



## Council Strategy

# Recreational Boating Facilities

# Strategic Plan 2016

*This study has been funded by the Department of Transport's  
Recreational Boating Facilities Scheme and the Department of Regional Development's  
Royalties for Regions Funding.*

City of Albany 2016

102 North Road, Yakamia WA 6330 | PO Box 484, ALBANY WA 6331

Tel: (08) 9841 9333 | Fax: (08) 9841 4099 | Email: [staff@albany.wa.gov.au](mailto:staff@albany.wa.gov.au) | Website: [www.albany.wa.gov.au](http://www.albany.wa.gov.au)

<b>Document Approval</b>			
<b>Document Development Officer:</b>		<b>Document Owner:</b> <i>(Member of EMT)</i>	
Manager, City Engineering		Executive Director Works & Services	
<b>Document Control</b>			
<b>File Number - Document Type:</b>	CM.STD.6 – Strategy		
<b>Synergy Reference Number:</b>	OS17137054		
<b>Meta Data: Key Search Terms</b>	Boating, ramps, facilities, recreational		
<b>Status of Document:</b>	Final		
<b>Document file details:</b>	Location of Document: Intranet & Internet		
<b>Quality Assurance:</b>	Chief Executive Officer, Executive Management Team, Council Committee, and Council.		
<b>Distribution:</b>	Internal Document, Public Document		
<b>Document Revision History</b>			
<b>Version</b>	<b>Author</b>	<b>Version Description</b>	<b>Date Completed</b>
0.1	Manager, City Engineering	Final draft for Council adoption.	27/10/2016
0.1	Manager, City Engineering	Adopted by Council on 22 November 2016.	22/11/2016

## TABLE OF CONTENTS

Executive Summary .....	5
1.1. Background .....	8
1.2. Scope of Plan .....	9
2. Literature Review .....	10
2.1. Literature Review .....	10
2.1.1. <i>Report on Albany Harbour (Tydeman 1948)</i> .....	10
2.1.2. <i>Geological Report: Albany Harbour WA (CZM 1971)</i> .....	10
2.1.3. <i>Environmental Protection Authority Estuaries of the Shire of Albany (Clark and</i> .....	10
2.1.4. <i>Department of Transport Strategic Plan for Maritime Facilities (Transport 1995)</i> .....	10
2.1.5. <i>Albany Harbour Planning Strategies (BSD 1997)</i> .....	11
2.1.6. <i>Albany Boat Harbour: Demand Study (IMC 2001)</i> .....	11
2.1.7. <i>Albany Boat Harbour Desktop Preliminary Study (DPI 2003)</i> .....	11
2.1.8. <i>South Coast Recreational Fishing Survey (Smallwood and Sumner 2007)</i> .....	12
2.1.9. <i>Demark Strategic Boating Plan (Estill 2007)</i> .....	12
2.1.10. <i>Southern Shores: A Strategy to Guide Coastal Zone Planning and Management in the South Coast Region of Western Australian (SCNRM 2009)</i> .....	12
2.1.11. <i>Capes Region Boating Strategy (Shore Coastal 2010)</i> .....	12
2.1.12. <i>Peel Region Recreational Boating Facilities Study (DoT 2011)</i> .....	12
2.1.13. <i>Department of Transport brochures on Albany boating facilities (2013-2014)</i> .....	12
2.1.14. <i>Condition Assessment of Boardwalks and Jetties (MRA 2015)</i> .....	13
2.1.15. <i>Aboriginal Heritage Enquiry System</i> .....	13
2.2. Data Gap Assessment .....	14
3. Inspection of Boating Facilities.....	15
3.1. Boat Launching Facilities .....	15
3.2. Associated Facilities.....	15
3.2.1. <i>Boat Trailer Parking</i> .....	15
3.2.2. <i>Community/User Facilities</i> .....	16
3.3. Survey .....	17
3.4. Coastal Exposure .....	20
3.4.1. <i>Oyster Harbour</i> .....	20
3.4.2. <i>Princess Royal Harbour</i> .....	22
3.4.3. <i>King George Sound</i> .....	22
3.4.4. <i>Southern Ocean Beaches</i> .....	23
3.4.5. <i>Wilson Inlet</i> .....	24
3.5. Boat Ramp Condition Assessment.....	24
3.6. Additional Sites.....	25
4. Boating Demand .....	29
4.1. Population .....	29
4.1.1. <i>Historic Population Growth</i> .....	30
4.1.2. <i>Projected Population Growth</i> .....	32
4.2. Vessel Registrations.....	32
4.2.1. <i>Projected Growth in Vessel Registrations</i> .....	33
4.3. Peak Boating Demand .....	33
4.3.1. <i>Peak Demand Model (Method 1)</i> .....	34
4.3.2. <i>Daily Launch and Retrieval Counts (Method 2a)</i> .....	34

