|  |
| --- |
| Queensland Recreational Boating Facilities Demand Forecasting Study 2022  Gympie LGA Assessment |
|  |
|  |

|  |  |  |
| --- | --- | --- |
| Customer |  | Maritime Safety Queensland |
| Project |  | A12068 |
| Deliverable |  | 011 |
| Version |  | 01 |
|  |  | 21 April 2023 |

Document Control

Document Identification

|  |  |
| --- | --- |
| Title | Queensland Recreational Boating Facilities Demand Forecasting Study 2022 |
| Project No | A12068 |
| Deliverable No | 011 |
| Version No | 01 |
| Version Date | 21 April 2023 |
| Customer | Maritime Safety Queensland, a branch of the Department of Transport and Main Roads |
| Customer Contact | boatinginfrastructure@msq.qld.gov.au |
| Classification | {None} |

|  |  |
| --- | --- |
| Author | Daniel Wishaw, Nicholas Heiner, Geoff Long, Azam Dolatshah, Sophie Barrett, Mackenzie Stacey |
| Reviewed By | Katrina O’Malley-Jones, Jeremy Visser, Matthew Barnes |
| Project Manager | Daniel Wishaw |

Amendment Record

The Amendment Record below records the history and issue status of this document.

| Version | Version Date | Distribution | Record |
| --- | --- | --- | --- |
| 00 | 15 February 2023 | Maritime Safety Queensland  Gympie Regional Council | Draft |
| 01 | 21 April 2023 | Maritime Safety Queensland | Final |

Executive Summary

This report, part of the Queensland Recreational Boating Facilities Demand Forecasting Study 2022 (‘the Study’), provides a summary of current and forecast demand on recreational boating facilities in the Gympie LGA and the capacity of existing facilities to meet this demand. Where capacity is insufficient to meet current or forecast demand, recommendations have been made to improve existing facilities or for the construction of new facilities. This report is intended to support facility deliverers, owners, and managers over the next 20 years in their decision-making on development priorities for recreational boating facilities within the Gympie LGA.

Key issues and attributes of recreational boating

The key attributes of recreational boating facilities identified in this Study for the Gympie LGA are summarised in Table 1, while consultation with stakeholders undertaken as part of the Study identified a key issue for the LGA being the strong influx of vessels from south-east Queensland LGAs seeking access to southern Tin Can Bay, southern Great Sandy Strait and K’gari (Fraser Island) waters.

1. Key recreational boating attributes for the Gympie LGA

| Key attribute | Value |
| --- | --- |
| Deep-draught landing facilities |  |
| Existing capacity (number) | 1 |
| Existing demand (number) | 0.8 |
| Existing shortfall (number) | -0.2 |
| Boat launching facilities |  |
| Number of existing facilities | 5 |
| Current demand for boat launching lanes (effective lanes) | 14.1 |
| Number of existing ‘effective’ boat launching lanes | 11.25 |
| Shortfall of ‘effective’ boat launching lanes (number) | 2.85 |
| Demand satisfaction for ‘effective’ boat launching lanes | 80% |
| State-wide demand satisfaction for ‘effective’ boat launching lanes | 87% |

Demand summary

The assessment of recreational boating demand is centred on a statistical demand model that considers vessel registration data, population statistics, assumptions around local usage and the movement of vessels into and out of the LGA. Key parameters from this assessment for the Gympie LGA are:

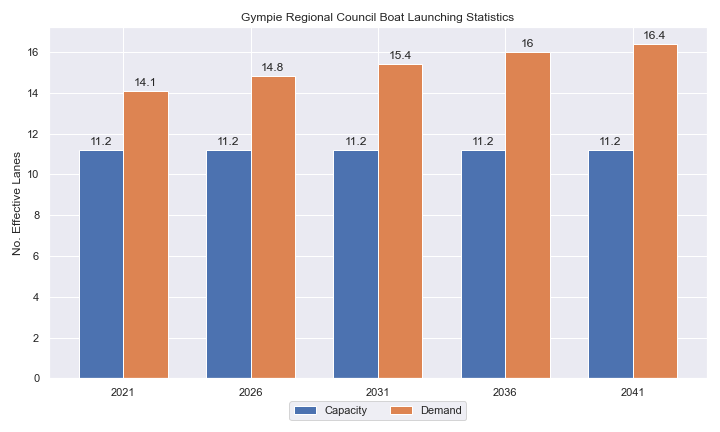
* The population is 52,257 as at the 2021 census and is projected to be 60,088 by 2041.
* As of July 2022, there are a total of 4,517 vessels with a home registration within the LGA, with 97.0% being ‘trailable’ – and therefore requiring boat launching facilities – and 3.0% being non-trailable.
* Gympie LGA is deemed to be a Regional Centre with an assumed vessel activation rate of 8.0% on a ‘good boating day’.
* Vessels are primarily used within the Gympie LGA, with leakage mostly to Sunshine Coast LGA, and then Bundaberg, Moreton Bay and Noosa LGAs.
* Vessels from Sunshine Coast, Brisbane and Fraser Coast LGAs are expected to flow into the Gympie LGA and contribute to local demand.
* The existing demand for boat launching facilities is 14.1 ‘effective’ boat ramp lanes and projected to be 16.4 ‘effective’ lanes by 2041. As presented in Table 1, the current capacity is 11.25 ‘effective’ lanes.
* The existing demand for deep-draught vessel landings is 0.8 and projected to be 0.9 by 2041. As presented in Table 1, the current capacity is 1 deep-draught landing.

Boat launching

Boat launching facilities comprise boat ramps, any queuing facilities (floating walkways, pontoons, beaches and fixed sloping walkways) and the provision of car and trailer unit (CTU) parking. The capacity of a boat launching facility is measured in ‘effective lanes’ for both waterside and landside facilities, with the total capacity of a facility being the minimum of the waterside or landside capacity. Waterside capacity is calculated from the number of boat ramp lanes multiplied by environmental reduction factors (for tide, current or waves) and queuing facility improvement factors to derive the number of ‘effective’ lanes. The landside capacity is calculated from the number of available CTU parking spaces.

The Gympie LGA has five boat launching facilities, comprising fourteen boat ramp lanes with a total effective boat launching capacity of 11.25 ‘effective’ lanes. One of these facilities is constrained by waterside capacity with the remainder constrained by landside capacity.

The capacity, forecast demand, and shortfall of boat ramp ‘effective’ lanes in the Gympie LGA is shown in Figure 1.



1. Existing capacity, forecast demand and shortfall of ‘effective’ boat ramp lanes for the Gympie LGA

Deep-draught vessel landings

Vessel landing facilities are provided across the state in the form of pontoons and jetties, to provide locations for larger vessels, or their tenders, to access landside destinations or facilities. Pontoons and jetties may also be provided for other purposes such as supporting boat launching or other recreation and may not be suitable for deep-draught vessels. The trend across Queensland indicates that jetties are rarely used as landings, with pontoons preferred by recreational users. As such, the Study has limited the capacity of deep-draught vessel landings to those that are accessible and commonly used by deep-draught vessels, as identified in consultation with stakeholders.

The Gympie LGA has one public deep-draught vessel landing at Norman Point in Tin Can Bay. The shortfall assessment in Table 2 indicates that public landing capacity for deep-draught vessels is currently sufficient to support demand in the Gympie LGA.

1. Deep-draught vessel landing shortfall summary

| Criteria | 2021 | 2026 | 2031 | 2036 | 2041 |
| --- | --- | --- | --- | --- | --- |
| Deep-draught vessel demand | 0.8 | 0.8 | 0.8 | 0.8 | 0.9 |
| Deep-draught vessel capacity | 1 | 1 | 1 | 1 | 1 |
| Shortfall | -0.2 | -0.2 | -0.2 | -0.2 | -0.1 |

Priority recommendations

Recommendations for new facilities or upgrades to existing facilities are outlined in Table 3. The range of recommendations seeks to reduce the overall capacity shortfall within Gympie LGA over the 20-year planning life of this project.

Recommendations

1. Summary of recommended boating infrastructure upgrades for the Gympie LGA

| Priority | Criteria | Recommendations |
| --- | --- | --- |
| 1 | * Required to meet existing demand. * Sites that can provide maximum benefit for existing demand pressures at an LGA scale or satisfy specific safety pressures. | * Norman Point, Tin Can Bay: Construct new boat ramp lane and add two new floating walkways. Increase parking capacity by 20 CTUs |
| 2 | * Required to meet demand within the next five to ten years. * Sites that are likely to have low to medium approval complexity. * Sites that can provide satisfaction of specific demand or safety pressures within the LGA. | * Carlo Point: Provide an additional 15 CTU parks in stage one with a further 10 CTUs in a second stage. |
| 3 | * Required to meet demand within the next ten to fifteen years. * Sites that service planned future growth within the LGA. | * Norman Point, Tin Can Bay: Construct a new 2-lane boat ramp with a floating walkway and 43 CTU parking spaces. * Bullock Point: Construct 15 new CTU parking spaces. |
| 4 | * Required to meet demand within the next fifteen to twenty years. * Sites that service planned future growth within the LGA. | * Nil |

Contents

[Definitions 11](#_Toc133242224)

[1 Introduction 14](#_Toc133242225)

[2 Gympie LGA Overview 15](#_Toc133242226)

[2.1 Key influences on recreational boating 15](#_Toc133242227)

[2.2 Existing recreational boating infrastructure 15](#_Toc133242228)

[2.3 Existing usage and issues 18](#_Toc133242229)

[3 Capacity Assessment 19](#_Toc133242230)

[3.1 Boat ramps 19](#_Toc133242231)

[3.2 Access to sheltered near all-tide and all-tide facilities 26](#_Toc133242232)

[3.3 Deep-draught vessel landings 29](#_Toc133242233)

[4 Demand Assessment 30](#_Toc133242234)

[4.1 Activation rate 30](#_Toc133242235)

[4.2 Digital user survey 31](#_Toc133242236)

[4.3 Active fleet size 35](#_Toc133242237)

[4.4 Boat ramp lane demand 35](#_Toc133242238)

[4.5 Non-statistical demand 35](#_Toc133242239)

[4.6 Deep-draught vessel demand 36](#_Toc133242240)

[5 Shortfall Assessment 38](#_Toc133242241)

[5.1 Shortfall assessment – boat ramps 38](#_Toc133242242)

[5.2 Shortfall assessment – deep-draught landings 39](#_Toc133242243)

[6 Stakeholder Feedback 40](#_Toc133242244)

[6.1 Managing authority feedback 40](#_Toc133242245)

[6.2 Stakeholder feedback 40](#_Toc133242246)

[7 Development Recommendations 42](#_Toc133242247)

[7.1 Previous recommendations 42](#_Toc133242248)

[7.2 Priority recommendations 42](#_Toc133242249)

[7.3 Priority 1 Recommendations 44](#_Toc133242250)

[7.4 Priority 2 Recommendations 46](#_Toc133242251)

[7.5 Priority 3 Recommendations 49](#_Toc133242252)

[7.6 Priority 4 Recommendations 54](#_Toc133242253)

[8 References 55](#_Toc133242254)

[Annex A Demand Study A-1](#_Toc133242255)

[Annex B Boat launching facility capacity B-1](#_Toc133242256)

[Annex C Travel time statistics C-1](#_Toc133242257)

[Annex D Facility Use D-1](#_Toc133242258)

Tables

[Table 2.1 Recreational boating facilities by facility owner in the Gympie LGA 15](#_Toc133242259)

[Table 3.1 Queuing facility efficiency modifiers 22](#_Toc133242260)

[Table 3.2 Deep-draught landing facilities within Gympie LGA 29](#_Toc133242261)

[Table 4.1 LGA of origin for active fleet in the Gympie LGA 31](#_Toc133242262)

[Table 4.2 Popularity of boat launching facilities. 32](#_Toc133242263)

[Table 4.3 Active fleet vessel size 35](#_Toc133242264)

[Table 4.4 Boat ramp lane demand 35](#_Toc133242265)

[Table 4.5 Deep-draught vessel landing demand 37](#_Toc133242266)

[Table 5.1 Shortfall of boat launching facilities 38](#_Toc133242267)

[Table 5.2 Shortfall assessment for open water, all-tide or near all-tide facilities for Gympie LGA 39](#_Toc133242268)

[Table 5.3 Shortfall of deep-draught vessel landings 39](#_Toc133242269)

[Table 6.1 Stakeholder identified opportunities. 40](#_Toc133242270)

[Table 7.1 Summary of recommendations for the Gympie LGA 43](#_Toc133242271)

[Table 7.2 Norman Point, Tin Can Bay - (Priority 1) 44](#_Toc133242272)

[Table 7.3 Carlo Road, Carlo Point - (Priority 2) 46](#_Toc133242273)

