# Queensland Recreational Boating Facilities Demand Forecasting Study 2017

## Fraser Coast Regional Council Assessment

GHD

ECONOMIC ASSOCIATES

December 2017

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# Table of contents



# Appendices

# 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

‘DEHP’ means the Department of Environment and Heritage Protection

‘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 Fraser Coast 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 Fraser Coast Regional Council*

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

- capacity of existing facilities
- accessibility due to parking or tidal limitations.

### *Demand assessment*

The demand assessment is based on boat registrations from within the local government area (LGA) of Fraser Coast 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 that:

- The population of Fraser Coast Regional Council is projected to increase from 102,953 persons in 2016 to 133,958 persons in 2036, or by 1.3% per annum, below the state-wide five year forecast average of 1.6% (Appendix C).
- Fraser Coast has a relatively high incidence of trailable boats compared to the Queensland average, particularly for boats up to 4.5 metres in length.
- Trailable and non-trailable vessel registrations within the Fraser Coast LGA are mostly used on the water within the LGA, with some leakage/export in usage from/to the LGA with Gympie Regional Council and Bundaberg Regional Council areas.
- Vessel inflows from outside the LGA are likely from Gympie Regional Council, North Burnett Regional Council, South Burnett Regional Council and Bundaberg Regional Council.
- There is demand for recreational boating infrastructure in Fraser Coast Regional Council as a result of tourism.
- The registration activation rate from residents of the LGA is anticipated to be high (12%) as a result of a relatively high incidence of blue collar workers and higher average age compared to the Queensland state average.

### *Boat ramps*

At present there are 26 boat ramp facilities in the LGA, containing 41 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 28.9 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 to 30.9 lanes.

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 Fraser Coast is shown in Table 1.

Table 1 – Projected boat ramp lane shortfall, Fraser Coast Regional Council

| Evaluation category | Existing effective capacity* | 2016 | | 2021 | | 2026 | | 2036 | |
|---|---|---|---|---|---|---|---|---|---|
| | | Demand | Shortfall | Demand | Shortfall | Demand | Shortfall | Demand | Shortfall |
| Open-water access | 17.4 | 19.1 | 1.7 | 19.9 | 2.5 | 21.7 | 4.3 | 24.2 | 6.8 |
| Non-open-water access | 13.5 | 14.9 | 1.4 | 16.1 | 2.6 | 17.3 | 3.8 | 19.8 | 6.3 |
| **Total** | **30.9** | **34** | **3.1** | **36** | **5.1** | **39** | **8.1** | **44** | **13.1** |

**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, Fraser Coast Regional Council

| Evaluation category | Existing effective capacity |
|---|---|
| # of public sheltered mainland landings* | 3 |
| # of public island landings – supplies available | 0 |
| # major private landings* | 4 |
| **Total** | **7** |
| **Facilities not contributing to recreational capacity:** | |
| # of public unsheltered mainland landings | 0 |
| # of public island landings – no supplies available | 0 |

**public sheltered mainland landings include two pontoons in Urangan Boat Harbour* and a jetty in the city reach of the Mary River.

**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)*

Table 3 – Projected landing shortfall, Fraser Coast Regional Council

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

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

This assessment indicates that at present the public landings network in conjunction with the supplementary capacity provided by commercial or club landings is adequate to cater for existing demand, however an additional landing will be required within the next 20 years.

### *Recommended priorities*

Refer to Table 4 for the Fraser Coast 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, Fraser Coast Regional Council area

| Priority | Sites |
|---|---|
| Priority 1 (as soon as possible) | Beaver Rock – expand facility to 4 lanes with a heavy duty pontoon and 90 CTU spaces. |
| | New facility at Poona Creek, Poona – 2-lane ramp with 45 CTU spaces and a feasibility study to determine if a floating walkway is viable. |
| | New facility at Beelbi Creek – formalise facility to 1-lane ramp with an all-weather parking area for 10 to 15 CTUs. |
| | March Street, Maryborough – replace existing jetty with a pontoon. |
| Priority 2 (over the next five years) | River Heads (Stage 1) – acquire land to provide car-only parking for ferry users and convert existing parking to CTU spaces where possible. |
| | South Street, Maryborough – expand facility to 3-lanes with an existing floating walkway and formalise parking to achieve 70 CTU spaces. |
| Priority 3 (over the next five to ten years) | River Heads (Stage 2) – reclaim land to expand parking area and expand western ramp to 4-lanes with a floating walkway. |
| | Lenthalls Dam – expand ramp to 2-lanes and parking to 45 CTU spaces. |
| Priority 4 (other) | Howard, Power House Road – acquire land to expand parking to approximately 60 CTU spaces and expand ramp to 3 near all-tide lanes. |
| | Maaroom – formalise parking to 45 CTU spaces. |
| | Lions Park, Burrum Heads – install a pontoon for deep-draught vessel and tender access.. |

# 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 Fraser Coast Regional Council area are that:

- The area is dominated by key industries of tourism, agriculture and manufacturing.
- The population of Fraser Coast Regional Council is projected to increase from 102,953 persons in 2016 to 133,958 persons in 2036, or by 1.3% per annum, below the state-wide five year forecast average of 1.6% (Appendix C).
- Growth will be dominated by development in the Hervey Bay area.
- Windy weather reduces the annual number of days that are suitable for offshore boating.
- The LGA is considered to be a regional centre under the remoteness measures used by the Australian Bureau of Statistics.

# 3. Existing facilities

## 3.1 Overview of existing facilities

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

Table 5 – Recreational boating facilities within Fraser Coast Regional Council area

| Infrastructure owner | Boat ramps* | | Landings | |
|---|---|---|---|---|
| | Facilities | Lanes | Pontoons | Jetties |
| TMR mainland (other than state boat harbour) | 15 (16) | 23 (26) | 0 | 0 |
| TMR (state boat harbour) | 3 | 9 | 2 | 0 |
| Fraser Coast Regional Council | 8 | 9 | 0 | 0 |
| Private landings (marinas/clubs) | N/A | N/A | 4 | 0 |
| **Total** | **26 (27)** | **41 (43)** | **6** | **0** |

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

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:

- Urangan Boat Harbour
- River Heads
- South Street, Maryborough (Mary River)
- new facility at Lions Park, Burrum Heads

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

- service the main population centre close to central Maryborough, growth areas of Hervey Bay and Burrum Heads, Fraser Island, and the communities in the northern area of the Great Sandy Strait

- provide open-water access, or access to estuarine reaches of the numerous river and creek systems – some facilities providing access to both, such as River Heads, Beaver Rock and the Burrum Heads facilities.

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 Urangan Boat Harbour which is within approximately 1-hours drive of main population areas to the north of the LGA. Southern communities of Fraser Coast LGA are just over an hour from the Urangan Boat Harbour, however these communities can access Snapper Creek (Tin Can Bay) state boat harbour, which is within approximately 1-hours drive to the south in Gympie Regional Council.

The public deep-draught vessel landings within the LGA comprise two pontoons in Urangan Boat Harbour and a jetty in the city reach of the Mary River. The Urangan pontoons were originally installed as boat ramp queuing facilities. Floating walkways are planned in the current MIIP as at December 2016 to improve safety and efficient queuing at the boat ramps.

The March St, Maryborough landing is reaching the end of its design life and is recommended for replacement with a pontoon.

## 3.2 Key issues and hotspots

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

### 3.2.1 Capacity

Overcrowding at certain facilities was raised by many stakeholders. Most of the overcrowding centred on facilities providing all-tide or near all-tide, open-water access, with Urangan Boat Harbour, River Heads and Gatakers Bay being the sites of main concern. Importantly, stakeholders identified that these facilities were not currently used to their full potential due to insufficient parking for CTUs.

Crowding at River Heads was identified as being of major concern, with the parking area currently catering for the recreational boating facility and for commuter/tourist cars parked by people using the ferry to Fraser Island. Due to the highly small and geographically constrained parking area, conflicts over parking can occur with cars occasionally parking in CTU spaces.

### 3.2.2 Accessibility

A key issue raised by stakeholders is the limited accessibility of several boating facilities due to either parking limitations, which reduces the number of boat users who can access the facility, or tidal limitations, which limit the time the facility is usable to reach open-water. The facility particularly identified by stakeholders as providing very limited access to open-water is at Poona, which is highly tidally-restricted and has constrained CTU parking.

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

# 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.

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

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

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
- 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 Fraser Coast Regional Council area under the MIIP that seek to increase the capacity of marine infrastructure comprise:

- addition of a floating walkway to the western ramp at River Heads
- addition of floating walkways to both boat ramps in Urangan Boat 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.

A key observations drawn from this analysis is that there are more open-water access facilities in the Fraser Coast LGA than those that provide access into estuaries or river/creek systems.