4.3.3.	Traffic Counts (Method 2b).....	37
5.	Community Consultation .....	39
5.1.	Internal Consultation .....	39
5.2.	Stakeholder Workshop .....	39
5.3.	Lower Kalgan Site Visit and Workshop .....	40
5.4.	Further Consultation .....	42
6.	Strategic Planning .....	43
6.1.	Boating Demand .....	44
6.1.1.	Present Peak Boating Demand.....	44
6.1.2.	Future Demand .....	45
6.2.	Existing Boating Facilities .....	46
6.2.1.	Type of Facilities .....	46
6.2.2.	Parking Capacity.....	51
6.2.3.	Boat Launching Capacity.....	52
6.2.4.	Condition of Existing Boating Facilities.....	53
6.2.5.	Proximity of Boating Facilities to Population and Population Growth .....	53
6.3.	Stakeholder Input .....	55
6.4.	Strategic Constraints .....	57
6.5.	Financial Considerations.....	59
6.5.1.	Nominal Asset Value .....	59
6.5.2.	Maintenance Costs .....	61
6.5.3.	Cost Benefit Considerations.....	62
6.6.	Sea Level Rise Considerations .....	62
7.	Discussion .....	64
7.1.	Improvements to Existing Facilities .....	64
7.1.1.	Emu Point.....	65
7.1.2.	Lower King.....	66
7.1.3.	Cheynes Beach.....	68
7.1.4.	Cosy Corner (Hartmans).....	70
7.1.5.	Other Sites .....	73
7.2.	Rationalisation of Existing Facilities.....	74
7.3.	Maintenance of Existing Facilities .....	75
7.4.	Potential New Facilities .....	75
7.5.	Boating Safety.....	76
8.	Implementation.....	78
9.	Recommendations .....	80
10.	References .....	82

## **Executive Summary**

With its magnificent coastline and river ways Albany is a popular area for motorised recreational boating in particular for fishing but including general enjoyment of river ways and coastal areas and for other recreational pursuits. Recreational boating facilities are important to the City of Albany. They provide access for the boating public to the region's magnificent coastline and river ways.

Similar to many other local governments the City's recreational boating facilities have been developed over the years with little strategic planning. Some are well placed and in excellent condition but others are underutilised and in poor condition.

The City of Albany received a Recreational Boating Facilities Scheme (RBFS) grant from the Department of Transport (DoT) in 2015 to undertake a strategic plan for boating facilities in the Albany municipality. This scheme provides funding for planning and construction of recreational public boating infrastructure in WA.

The City engaged Seashore Engineering in August 2015 to undertake this study, to ensure a rational and sustainable approach to future provision of recreational boating facilities in the municipality. The focus is on development of improved, safe and appropriate facilities for recreational boating users (in particular motorised) in Albany.

### ***Literature Review***

The available data has been reviewed and is considered reasonable for a strategic assessment of boating facilities within the City of Albany, however data gaps were identified. Local bathymetry and inshore wave conditions for the assessment of coastal exposure is limited at many boating facilities. The peak boating demand assessments have a high degree of uncertainty and require ongoing data collection to monitor and assess future demand.

### ***Inspection of Boating Facilities***

In general the boat facilities inspected are in reasonable condition and suitable for their intended purpose, provided ongoing maintenance of access roads and boat launching facilities occurs. Several rural ramps require ongoing maintenance work.

### ***Boating Demand***

The assumed peak boating demand in the City of Albany is 290 boat launches per day ( $\pm 35\%$ ), focused on the urban boating facilities. Future demand (20yrs) is assumed to be 400 boat launches per day, based on an average 2%p.a. growth rate.