[Table 7.4 Norman Point, Tin Can Bay - (Priority 3) 49](#_Toc133242274)

[Table B.1. Capacity of existing boat launching facilities B-1](#_Toc133242275)

[Table C.1. Travel time from population centres to nearest sheltered all-tide or near all-tide open water accessible facilities C-1](#_Toc133242276)

[Table D.1. Boat launching facility usage statistics D-1](#_Toc133242277)

Figures

[Figure 2.1 Gympie LGA - Boat launching facilities 16](#_Toc133242278)

[Figure 2.2 Gympie LGA - Deep-draught landing facilities 17](#_Toc133242279)

[Figure 3.1 (a) Summary of open water access from boat launching facilities (left) and (b) Summary of tidal restrictions at tidal boat launching facilities (right) 24](#_Toc133242280)

[Figure 3.2 Summary of limiting capacity constraint 25](#_Toc133242281)

[Figure 3.3 Distribution of travel time from Gympie’s eligible population centres to sheltered near all-tide facilities 27](#_Toc133242282)

[Figure 3.4 Gympie LGA – Travel time to nearest all-tide or near all-tide facility 28](#_Toc133242283)

[Figure 4.1 Gympie LGA – vessel pathing 34](#_Toc133242284)

[Figure 5.1 Shortfall assessment with recommended upgrades adopted 38](#_Toc133242285)

[Figure 7.1 Priority 1 Recommendation – Norman Point, Tin Can Bay 45](#_Toc133242286)

[Figure 7.2 Priority 2 Recommendation – Carlo Road, Carlo Point 48](#_Toc133242287)

[Figure 7.3 Priority 3 Recommendation – Norman Point, Tin Can Bay 51](#_Toc133242288)

[Figure 7.4 Priority 3 Recommendation – Bullock Point 53](#_Toc133242289)

Definitions

| Term | Definition |
| --- | --- |
| All‑tide (for boat ramps) | Access from a boat ramp to the open sea with an approach depth of 0.5m below LAT or deeper and a depth at boat ramp toe of 0.5m below LAT or deeper. |
| All-tide (for landings) | Access from a gangway‑access pontoon or jetty to the open sea with an approach depth of 1.5m below LAT or deeper and a depth on at least one face of the pontoon of 1.5m below LAT or deeper. |
| BIP | Boating Infrastructure Program – a sub‑program within MSQ's Maritime Assets and Infrastructure Program |
| Boat ramp | A foreshore concrete ramp with a slope designed for vehicular launching and retrieving of recreational boats. |
| Breakwater | A structure constructed over the seabed and/or the foreshore, usually rising to a height above high tide, designed to provide protection to landward areas by limiting penetration of wave action or currents. |
| CTU | Car-trailer unit space – a parking space for a typical car with a boat trailer attached. |
| Demand | Demand is the requirement of the boat‑owning population for facilities to launch/retrieve trailer boats and/or to berth suitable boats at a given year to service their average (non‑peak period) needs. In most locations demand is based on vessel registrations and is expressed in terms of boat ramp lanes or in number of 12m berths at landings. |
| Effective capacity | For a boat ramp, effective capacity (effective lanes) means the number of boat ramp lanes after adjusting for anticipated unavailability due to unacceptable wave action (>0.2m wave height) or water depth, usage constraints such as the lack of adequate parking, and improvements to efficiency or launch/retrieval throughput such as floating walkways or pontoons. |
| FHA | Fish Habitat Area, declared under the Fisheries Act, 1994 |
| FIFO | Fly‑in fly‑out, where skilled workers travel from their city or central location home communities to a remote site to perform their duties often in blocks of time that provide regular, non-weekend, days off. |
| Fixed sloping walkway | A fixed sloping structure installed at the side of a boat ramp to assist launching/retrieval of trailer boats, and dry embarkation/disembarkation from trailer boats. It is sloped to allow use at varying tide heights – sometimes with sections of different slope. |
| Floating walkway | Multiple connected/hinged flotation modules configured to assist launching/retrieval of trailer boats, and dry embarkation/disembarkation from trailer boats at most if not all stages of the tide. Floating walkways are connected to a concrete shore abutment allowing pedestrian and assisted wheelchair access. |
| Gangway access pontoon | A platform/module that always floats, where a boat can be secured alongside on one or more faces. Pontoons are usually separated from a boat ramp and have a hinged articulated gangway for access to the shore via an abutment. |
| GBR | Great Barrier Reef |
| GCWA | Gold Coast Waterways Authority |
| Landing | A landing is a jetty or gangway‑access pontoon that facilitates berthing of vessels and transfer of passengers and stores. They are most often associated with non-trailable vessels |
| Landside | Refers to areas above high-water mark, often used to denote the location of and type of infrastructure. |
| LAT | Lowest Astronomical Tide, used as Chart Datum on navigational charts. |
| LGA | Local Government Area |
| Managing authority | Councils, port authorities, water storage managers as listed in schedule 1 of the Transport Infrastructure (Public Marine Facilities) Regulation 2011 |
| MCU | Material change of use under the planning scheme |
| MNES | Matter of national environmental significance under the Environment Protection and Biodiversity Conservation Act 1999 |
| MSQ | Maritime Safety Queensland |
| NC Act | Nature Conservation Act 1992 |
| Near all‑tide | Access from a boat ramp to the open sea with a minimum approach depth of 0.5m below LAT and minimum depth at the boat ramp of 0.5m below LAT for 80 percent or more of the tidal range (time measured over a year). |
| Parking - Formalised | A sealed, line-marked parking area for car-trailer units, providing adequately sized parking spaces, roadways and turning circles. |
| Parking – Semi-formalised | An all-weather non-sealed parking area, with markers to delineate adequately sized car-trailer unit parking bays and turning circles. Markers can be concrete blocks, pavement markers (e.g. retro-reflective raised markers) or other permanent instalment to show parking bays. |
| Parking – Informal overflow | A naturally surfaced area available for use as overflow parking on the design boating day, signed as such. To have mixed-use purpose (e.g., parkland) when not being utilised as overflow parking. |
| Part‑tide | Boat ramps that do not meet near all-tide or near all-tide requirements. |
| PV | Passenger vehicle (i.e., car – as opposed to car-trailer unit). |
| Port Authority | An organisation that is responsible for the management of one or more ports on the Queensland coast. |
| Population Centre | Official named urban settlements (populated places) that have been sourced from the Queensland Place Names Database. |
| Registration activation rate | The percentage of registered vessels liable to be in use on any given good weather weekend day |
| Shortfall | The number of effective boat ramp lanes or landings required to meet demand for a given timeframe. Negative shortfall signifies an oversupply for the time period nominated. |
| SPL | Strategic Port Land |
| Study | The Recreational Boating Facility Demand Forecasting Study 2022, including this document. |
| TMR | Department of Transport and Main Roads |
| Water Storage Authority | Includes Seqwater, Sunwater |
| Waterside | Refers to areas below high-water mark, often used to denote the location of and type of infrastructure, including dredged channels and breakwaters. |
| WHA | World Heritage Area |
| # | Number |

# Introduction

BMT has been appointed to undertake the Recreational Boating Facilities Demand Forecasting Study 2022 (‘the Study’) by Maritime Safety Queensland (MSQ), a branch of the Queensland Department of Transport and Main Roads (TMR), on behalf of all public recreational boating facility managers and owners across Queensland. The Study supersedes the 2017 study of the same name and is intended to report on recreational boating facility demand, capacity, and shortfall over a 20-year period at a Local Government Area (LGA) scale across Queensland.

The Study has been developed using information from the 2021 Australian Census (ABS, 2021), recreational boat vessel registrations, consultation with facility owners, managers, and stakeholders, the 2022 Queensland Government Get-Involved recreational boating facilities survey (MSQ, 2022), and previous versions of this Study (2011, 2017). The Study is intended for use by deliverers, owners, managers, and key stakeholders of public recreational boating facilities across Queensland, namely state government agencies including MSQ and the Gold Coast Waterways Authority (GCWA), local governments, port authorities and water authorities. The Study is non-regulatory in nature and is intended to be used as part of a broader suite of information to identify priority investment in recreational boating infrastructure at a local and state level.

The Study establishes demand primarily on statistics derived from registration and population data. Please refer to Section 4.5 for discussion of non-statistical demand. The Study evaluates existing and forecast demand over a 20-year period and makes recommendations on how this demand might be met over that period. Recommendations may include improvements to both landside and waterside capacity depending on the facility.

Recommendations are assigned a priority ranking, from 1 to 4, indicating if they are required immediately or in the next 5, 10 or 15 years respectively. To end 2022, 14% of recommendations from the 2017 study have been completed, comprising 11% of land-side recommendations and 18% of waterside recommendations and reflecting 22% of the priority 1 2017 recommendations. A much greater percentage of the earlier 2011 study recommendations have now been implemented. Given the low uptake on existing/outstanding recommendations, this Study will review previous recommendations and carry forward, modify, or remove as appropriate. The Study has also been tasked with reviewing specific wave exposed beach launching facilities across the state to determine their contribution to meeting boating facilities demand and make recommendations about their future.

The Study is comprised of a report for every LGA in Queensland and a state-wide summary report. Each LGA report summarises demand pressures from vessel registration data, population statistics, assumptions around local usage and the movement of vessels into and out of the LGA, and existing capacity and recommends opportunities to satisfy shortfall. The state-wide report will support the LGA reports and provide context at a state level for demand pressures, current capacity, equity of access to facilities and state-wide priority for major boating facilities.

The Study is intended to report on publicly accessible recreational boating facilities for registered vessels. This includes boat ramps, floating walkways, pontoons, fixed sloping walkways and supporting car-trailer unit parking at each facility. The Study does not include recommendations for facilities that are used primarily for commercial purposes, private facilities, non-motorised recreation such as launching canoes and stand-up paddle boards, and fishing platforms.

# Gympie LGA Overview

## Key influences on recreational boating

Within the Gympie LGA, the principal attributes and influences that affect demand on recreational boating infrastructure include:

* its designation as a Metropolitan Area, with a moderately sized local recreational boating fleet
* strong projected population growth
* strong influx of vessels from south-east Queensland LGAs seeking access to Tin Can Bay, southern Great Sandy Strait and K’gari (Fraser Island) waters.

## Existing recreational boating infrastructure

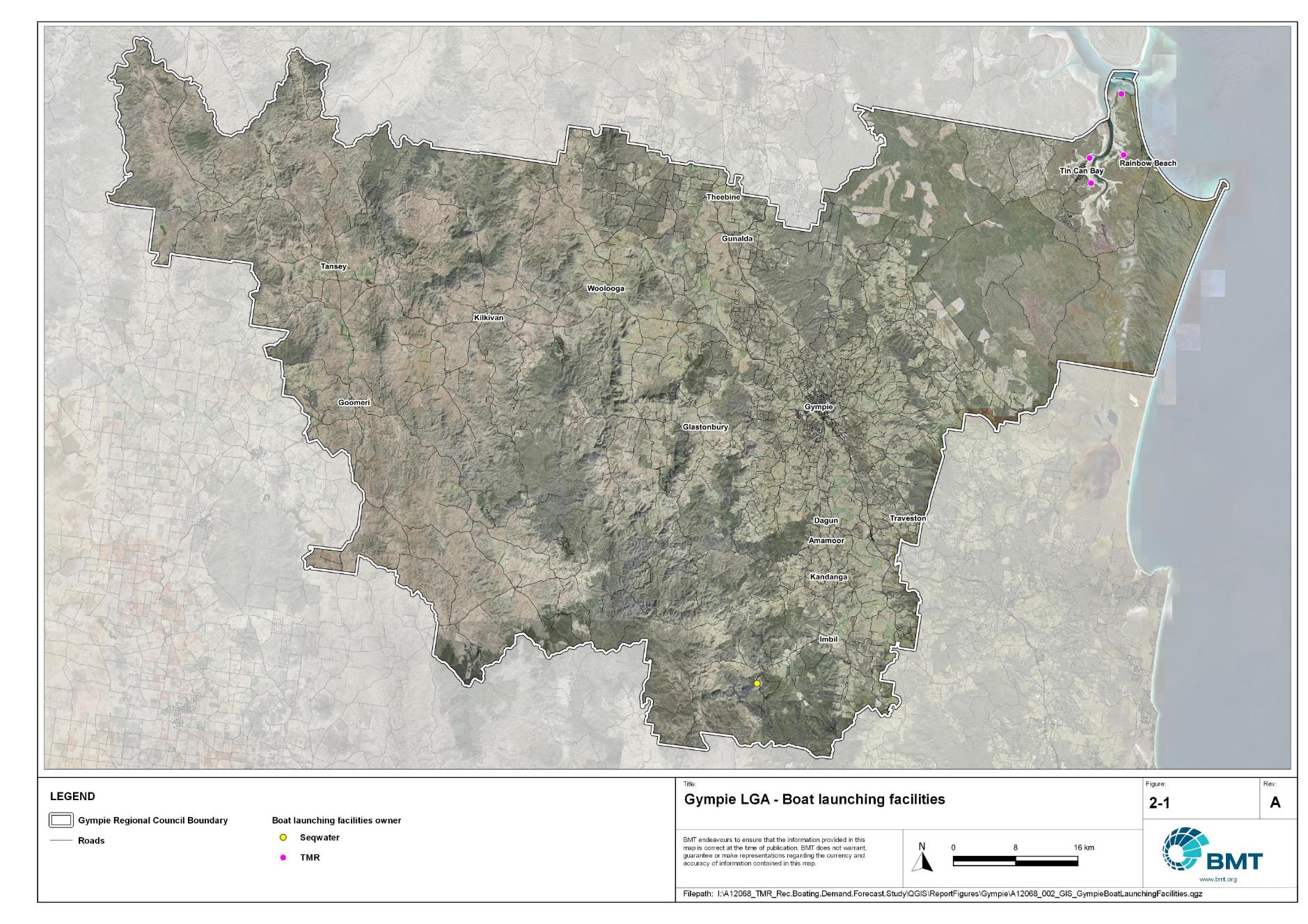
The recreational boating facilities within the Gympie LGA are summarised in Table 2.1. These facilities are owned or managed by multiple organisations and include facilities that provide access to open water, the Tin Can Bay estuaries, and fresh water. MSQ’s long term vision is to provide unrestricted access to open water from facilities along the Queensland coast such that all significant population centres are within one hour’s driving range where practical. For clarity, the Study has defined this vision to be the provision of sheltered all-tide, or near all-tide, boat launching facilities within one hour driving range of official population centres (DoR, 2022) lying within 30km of the coastline between the NSW border and Cooktown.