Table 6 – Summary of existing/planned* boat ramp effective capacity by access type, Fraser Coast 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 | 4 (5) | 1 | 3 (4) | 12 (14) | 12.8 (14.8) |
| Near all-tide | 2 | 2 | 0 | 3 | 2.6 |
| Part-tide | 3 | 3 | 0 | 3 | 1.5 |
| **Subtotal** | **9 (10)** | **9** | **3 (4)** | **18 (20)** | **16.9 (18.9)** |
| **Depth-limited open-water access** | | | | | |
| All-tide | 0 | 0 | 0 | 0 | 0 |
| Near all-tide | 2 | 0 | 2 | 2 | 2 |
| Part-tide | 4 | 2 | 2 | 8 | 3 |
| **Subtotal** | **6** | **2** | **4** | **10** | **5** |
| **Distance-limited open-water access** | | | | | |
| All-tide | 0 | 0 | 0 | 0 | 0 |
| Near all-tide | 2 | 0 | 2 | 3 | 1 |
| Part-tide | 1 | 1 | 0 | 1 | 0.5 |
| **Subtotal** | **3** | **1** | **2** | **4** | **1.5** |
| **Infrastructure-limited open-water access** | **2** | **1** | **1** | **3** | **2** |
| **Beach ramps** | **4** | **4** | **0** | **4** | **2** |
| **No open-water access** | **2** | **1** | **1** | **2** | **1.5** |
| **Total** | **26 (27)** | **15** | **11 (12)** | **41 (43)** | **28.9 (30.9)** |

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

- There are 41 actual lanes but only 28.9 effective lanes at present, reflecting limitations imposed by tidal restrictions and the lack of adequate parking. This is most evident for facilities that provide depth-limited open-water access, where there are currently 10 actual lanes but only 5 effective lanes.
- The MIIP (at December 2016) provides only two lanes of additional capacity in terms of effective lanes due to the lack of accompanying committed CTU parking. If the parking capacity were to be addressed at these facilities, these works would make a larger contribution to improvements in effective capacity.

## 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 Fraser Coast Regional Council area, there are three public landings that can be accessed by larger and deeper-draught vessels for short-term stays (a couple of hours or less), two pontoons at Urangan and a jetty in the city reach of the Mary River.

Key observations indicate that:

- The two pontoons in Urangan Boat Harbour are accessible to deep-draught vessels. The harbour contains marina facilities with fuel available, and shops where provisions can be purchased are approximately 2km away. The pontoons are currently also used as queuing structures, however in the MIIP as at December 2016, floating walkways are planned for installation and will replace this functionality, leaving the two pontoons for effective sole use by deep-draught vessels.
- The jetty at March Street on the south bank of the Mary River in Maryborough currently acts as a deep-draught landing. This jetty is nearing the end of its design life and will need to be removed or replaced in the near future. As this jetty provides access for vessels into Maryborough, replacement of the structure with a more user-friendly pontoon is preferable.

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

- Mary River Marina, servicing the town of Maryborough and within walking distance of provisions

- Great Sandy Straits Marina, Boat Club Marina and Fishermans Wharf Marina, all located within Urangan Boat Harbour.

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

Table 7 – Existing landing capacity, Fraser Coast Regional Council

| Evaluation category | Existing effective capacity |
|---|---|
| # of public sheltered mainland landings | 3 |
| # of public island landings – supplies available | 0 |
| # major private landings | 4 |
| **Total** | **7** |
| **Facilities not contributing to recreational capacity:** | |
| # of public unsheltered mainland landings | 0 |
| # of public island landings – no supplies available | 0 |

# 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 are 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 Fraser Coast 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 includes a high incidence of blue collar workers and an older average age compared to the state average outside the Fraser Coast 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, Fraser Coast Regional Council

| Contributing LGA | % of contributing LGA using Fraser Coast facilities* | # of registered vessels from contributing LGA using Fraser Coast facilities | % registration activation | Contribution comment |
|---|---|---|---|---|
| Fraser Coast | 93% | 9,444 | 12% | Resident population<br>Regional centre |
| Gympie | 12% | 431 | 8% | Visitation from adjacent coastal LGA<br>Older, blue collar, metropolitan |
| North Burnett | 5% | 41 | 10% | Hinterland catchment<br>Older, blue collar, regional centre, non-coastal |
| South Burnett | 5% | 95 | 10% | Western catchment<br>Older, blue collar, regional centre, non-coastal |
| Bundaberg | 4% | 368 | 12% | Visitation from adjacent coastal LGA<br>Older, blue collar, regional centre |

**See Economic Associates Appendix C for percentage estimates*

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

- Population areas within the Fraser Coast LGA are largely near or on main roads (Bruce Highway, State Route 57), or along the coast. Most (93%) Fraser Coast residents are considered to use facilities within the LGA. The remaining 7% are considered to use facilities in Gympie and Bundaberg LGAs.
- Some demand for tidal facilities from North Burnett LGA is funnelled into the Fraser Coast by virtue of the road network (Isis Highway, Maryborough-Biggenden Road).
- Demand for tidal facilities from South Burnett Regional Council is shared with Gympie due to the road network.
- Fraser Coast LGA is separated from Bundaberg Regional by the Burrum River creating a long drive round via the Bruce Highway, and there are no boating facilities close to the border of Fraser Coast and Gympie LGA. As such, sharing of demand between Fraser Coast and these adjoining LGAs is expected to be relatively small.

In addition to usage of the Fraser Coast facilities by residents from Fraser Coast and adjacent LGAs, the Fraser Coast area is considered to record a notable uplift in boating infrastructure demand as a result of tourism activity. While much of the increased boating tourism will be commercial, a substantial increase will be incurred by residents taking visiting friends and relatives out on their boats.

Economic Associates (Appendix C) assumed that Fraser Coast would experience a 10% 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, Fraser Coast Regional Council

| Vessel length | Boat ramp lanes | | | | |
|---|---|---|---|---|---|
| | 2016 | 2021 | 2026 | 2031 | 2036 |
| 0 to 4.5m | 24 | 26 | 28 | 30 | 32 |
| 4.5 to 8m | 10 | 10 | 11 | 12 | 12 |
| **Total** | **34** | **36** | **39** | **42** | **44** |

Key observations relevant to the catchment demand include that:

- The majority of demand on facilities originates from Fraser Coast Regional Council residents.
- Demand from small boats is over 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 Urangan Boat Harbour pontoons form part of a network of mainland landings accessible by deep-draught vessels cruising the Queensland Coast. Approaching from the south, it is approximately 40 nautical miles from the Snapper Creek (Tin Can Bay) state boat harbour in the Gympie Regional Council area to the Urangan Boat Harbour, and another 25 nautical miles to the Buxton pontoon in the Burrum River in Bundaberg LGA. While the Burrum River is navigable upstream past the Buxton pontoon, access through the mouth of the Burrum River may be tide-dependent for deeper-draught vessels. Alternatively, vessels can travel from Urangan Boat Harbour north to Burnett Heads Boat Harbour, approximately 45 nautical miles. Depending on the weather conditions and seasonal trade winds, all three destinations are within a day's sail of Urangan Boat Harbour.

Given that the Great Sandy Strait is a popular boating area and tourist destination, visiting vessels often desire to stay for more than one night, and therefore will need to seek an overnight protected berth or mooring. Commercial marina facilities cater towards this demand, providing landing facilities for their members and for casual visitors. Moorings or berths are generally available at one of the private facilities in Urangan Boat Harbour or in Maryborough.

The March Street jetty located in central Maryborough is a third deep-draught landing, however the structure is approaching the end of its design life. As the landing provides access to Maryborough and services the popular anchorage in the Mary River, stakeholders have

expressed a desire to replace the jetty with a public pontoon in the near future to provide continued access for deep-draught vessels and their tenders into the township.

Currently, it appears that demand for deep-draught landings in other areas of the LGA is low. However, a new boat ramp facility has recently been constructed at Burrum Heads (Burrum River). This facility is expected to be popular and attract future growth, so would be a potential location for an additional landing, in particular to service vessels anchored in the Burrum River.

#### 5.2.2 Landing demand

The projected demand for deep-draught vessel landings within the Fraser Coast 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.

Table 10 – Landing demand projections, Fraser Coast Regional Council

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

# 6. Development needs and opportunities

The need for additional recreational boating infrastructure within the Fraser Coast 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, Fraser Coast Regional Council

| Evaluation category | Existing effective capacity* | 2016 | | 2021 | | 2026 | | 2036 | |
|---|---|---|---|---|---|---|---|---|---|
| | | Demand | Shortfall | Demand | Shortfall | Demand | Shortfall | Demand | Shortfall |
| All vessels, all facilities | 30.9 | 34 | 3.1 | 36 | 5.1 | 39 | 8.1 | 44 | 13.1 |

**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 Fraser Coast 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, Fraser Coast Regional Council

| Evaluation category | Existing effective capacity* | 2016 | | 2021 | | 2026 | | 2036 | |
|---|---|---|---|---|---|---|---|---|---|
| | | Demand * | Shortfall | Demand | Need | Demand | Shortfall | Demand | Shortfall |
| **Best estimate** | **17.4** | **19.1** | **1.7** | **19.9** | **2.5** | **21.7** | **4.3** | **24.2** | **6.8** |
| Upper bound | 17.4 | 22 | 4.6 | 23 | 5.6 | 25 | 7.6 | 28 | 10.6 |
| Lower bound | 17.4 | 16.2 | -1.2 | 16.8 | -0.6 | 18.3 | 0.9 | 20.4 | 3 |

**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) = 10 + 12 = 22*

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 Fraser Coast 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, Fraser Coast Regional Council

| Evaluation category | Existing effective capacity* | 2016 | | 2021 | | 2026 | | 2036 | |
|---|---|---|---|---|---|---|---|---|---|
| | | Demand | Shortfall | Demand | Shortfall | Demand | Shortfall | Demand | Shortfall |
| **Best estimate** | **13.5** | **14.9** | **1.4** | **16.1** | **2.6** | **17.3** | **3.8** | **19.8** | **6.3** |
| Upper bound | 13.5 | 17.8 | 4.3 | 19.2 | 5.7 | 20.7 | 7.2 | 23.6 | 10.1 |
| Lower bound | 13.5 | 12 | -1.5 | 13 | -0.5 | 14 | 0.5 | 16 | 2.5 |

**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 Fraser Coast Regional Council residents, the location of additional or upgraded facilities should be targeted to service population centres of:

- Maryborough
- Hervey Bay
- the northern beaches area
- the Great Sandy Strait area.