Demand is highly variable throughout the year. Based on camera counts over 12 months at Emu Point Boat Harbour, the 98<sup>th</sup> percentile of peak boating demand (i.e. boat demand exceeded 7 days per year) is almost half the peak boating demand (i.e. the busiest day of the year).

Demand is also highly variable throughout the City. Whilst in theory there is enough boat trailer parking capacity in the City of Albany to accommodate present demand, this demand is focussed on Emu Point.

### **Community Consultation**

The key stakeholder workshop provided critical local knowledge and focus to the strategy, which resulted in tangible recommendations for improvement to boating facilities. In particular stakeholders identified two urban sites (Emu Point, Lower King) and two rural sites (Cheynes Beach, Hartmans) as priority sites. Targeted consultation was also undertaken with a small group of stakeholders along the Lower Kalgan River.

Feedback from the Stakeholder Reference Group and elected members on the recommendations of the draft strategic plan is recommended, together with targeted consultation with indigenous groups and the Nullaki residents association, prior to seeking wider public consultation on the strategic plan.

### **Strategic Planning**

The Albany Boat Harbour and Emu Point Boat Harbour are the key facilities for recreational boat launching in the City of Albany. The availability of two boat harbours (Level 6) for recreational boat launching in the City of Albany compares favourably with similar local government areas in WA, where there is generally only one boating facility of this size available to local boat users.

Whilst there are numerous small local boat launching facilities, there are no District or Regional boat launching facilities in the City of Albany.

The current boating facilities generally meet current demand. On peak days, however, there is excessive demand on the urban ramps and a shortage of trailer parking around Emu Point. In addition, rural facilities such as Cheynes Beach struggle with the peak tourist demand. Effective boat trailer parking layouts, with allowance for overflow parking and single vehicle parking (that otherwise park in trailer bays) are required to manage peak demand.

Demand for boating facilities around the urban area is expected to continue to grow. There is a need to plan for additional capacity near the urban area to cater for this growth.

Strategic constraints for meeting future demand have been identified for each of the four priority sites following assessment of coastal exposure, tenure, topography/geology, location, adjacent uses, potential environmental issues and available standards and guidelines.



**Emu Point Boating Facility**

### **Improvements to Boat Launching Facilities**

The capacity and utility of the Emu Point facility can be improved through modification of the trailer parking layout and replacement of the timber finger jetty, which is nearing the end of its design life, with a wider jetty/pontoon. This is likely to require some realignment of the ramps. The development of a Master Plan to accommodate future demand is recommended.

The peak season capacity at Cheynes Beach and Cosy Corner (Hartmans) should be improved through maintenance of gravel parking and ramp approaches and improved delineation of parking bays and signage. Recommendations for other sites are also provided.

The provision of ACROD bays and floating pontoons at boating facilities for Assisted Universal Access should be reviewed.

### **Maintenance of Existing Facilities**

Previous studies have identified that the timber jetty at Emu Point requires replacement within 2-5 years, and immediate corrosion protection is required at the Little Grove jetty.

Works are also required to boat launching, parking and community/user facilities. A review of asset values and maintenance expenditure for boating facilities is also recommended.

### **Rationalisation of Existing Facilities**

Opportunities to rationalise facilities at Nullaki Peninsula and smaller sites on Oyster Harbour should be pursued. In particular, consultation with the Nullaki Residents Association regarding the potentially high future maintenance costs of the facility is recommended.

### **New Boat Launching Facilities**

Lower King provided the best opportunity to construct a new boating facility to meet future demand and alleviate pressure at Emu Point. This site is close to areas of high population density and population growth. The design and timeframe for constructing a new facility at this site should be subject to further monitoring of boating demand (Recommendation 1) and a consultative Master Planning process.

The installation of a third boat ramp and securing of overflow parking areas should be investigated for Albany Boat Harbour to accommodate longer-term demand within Princess Royal Harbour.

### **Boating Safety**

The risks associated with open ocean launching should be investigated further, and consistent warning provided to the public through signage at boating facilities and boating guides. Options for improved sheltering should be considered.

### **Lower Kalgan River**

The development of a feasibility study for the provision of boating facilities along the Lower Kalgan River is recommended.