Recreational boating facilities by facility owner in the Gympie LGA

| Owner | Open-water boat ramps | | Other boat ramps | | Landings | |
| --- | --- | --- | --- | --- | --- | --- |
| Facilities | Lanes | Facilities | Lanes | Pontoons | Jetties |
| TMR | 2 | 7 | 2 | 5 | 1 |  |
| Seqwater |  |  | 1 | 2 |  |  |

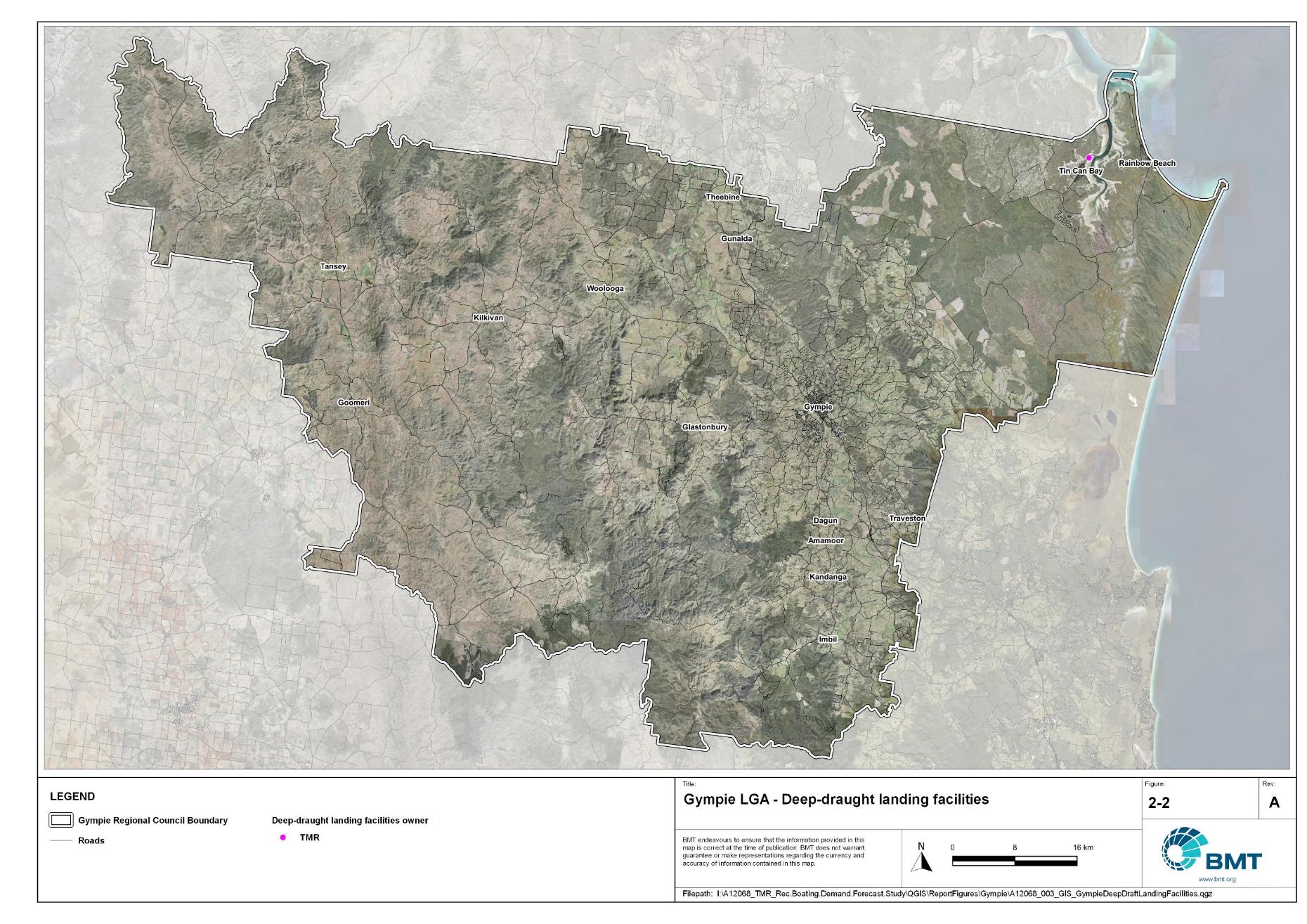
Each of the boat launching facilities within the LGA are shown in Figure 2.1 and deep-draught vessel landings in Figure 2.2.

Access to land from deep-draught vessels is catered for by the provision of landings such as jetties and pontoons that are intended for short term usage, mainly to drop off and embark passengers and supplies. Within the Gympie LGA these vessels are catered for at the Norman Point facility, where there is a public pontoon.



Gympie LGA - Boat launching facilities

"I:\A12068\_TMR\_Rec.Boating.Demand.Forecast.Study\QGIS\ReportFigures\Gympie\A12068\_002\_GIS\_GympieBoatLaunchingFacilities.jpg"



Gympie LGA - Deep-draught landing facilities

"I:\A12068\_TMR\_Rec.Boating.Demand.Forecast.Study\QGIS\ReportFigures\Gympie\A12068\_003\_GIS\_GympieDeepDraftLandingFacilities.jpg"

## Existing usage and issues

Consultation with Gympie Regional Council, Seqwater, Maritime Safety Queensland, recreational groups and feedback from the recreational boating facilities survey hosted by TMR indicate the following major trends and issues within the Gympie LGA.

* + 1. Key destination launching point

The feedback from the stakeholders indicated that the facilities within the Gympie LGA were seen as a main launching point for the popular destinations of Tin Can Bay, K’gari waters, western Great Sandy Strait, and to open waters. This attracts users from LGAs both neighbouring and further afield to access these destinations.

* + 1. Facility location

All facilities (besides that on Borumba Dam) are located within the Tin Can Bay waterway, as this both provides the best access to destinations and is the only suitable coastal waterway within the LGA. As such, the concentration of facilities within the broader Gympie LGA at this area is noticeable, with a lack of facilities inland on waterways (for example, the upper Mary River) due to preference of boating destination and suitability of waterway for recreational boating.

# Capacity Assessment

## Boat ramps

* + 1. Introduction

Boat ramps are facilities that are used for launching and retrieving trailable vessels, typically up to 8m in length (with some exceptions), to and from the water. Boat ramps consist of one or more lanes and their use is often supported by landside and waterside infrastructure to improve efficiency. In some instances, the usability of a facility can be adversely affected by environmental constraints such as low water levels, currents, or wave exposure, reducing the overall availability of the facility. Together, consideration of the number of boat ramp lanes, the supporting infrastructure, and environmental constraints results in the facility having a capacity described in terms of ‘effective lanes’ that may or may not be equal to the number of actual boat ramp lanes.

To maximise usage of each facility, the landside and waterside capacity should be balanced. Each facility will have a calculated ‘effective’ capacity for both the landside and waterside elements, with the limiting element dictating the facility's overall effective capacity. Recommendations for works or infrastructure promote balancing these two capacity elements by either improving the limiting element for increased facility effectiveness or by increasing the overall 'effective capacity' through changes to both elements.

* + 1. Boat ramp capacity

The overall capacity of each boat launching facility is limited by the effective capacity of either the waterside or landside elements. The waterside capacity is informed by the number of boat ramp lanes and the number and type of queuing facilities, such as pontoons, floating walkways, queuing beaches and fixed sloping walkways. It may also be limited by the available water depth in the adjacent waterbody and exposure to environmental or other physical factors.

Landside capacity is governed by the availability of nearby spaces for parking of car-trailer units (CTU), the provision of rigging and de-rigging facilities, and provision of single car parking spaces (single cars may otherwise be obliged to park in CTU spaces).

While it is expected that facilities will have their own characteristics influencing efficient use, this Study applies an approach that is consistent across the entire state and consistent with previous editions of the Study. Accordingly, the effective waterside capacity of a boat launching facility is determined as being:

* the ability to support 40 vessels being launched and retrieved per day per lane (see section 3.1.3)
* influenced by exposure to wave, tide, and current conditions (see section3.1.4
* supported by queuing facilities that assist in the efficient use of the boat ramp (see section 3.1.4).

Calculation of landside capacity is in line with the TMR guideline (TMR, 2020), which requires less provision of CTU parking per lane than the Australian standard (AS3962 Table 7.1), and advises:

* 10 CTUs for a single lane boat ramp accessed by an unsealed road, or 15 CTUs accessed by a sealed road
* 45 CTUs for a two-lane boat ramp
* 70 CTUs for a three-lane boat ramp
* 90 CTUs for a four-lane boat ramp.

A notable difference from the 2017 study is the recognition and inclusion of areas close to existing boating facilities that are unsealed and/or not line marked where parking of cars with trailers occurs and is not discouraged. These areas of informal parking have been identified on aerial imagery and through discussions with managing authorities. Each informal area has been assumed to be available for CTU parking only 50% of the time to account for conflicts with other uses (for example, markets), inefficient parking practices, or poor ground conditions. The rate of parking has been calculated as:

* for linear areas where nose-to-tail parking is expected – 1 CTU per 13m
* for linear areas with enough space to allow side-by-side parking – 1 CTU per 3m, provided there is a minimum distance of 15m from the road or manoeuvring area
* for large areas – 1 CTU per 100m2.
  + 1. Boat ramp capacity basis

The number of vessels per day each boat ramp lane can support is based on the Australian Standard for the Design of Marinas (AS3962-2001) and previous versions of this report (GHD, 2011 and 2017).

Research on boat ramp lane efficiency described in the previous report (GHD, 2017) identified that 40 vessels per lane per day was a reasonable compromise between 50 vessels per lane per day (representing congested conditions) and 30 vessels per lane per day (representing unhampered conditions). For context, the 40 vessels per lane per day rate represents a vessel launch or retrieval every 9 minutes per lane within an average normally used period of 12 hours per day.

During this Study, BMT has sought to validate the assumptions presented above, and those relating to capacity modification, by undertaking a literature review, conducting site visits that included observations of launching and retrieving manoeuvres, and reviewing video recordings of boats launching and retrieving at popular boating facilities. The literature review included a boat ramp efficiency investigation undertaken by BMT on the Mornington Peninsula, Victoria (BMT, 2015) and a review of standards from other Australian states and countries that undertake similar studies. The onsite and video analysis provided the opportunity to observe recreational boat operators using facilities included in the Study but did not include observation of total throughput during high demand periods. This assessment was undertaken during site visits across Queensland, and a full day of video recording at Manly Boat Harbour (north ramp) in Brisbane.

The New South Wales and Victoria governments are currently in a planning phase for boating infrastructure and there are presently no publicly accessible documents identifying how those jurisdictions calculate boat ramp lane capacity. The Western Australia government has commissioned studies of the Perth region and the southwest region (Western Australia Department of Transport, 2019 and 2021) that indicate a base rate of 50 vessels per lane per day, with no modifiers applied. Internationally, studies from Florida in the USA (Bell, 2022 and Swett et. al, 2012) assumed that total vessel launch plus retrieval time is between 20 to 40 minutes (18 to 36 vessels per day), although no evidence is provided to support this assumption.