### 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 demand, however additional landings will be required in the next ten to 20 years.

Table 14 – Projected landing shortfall, Fraser Coast Regional Council

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

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

## 6.2 Identified stakeholder opportunities

Table 15 summarises the key facilities and sites identified by stakeholders during consultation activities as requiring consideration.

Table 15 – Stakeholder identified opportunities to increase capacity, Fraser Coast Regional Council

| Facility | Stakeholder comments | Study comments |
|---|---|---|
| Urangan Boat Harbour | Excellent open water access.<br>Floating walkway on both 4-lane ramps is desirable.<br>Limited parking. | Floating walkways planned for both 4-lane ramps in the MIIP (as at December 2016). Limited expansion availability minimises opportunities for additional infrastructure.<br>Upgrade to facility to increase effective lanes not currently recommended. |
| River Heads | Good open-water access.<br>Parking is highly restricted by geography and conflicting users.<br>Western ramp is exposed to strong currents.<br>Floating walkway is desirable. | Floating walkway planned in the MIIP (as at December 2016) for western ramp.<br>Recommendation for upgrade in stages.<br>Stage 1: Acquire land for ferry users parking and convert current parking into CTU only spaces.<br>Stage 2: Reclaim land at the tip of the point and expand CTU parking, construct an additional 2-lanes on western ramp, subject to parking capacity being at or near TMR reference standards. |
| Poona | Highly tide-restricted access to open-water.<br>Highly tide-restricted access to estuarine waters.<br>Alternative facility location desirable. | New facility upstream in Poona Creek consisting of a 2-lane ramp and formalised parking recommended. |
| Toogoom Road, Toogoom | Poor access to open and estuarine waters.<br>Limited parking.<br>Parking area shared with other users. | Facility offers only partial tide access upstream and to open-water. Parking expansion would necessitate land acquisition that is currently used for either housing or a business.<br>Upgrade of facility not currently recommended. |
| Beaver Rock | Open-water access.<br>Area available for both landside and waterside expansion.<br>Floating walkway is desirable. | 2 additional lanes, heavy duty pontoon and carpark formalisation recommended. |
| Gatakers Bay, Corfield Street | Good open-water access.<br>Capacity can be affected by maintenance.<br>All-tide access is desirable. | Alteration to reversing area to improve efficiency could be considered in future.<br>Upgrade of facility not currently recommended. |
| Raglan Street, Maryborough | Estuarine access.<br>Well-used facility.<br>Limited parking. | Limited opportunity for parking expansion.<br>Facility upgrade not currently recommended. |

| Facility | Stakeholder comments | Study comments |
|---|---|---|
| South Street, Maryborough | Estuarine access.<br>Popular, well-used facility.<br>Formalisation of parking is desirable. | 1 additional lane and formalisation of parking 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

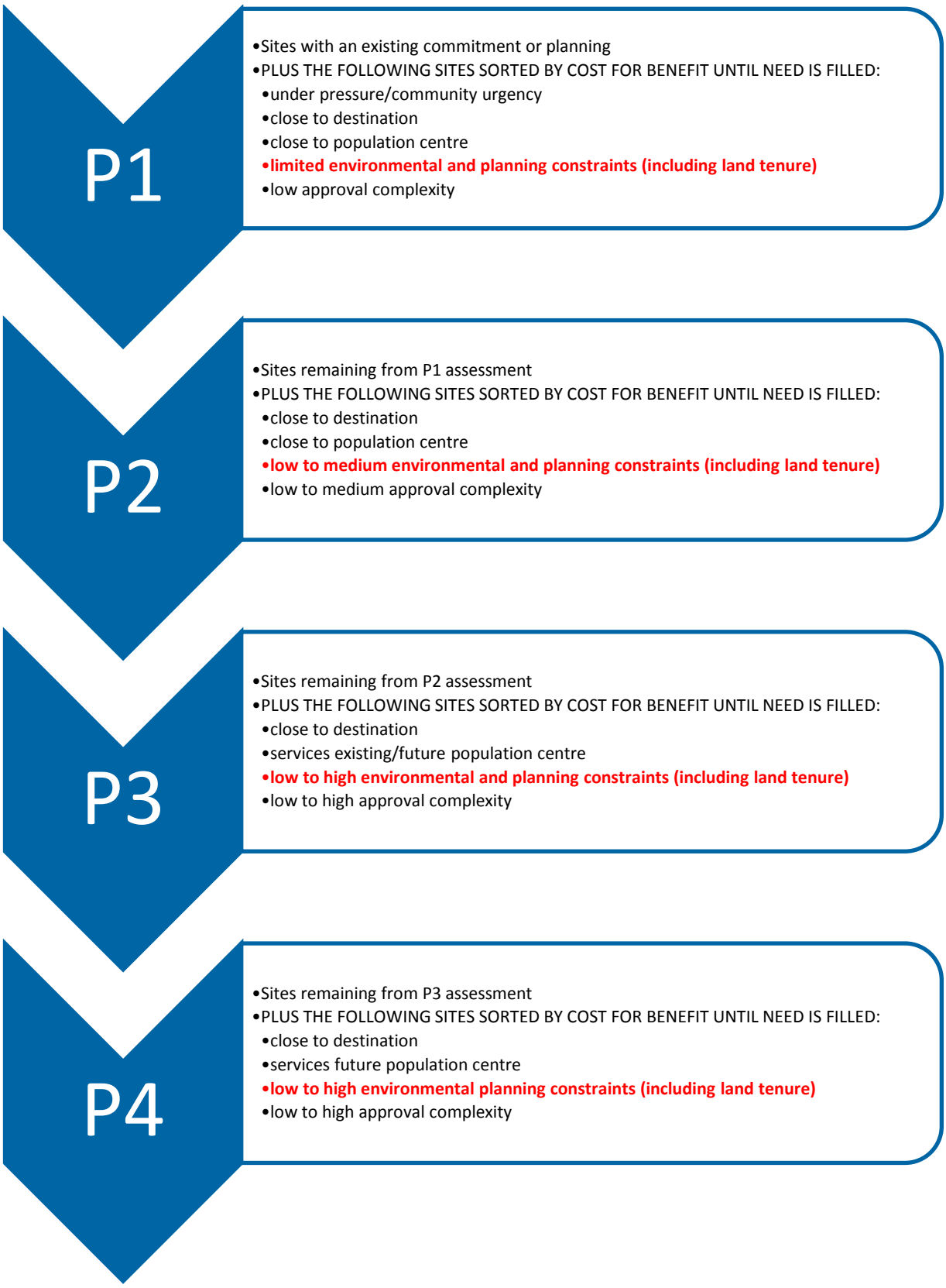



Figure 1 – Priority selection methodology

### 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 16 – Recommended priorities to increase capacity, Fraser Coast Regional Council area

| Priority | Sites |
|---|---|
| Priority 1 (as soon as possible) | Beaver Rock – expand facility to 4 lanes with a heavy duty pontoon and 90 CTU spaces. |
| | New facility at Poona Creek, Poona – 2-lane ramp with 45 CTU spaces and a feasibility study to determine if a floating walkway is viable. |
| | New facility at Beelbi Creek – formalise facility to 1-lane ramp with an all-weather parking area for 10 to 15 CTUs. |
| | March Street, Maryborough – replace existing jetty with a pontoon. |
| Priority 2 (over the next five years) | River Heads (Stage 1) – acquire land to provide car-only parking for ferry uses and convert existing parking to CTU spaces where possible. |
| | South Street, Maryborough – expand facility to 3-lanes with an existing floating walkway and formalise parking to achieve 70 CTU spaces. |
| Priority 3 (over the next five to ten years) | River Heads (Stage 2) – reclaim land to expand parking area and expand western ramp to 4-lanes with a floating walkway. |
| | Lenthalls Dam – expand ramp to 2-lanes and parking to 45 CTU spaces. |
| Priority 4 (other) | Howard, Power House Road – acquire land to expand parking to approximately 60 CTU spaces and expand ramp to 3 near all-tide lanes. |
| | Maaroom – formalise parking to 45 CTU spaces. |
| | Lions Park, Burrum Heads – install a pontoon for deep-draught vessel and tender access. |

## 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 17, 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.

Table 17 – Effective lane and landing capacity after delivery of recommended priorities, Fraser Coast 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 | 17.5 | 19 | 19.5 | 20 | 20 | 21.5 | 22.5 | 24 | 22.5 |
| Non-open-water access | 13.5 | 15 | 16 | 16 | 17 | 17.5 | 18 | 20 | 21 |
| All vessels, all facilities | **31** | **34** | **35.5** | **36** | **37** | **39** | **40.5** | **44** | **43.5** |
| # of landings* | 7 | 6 | 7 | 6 | 7 | 7 | 7 | 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*

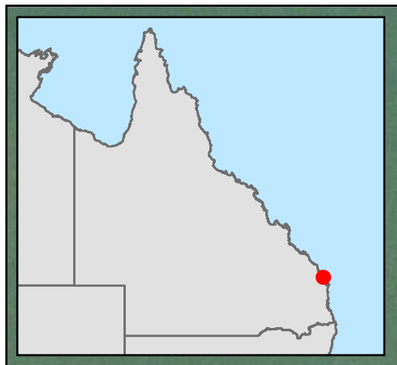
It should be noted that the post-delivery effective capacity in Table 17 is calculated based on a facility's ability to provide open-water access. While some of the recommended facilities are classified as open-water access, the River Heads facility, Beaver Rock facility and the new Burrum Heads facility at Lions Park also offer estuarine access, assisting in meeting the demand for estuarine facilities.