## Introduction

### 1.1. Background

With its magnificent coastline and river ways Albany is a popular area for motorised recreational boating for the purposes of fishing, as well as general enjoyment of the scenic coastline and active pursuits such as water-skiing. Similar to many other local governments, the City of Albany's recreational boating facilities have been developed over the years with little strategic planning. While some facilities are well used and in excellent condition, others may be underutilised or in poor condition.

The City of Albany (CoA) received a Recreational Boating Facilities Scheme (RBFS) grant from the Department of Transport (DoT) in Round 19 (2014) to undertake a strategic plan for boating facilities in the Albany municipality. This scheme provides funding for planning and construction of recreational public boating infrastructure in WA.

The City engaged Seashore Engineering in August 2015 to undertake this study with the aim of establishing a rational and sustainable approach to future provision of recreational boating facilities in the municipality. The focus is on development of improved, safe and appropriate facilities for recreational boating (in particular motorised) users in Albany.

For the purpose of this study, the recreational *boating facility* refers to the site, such as Emu Point. Within each recreational boating facility there are:

- *Boat Launching Facilities:* This may include concrete or gravel ramps, finger jetties and for smaller facilities the sandy beach (i.e. boat launching occurs across the beach).
- *Parking Facilities:* This includes boat trailer parking bays (i.e. trailer bays) and single vehicle parking bays (i.e. car bays). These parking facilities may be paved and marked, or informal gravel parking or overflow parking areas.
- *Community / Users Facilities:* This may include toilets, fish cleaning facilities and BBQs that are used by both boat users and the wider public.

Larger boating facilities in close proximity to the residential area of Albany are referred to as *urban* sites for this study. Smaller facilities further from the townsite servicing a local demand are referred to as *rural* sites.



**Figure 0.1 Boat Launching Facilities at Emu Point (urban) and Cheynes Beach (rural)**



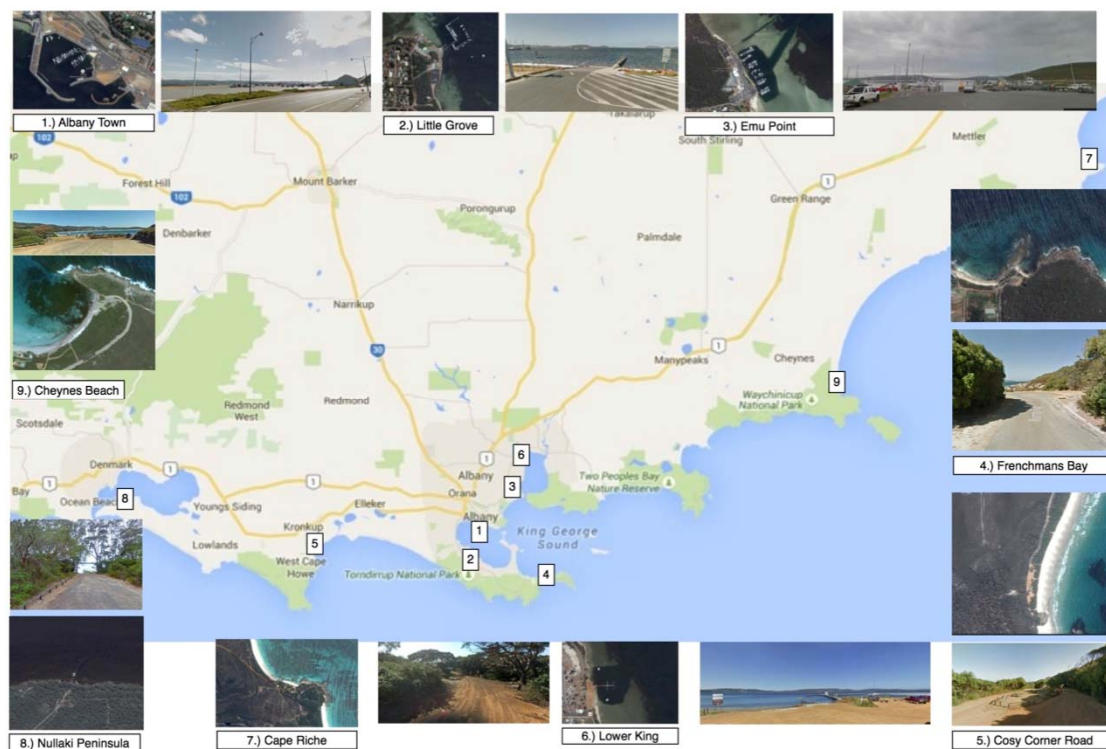
## 1.2. Scope of Plan

The scope of the Albany Recreational Boating Facilities Strategic Planning (RBFSP) project includes:

- Review of relevant literature and data gap assessment.
- Site inspections and condition assessment of recreational boating facilities.
- Assessment of present and future boating demand.
- Community consultation.
- Strategic planning for recreational boating facilities including boating demand, existing boating facilities, stakeholder input, strategic constraints and financial considerations.
- Recommendations for improvements to, rationalisation of and maintenance of existing facilities, potential new facilities and boating safety.

Additionally, a pre-feasibility study of boating facilities of the Lower Kalgan River has been undertaken and is provided as Attachment F.

The City initially identified nine (9) boating facilities for assessment (Figure 0.2). Four (4) additional sites were identified during the study and have been assessed in the strategic plan.



City of Albany: Recreational Boating Facilities Strategic Plan

**Figure 0.2 Site Overview**

## **2. Literature Review**

An initial literature review was undertaken at the Department for Transport library in Marine House, Fremantle. Limited reports were available from the City of Albany, however a search of online and library references was also undertaken. This is summarised in Section 2.1.

The available references referred broadly to boating in the Albany region. Further assessment of available data at each boating facility including topographic and bathymetric data; oceanographic and coastline movement data; geotechnical, cadastral and boating demand data; was used as the basis for the gap analysis in Section 2.2.

### **2.1. Literature Review**

#### **2.1.1. Report on Albany Harbour (Tydeman 1948)**

Written commentary on the suitability of the coastline in the Albany region for the launching and sheltering of boats dates back to the turn of the nineteenth century. In 1948 FWE Tydeman prepared a Report on Albany Harbour for Government, which identified shipping and boating facilities in Princess Royal Harbour.

#### **2.1.2. Geological Report: Albany Harbour WA (CZM 1971)**

Coastal Zone Management Consultants analysed laser levels in the vicinity of the town harbour from a geological perspective. The report includes seabed contours in the harbour vicinity and a geological analysis of this area.

#### **2.1.3. Environmental Protection Authority Estuaries of the Shire of Albany (Clark and Hodgkin 1990)**

This forms part of the Estuarine Study Series as part of the State Conservation Strategy. The report describes catchment characteristics for the wider City of Albany area as well as details about the rivers, coastal features and landforms. The report then goes into more detail on Oyster Harbour including Landforms, water depths and sediments, water characteristics and descriptions of bar formations at the mouth of the estuary.

#### **2.1.4. Department of Transport Strategic Plan for Maritime Facilities (Transport 1995)**

This strategic plan covers the State Government's involvement in the planning, development and management of maritime facilities. It includes an assessment of current and potential future demand and uses for maritime facilities around the state. The strategy identifies a number of issues including the difficulty in assessing demand, the criteria and requirements for the provision of new facilities, the roles and responsibilities of the public and private sectors, the sources of funding, the level of cost recovery and subsidisation and the external benefits from maritime facilities.

The Strategy addresses some of the issues raised by outlining the processes to be followed for the approval of public and private maritime infrastructure. Actions resulting from the Strategy include the development of a Manual of Design Standards for maritime facilities to be used in the development of future maritime facilities

The findings of the demand assessment of the Strategy outline that between 1980 and 1990 the boating population stabilised at approximately 30 boats per 1000 people with the majority of these being small trailerable craft. It was considered that the fishing fleet was unlikely to expand, although a trend towards larger vessels was observed. There was projected to be an increase in the number of passenger vessels with the increase in tourist activity.

The appendices of the report offer a brief description of the boating facilities in and around the City of Albany. Criteria for funding public boat harbour are outlined including level of community support, financial and economic viability, boating safety considerations, statutory planning and environmental considerations.

#### **2.1.5. Albany Harbour Planning Strategies (BSD 1997)**

This Strategy's aim was to manage the harbours' multiple uses and facilitate an integrated and transparent approval process for development in the harbour areas. A major focus of the strategy is the relationship between the various management and regulatory authorities in a context where the management bodies included the Albany Port Authority, Shire of Albany, Department of Transport, Department of Fisheries and Albany Waterways Management Authority.