The Mornington Peninsula report (BMT, 2015) collected boat launch and retrieval data for 6 boat ramp facilities on the Mornington Peninsula across 9 days, including the peak Australia Day holiday. Total throughput was assessed for each facility on days where there was constant pressure for launching and retrieving boats with results between 30 and 70 vessels per lane per day for the various facilities. When adjusted for queuing modifications, a baseline rate of between 20 and 50 vessels per lane per day was identified. Of the facilities, the higher rates were achieved where sufficient parking was provided and both waterside and landside queuing facilities existed.

Observations of recreational boat users launching and retrieving their vessels undertaken through the site visits and the analysis of video footage showed that:

* Most observed launches were of ‘multi-person’ boats, which made launching and retrieving boats more efficient.
* Almost all users were able to launch and/or retrieve their boat within the 9-minute target time, when adjusted for queuing facility efficiency.
* There was a preference to launch adjacent to a floating walkway, where one was available. At facilities where a queuing facility is not immediately adjacent to the lane it is expected that average launch times may slightly increase during busy periods.

While the observations that were made generally aligned with expectations, a more in-depth review of capacity assumptions was outside of the scope of the Study. For future studies there would be value in undertaking a more thorough, data-driven investigation of the assumptions about boat ramp lane capacity, both at its base level and modified by queuing facilities. Overall, the preliminary investigations undertaken as part of the Study suggest that the base rate of 40 vessels per lane per day adopted in previous studies is appropriate.

* + 1. Boat ramp efficiency modifications

The waterside capacity of boat ramp lanes can be reduced by environmental factors that include:

* Water levels: Mainly relating to tidal areas this factor considers the reduction in the amount of time the boat ramp is available to launch and retrieve vessels over the full tidal cycle, thus reducing the overall capacity of the facility. For all-tide access, the boat ramp and connecting channel to the open sea are available during all tidal conditions and therefore available 100% of the time. For near all-tide access the boat ramp and the connecting channel to the open sea are assumed to be available, on average, for 80% of the tidal cycle. For part-tide access the boat ramp and its access channel are available less than 80% of the time. A modification factor of 0.8 is applied for near all-tide facilities and 0.5 for part-tide facilities.
* Wave and current conditions: In areas where vessel launching and retrieval may be intermittently impacted by waves (most commonly on beach ramps, but not exclusively) or strong currents (such as in rivers), a modification factor of 0.5 is applied.

Conversely, effective boat ramp capacity can be improved through the use of well-designed queuing facilities. Queuing facilities aim to improve amenity and efficient use of the boat ramp by accelerating one or more of the following phases of boat launching, with the opposite steps required for retrieval:

1. manoeuvring for launching, including for CTU entering the queuing area for the boat ramp and reversing into position for launch
2. launching and securing the launched vessel
3. moving the launch vehicle from the boat ramp to the parking area
4. removing the vessel from the waterside queuing facility.

A range of waterside queuing facilities is in use in Queensland boating infrastructure, which modify different phases of the total launching process. These include:

* Floating walkways and fixed sloping walkways: Positioned to about a boat ramp lane, these structures aim to:
  + improve amenity – such as to assist embarking/disembarking passengers, provide a refuge from in-water contact with crocodiles and so on
  + make securing the vessel and removing the vehicle from the boat ramp more rapid, while freeing the boat ramp for subsequent users.
* Pontoons: Also used by deep-draught vessels, these structures improve the ability to secure the vessel and clear the boat ramp, but there is usually some time lost returning to recover the launch vehicle compared with the above options as they are generally positioned slightly further away from the ramp.
* Queuing beaches: These also provide a place to secure the vessel close to the boat ramp, although they are generally not as fast to use as pontoons.

As observed throughout the Study site visits, each of these queuing facility types can support a limited number of boat ramp lanes depending on the available space on the queuing facility. The 2017 edition of this Study applied a blanket uplift for all boat ramp lanes where a queuing facility was provided. However, the number of lanes each type of queuing facility can realistically support varies. Accordingly, this Study has provided limitations to the number of boat ramp lanes that can benefit from each queuing facility, based on the number of “working faces” (or area for a queuing beach) provided, where the “working face” is a face that allows temporary securing of vessels during launching or retrieval. The adopted improvement factors and supported lanes are summarised in Table 3.1.

Queuing facility efficiency modifiers

| Queuing facility | Modification factor | Supported lanes |
| --- | --- | --- |
| Floating walkway (lanes adjacent to walkway) | 1.7 | 1 Lane/face |
| Floating walkway (lanes not adjacent to walkway) | 1.3 | 1 Lane/face |
| Fixed sloping walkway | 1.7 | 1 Lane/face |
| Pontoon | 1.2 | 2 Lanes/face |
| Queuing beach | 1.1 | Site-based |

In other states in Australia, reversing queuing bays are more commonly used than in Queensland. These are CTU waiting bays at the head of the boat ramp that are aligned with each boat ramp lane to allow the user to reverse directly down the boat ramp once it is clear. CTU waiting bays reduce the time of the first phase of boat launching by allowing waiting CTU’s to be ready to reverse as soon as the lane becomes clear. The BMT (2015) study on the Mornington Peninsula included facilities with and without these bays. Boat ramps that included reversing queuing bays achieved 50% greater throughput. Facilities that have implemented this approach in Queensland include North Street Southport, Urangan Boat Harbour, Townsville Recreational Boating Park, and the (under construction late 2022) boat ramp at Yorkeys Knob.

* + 1. Accessibility from boat launching facilities

Recreational boat users will typically select the boat launching facility most appropriate or convenient to the activity they are seeking to undertake, the anticipated weather/wave conditions, and their destination. Each of facility within an LGA will provide a varying degree of access to different destinations and for different activities. During the Study, consultation with stakeholders highlighted the following general types of destinations and activities:

* open water/offshore: typically accessed for visiting offshore islands or remote beaches, snorkelling or diving locations, deep sea fishing and general recreation
* creeks and estuaries: typically accessed for fishing, crabbing, wildlife observation, skiing and general recreation
* freshwater: typically accessed for skiing, fishing, wildlife observation and general recreation.

These destinations are typically serviced by different types of recreational vessels. Inshore locations including creeks, estuaries and other freshwater locations are typically patronised by vessels less than 4.5m, except for ski boats, which can be much larger than this. Offshore locations typically require larger boats for access as these vessels are more capable of managing a wide range of wave conditions and can carry sufficient fuel to access distant destinations. Smaller vessels may be able to access close destinations on good weather days, and larger vessels may choose to access inshore destinations, particularly on poor weather days.

Consequently, the following aspects are used to classify how well a facility provides open water access:

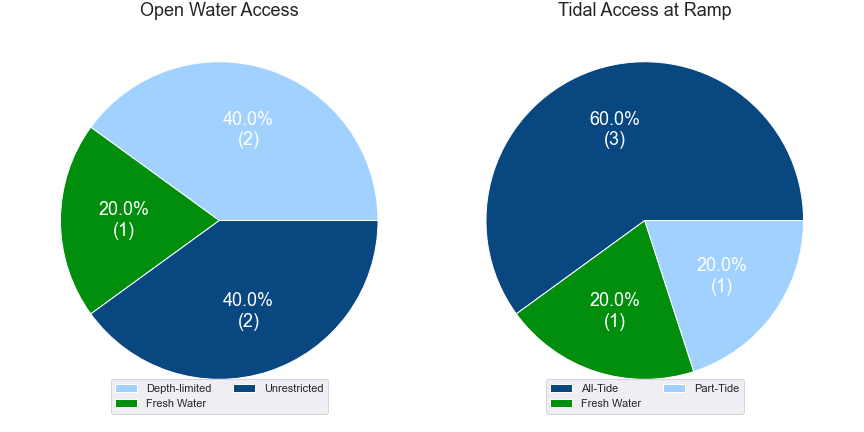
* Open-water access: There are no restrictions between the facility and open water.
* Depth-limited access: There are depth restrictions between the facility and open water that limit navigable access to part of the tidal range. This differs from tidal constraints at the actual facility, which might be usable at all tides, but offshore access is limited by a downstream bar or delta.
* Distance-limited access: The distance from the facility to the open water is unrealistic for typical boat users. This distance is assumed to be about 4.5km between the facility and open water to rate as 'distance limited', with travel times increased further where portions of the access channel are regulated by speed limits.
* Infrastructure-limited access: There are man-made obstacles between the facility and open water, such as above-ground pipeline crossings, low bridges or weirs that impede navigable access to open water.
* Beach ramps: These provide open-water access but are typically constrained by environmental conditions such as wave exposure and tide levels. The capacity of these facilities has been individually assessed based on consultation and other data sources and is described in more detail in section 4.
* Freshwater: There is no access to open water.

Certain facilities, particularly those in freshwater, may be constrained by periods of drought, or debris deposition after rainfall events that limit access to destinations, and therefore whether a facility will provide useful boat launching capacity. While it is noted that drought and rainfall may affect the overall capacity of boat launching within an LGA, and given that the timing of such events is not readily predictable, their impact on capacity has not been evaluated.

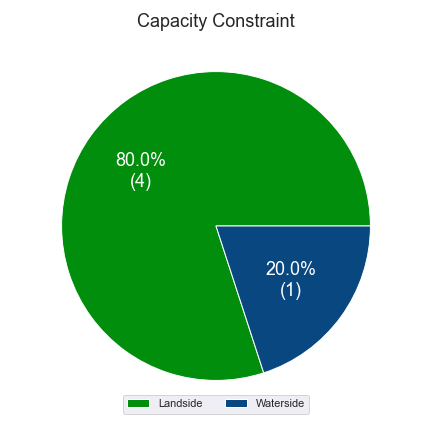
* + 1. Existing boat launching capacity

Within the Gympie LGA there are five boat launching facilities with a total effective capacity of 11.25 effective lanes. The effective capacity of boat launching facilities within the Gympie LGA is shown in Annex B, with a summary of the access to open water and tidal constraints shown in Figure 3.1 and the overall capacity constraint shown in Figure 3.2. Pertinent features of these facilities include:

* There are 14 total lanes, with an effective capacity of 11.25 effective lanes. This effective capacity is primarily reduced due to insufficient parking being allocated for each lane, with the exception of Norman Point, which is constrained by waterside launching capacity.
* Boat users in the Gympie LGA primarily access waters in Tin Can Bay, southern Great Sandy Strait and K’gari (Fraser Island) waters, with only one freshwater facility provided in Borumba Dam.
* The majority of the facilities provide all-tide access.



(a) Summary of open water access from boat launching facilities (left) and (b) Summary of tidal restrictions at tidal boat launching facilities (right)



Summary of limiting capacity constraint

## Access to sheltered near all-tide and all-tide facilities

MSQ has a longer-term vision to provide access to all-tide or near all-tide open water access boat launching facilities along the Queensland coast, such that all significant population centres are within one hour’s driving range as far as practical (TMR, 2020). For this purpose, the Study has defined eligible towns as being within the coastal strip if within 30km of the Queensland coastline. The vision (TMR, 2020) is applied to the coastal strip between the NSW border and Cooktown. Consultation throughout the Study has highlighted that this vision is important with users/stakeholders and organisations that own and manage these facilities. As such, the Study has developed a statistical approach to quantify this vision to allow it to be measured and tracked over time. To do this, the Study has calculated the travel time from all Population Centres (DoR, 2022) within the coastal zone to the nearest available sheltered, all-tide or near all-tide facility, regardless of which LGA it is in. This has been accomplished using mapped road networks and assigning speed limits to each type of road, with the following speed limits applied:

* for restricted roads, 40km/hr
* for local roads, 60km/hr
* for connector roads, 70km/hr
* for distributor roads, 80km/hr
* for highways, 100km/hr.