## 7.4 Priority 1 sites

### Table 18 – Priority 1 – Beaver Rock Road, Beaver Rock

| Site name | Beaver Rock Road, Beaver Rock |
|---|---|
| Existing formal facility? | Yes |
| Location | Beaver Rock Road, Beaver Rock |
| Current tidal status | Near all-tide, open-water access |
| Site characteristics | The Beaver Rock facility is located on the southern bank of the Mary River, approximately 13.5km (7.3 nautical miles) upstream of where the Mary River enters the Great Sandy Strait.<br>The site is approximately 24.7km (13.3 nautical miles) downstream of Maryborough, and can be accessed via Beaver Rock Road.<br>The existing facility currently consists of a 2-lane ramp and unformed car park, with piles alongside the ramp on the downstream side that may have once been used to support barges working in the river. The area of the Mary River adjacent to the facility is also used as an anchorage.<br>The facility is located on Reserve land at the end of Beaver Rock Road, which is an unsealed road. |
| Proposed works | Expansion of facility to 4-lanes and formalisation of the parking area to achieve 90 CTU spaces. Installation of a heavy duty pontoon adjacent to the ramp (as a floating walkway is unsuitable to resist flood flows). |
| Increase in effective lanes provided by works | 2.3 effective lanes |
| Rationale | The facility provides access to estuarine reaches of the Mary River and services the township of Maryborough. The site allows access to the Great Sandy Strait and can provide open-water access through the northern extent of the Strait at Hervey Bay.<br>The facility is located in a reserve with area available for expansion of both the waterside and landside infrastructure.<br>As the ramp has the potential to be used by commercial operators, a heavy duty pontoon as a queuing structure is preferable over a floating walkway. |
| Environmental and planning constraints | Native title claim under Butchulla Land & Sea Claim #2; NNTT QC2009/005. DATSIP Cultural Heritage Database search recommended.<br>World Heritage and National Heritage place - Great Sandy Straight, and Ramsar wetland. As the works are likely to impact on MNES, a referral under the EPBC Act must be made to DEE.<br>Within a flora trigger area and flora appears to be established 'in the wild'. Site survey required 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.<br>Of concern remnant vegetation regional ecosystem (RE) 12.3.11. Exemptions apply for clearing native vegetation on land generally that is clearing for the construction or maintenance of community infrastructure mentioned in Shd |

| Site name | Beaver Rock Road, Beaver Rock | |
|---|---|---|
| | 21, Part 1, Section 14 (b) of P Reg that is government supported transport infrastructure.<br>Marine plants - 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.<br>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).<br>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).<br>The proposed works are located within the Great Sandy Strait Marine Park. Marine Park Permits may be required for any works that occur within the Marine Park.<br>The proposed works are located within the open space zone under the Fraser Coast Planning Scheme: An MCU is exempt for a 'utility installation' in the open space zone.<br>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).<br>Reserve tenure. | |
| Consultation feedback | Fraser Coast Regional Council requires additional information to assess whether the presented priority recommendations represent the most beneficial options to meet demand within the LGA. In particular, feasibility assessments may be required for some of the recommended priorities to better inform Council's views. | |
| Indicative cost (excl. GST) (to ±50%) | Water-based infrastructure | $1,240,000 |
| | Land-based infrastructure | $2,600,000 |





BEAVER ROCK ROAD

Paper Size A3

0 10 20 40 60 80

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

N

LEGEND

- Populated Places
- State controlled road
- Cadastre
- Carpark
- Pontoon
- 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
# Beaver Rock Road, Beaver Rock

C:\Users\ihamilton\Desktop\GIS\30098\MXDROADS\41_30098_049_Beaver_RevA.mxd



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

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Table 19 – Priority 1 – Poona Creek

| Site name | Poona Creek |
|---|---|
| Existing formal facility? | No |
| Location | Poona Creek, Poona, approximately 1.3km west of the existing facility, on the power line access road |
| Current tidal status | Part-tide, depth-limited open-water access |
| Site characteristics | The site is currently an informal launch/retrieval area located approximately 2km upstream in Poona Creek. The site is located adjacent to a power line route and there is a cleared, unformed parking area and access road.<br>The site is towards the southern end of the Great Sandy Strait, with access to open-water through the channel between Fraser Island and Inskip Point, dependent on weather conditions.<br>The location, whilst still only providing part-tide access to open water, offers a greater tidal access range than is currently provided at the existing Poona facility. The existing Poona facility is exposed to wind and wave action from the north, east and south, and is not positioned in the Poona Creek channel, highly limiting the usability of the ramp. |
| Proposed works | Construction of a 2-lane ramp and formalisation of the parking area to create approximately 45 CTU spaces.<br>Conduct a feasibility study to determine if it is possible to install a floating walkway. |
| Increase in effective lanes provided by works | Between 1 and 1.5 effective lanes |
| Rationale | The existing Poona ramp is highly tidally constrained, with limited access to both open-water and estuarine environments. The existing facility is exposed to wind and wave action from the north, east and south and is also limited by parking, minimising the opportunity for expansion.<br>Construction of a new facility in Poona Creek would provide a larger tidal window for launching and retrieval, and access to estuarine and open-water environments.<br>The potential site has an existing service road and cleared area that will assist in reducing costs of vegetation clearing. |
| Environmental and planning constraints | Native title claim NNTT QC2009/005 Butchulla Land & Sea Claim #2. DATSIP Cultural Heritage Database search recommended.<br>Within Nationally important wetland – Great Sandy Strait – GBR/wetland/threatened flora and fauna– if the works are likely to impact on MNES, a referral under the EPBC Act must be made to DEE.<br>Category B remnant vegetation mapped over site, being least concern RE 12.1.2. 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.<br>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.<br>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 |

| Site name | Poona Creek | |
|---|---|---|
| | 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).<br>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).<br>Within a high risk flora trigger area. Within a flora trigger area and flora appears to be established 'in the wild'. Site survey required 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.<br>The proposed works are located within the Great Sandy Strait Marine Park. Marine Park Permits may be required for any works that occur within the Marine Park.<br>The proposed works are located within the rural zone under the Fraser Coast Planning Scheme: An MCU is exempt for a 'utility installation' in the rural zone.<br>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).<br>Reserve/Unallocated state land tenure. | |
| Consultation feedback | Fraser Coast Regional Council requires additional information to assess whether the presented priority recommendations represent the most beneficial options to meet demand within the LGA. In particular, feasibility assessments may be required for some of the recommended priorities to better inform Council's views. | |
| Indicative cost (excl. GST) (to ±50%) (excludes feasibility study) | Water-based infrastructure | $390,000 |
| | Land-based infrastructure | $1,370,000 |




Paper Size A3

0 10 20 40 60 80

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

N

LEGEND

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

Department of Transport and Main Roads
Queensland Recreational Boating Demand Study

Job Number 41-30098
Revision B
Date 15 Dec 2016

# Boating facility
# Poona Creek

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

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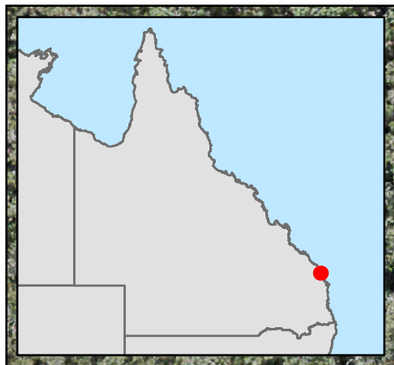
### Table 20 – Priority 1 – Pialba-Burrum Heads Road, Beelbi Creek

| Site name | Pialba-Burrum Heads Road, Beelbi Creek |
|---|---|
| Existing formal facility? | No |
| Location | Beelbi Creek, Beelibi, on Pialba Burrum Heads Road, approx. 2.5km south of Toogoom |
| Current tidal status | Near all-tide, depth-limited open-water access |
| Site characteristics | The site is currently an informal launch and retrieval facility located approximately 6.2km (3.3 Nautical Miles) upstream in Beelbi Creek. The site is on the eastern bank of the creek and is directly accessible via Pialba Burrum Heads Road. The facility is approximately 3km north of the existing Toogoom facility. The site is located on road reserve.<br>The site provides estuarine access into Beelbi Creek, with open-water access limited by tide and the presence of sand bars throughout the lower reaches of the creek. Upstream access is possible for several kilometres but can become limited by the creek width thinning and the presence of shallow areas towards Old Toogoom Road. |
| Proposed works | Construction of a new 1-lane ramp and an all-weather parking area for 10 to 15 CTU spaces |
| Increase in effective lanes provided by works | 0.8 effective lanes |
| Rationale | The site offers an alternative to the highly constrained Toogoom facility, which is currently restricted by the tide and the amount of landside area available for parking, as it is bordered by private property. The site will also provide estuarine creek access with greater consistency than the Toogoom facility.<br>The site offers an alternative estuarine access point for the Hervey Bay area, with the closest facilities currently located in Howard and Maryborough.<br>The facility is easily accessible due to its location alongside Pialba Burrum Heads Road, which is a main road. |
| Environmental and planning constraints | Threatened fauna and flora species are recorded within 5km of the site. Clearance survey recommended prior to construction. If the works are likely to impact on MNES, a referral under the EPBC Act must be made to DEE.<br>Within wetland protection trigger area. SDAP Module 11 will apply to all works triggering under the SP Act which are high impact earthworks in a WPA.<br>Site mapped as Category X – non remnant.<br>Adjacent to Category B remnant vegetation and essential habitat – potential impact during construction. 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.<br>Fish habitat area (FHA) management area B 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.<br>The creek is tidal and therefore marine plants may be present. 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. |

| Site name | Pialba-Burrum Heads Road, Beelbi Creek | |
|---|---|---|
| | 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).<br>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).<br>The proposed works are located within the environmental management and conservation zone under the Fraser Coast Planning Scheme: An MCU is exempt for a 'utility installation' in the environmental management and conservation zone.<br>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).<br>Freehold tenure. | |
| Consultation feedback | Fraser Coast Regional Council requires additional information to assess whether the presented priority recommendations represent the most beneficial options to meet demand within the LGA. In particular, feasibility assessments may be required for some of the recommended priorities to better inform Council's views. | |
| Indicative cost (excl. GST) (to ±50%) | Water-based infrastructure | $190,000 |
| | Land-based infrastructure | $290,000 (unsealed) |