The Strategies include zones for different activities. It also includes reference to tensions between power boat racing or skiing and passive recreational activities on the King and Kalgan Rivers.



**Figure 2.1 Cape Riche Boating Facility**

#### **2.1.6. Albany Boat Harbour: Demand Study (IMC 2001)**

This report examined the demand for a new boat harbour at the Albany townsite. It includes extensive discussion of use and demand from the commercial sector, as well as consideration of safety issues. Observations around recreational boating include an estimate, provided by boating club members, of 50 trailer boats as the likely demand at any new boat harbour. There is also some discussion of the demand for boat pens for recreational users.

#### **2.1.7. Albany Boat Harbour Desktop Preliminary Study (DPI 2003)**

This Department of Transport study reviews the issues for the proposed Albany Boat Harbour. It covers a range of issues, including demand, environmental risk and feasibility of construction. The discussion of demand focuses more on the boating pen requirements than on boat launching facilities. The short section on boat ramps notes, "since Albany has a very high proportion of trailable boats, at least 2 ramps should be provided in the initial development". It also clarifies the associated parking (80 car/trailer parks) required under the AS 3962. The report also notes at "large dedicated boat ramp parking areas are vacant on most days of the year. It would thus be recommended that ramp parking for this tourist-oriented harbour be carefully incorporated into multi-user parking and parkland space" and that half the bays could be unpaved since they would only be used on peak boating days.

**2.1.8. South Coast Recreational Fishing Survey (Smallwood and Sumner 2007)**

This Department of Fisheries report surveyed fishing effort in the south coast bioregion in 2002/03, including Oyster Harbour and Princess Royal Harbour. This included boat and shore based fishing, with records included of local/visitor ratio for boat based fishing in Princess Royal Harbour and Emu Point.

**2.1.9. Demark Strategic Boating Plan (Estill 2007)**

This report is provide an overview of the research undertaken on boating in the Shire of Demand, in particular Wilson Inlet, and presents feedback gained from two forums with key stakeholders. The findings of these activities will be used to inform the development of a Strategic Boating Facilities Plan for the Denmark River and Wilson Inlet to the year 2025.

**2.1.10. Southern Shores: A Strategy to Guide Coastal Zone Planning and Management in the South Coast Region of Western Australian (SCNRM 2009)**

This report gives general guidance to South Coast councils on coastal planning. While the report does not generally deal with the specifics of the recreational boating sites, it does note the way the Wellstead community is sharing management of the Cape Riche facility with local government and the DEC.

**2.1.11. Capes Region Boating Strategy (Shore Coastal 2010)**

This reports provides a planned boating strategy for the Capes Region of Western Australia including the City of Busselton and Shire of Augusta Margaret River. This report included, a review of previous studies, assessment of boating demand, inspections of 20 boating facilities and community consultation. Recommendations were made with regard to development of strategically located district boat launching facilities at existing sites.

**2.1.12. Peel Region Recreational Boating Facilities Study (DoT 2011)**

The *Peel Region Recreational Boating Facilities Study* examines the recreational boating facility requirements for the Peel region to 2031 and proposes a number of recommendations to address the forecast boating demand.

**2.1.13. Department of Transport brochures on Albany boating facilities (2013-2014)**

The Department of Transport has produced a number of brochures, which outline boating facilities in the Albany Region. Together with basic written information, they typically include a photo or map with labels for relevant facilities. The relevant brochures are

- Albany Waterfront Marina (DoT 2014)
- Boating Guide Albany- Marine Safety (DoT 2013)
- Emu Point Boat Harbour (Albany) (DoT 2014)
- Albany (Emu Point) Maritime Facility: Vessel Accommodation Plan (DoT 2014)
- Albany Waterfront Marina Vessel Accommodation Plan (DoT 2014)



**Figure 2.2 Albany Boat Harbour**

#### **2.1.14. Condition Assessment of Boardwalks and Jetties (MRA 2015)**

This report gives condition assessments of various boardwalks and jetties around the City of Albany, including the finger jetties and associated boat ramps at Emu Point, Little Grove, Lower King and Nullaki. Items identified as requiring attention include the finger jetty piles at Emu Point and Little Grove.