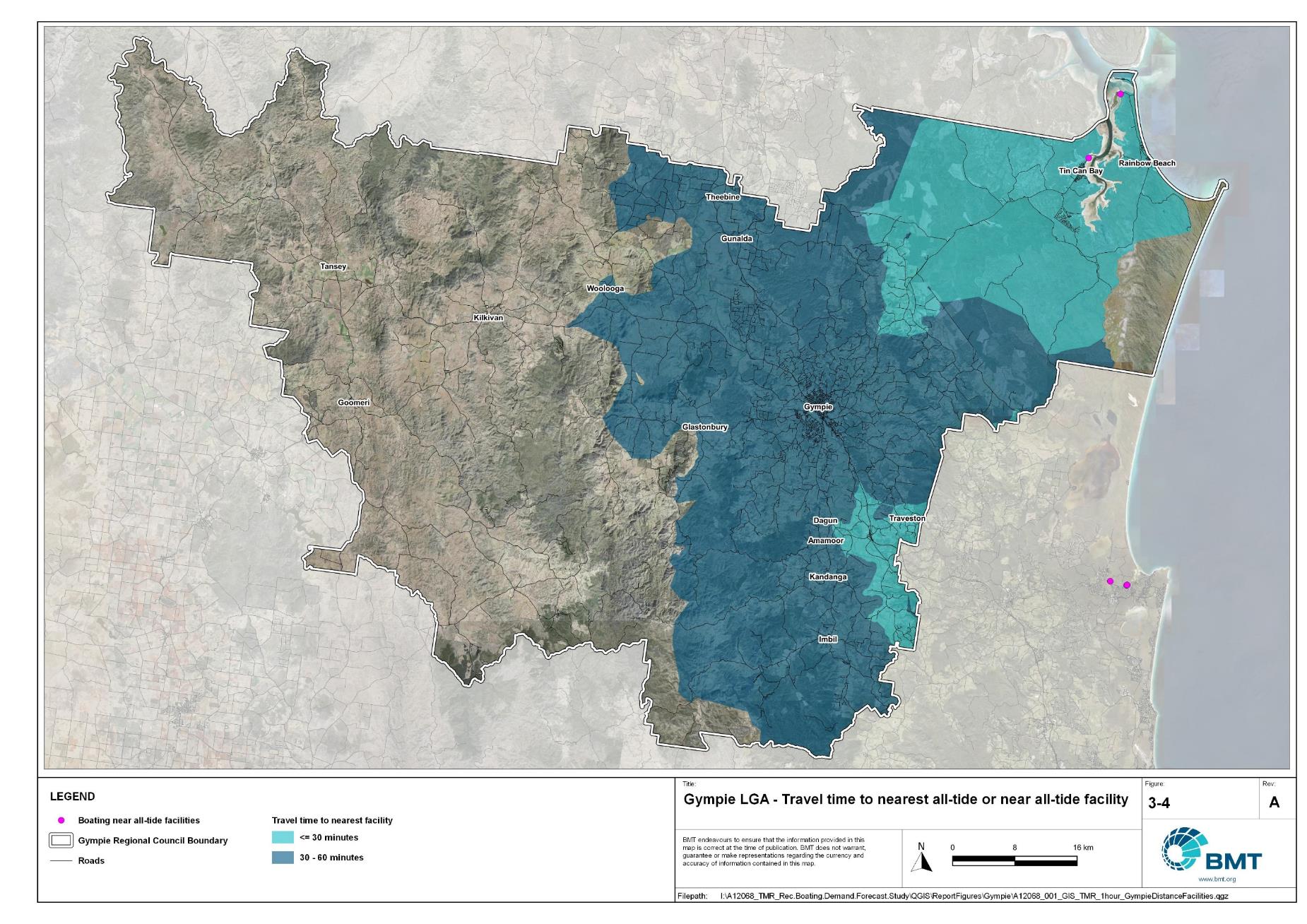
For the Gympie LGA the median travel time from eligible Population Centres to the nearest sheltered all-tide or near all-tide facility is 11.3 minutes. The distribution of travel times is shown in Figure 3.3 with detailed travel times of all population centres within the LGA in Annex C. Of interest for the Gympie LGA are:

* Eligible Population Centres (within 30km from the coastline) include Traveston, Rainbow Beach and Tin Can Bay. Gympie is beyond this distance (approximately 40km) but included in this discussion as the main population centre of the LGA.
* All three of these eligible Population Centres are within half an hour of travel time, while Gympie is within 40 minutes.
* The majority of Population Centres in the Gympie LGA (although outside the 30km buffer) are within 40 minutes of a sheltered near all-tide or all-tide facility.
* Facilities in the adjacent Noosa LGA provide capacity for sheltered near all-tide access for vessels in the southern part of the Gympie LGA.



Distribution of travel time from Gympie’s eligible population centres to sheltered near all-tide facilities

\*Beyond 30km from coastline



Gympie LGA – Travel time to nearest all-tide or near all-tide facility

"I:\A12068\_TMR\_Rec.Boating.Demand.Forecast.Study\QGIS\ReportFigures\Gympie\A12068\_001\_GIS\_TMR\_1hour\_GympieDistanceFacilities.jpg"

## Deep-draught vessel landings

Deep-draught vessel landings are intended to provide short-term landing capacity for vessels that are too large to use public boat launching and retrieval facilities. These facilities are provided for the benefit of both local vessels and to service the fleet of vessels that travel along the Queensland coast. Deep-draught vessel landings may be designed to accept one or more large vessels at a time and/or provide capacity for tenders from larger vessels that may be anchored or moored nearby, for the purpose of loading and offloading passengers and supplies, and making short local visits to onshore destinations.

For the Study, deep-draught vessel landings need to be primarily accessible by recreational boats for short, temporary stays. In some cases, commercial vessels may utilise these facilities subject to the relevant permissions, however, this may reduce the capacity of the facility to cater for recreational vessels. Deep-draught vessel landings should be located such that the facility provides reasonable access to landside passenger pick up and drop off, provisioning, recreational destinations, or population centres. Within the Gympie LGA there is one deep-draught vessel landing at Norman Point that provides access to a large carpark for passenger pickup/drop-off. Also available at a 2km walk to Tin Can Bay township is a supermarket and public transport options.

As well as the above, Gympie LGA has additional deep-draught vessel landings provided by private facilities at Tin Can Bay Marina, which provide paid short stay facilities for vessels if arranged prior to arrival. This facility provides access to fuel.

In summary, Table 3.2 shows the total capacity of deep-draught landing facilities within Gympie LGA.

Deep-draught landing facilities within Gympie LGA

| Facility type | Total capacity |
| --- | --- |
| Public sheltered mainland landings | 1 |
| Private sheltered facilities | 1 |

# Demand Assessment

The Study has developed a model to calculate statistical demand for boat launching facilities and deep-draught vessel landings at an LGA scale. Vessels that are less than 8m in length are considered trailable and drive demand for boat launching facilities such as boat ramps, while those over 8m are assumed to remain on water and drive demand for deep-draught landings.

Statistical demand is recognised at three different levels for public marine facilities within the TMR guidelines (TMR, 2020), which are:

* off-peak demand – typical weekday usage
* average demand – demand on ‘good boating days’, 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 demand model created for this Study is intended to provide information on demand pressures on ‘good boating days’ for all facilities as per the intentions of the guidelines. The model achieves this through a ‘registration activation rate’ that estimates the proportion of registered vessels in an LGA that is assumed to be active on a ‘good boating day’, as well as the exchange of vessels between LGAs, and general tourism pressures.

## Activation rate

The fleet size for each LGA is determined statistically from vessel registration numbers and the application of a vessel activation rate, while for future time horizons vessel registration and population growth estimates are also utilised. The methodology for determining the registration activation rate has been adopted from the previous study (GHD, 2017), with activation rates taken to be between 8% and 14% for a typical weekend. The variability of the activation rate is intended to capture the regional differences in vessel types, and is driven by the availability of access to open water, accessibility of other recreational opportunities, and likelihood of users’ available time for recreation, considering factors including:

* remoteness classification for the LGA
* incidence of blue-collar employment
* average age of residents
* whether the LGA is coastal.

Further information about the derivation of this rate can be found in Annex A. For the Gympie LGA the activation rate is assumed to be 8%, with the key factors influencing the rate including:

* its classification as a Metropolitan Area
* the incidence of blue-collar employment being higher than the state average
* the average age being higher than the state average
* it being located adjacent to the open coast.

## Digital user survey

To gain an understanding of usage trends at existing formal recreational boating facilities across Queensland, the Study has considered the results of a digital user survey using human movement data, sourced through a third party. The data was acquired from a location data store with more than 13 trillion mobile location observations globally from 2019 to present, which were sourced from 250,000 different mobile phone applications that users ‘opted-in’ to use the location services under the application’s terms and conditions. All data received was deidentified and compliant with relevant data privacy regulations.

The analysis uses mobile devices (such as telephones) location data as a proxy for boat user traffic, however, this relationship has several limitations including, but not limited to:

* Mobile device users detected in the area of interest may not be boat users (for example, pedestrians not using vessels may walk through the detection area).
* The relationship between mobile device users and vessels may not be 1:1 (that is, there may be multiple mobile devices providing data for each vessel).
* Users of vessels may not have a mobile device, may not be using a mobile device or may not have provided permission to use their location data.

With these, and potentially other, limitations in mind, the Study compared this data against vessel launching counts provided by various facility managers and found that approximately 15-30% of vessels are captured using this digital survey method. This percentage can change from facility to facility and from day to day. Consequently, the Study has not relied on raw counts of users from this data, but instead considered the relative trends within the data, with the assumption that no groups (for example, users from a particular LGA or using a particular facility) within the data would be more or less likely to be captured by the technique.

The Study has used this data to identify the relative volume of users, the ‘home’ local government area of users and the popularity of destinations that users travel to once vessels have been launched. Presentation of the full dataset can be found in Annex D.

* + 1. Inter-LGA demand

The human movement data has been interrogated to determine the LGA of origin for users of the Gympie LGA’s public boating facilities to ascertain the proportion of users from each LGA that are using specific facilities. Statistics from all public boating facilities within the LGA are then grouped together to determine the total proportion of resident or visiting users across the LGA. Table 4.1 shows the active fleet proportion from the top 10 LGAs contributing to demand on facilities within Gympie LGA. All other sources have been grouped together.

LGA of origin for active fleet in the Gympie LGA

| LGA of origin | Active fleet proportion |
| --- | --- |
| Gympie | 28.9% |
| Sunshine Coast | 13.2% |
| Brisbane | 12.3% |
| Moreton Bay | 9.3% |
| Fraser Coast | 4.6% |
| Gold Coast | 4.3% |
| Logan | 3.3% |
| Noosa | 3.1% |
| Redland | 2.7% |
| Ipswich | 2.7% |
| Other LGAs | 15.6% |

* + 1. Intra-LGA demand distribution

Recreational boating users will tend to use facilities that best suit their needs, the destinations they want to access, the capability of their vessel and the weather conditions. Consequently, distribution within an LGA is unlikely to be evenly spread across all facilities, with some facilities attracting users disproportionately due to amenity, access, or destinations. The attractiveness of large well-designed facilities is likely to draw visiting boat users in preference to smaller or less desirable facilities across the LGA. The human movement statistics have been assessed to qualitatively estimate the proportion of users using each facility, both in total and with respect to both resident and visiting boat users (Table 4.2).

Popularity of boat launching facilities.

| Facility | Overall fleet | Resident fleet | Visiting fleet |
| --- | --- | --- | --- |
| Tin Can Bay, Norman Point | 56.6% | 67.6% | 52.1% |
| Carlo Point, Carlo Road | 16.6% | 10.3% | 19.1% |
| Borumba Dam, Imbil | 11.2% | 6.8% | 12.9% |
| Bullock Point | 9.3% | 5.6% | 10.8% |
| Toolara | 6.3% | 9.7% | 5.0% |

The results indicate that there is a strong presence of tourists using the facilities within the Gympie LGA. The proportion of just 28.9% of local vessel use over all the facilities shows that recreational boat users from other LGAs dominate the use of the facilities within the region. This is likely due to the attractive boating destinations that are on offer from the facilities within Tin Can Bay.

The facility at Norman Point is by far the most popular facility within the LGA, where there is an indication of a stronger local presence compared to the other facilities, where visitors from other LGAs are more frequent. Carlo Point, which also offers all-tide access with excellent waterside infrastructure, is also quite a popular facility, though landside limitations and distance from the major inland population centres may be reducing its use, similar to Bullock Point. Borumba Dam is much more popular with visitors than with locals.