PIALBA BURRUM HEADS 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 56

N

LEGEND

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

Department of Transport and Main Roads
Queensland Recreational Boating Demand Study

| | |
|---|---|
| Job Number | 41-30098 |
| Revision | A |
| Date | 16 Dec 2016 |

# Boating facility
# Pialba-Burrum Heads Road, Beelbi Creek

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

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Table 21 – Priority 1 – March Street, Maryborough

| Site name | March Street, Maryborough |
|---|---|
| Existing formal facility? | Yes |
| Location | Southern bank of the Mary River, March Street, Maryborough |
| Current tidal status | Near all-tide, open-water access |
| Site characteristics | The facility currently consists of a jetty on the southern bank of the Mary River. The site lies at the northern end of March Street in Maryborough.<br>The jetty is a deep-draught landing for vessels and is also used for general recreation purposes. The structure is nearing the end of its design life.<br>The area of the Mary River adjacent to the jetty is used as an anchorage, with a private marina facility located immediately upstream of the jetty.<br>Access for further upstream is limited for taller vessels due to the Granville Bridge, which has a low clearance. |
| Proposed works | Replace existing jetty with a pontoon |
| Increase in effective lanes provided by works | N/A |
| Rationale | The existing March Street jetty is a popular facility, however the structure is approaching the end of its design life. As such a replacement structure should be a pontoon as it provides higher quality access over variable water levels compared to a jetty.<br>The pontoon will allow for deep-draught vessels to access Maryborough and provide a more user-friendly landing structure. The structure also has the potential to be used as a temporary mooring for tenders of vessels anchored in the Mary River. |
| Environmental and planning constraints | Native title claim under Butchulla Land & Sea Claim #2, NNTT QC2009/005. DATSIP Cultural Heritage Database search required.<br>Site is within a high-risk flora trigger area. Site previously cleared, non-remnant and considered to be not 'in the wild'.<br>Marine plants are located 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.<br>Site is within the coastal zone and coastal management district. 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).<br>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).<br>The proposed works are located within the open space zone under the Fraser Coast Planning Scheme: An MCU is exempt for a 'utility installation' in the open space zone.<br>The operational works are exempt from assessment against the local planning scheme as the works would be undertaken |

| Site name | March Street, Maryborough | |
|---|---|---|
| | by or on behalf of a public sector entity (TMR) (Shd 6 Part 3, Section 8 of P Reg).<br>Unallocated state land. | |
| Consultation feedback | Fraser Coast Regional Council supports the replacement of the March Street jetty with a pontoon. | |
| Indicative cost (excl. GST) (to ±50%) | Water-based infrastructure | $670,000 |
| | Land-based infrastructure | $ - |




Paper Size A3

0 2.5 5 10 15 20 25

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

N

LEGEND

- Populated Places
- Pontoon
- State controlled road
- Cadastre

Department of Transport and Main Roads
Queensland Recreational Boating Demand Study

| | |
|---|---|
| Job Number | 41-30098 |
| Revision | A |
| Date | 16 Dec 2016 |

# Boating Facility
# March Street, Maryborough

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

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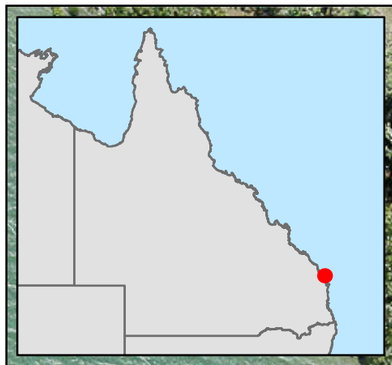
## 7.5 Priority 2 sites

### Table 22 – Priority 2 – River Heads

| Site name | River Heads |
|---|---|
| Existing formal facility? | Yes |
| Location | Southern end of Ariadne Street, River Heads |
| Current tidal status | All-tide, open-water access |
| Site characteristics | The site is located at the southern tip of River Heads where the Mary River enters the Great Sandy Strait. The facility is geographically constrained on a peninsula, with a well-vegetated incline to the north-west and water on all other sides.<br>The River Heads site currently services ferry users as well as recreational boat users, leading to highly-limited parking availability and conflicts between users.<br>The area includes public and private facilities totalling three ramps; two of which are available for public use and one that is used by the Fraser Island barge/ferry.<br>The western ramp is affected by significant cross currents while the eastern recreational ramp is tide-restricted and exposed to wind and wave action from the north-east. The shore adjacent to both ramps is rocky, however a floating walkway is planned for installation on the western ramp in the current MIIP as at December 2016. |
| Proposed works | Stage 1 (this recommendation) is the acquisition of land approximately 350m north west of the site at the top of the vegetated incline. It is recommended that the land then be used to create car parking for ferry users, while the existing parking area is converted to CTU only parking where possible. |
| Increase in effective lanes provided by works | Stage 1 – 0.5 effective lanes (Priority 2 works) |
| Rationale | Expansion of the CTU parking will allow more efficient use of the existing infrastructure and a diminished level of congestion. Reclamation of the point will create a large additional parking area, allowing for an expansion of the existing western ramp.<br>The River Heads facility is an alternative open-water access to Urangan Boat Harbour, whilst also offering access to the Mary River and the Great Sandy Strait. |
| Environmental and planning constraints | Impacts on the Ramsar and nationally important wetland – Great Sandy Strait is likely to be minimal and can be managed. However, if the works are likely to impact on MNES, a referral under the EPBC Act must be made to DEE. Referral is likely for the reclamation area.<br>Remnant endangered vegetation RE 12.5.13a mapped over area, including over pre-existing infrastructure. Area is mapped as essential habitat. Proposed development includes minimal impact to remnant vegetation. 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.<br>Within a flora trigger area. Site survey required per EHP (Environment and Heritage Protection) 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 |

| Site name | River Heads | |
|---|---|---|
| | 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.<br>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.<br>Marine plants are located 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.<br>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).<br>The works are located in the Coastal Management District: 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).<br>Marine Park Permits may be required for any works that occur within the Great Sandy Marine Park.<br>The proposed works are located within the environmental management and conservation zone under the Fraser Coast Planning Scheme: An MCU is exempt for a 'utility installation' in the environmental management and conservation zone.<br>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).<br>Reserve tenure. | |
| Consultation feedback | Fraser Coast Regional Council requires additional information to assess whether the presented priority recommendations represent the most beneficial options to meet demand within the LGA. In particular, feasibility assessments may be required for some of the recommended priorities to better inform Council's views. | |
| Indicative cost (excl. GST) (to ±50%) | Water-based infrastructure | $ - |
| | Land-based infrastructure (does not include land acquisition) | $760,000 |







Paper Size A3

0 10 20 40 60 80

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

N

LEGEND

- Populated Places
- State controlled road
- Cadastre
- Breakwater
- Carpark Stage 1
- Carpark Stage 2
- 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
# River Heads

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

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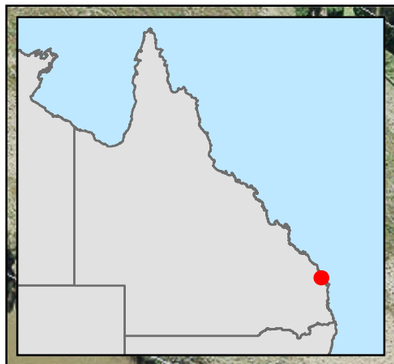
### Table 23 – Priority 2 – South Street, Maryborough

| Site name | South Street, Maryborough |
|---|---|
| Existing formal facility? | Yes |
| Location | The corner of South Street and Ferry Street, Maryborough |
| Current tidal status | Near all-tide, open-water access limited by other infrastructure |
| Site characteristics | The site is located on the northern bank of the Mary River in Maryborough, at the corner of South and Ferry Streets.<br>The existing facility consists of a 2-lane ramp with a central floating walkway and an unformed parking area. It is adjacent to the Lamington Bridge, which lies on the upstream side of the ramp.<br>The facility provides near all-tide access, however access downstream is impeded for larger vessels by the Granville Bridge, dependent on the tide.<br>The Mary River is prone to flooding.<br>Access is possible upstream to the Mary River Barrage. |
| Proposed works | Installation of an additional lane and formalisation of the parking area to 70 CTU spaces. |
| Increase in effective lanes provided by works | 1 effective lane |
| Rationale | The South Street facility is located in the town of Maryborough, a significant population centre in the Fraser Coast Regional Council area. The ramp services the town as well as the surrounding suburbs as one of two facilities within Maryborough.<br>The facility is located on council-owned freehold land with sufficient landside and waterside area to support expansion.<br>The facility also offers an alternative to the smaller Yangarie facility for accessing the upper estuarine areas of the Mary River. |
| Environmental and planning constraints | Native title claim NNTT QC2009/005 Butchulla Land & Sea Claim #2. DATSIP Cultural Heritage Database search required.<br>Next to Lamington Bridge which is state heritage listed. Works do not direct impact the bridge.<br>Within a high risk flora trigger area. Site previously cleared, non-remnant and considered to be not 'in the wild'.<br>Marine plants are located 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.<br>Site is within the coastal zone and coastal management district. 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).<br>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). |

| Site name | South Street, Maryborough | |
|---|---|---|
| | The proposed works are located within the rural zone under the Fraser Coast Planning Scheme: An MCU is exempt for a 'utility installation' in the rural zone.<br>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).<br>Freehold tenure. | |
| Consultation feedback | Fraser Coast Regional Council requires additional information to assess whether the presented priority recommendations represent the most beneficial options to meet demand within the LGA. In particular, feasibility assessments may be required for some of the recommended priorities to better inform Council's views. | |
| Indicative cost (excl. GST) (to ±50%) | Water-based infrastructure | $230,000 |
| | Land-based infrastructure | $2,060,000 |