The distribution of capacity within the LGA needs to consider these trends to avoid consistent capacity shortfalls at some facilities or indicating demand for unnecessary extra capacity at other facilities. Results from the above statistics and feedback obtained through the TMR online survey indicate that within the Gympie LGA the following factors tend to influence the preferred facilities for recreational boat users:

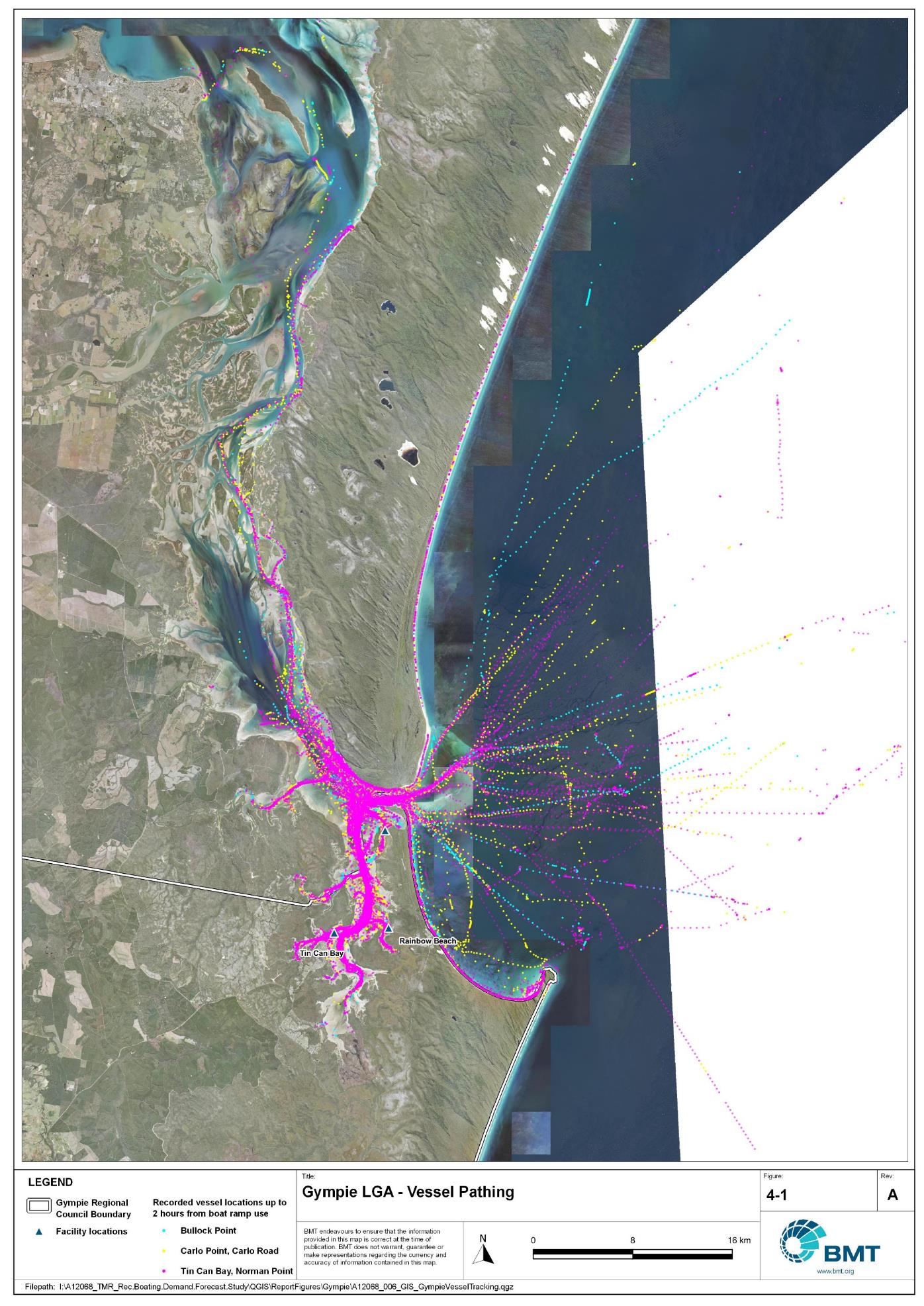
* access to sheltered, all-tide launching facilities
* dry entry/exit capabilities of launching facilities provided through floating walkways, pontoons and to a lesser extent fixed sloping walkways
* facilities that provide the most capacity
* ability to access offshore destination.
  + 1. Destinations

For facilities that provide sheltered, near all-tide or all-tide open water access, additional analysis of the human movement statistics has been undertaken to identify destinations for users of these facilities. Location data from users utilising the facilities was extracted for a period of two hours after they used the facility, and trimmed for waterside destinations. For the Gympie LGA this additional analysis was applied to the following facilities, with destinations mapped in Figure 4.1:

* Bullock Point
* Carlo Point
* Norman Point.

From this additional analysis, the following notable observations were made:

* Users accessing offshore destinations gave preference to the Norman Point facility, likely due to the infrastructure there providing significantly more capacity (both landside and waterside) and the proximity to inland population centres. This is despite Bullock Point offering closer proximity to offshore destinations.
* Offshore ventures are widely dispersed, with no major congregation points offshore, indicating a large number of attractive destinations (reefs/fishing grounds or Double Island Point/Bay) allowing boat users to spread out.
* There is a large portion that use facilities in the Gympie LGA to access Tin Can Bay and southern K’gari (Fraser Island) waterways, which is larger than the portion of vessels venturing offshore.
* Some vessels are making the trip through Great Sandy Strait up to Urangan.



Gympie LGA – vessel pathing

"I:\A12068\_TMR\_Rec.Boating.Demand.Forecast.Study\QGIS\ReportFigures\Gympie\A12068\_006\_GIS\_GympieVesselTracking.jpg"

## Active fleet size

The total ‘active’ fleet on a good boating day is derived from the activation rate of the total fleet of registered vessels within the LGA and the net inflow of visiting vessels. The total number of visiting vessels from each LGA is determined from the number of vessels in the resident active fleet and the relative proportion of resident to visiting vessels outlined in Table 4.1.The fleet size is expected to change over time due to changes in population and vessel acquisition trends, with the size and proportion of the fleet across the Study period described in Table 4.3.

Active fleet vessel size

| Vessel length | 2021 | 2026 | 2031 | 2036 | 2041 |
| --- | --- | --- | --- | --- | --- |
| 0 to 4.5m | 399 | 418 | 437 | 453 | 467 |
| 4.5m to 8m | 164 | 172 | 179 | 186 | 191 |
| >8m | 16 | 16 | 17 | 17 | 17 |
| **Total** | **579** | **606** | **632** | **655** | **675** |

## Boat ramp lane demand

The fleet size derived in Table 4.3 represents the statistical demand for the LGA, with vessels under 8m assumed to contribute to boat ramp demand, measured in boat ramp lanes. As outlined in section 3.1.2 the adopted capacity of each effective lane is 40 vessels per day, with each vessel assumed to both launch and retrieve, for a total of 80 vessel movements per day. The total boat ramp lane demand across the Study period is shown in Table 4.4.

Boat ramp lane demand

|  | 2021 | 2026 | 2031 | 2036 | 2041 |
| --- | --- | --- | --- | --- | --- |
| Boat ramp lane demand | 14.1 | 14.8 | 15.4 | 16 | 16.4 |

For the Gympie LGA the important elements that contribute to the boat ramp lane demand include:

* a moderate sized total fleet, with a high proportion of trailable vessels
* contribution of vessels from larger LGAs within southeast Queensland due to the attractive destinations.

## Non-statistical demand

As well as the statistical demand outlined in the section above, facilities may face demand pressures that are related to their functional use, which reduces the capability of the facility to service the recreational boat fleet in the desired manner. Issues with specific facilities have been identified within the consultation process of the Study with appointed managers and other stakeholders. While care has been taken to identify these non-statistical demand issues throughout the Study, it is beyond the scope of the Study to individually review the functionality, safety, and amenity of each facility across Queensland. Non-statistical demand pressures may warrant upgrades to facilities even where statistical demand is satisfied by existing capacity. These pressures have been classified into the following categories:

* Amenity: Amenity describes the functional usability of the facility including the desire to provide dry entry and exit facilities, facilities that provide easy access and/or access for persons with restricted mobility.
* Safety: Safety demand may include protection from currents and waves or contact with marine creatures such as sharks, jellyfish, and crocodiles.
* In-water congestion: Where existing queuing facilities are not able to efficiently meet the needs of the facility. Such deficiency may warrant additional queuing facility capacity to optimise boat launching and retrieval.

The Study’s recommendations may alleviate these non-statistical demand pressures with consideration for capability of all facilities within the LGA. The presence of a non-statistical demand pressure at a facility may not warrant upgrades where other suitable facilities are reasonably available.

## Deep-draught vessel demand

* + 1. Cruising vessels

Vessels cruising along the east coast of Queensland have a requirement for a network of deep-draught vessel landings that are appropriately spaced to be within a day’s sailing on good weather days. These facilities are required to support the reprovisioning of vessels as they travel along the coast and provide access to desirable land-based destinations. Private marina facilities may be used by cruising vessels where there is an expectation for a prolonged stay that requires protected mooring or berthing. Within the Gympie LGA suitable facilities for deep-draught vessels includes the public pontoon at Norman Point.

Within the east coast network but outside of the Gympie LGA, the nearest deep-draught vessel landing facility to the north is approximately 42 nautical miles from Norman Point to Urangan, through the Great Sandy Strait. It is noted, however, that the shoals through this path can be very shallow and treacherous, as such experience and correct timing of the tides is critical to make this voyage safely, particularly in a large vessel. This voyage is not recommended. Alternatively, there is a distance of 140-150 nautical miles from Norman Point to Urangan or Burrum Heads, travelling on the eastern side of K’gari (Fraser Island). To the south, the nearest deep-draught vessel landing is at Mooloolaba (Sunshine Coast LGA), some 67 nautical miles distance (approximately). At present there is no useable public deep-draught vessel landing facility within the neighbouring Noosa LGA.

The public pontoon at Norman Point provides reasonable access to supplies and provisions, though there is no public transport available directly from the ramp, and the Tin Can Bay township is about two kilometres away. There is also no fuel or pump out facilities are available for public use. For vessels seeking to stay in the region, protected mooring or berthing is seasonally available at private facilities at the Tin Can Bay Marina.

* + 1. Landing demand

Statistical demand for deep-draught vessel landings has been assessed based on the size of the non-trailable fleet within the Gympie LGA. Landing demand is more difficult to assess than boat ramp lane demand as the requirements and duration of the landing influence the demand pressure but are highly variable between users. Nevertheless, the Study has assumed that 5% of the non-trailable fleet will be seeking a landing at any given time. The consultation undertaken during the Study indicates that this assumption may overestimate the number of landings, but that the landings are often utilised for other boating and recreation activities when not in use by deep-draught vessels. In particular, landings that are located near boat launching facilities may be used as queuing facilities and therefore support the efficient launching of smaller recreational vessels. Given this, the 5% assumption has been adopted noting that it may overestimate demand, but not to an extent that it would be onerous to facility providers. Within the Gympie LGA the demand for deep-draught vessel landings is outlined in Table 4.5

Deep-draught vessel landing demand

| Requirement | 2021 | 2026 | 2031 | 2036 | 2041 |
| --- | --- | --- | --- | --- | --- |
| No. of Landings | 0.8 | 0.8 | 0.8 | 0.8 | 0.9 |

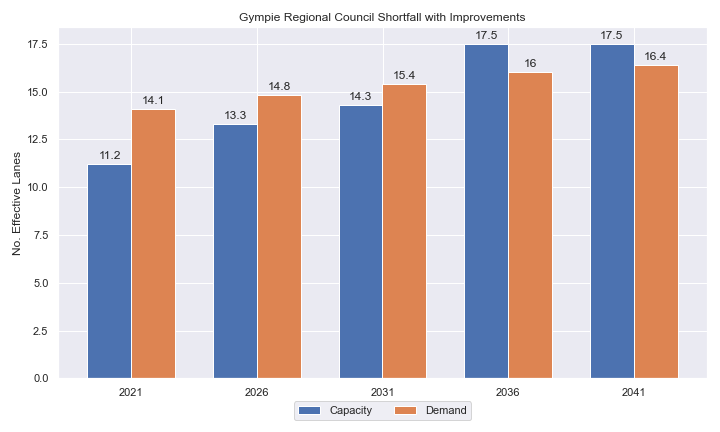
# Shortfall Assessment

## Shortfall assessment – boat ramps

The shortfall of boat ramp lanes within the Gympie LGA is shown in Table 5.1 and Figure 5.1 at an LGA scale. This is presented both with and without the inclusion of additional capacity provided by the recommended upgrades.

Shortfall of boat launching facilities

| Assessment | Metric | 2021 | 2026 | 2031 | 2036 | 2041 |
| --- | --- | --- | --- | --- | --- | --- |
| Demand | Demand | 14.1 | 14.8 | 15.4 | 16 | 16.4 |
| Existing | Capacity | 11.2 | 11.2 | 11.2 | 11.2 | 11.2 |
| **Shortfall** | 2.9 | 3.6 | 4.2 | 4.8 | 5.2 |
| Improved | Capacity | 11.2 | 13.3 | 14.3 | 17.5 | 17.5 |
| **Shortfall** | 2.9 | 1.5 | 1.1 | -1.5 | -1.1 |



Shortfall assessment with recommended upgrades adopted

* + 1. Open-water access shortfall in boat ramp lanes

Statistical capacity has been calculated across the Gympie LGA in its entirety, however, some facilities are evidently more popular than others due to their ability to access open-water destinations, and/or their usability. In general, larger vessels are more suited to access open-water destinations while smaller vessels are more likely to remain in sheltered environments. This was identified in the 2017 study and confirmed during discussions with stakeholders. The human movement data indicates that visiting boats from other LGAs are drawn to facilities that provide access to open-water destinations. To ensure that the capacity of effective boat ramp lanes in the LGA is appropriately distributed to cater for these usage trends, it is worth assessing facilities providing this desirable access as a subset of the total capacity for the LGA. A ‘scenario’ approach to assessing this capacity (Table 5.2) has been developed, with Scenario 1 derived from empirical estimates of vessel distribution and Scenario 2 derived from the human movement statistics, and the final result averaged between the two scenarios. This provides the opportunity to rationalise the figure that drives the demand and acknowledge when one scenario is not representative of the population or consistent with stakeholder feedback. The scenarios that were assessed are:

Scenario 1: 80% of larger vessels and 20% of smaller vessels from the local fleet and 80% of the visiting fleet are using the facilities with unrestricted open water access.

Scenario 2: Distributing the fleet between facilities as per the human movement statistics.

Shortfall assessment for open water, all-tide or near all-tide facilities for Gympie LGA

| Assessment | Metric | 2021 | 2026 | 2031 | 2036 | 2041 |
| --- | --- | --- | --- | --- | --- | --- |
| Overall | Capacity | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 |
| Scenario 1 | Demand | 9.2 | 9.7 | 10.2 | 10.6 | 11.0 |
| Shortfall | 1.7 | 2.2 | 2.7 | 3.1 | 3.5 |
| Scenario 2 | Demand | 9.4 | 9.9 | 10.3 | 10.7 | 11.0 |
| Shortfall | 1.9 | 2.4 | 2.8 | 3.2 | 3.5 |
| **Average** | Demand | 9.3 | 9.8 | 10.3 | 10.6 | 11.0 |
| **Shortfall** | **1.8** | **2.3** | **2.8** | **3.1** | **3.5** |

Comparing the LGA-scale shortfall with the subset of facilities providing protected all-tide or near all-tide access to open water indicate that the demand is focused on this subset of facilities.

## Shortfall assessment – deep-draught landings

The shortfall of public deep-draught landings for the Gympie LGA is provided in Table 5.3. The existing capacity is statistically adequate to meet demand, particularly with the inclusion of facilities at the marina.

Shortfall of deep-draught vessel landings

| Assessment | Metric | 2021 | 2026 | 2031 | 2036 | 2041 |
| --- | --- | --- | --- | --- | --- | --- |
| Deep-draught vessel landings | Demand | 0.8 | 0.8 | 0.8 | 0.8 | 0.9 |
| Capacity | 1 | 1 | 1 | 1 | 1 |
| **Shortfall** | -0.2 | -0.2 | -0.2 | -0.2 | -0.1 |

# Stakeholder Feedback



The Study has undertaken extensive consultation throughout its execution to achieve a comprehensive understanding of issues relating to the use of recreational boating facilities across the state. This consultation was conducted with managing authorities that own and/or and manage recreational boating facilities, as well as with facility stakeholders including recreational groups, volunteer marine rescue and coastguard organisations, and the general public. Stakeholder engagement was supplemented with site visits to facilities where key issues had been identified.

## Managing authority feedback

For the Gympie LGA, the Study team met with Seqwater and Maritime Safety Queensland to discuss recreational boating facilities within the region. Offers to meet with Gympie Regional Council were not accepted. This consultation process identified a range of potential opportunities to alleviate demand pressures. The Study has considered the practical implementation of each of these opportunities with respect to the required infrastructure, difficulty of implementation and magnitude of benefit, as summarised in Table 6.1.

Stakeholder identified opportunities.

| Location | Stakeholder opportunity | Review comments |
| --- | --- | --- |
| Borumba Dam | Lake is currently at capacity; no additional boating can fit on the lake. | Agreed. |
| Norman Point | Potential to expand this facility with additional parking and waterside infrastructure in future. | Agreed, although it should be noted that recommendations in the Coastal Hazard Adaptation Strategy are to retreat from this location. |

## Stakeholder feedback

Broader stakeholder feedback has been conducted within the Study by undertaking virtual or face-to-face meetings with recreational boating groups and marine rescue organisations, as well as through the Recreational Boating Facility Survey (MSQ, 2022) undertaken by Maritime Safety Queensland, which included survey responses of nearly 3,000 users and open submissions. For the Gympie LGA a total of 13 submissions were received, with 62% of respondents using trailable power boats and 85% of respondents using recreational boating facilities at least once a month. For the Gympie LGA the following statistics or themes were extracted from the survey and associated comments:

* 82% of respondents typically travel less than 1hr to their preferred boat ramp (which may not be their closest facility).
* 77% of respondents indicated that floating walkways are their preferred type of queuing facility.
* 85% of respondents indicated that they would be unwilling to walk further than 200m from designated CTU parking to a boat ramp.
* The most common requests for new boat ramps were at:
  + Crab Creek
  + Lake Borumba
  + Noosa River near entrance to Lake Doonella (this site being within the Noosa LGA).
* The following themes were identified with respect to existing facilities:
  + lack of fish cleaning facilities (Tin Can Bay and Crab Creek)
  + upgrading ramps with pontoons (Lake Borumba), separate ramps for fishing-type craft, wake-type boats and jet skis, and dredging (Crab Creek)
  + protection from strong currents at Tewantin (Noosa LGA).
* Where the closest available boat launching facility was not preferred, the following themes among respondents were identified:
  + better parking spots
  + Access to all-tide ramps
  + fishing spots
  + access to pontoons and multi-lane ramps.
* Respondents were given an opportunity to provide additional feedback, with the following themes identified:
  + residents from Gympie LGA travelling to the Noosa River (Noosa LGA) and Seventeen Seventy (Gladstone LGA) boat ramp facilities
  + provision of more fish cleaning facilities
  + safety concerns regarding slippery ramps
  + opportunities to improve existing facilities through the provision of night-time lighting, toilets, and rubbish bins.

# Development Recommendations

## Previous recommendations

The 2017 GHD assessment recommended opportunities for increasing the capacity of recreational boating facilities across the state. However, the implementation of these recommendations has been low, with only 10% of the total state-wide recommendations delivered in part or full in the 5 years since the delivery of the report. Of the priority 1 recommendations (for immediate delivery) and priority 2 recommendations (for implementation within 5 years) only 18% and 6% respectively have been delivered. State-wide only 5% of land-side recommendations were delivered, while 16% of water-side recommendations were delivered.

Within the Gympie LGA there were no recommendations as part of the 2017 study. However, the 2017 study notes that a new facility was programmed to be constructed by MSQ and Gympie Regional Council partnership at Bullock Point. The Bullock Point facility was duly constructed, and its capacity is taken into account in this Study.

## Priority recommendations

The selection and ranking of development priorities provides for progressive implementation of solutions to meet capacity shortfalls and/or resolve existing safety and usage issues at existing facilities over time. Recommendations have been split into four categories for implementation within the 20-year planning period of this Study, with the following projected timelines:

* Priority 1: For immediate planning and design.
* Priority 2: Planning and design intended to provide capacity within 5-10 years.
* Priority 3: Planning and design intended to provide capacity within 10-15 years.
* Priority 4: Planning and design intended to provide capacity within 15-20 years.

The recommendations have been structured to include consideration of the reasonable timelines for implementation. This may include consideration for budgetary processes, planning, environmental approvals, consultation periods and construction. The priority selection of recommendations has been conducted in accordance with TMR’s Marine Infrastructure and Facilities Plan (TMR, 2020) guidelines, namely:

1. *priority to 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.*
2. *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*
3. *the most economically viable options will take precedence, including the expansion of existing facilities, and the changing of existing foreshore land uses. In many cases, limiting or avoiding dredging and/or breakwater costs will be a crucial factor*
4. *a goal of providing access to sheltered all-tide or near all-tide boat launching facilities within one hour’s drive for significant communities*

Consequently, higher order recommendations need to address, where possible, the provision of facilities that provide maximum benefit in the widest range of conditions. Lower order recommendations will consist of solutions where there is reduced adherence to the TMR guidelines and/or there are constraints that may result in long lead times to resolve. A summary of the recommendations is provided in Table 7.1 with full detail of each recommendation in the tables that follow.

Summary of recommendations for the Gympie LGA

| Priority | Description | Landside or Waterside | Increased capacity  (Effective lanes) |
| --- | --- | --- | --- |
| 1 | Norman Point, Tin Can Bay: Construct new boat ramp lane and add two new floating walkways. Increase parking capacity by 20 CTUs | Both | 2.1 lanes |
| 2 | Carlo Point: Provide an additional 15 CTU parks in stage one with a further 10 CTUs in a second stage. | Landside | Stage 1: 0.5 lanes Stage 2: 1 lane (total) |
| 3 | Norman Point, Tin Can Bay: Construct a new 2-lane boat ramp with a floating walkway and 43 CTU parking spaces. | Both | 2.65 lanes |
| 3 | Bullock Point: Construct 15 new CTU parking spaces. | Landside | 0.5 lanes |

## Priority 1 Recommendations

Norman Point, Tin Can Bay - (Priority 1)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| General Description | | | | |
| Location | Snapper Creek Boat Harbour, The Esplanade, Tin Can Bay | | | |
| Existing Facility? | Yes | | | |
| Coordinates | -25.90160543, 153.01365323 | | | |
| Existing tidal status | All-tide | | | |
| Existing wave exposure | None | | | |
| Existing current exposure | None | | | |
| Proposed works | Construct a new boat ramp lane on the north-eastern side of the existing ramps, two new floating walkways on the outside lanes, and 20 additional CTU parking spaces. | | | |
| Increased effective capacity | 2.1 effective lanes | | | |
| Capacity improvement position | Waterside | Landside | | Both |
| Rationale | The Norman Point facility is the most frequented facility in the LGA. It provides sheltered, all-tide launching and retrieving infrastructure with Great Sandy Straits and open-water access at a location close to shops and other amenities. To cater for increased demand, this facility should be upgraded to provide more capacity. | | | |
| Anticipated Costs (+/- 50%) | Waterside infrastructure | | $1,100,000 | |
| Landside infrastructure | | $130,000 | |
| Planning, environmental and approvals constraints | | | | |
| Assessment | Requirement | Comments | | |
| Fish Habitat Zone | x | N/A | | |
| Native Title | x | N/A | | |
| MCU requirement | x | N/A | | |
| Clearing remnant vegetation | x | N/A | | |
| GBRWHA | x | N/A | | |
| Marine Park | x | N/A | | |
| Tidal works assessment | ü | Marine works will likely be tidal works and require a Development Permit. | | |
| Other as required | x | N/A | | |
| Sea Level Rise | ü | The proposed works are within the boundary of the erosion prone area. | | |
| Storm Tide Hazard | ü | The proposed works are within the boundary of a high storm tide hazard area. | | |
| Anticipated Complexity | Low | Medium | | High |

Map

Description automatically generated

Priority 1 Recommendation – Norman Point, Tin Can Bay

"I:\A12068\_TMR\_Rec.Boating.Demand.Forecast.Study\Recomendations by Council\JPG\Gympie\A12068\_005\_GympieProposedUpgrades\_7-1.jpg"

## Priority 2 Recommendations

Carlo Road, Carlo Point - (Priority 2)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| General description | | | | |
| Location | Rainbow Beach, Cooloola | | | |
| Existing Facility? | Yes | | | |
| Coordinates | -25.89812623, 153.05728622 | | | |
| Existing tidal status | All-tide | | | |
| Existing wave exposure | None | | | |
| Existing current exposure | None | | | |
| Proposed works | Stage 1 – construct 15 CTU parking spaces.  Stage 2 – Construct a further 10 CTU parking spaces | | | |
| Increased effective capacity | Stage 1: 0.5 effective lanes  Stage 2: 1.0 effective lanes (combined total) | | | |
| Capacity improvement position | Waterside | Landside | | Both |
| Rationale | Carlo Point is the second most popular facility in the Gympie LGA, providing open water access from a sheltered, all-tide facility. It is currently constrained on the landside and requires more CTU parking spaces to cater for the capacity that the waterside facilities provide. | | | |
| Anticipated Costs (+/- 50%) | Waterside infrastructure | | N/A | |
| Landside infrastructure | | $140,000 | |
| Planning, environmental and approvals constraints | | | | |
| Assessment | Requirement | Comments | | |
| Fish Habitat Zone | x | N/A | | |
| Native Title | x | N/A | | |
| MCU requirement | x | N/A | | |
| Clearing remnant vegetation | x | N/A | | |
| GBRWHA | x | N/A | | |
| Marine Park | x | N/A | | |
| Tidal works assessment | x | N/A | | |
| Other as required | x | N/A | | |
| Sea Level Rise | ü | The proposed works are partially within the boundaries the erosion prone area. | | |
| Storm Tide Hazard | ü | The proposed works are within the boundaries of a high storm hazard area. | | |
| Anticipated Complexity | Low | Medium | | High |