HYNE STREET
FERRY STREET
QUEENS PLACE
FERRY LANE
QUEEN STREET
FORT STREET
FORT LANE
LA FRANTZ DRIVE
GYMPIE ROAD
SOUTH STREET
JOHN STREET
JOHN LANE

Paper Size A3

0 10 20 40 60 80 100

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

N

LEGEND

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

Department of Transport and Main Roads
Queensland Recreational Boating Demand Study

Job Number 41-30098
Revision B
Date 15 Dec 2016

# Boating facility
# South Street, Maryborough

C:\Users\ihamilton\Desktop\GIS\30098\MXDROADS\41_30098_054_South_RevB.mxd



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

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## 7.6 Priority 3 sites

### Table 24 – Priority 3 – River Heads

| Site name | River Heads |
|---|---|
| Existing formal facility? | Yes |
| Location | Southern end of Ariadne Street, River Heads |
| Current tidal status | All-tide, open-water access |
| Site characteristics | The site is located at the southern tip of River Heads where the Mary River enters the Great Sandy Strait. The facility is geographically constrained on a peninsula with a well-vegetated incline to the north-west and water on all other sides.<br>The River Heads site currently services ferry users as well as recreational boat users, leading to highly-limited parking availability and conflicts between users.<br>The area includes public and private facilities totalling three ramps; two of which are available for public use and one that is used by the Fraser Island Ferry.<br>The western ramp is affected by significant cross currents while the eastern ramp is tide-restricted and exposed to wind and wave action from the north-east. The shore adjacent to both ramps is rocky, however a floating walkway is planned for installation on the western ramp in the current MIIP as at December 2016. |
| Proposed works | Stage 2 (this recommendation) is the reclamation of the south-east point, with the reclaimed land then being converted to CTU parking, and the addition of 2 lanes to the western ramp. Stage 2 is a priority 3 recommendation. |
| Increase in effective lanes provided by works | Stage 2 – 2.5 effective lanes (Priority 3 works) |
| Rationale | Expansion of the CTU parking will allow more efficient use of the existing infrastructure and reduce congestion. Reclamation of the point will create a large additional parking area, allowing for expansion of the existing western ramp<br>The River Heads facility is an alternative open-water access to Urangan Boat Harbour, whilst also offering direct access to the Mary River and the Great Sandy Strait. |
| Environmental and planning constraints | Impacts on the Ramsar and nationally important wetland – Great Sandy Strait is likely to be minimal and can be managed. However, if the works are likely to impact on MNES, a referral under the EPBC Act must be made to DEE. Referral is likely for the reclamation area.<br>Remnant endangered vegetation RE 12.5.13a mapped over area, including over pre-existing infrastructure. Area is mapped as essential habitat. Proposed development includes minimal impact to remnant vegetation. 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.<br>Within a flora trigger area. Site survey required per EHP (Environment and Heritage Protection) 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 |

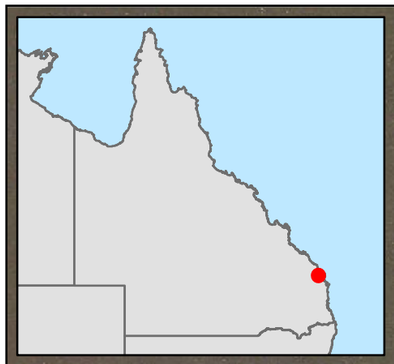
| Site name | River Heads | |
|---|---|---|
| | Tampering with Animal Breeding Places' and 'Protected plant exemption' agreement may apply depending on works.<br>FHA management area A is located within the site area. Operational work completely or partly in a declared fish habitat area is assessable development, unless the work is accepted development under shd 7, part 3, section 7 of the P Reg.<br>Marine plants are located 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.<br>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).<br>The works are located in the Coastal Management District: 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).<br>Marine Park Permits may be required for any works that occur within the Great Sandy Marine Park.<br>The proposed works are located within the environmental management and conservation zone under the Fraser Coast Planning Scheme: An MCU is exempt for a 'utility installation' in the environmental management and conservation zone.<br>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).<br>Reserve tenure. | |
| Consultation feedback | Fraser Coast Regional Council requires additional information to assess whether the presented priority recommendations represent the most beneficial options to meet demand within the LGA. In particular, feasibility assessments may be required for some of the recommended priorities to better inform Council's views. | |
| Indicative cost (excl. GST) (to ±50%) | Water-based infrastructure | $780,000 |
| | Land-based infrastructure (includes reclamation) | $4,320,000 |

See Figure 6 for River Heads figure.

### Table 25 – Priority 3 – Lenthalls Dam Road, Lake Lenthall

| Site name | Lenthalls Dam Road, Lake Lenthall |
|---|---|
| Existing formal facility? | Yes |
| Location | Lenthalls Dam |
| Current tidal status | Fresh water |
| Site characteristics | The facility is located in Lake Lenthall, Duckinwilla, approximately 360m south of the Lenthalls Dam wall. The facility is accessible via the A1 Highway and is approximately 26km north-west of Maryborough.<br>The existing facility consists of a single lane ramp with 8 CTU spaces. The area north of the facility also has a picnic and daytrip area.<br>Due to the location of the ramp, access to the Lake is available during a wide range of water levels. |
| Proposed works | Expand the ramp to 2-lanes and extend parking to achieve 45 CTU spaces. |
| Increase in effective lanes provided by works | 1 effective lane |
| Rationale | Lake Lenthall provides an opportunity to access a fresh water environment, which is limited within the Fraser Coast Regional Council area.<br>Currently, the facility has 8 CTU spaces which limits the number of users able to access the dam at any one time, while also reducing the efficiency of the ramp. Providing more parking will allow the more efficient usage of the existing infrastructure. |
| Environmental and planning constraints | Native title claim NNTT QC2009/005 Butchulla Land & Sea Claim #2. DATSIP Cultural Heritage Database search recommended.<br>Major (purple) waterway classification for waterway barrier works. May therefore trigger Operational Works for Waterway Barrier Works under P Act.<br>Previously cleared site, non- remnant vegetation.<br>Adjoining endangered remnant vegetation with RE 12.5.13 which is consistent with a threatened ecological community. Potential impact associated with construction. 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.<br>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).<br>Operational works for the taking or interfering with water from a watercourse may apply depending on the works involved.<br>The proposed works are located within the rural zone under the Fraser Coast Planning Scheme: An MCU is exempt for a 'utility installation' in the rural zone.<br>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).<br>Reserve tenure. |
| Consultation feedback | Fraser Coast Regional Council requires additional information to assess whether the presented priority recommendations represent the most beneficial options to meet demand within the LGA. In particular, feasibility |

| Site name | Lenthalls Dam Road, Lake Lenthall | |
|---|---|---|
| | assessments may be required for some of the recommended priorities to better inform Council's views. | |
| Indicative cost (excl. GST) (to ±50%) | Water-based infrastructure | $780,000 |
| | Land-based infrastructure | $930,000 |





Paper Size A3

0 10 20 40 60 80 100

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

N

LEGEND

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

Department of Transport and Main Roads
Queensland Recreational Boating Demand Study

| | |
|---|---|
| Job Number | 41-30098 |
| Revision | A |
| Date | 15 Dec 2016 |

# Boating facility
# Lenthalls Dam Road, Lake Lenthall

C:\Users\ihamilton\Desktop\GIS\30098\MXDROADS\41_30098_047_Lenthalls_RevA.mxd



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

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## 7.7 Priority 4 sites

### Table 26 – Priority 4 – Power House Road, Howard

| Site name | Power House Road, Howard |
|---|---|
| Existing formal facility? | Yes |
| Location | Western bank of Burrum River, Power House Road, Howard |
| Current tidal status | Near all-tide, distance-limited open-water access |
| Proposed works | Acquire adjacent land to the northeast and expand facility to 3-lanes and 60 CTU spaces |
| Increase in effective lanes provided by works | 2 effective lanes |
| Rationale | The facility is currently highly restricted by the available parking, with area for only 5 CTUs at the 2-lane ramp. Expansion of parking will allow for more efficient use of existing infrastructure and offer an alternative access point in which to enter the Burrum River from Howard and the surrounding suburbs.<br>The site is suitable for smaller vessels, with low bridges and power lines crossing the creek in close proximity. |




Paper Size A3

0 5 10 20 30 40 50

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

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 | 16 Dec 2016 |

# Boating facility
# Power House Road, Howard

G:\41\30098\GIS\Maps\Deliverables\MXDROADS\41_30098_152_Power_House_Road_RevA.mxd



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

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Table 27 – Priority 4 – Maaroom

| Site name | Maaroom |
|---|---|
| Existing formal facility? | Yes |
| Location | Eastern end of Granville Road, Maaroom |
| Current tidal status | Part-tide, depth-limited open-water access |
| Proposed works | Formalise parking area for 45 CTU spaces |
| Increase in effective lanes provided by works | 1 effective lane |
| Rationale | Increasing the parking capacity will allow for more efficient use of existing waterside infrastructure. |




Paper Size A3

0 5 10 20 30 40 50

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

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
# Maaroom

C:\Users\ihamilton\Desktop\GIS\30098\MXDROADS\41_30098_166_MB51_RevA.mxd



Data source: GHD: Layout/2016; DNRM: Roads/2015, Populated Places, Local Government Area/2016, Cadastre/2016, Cadastre/2016; TMR: Facilities/2016. GE: Imagery extracted 2/12/2016. Created by: AJ/MS/JCM

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### Table 28 – Priority 4 – Lions Park, Burrum Heads

| Site name | Lions Park, Burrum Heads |
|---|---|
| Existing formal facility? | Yes |
| Location | Lions Park, Burrum Heads |
| Current tidal status | All-tide, open-water access |
| Proposed works | Installation of a pontoon |
| Increase in effective lanes provided by works | No increase in capacity |
| Rationale | The recently opened Lions Park facility has room to allow for the installation of a pontoon on the upstream side of the ramp to act as a deep-draught vessel landing. The river is currently a popular anchorage, so the pontoon can also be used to allow tenders to temporarily tie up on the shoreward edge.<br>The facility is within walking distance of shops. |




Paper Size A3

0 5 10 20 30 40 50

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

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
# Lions Park, Burrum Heads

C:\Users\ihamilton\Desktop\GIS\30098\MXDROADS\41_30098_167_Lion_Park_RevA.mxd



Data source: GHD: Layout/2016; DNRM: Roads/2015, Populated Places, Local Government Area/2016, Cadastre/2016, Cadastre/2016; TMR: Facilities/2016. GE: Imagery extracted 2/12/2016. Created by: AJ/MS/JCM

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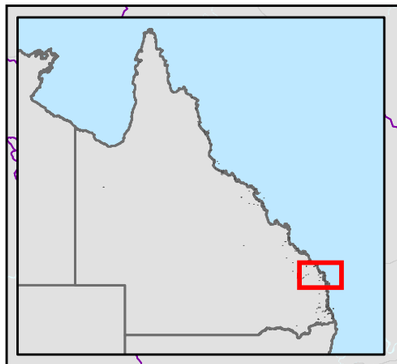
# Appendices

# Appendix A – Locality plan, existing facilities



MOORE PARK
BURNETT HEADS
BARGARA
BUNDABERG
INNES PARK
ELLIOTT HEADS
GIN GIN
WOODGATE BEACH
CORDALBA
BURRUM HEADS
CHILDERS
TOOGOOM
CRAIGNISH
DUNDOWRAN BEACH
HERVEY BAY
HOWARD
TORBANLEA
BOORAL
RIVER HEADS
BIGGENDEN
MARYBOROUGH
GAYNDAH
TIARO
RAINBOW BEACH
TIN CAN BAY
COOLOOLA COVE
KILKIVAN

Paper Size A3

0 12.5 25

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

Fraser Coast Regional Council

G:\41\30098\GIS\Maps\MXD\41_30098_165_LGA_Ramps_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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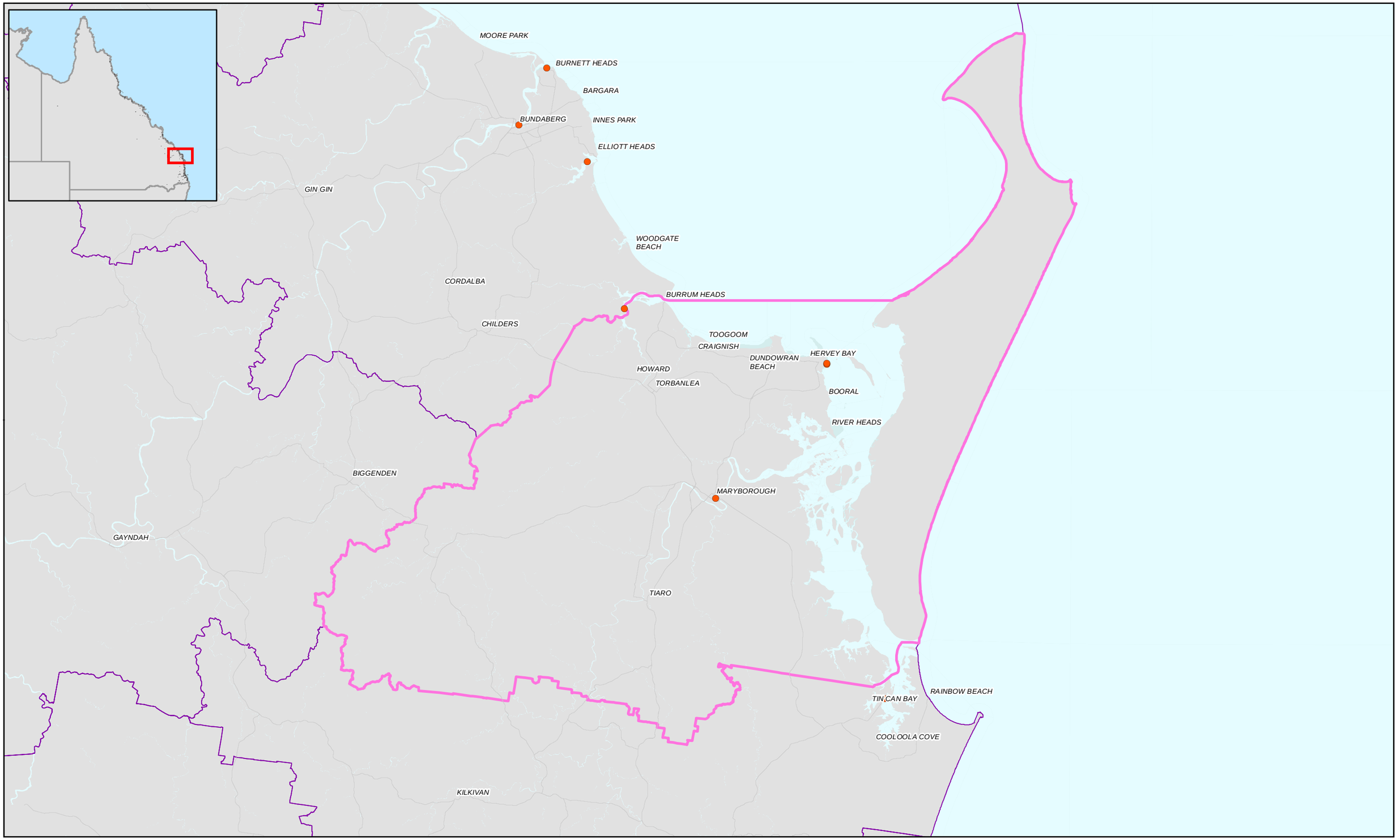


Paper Size A3

0 12.5 25

Kilometres

Horizontal Datum: GDA 1994
Grid: GCS GDA 1994

N

LEGEND

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



Department of Transport and Main Roads
Queensland Recreational Boating Demand Study

Job Number 41-30098
Revision C
Date 21 Dec 2016

Fraser Coast 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** | | | | | | | | | |
| HB12 | Western Ramp, River Heads | All-tide | 2 | No | 2 | 30 | 2 | 1.8 | CTU | |
| | *+ MIIP Upgrades as at Dec 16* | *All-tide* | *2* | *Floating walkway* | *2* | *30* | *3* | *1.8* | *CTU* | |
| HB38 | Corfield Street, Gatakers Bay | All-tide | 2 | No | 2 | 45 | 2 | 2 | Waterside | |
| HB71 | Ramp 1, Jetty Road, Urangan Boat Harbour | All-tide | 4 | Pontoon | 4 | 100 (200 Shared) | 4.8 | 4.5 | CTU | |
| | *+ MIIP Upgrades as at Dec 16* | *All-tide* | *4* | *Floating walkway* | *4* | *100 (200 Shared)* | *6* | *4.5* | *CTU* | |
| HB73 | Ramp 2, Jetty Road, Urangan Boat Harbour | All-tide | 4 | Pontoon | 4 | 100 (200 Shared) | 4.8 | 4.5 | CTU | |
| | *+ MIIP Upgrades as at Dec 16* | *All-tide* | *4* | *Floating walkway* | *4* | *100 (200 Shared)* | *6* | *4.5* | *CTU* | |
| HB58 | Lions Park, Burrum Heads | All-tide | 2 | Floating walkway | 2 | 50 | 3 | 2 | CTU | |
| HB78 | Barge Ramp, Urangan Boat Harbour | Near all-tide | 1 | Pontoon | 0.8 | Shared | 1 | 1.5 | Waterside | |
| MB31 | Beaver Rock Road, Beaver Rock | Near all-tide | 2 | No | 1.6 | Unformed | 1.6 | Unformed | Waterside | |
| HB11 | Eastern Ramp, River Heads | Part-tide | 1 | No | 0.5 | 5 | 0.5 | 0.5 | Waterside | |
| HB56 | Ross Street, Burrum Heads | Part-tide | 1 | Beach | 0.5 | 8 | 0.5 | 0.5 | Waterside | |
| MB43 | Bates Street, Boonooroo | Part-tide | 1 | Beach | 0.5 | Unmarked | 0.5 | Unmarked | Waterside | |
| | ***SUBTOTAL*** | | ***20*** | | ***17.9*** | | ***24.1*** | ***17.3**** | | |