Map

Description automatically generated with low confidence

Priority 2 Recommendation – Carlo Road, Carlo Point

"I:\A12068\_TMR\_Rec.Boating.Demand.Forecast.Study\Recomendations by Council\JPG\Gympie\A12068\_005\_GympieProposedUpgrades\_7-2.jpg"

## Priority 3 Recommendations

Norman Point, Tin Can Bay - (Priority 3)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| General description | | | | |
| Location | Snapper Creek Boat Harbour, The Esplanade, Tin Can Bay | | | |
| Existing Facility? | Yes | | | |
| Coordinates | -25.90160543, 153.01365323 | | | |
| Existing tidal status | All-tide | | | |
| Existing wave exposure | None | | | |
| Existing current exposure | None | | | |
| Proposed works | Construct a new 2-lane boat ramp with a floating walkway and 43 CTU parking spaces adjacent to the existing facility. Remove the existing gangway-access pontoon, to be replaced with a floating walkway with a heavy-duty outer section, designed to accommodate landing for deep-draught vessels as well as queuing for trailable vessels.  Consideration is to be given to future expansions of the Norman Point boat harbour during master planning. | | | |
| Increased effective capacity | 2.65 effective lanes | | | |
| Capacity improvement position | Waterside | Landside | | Both |
| Rationale | Supplement the upgrades recommended as a Priority 1, maximising the capacity of this facility and catering for forecast demand.  The gangway-access pontoon adjacent is in place as a queuing and deep-draught landing facility. This purpose can be better served by a floating walkway with a heavy-duty outer section.  *Please note the public marine facility is located within a State Boat Harbour, any upgrades should seek to align with future planning processes for the harbour.* | | | |
| Anticipated Costs (+/- 50%) | Waterside infrastructure | | $1,070,000 | |
| Landside infrastructure | | $175,000 | |
| Planning, environmental and approvals constraints | | | | |
| Assessment | Requirement | Comments | | |
| Fish Habitat Zone | x | N/A | | |
| Native Title | x | N/A | | |
| MCU requirement | x | N/A | | |
| Clearing remnant vegetation | x | N/A | | |
| GBRWHA | x | N/A | | |
| Marine Park | x | N/A | | |
| Tidal works assessment | ü | Marine works will likely be tidal works and require a Development Permit. | | |
| Other as required | x | N/A | | |
| Sea Level Rise | ü | The proposed works are within the boundary of an erosion prone area. | | |
| Storm Tide Hazard | ü | The proposed works are within the boundary of a high storm tide hazard area. | | |
| Anticipated Complexity | Low | Medium | | High |

Map

Description automatically generated

Priority 3 Recommendation – Norman Point, Tin Can Bay

"I:\A12068\_TMR\_Rec.Boating.Demand.Forecast.Study\Recomendations by Council\JPG\Gympie\A12068\_005\_GympieProposedUpgrades\_7-3.jpg"

Bullock Point - (Priority 3)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| General description | | | | |
| Location | Bullock Point, near Inskip Point | | | |
| Existing Facility? | Yes | | | |
| Coordinates | -25.82724107, 153.05436244 | | | |
| Existing tidal status | All-tide | | | |
| Existing wave exposure | None | | | |
| Existing current exposure | None | | | |
| Proposed works | Construct 15 CTU parking spaces. | | | |
| Increased effective capacity | 0.5 effective lanes | | | |
| Capacity improvement position | Waterside | Landside | | Both |
| Rationale | This facility is very constrained on the landside. The capacity provided by the waterside facilities should be catered for by CTU parking spaces on the landside. The access to the Great Sandy Strait, K’gari and offshore from this facility is excellent, serving locals and tourists, and specifically Rainbow Beach. | | | |
| Anticipated Costs (+/- 50%) | Waterside infrastructure | | N/A | |
| Landside infrastructure | | $325,000 | |
| Planning, environmental and approvals constraints | | | | |
| Assessment | Requirement | Comments | | |
| Fish Habitat Zone | X | N/A | | |
| Native Title | X | N/A | | |
| MCU requirement | X | N/A | | |
| Clearing remnant vegetation | ü | The proposed works is within an area containing RVM category B – remnant vegetation. A Development Permit may be required for the clearing of remnant vegetation. | | |
| GBRWHA | X | N/A | | |
| Marine Park | X | N/A | | |
| Tidal works assessment | X | N/A | | |
| Other as required | ü | Ramsar Wetland – The proposed works is within the Great Sandy Strait Ramsar Wetland which may trigger a Controlled Action if determined to be a significant impact. | | |
| Sea Level Rise | ü | The proposed works within the boundaries of an erosion prone area subject to sea level rise. | | |
| Storm Tide Hazard | ü | The proposed works is within the boundaries of a high storm tide hazard area. | | |
| Anticipated Complexity | Low | Medium | | High |

A picture containing calendar

Description automatically generated

Priority 3 Recommendation – Bullock Point

I:\A12068\_TMR\_Rec.Boating.Demand.Forecast.Study\Recomendations by Council\JPG\Gympie\A12068\_005\_GympieProposedUpgrades\_7-4.jpg

## Priority 4 Recommendations

Nil.

# References

Australian Bureau of Statistics (ABS), 2021, *2021 Census,* <https://www.abs.gov.au/census>

Bell, Frederick W. 2022, *Estimation of the present and projected demand and supply of boat ramps for Florida's coastal regions and counties*, Florida State University, Department of Economics.

BMT, 2015, *MPSC Managed Boating Facilities Demand and Capacity Study: Boat Ramp Modelling*

Department of Transport and Main Roads (TMR), 2020, Marine facilities and infrastructure plan.

GHD, 2011, *Recreational Boating Facilities Demand Forecasting Study*

GHD, 2017, *Queensland Recreational Boating Facilities Demand Forecasting Study 2017.*

Maritime Safety Queensland (MSQ), 2022, *Recreational Boating Facilities,* <https://www.getinvolved.qld.gov.au/gi/consultation/8850/view.html>

Queensland Government Department of Resources (DoR), 2022, *Cities and towns [OGC WMS Service]*, Accessed 5/10/2022, available online at spatial.information.qld.gov.au/arcgis/home/item.html?id=103c7c9ccca449fab79d27cde06868ab

Rose, T., R. Powell & J. Yu (2009). Identification of the Present and Future Recreational Boating Infrastructure in Redland City – A 10 Year Infrastructure Plan- Griffith University

SKM (1998) Public Boat Ramps Central Queensland Strategic Plan - Volume One - Demand Forecasting - Noosa to Yeppoon. Sinclair Knight Merz, March 1998.

Swett, R., Fik, T., Ruppert, T., Davidson, G., Guevara, C. & Betty Staugler, 2012, *Planning for the future of recreational boating access to charlotte county waterways: 2010 – 2050*, Florida Sea Grant, University of Florida.

Western Australia Department of Transport, 2019, *Perth Recreational Boating Facilities Study Review 2019*, https://www.transport.wa.gov.au/mediaFiles/marine/MAC\_P\_Perth\_RBFS\_study\_review\_2019.pdf

Western Australia Department of Transport, 2021, *South West Region Recreational Boating Facilities Study July 2021,* https://www.transport.wa.gov.au/mediaFiles/marine/MAC\_P\_SouthWest\_RBFS\_Study\_2021.pdf

###### Demand Study

"G:\Admin\A12068.g.mpb.TMRBoatingDemand\06\_Reports\09\_Demand Study\2022\_2119 (016) Final Demand Report (March 2023).pdf"

###### Boat launching facility capacity

Capacity of existing boat launching facilities

| Facility ID | Facility name | No. Lanes | Tidal Access  (at ramp) | Tidal access (to open water) | Queuing facility | Formal CTUs | Informal CTUs | Waterside capacity | Landside capacity | Effective capacity | Constraint |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Open water access** | | | | | | | | | | | | |
| WI50 | Bullock Point | 3 | All-Tide | All-Tide | Floating Walkway | 25 |  | 4.2 | 1.5 | 1.5 | Landside |
| WI81 | Tin Can Bay, Norman Point | 4 | All-Tide | All-Tide | Floating Walkway | 87 | 72 | 6 | 7.5 | 6 | Waterside |
| Subtotal |  | 7 |  |  |  | 112 | 72 | 10.2 | 9 | 7.5 |  |
| **Depth-limited open water access** | | | | | | | | | | | | |
| WI21 | Toolara | 1 | Part-Tide | Part-Tide | Beach | 7 |  | 0.55 | 0.5 | 0.5 | Landside |
| WI31 | Carlo Point, Carlo Road | 4 | All-Tide | Near All-Tide | Floating Walkway | 37 |  | 4.6 | 1.75 | 1.75 | Landside |
| Subtotal |  | 5 |  |  |  | 44 | 0 | 5.15 | 2.25 | 2.25 |  |
| **Fresh Water** | | | | | | | | | | | |
| WI11 | Borumba Dam, Imbil | 2 | Fresh Water | Fresh Water | None | 29 |  | 2 | 1.5 | 1.5 | Landside |
| Subtotal |  | 2 |  |  |  | 29 | 0 | 2 | 1.5 | 1.5 |  |
| **Total Effective Capacity** | | | | | | | | | | **11.25** | | |

###### Travel time statistics

Travel time from population centres to nearest sheltered all-tide or near all-tide open water accessible facilities

| Population Centre | Travel time (mins) |
| --- | --- |
| Amamoor\* | 31.7 |
| Brooloo\* | 37.1 |
| Dagun\* | 30.8 |
| Glastonbury\* | 48.2 |
| Goomeri\* | 81.8 |
| Gunalda\* | 47.6 |
| Gympie\* | 37.3 |
| Imbil\* | 36.6 |
| Kandanga\* | 33.5 |
| Kilkivan\* | 66.4 |
| Kinbombi\* | 78.0 |
| Rainbow Beach | 11.3 |
| Tansey\* | 85.4 |
| Theebine\* | 52.2 |
| Tin Can Bay | 1.8 |
| Traveston | 27.4 |
| Woolooga\* | 58.5 |

\*Indicates those population centres outside the 30km from the coastline range.

###### Facility Use

Boat launching facility usage statistics

| Facility ID | Facility name | Total reports | Gympie | Sunshine Coast | Brisbane | Moreton Bay | Fraser Coast | Gold Coast | Logan | Noosa | Redland | Ipswich | Other LGAs |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Total |  | 21675 | 6274 | 2852 | 2659 | 2015 | 992 | 940 | 714 | 666 | 596 | 595 | 3372 |
| Total % |  | 100% | 28.9% | 13.2% | 12.3% | 9.3% | 4.6% | 4.3% | 3.3% | 3.1% | 2.7% | 2.7% | 15.6% |
| WI81 | Tin Can Bay, Norman Point | 12270 | 34.6% | 10.3% | 10.9% | 8.5% | 4.8% | 4.1% | 2.9% | 2.3% | 2.6% | 2.3% | 16.6% |
| WI31 | Carlo Point, Carlo Road | 3594 | 18.0% | 12.1% | 16.6% | 10.5% | 3.6% | 6.4% | 4.7% | 1.9% | 3.3% | 4.5% | 18.4% |
| WI11 | Borumba Dam, Imbil | 2417 | 17.6% | 31.5% | 10.7% | 10.0% | 4.5% | 2.4% | 2.5% | 9.7% | 2.3% | 2.0% | 6.9% |
| WI50 | Bullock Point | 2020 | 17.4% | 14.7% | 16.4% | 11.9% | 5.3% | 5.9% | 4.0% | 2.2% | 3.7% | 3.8% | 14.8% |
| WI21 | Toolara | 1374 | 44.2% | 6.7% | 9.5% | 8.4% | 3.8% | 2.4% | 3.3% | 2.3% | 2.2% | 1.7% | 15.5% |

|  |  |  |
| --- | --- | --- |
|  |  | BMT is a leading design, engineering, science and management consultancy with a reputation for engineering excellence. We are driven by a belief that things can always be better, safer, faster and more efficient. BMT is an independent organisation held in trust for its employees. |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  | Contact us  enquiries@bmtglobal.com  www.bmt.org  Follow us  www.bmt.org/linkedin LinkedIn desc  www.bmt.org/youtube YouTube logo.  www.bmt.org/twitter Twitter logo.  www.bmt.org/facebook Facebook logo. |  |
|  | Level 5  348 Edward Street  Brisbane  QLD 4000  Australia  +61 7 3831 6744 |  | Registered in Australia  Registered no. 010 830 421  Registered office  Level 5, 348 Edward Street,  Brisbane QLD 4000 Australia |  |  |  |  |
|  | For your local BMT office visit www.bmt.org | | |  |  |  |  |  |