| 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 | | |
| | **Depth-limited open-water access** | | | | | | | | | |
| MB40 | Downstream Ramp, Bottlebrush Drive, Tuan | Near all-tide | 1 | Floating walkway | 0.8 | Unmarked | 1.2 | 1 | CTU | |
| MB41 | Upstream Ramp, Bottlebrush Drive, Tuan | Near all-tide | 1 | Floating walkway | 0.8 | Unmarked | 1.2 | 1 | CTU | |
| MB61 | Owen Cox Street, Poona | Part-tide | 1 | Beach | 0.5 | 10 | 0.5 | 1 | Waterside | |
| HB41 | Toogoom Road, Toogoom | Part-tide | 2 | Beach | 1 | 8 | 1 | 0.5 | CTU | |
| TI81 | Boat Ramp Drive, Tinnanbar | Part-tide | 2 | Beach | 1 | Unformed | 1 | Unformed | Waterside | |
| MB51 | Granville Road, Maaroom | Part-tide | 3 | Floating walkway | 1.5 | 12 | 2.3 | 1 | CTU | |
| | ***SUBTOTAL*** | | ***10*** | | ***5.6*** | | ***7.2*** | ***4.5**** | | |
| | **Distance-limited open-water access** | | | | | | | | | |
| MB11 | Raglan Street, Maryborough | Near all-tide | 1 | No | ***0.8*** | 8 | 0.8 | 0.5 | CTU | |
| HB62 | Power House Road, Howard | Near all-tide | 2 | No | ***1.6*** | 5 | 1.6 | 0.5 | CTU | |
| HB46 | Pacific Haven Cresent, Howard | Part-tide | 1 | No | ***0.5*** | Unformed | 0.5 | Unformed | Waterside | |
| | ***SUBTOTAL*** | | ***4*** | | ***2.9*** | | ***2.9*** | ***1**** | | |
| | **Limited open-water access – Other infrastructure** | | | | | | | | | |
| MB21 | South Street, Maryborough | Near all-tide | 2 | Floating walkway | 1.6 | Unformed | 2.4 | 1.5 | CTU | |
| WC11 | Pleasant View Drive, Yengarie | Part-tide | 1 | No | 0.5 | 5 | 0.5 | 0.5 | Waterside | |
| | ***SUBTOTAL*** | | ***3*** | | ***2.1*** | | ***2.9*** | ***2**** | | |

| 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** | | | | | | | | | |
| HB25 | Beach Ramp, Torquay | Beach | 1 | Beach | 0.5 | 7 | 0.5 | 0.5 | Waterside | |
| HB35 | Alpin Street, Point Vernon | Beach | 1 | No | 0.5 | Unmarked | 0.5 | Unmarked | Waterside | |
| HB51 | Burrum Heads Road, Burrum Heads | Beach | 1 | Beach | 0.5 | 7 | 0.5 | 0.5 | Waterside | |
| ADD1 | Beach Ramp, Scarness | Part-tide | 1 | No | 0.5 | Street parking | 0.5 | Street parking | Waterside | |
| | ***SUBTOTAL*** | | ***4*** | | ***2*** | | ***2*** | ***1**** | | |
| | **No open-water access** | | | | | | | | | |
| HB15 | Lenthalls Dam, Maryborough | Fresh water | 1 | No | 1 | 8 | 1 | 0.5 | CTU | |
| MB90 | Petrie Park, Tiaro | Fresh water | 1 | No | 1 | Unformed | 1 | Unformed | Waterside | |
| | ***SUBTOTAL*** | | ***2*** | | ***2*** | | ***2*** | ***0.5**** | | |
| | | | ***Total effective capacity*** | | | | ***30.9**** | | | |

**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

**Prepared for:**

**GHD Pty Ltd**
145 Ann Street
Brisbane QLD 4000

**Prepared by:**

**Economic Associates Pty Ltd**
ACN 085 445 610

PO Box 541 Spring Hill QLD 4004
Telephone: (07) 3839 1011
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December 2017

16042



ECONOMIC ASSOCIATES

# TABLE OF CONTENTS

## LIST OF TABLES

# 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

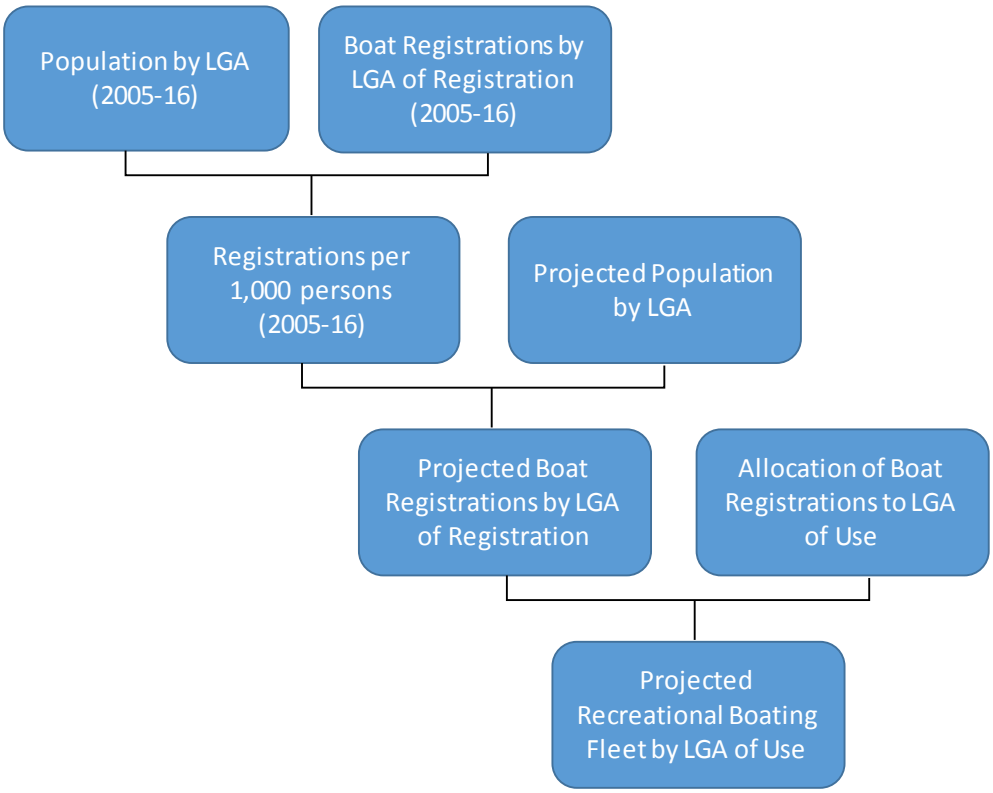
This section of the report provides a summary of the projected size of the recreational boating fleet by LGA, including a detailed explanation relating to the assumptions made in preparing the projections.

## 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

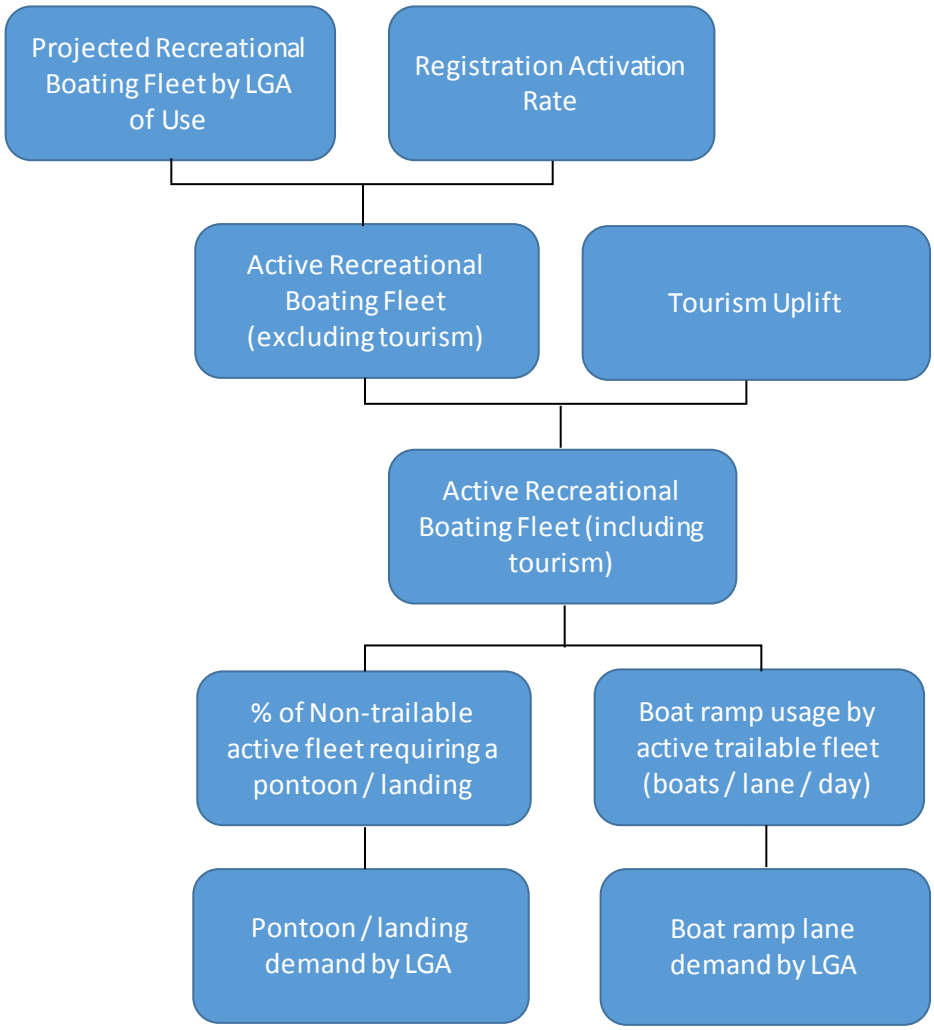
# 3 INFRASTRUCTURE DEMAND ASSESSMENT

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 | | |

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

| | LGA Registration Address | | |

GHD

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