#### **2.1.15. Aboriginal Heritage Enquiry System**

The Department of Aboriginal Affairs' Aboriginal Heritage Enquiry System has been reviewed for registered Aboriginal sites in the vicinity of boating facilities. The following registered sites were identified:

- ID636: Oyster Harbour (total); Mythological
- ID637: Green Island; Historical, Mythological
- ID5744: Oyster Harbour (Albany); Artefacts/Scatter, Fish Trap, Camp, Other.
- ID5748: Sweep Rock; Grinding Patches/Grooves.
- ID5750: Two Peoples Bay North; Grinding Patches/Grooves.



## 2.2. Data Gap Assessment

A data gap analysis was undertaken to identify available data at each of the boat launching sites and requirements for further data collection. The results of this analysis are summarised in Table 2.1.

**Table 2.1 Data Gap Analysis**

Data	Albany Boat Harbour	Little Grove	Emu Point	Frenchman's Bay	Cosy Corner	Lower King	Cape Riche	Nullaki Peninsula	Cheynes Beach
<b>Topographic Data (onshore)</b>									
5m contours (Landgate)					☐		☐	☐	☐
DoW 1m contours	☐	☐	☐	☐		☐			
<b>Bathymetric Data (offshore)</b>									
High resolution nearshore hydrosurvey (DoT)	☐	☐	☐	☐		☐		☐	
West Australian Local Nautical Charts (Low Res Bathymetry) (DoT)	☐	☐	☐	☐		☐		☐	
Regional Nautical Charts (Low Res Bathymetry) Australian Hydrographic Service)	☐	☐	☐	☐	☐	☐	☐	☐	☐
<b>Water Levels</b>									
Ocean water levels (Albany)	☐	☐	☐	☐	☐	☐	☐	☐	☐
Ocean water levels (Bremer Bay)	☐	☐	☐	☐	☐	☐	☐	☐	☐
River flood levels						☐		☐	
<b>Wave Heights</b>									
Offshore wave heights (Albany)	☐			☐	☐		☐		☐
Inshore wave heights									
<b>Shoreline Movements</b>									
Rectified aerial photography	☐	☐	☐	☐	☐	☐	☐	☐	☐
Shoreline movements			☐						
<b>Geotechnical</b>									
Smartline coastal type	☐	☐	☐	☐	☐	☐	☐	☐	☐
Landform maps	☐	☐	☐	☐	☐	☐	☐	☐	☐
Geotechnical reports									
Geotechnical logs									
<b>Cadastral</b>									
Reserve/Land Tenure	☐	☐	☐	☐	☐	☐	☐	☐	☐
Roadlines	☐	☐	☐	☐	☐	☐	☐	☐	☐
Locality	☐	☐	☐	☐	☐	☐	☐	☐	☐
<b>Boating Demand</b>									
Traffic Counts		☐			☐	☐	☐		☐
Peak Traffic Counts			☐		☐	☐			☐
Boat Ownership	☐	☐	☐	☐	☐	☐	☐	☐	☐
Population Statistics	☐	☐	☐	☐	☐	☐	☐	☐	☐
Boat Launching Counts (DoF)			☐						

The following is noted:

- Topographic data at rural boating facilities is generally limited to 5m contours. Bathymetric data at these sites is also limited.
- There is very limited inshore wave height data to assess coastal exposure at the boating facilities.
- Geotechnical reports and logs are limited at most sites.
- Boating demand data is available for many sites, although traffic counts are not always at peak periods.

### 3. Inspection of Boating Facilities

Field Inspections of the 9 facilities outlined in the RFQ were conducted between 2<sup>nd</sup> September 2015 and 4<sup>th</sup> September 2015. Additional sites identified in the stakeholder workshop were inspected in March 2016. This included local survey pickup of ramp and carparks. The field survey sheets are included in **Error! Reference source not found.**

#### 3.1. Boat Launching Facilities

The number of boat ramps, jetties, the construction type and materials used in the ramp and the ramp approach details were all noted to identify the current launching and retrieval facilities. Table 3.1 provides a summary of the field inspection notes on boat ramp facilities.

**Table 3.1 Field Inspection Notes of Boat Launching Facilities**

ID	Ramp	No. Lanes:	Urban/Rural	Construction Type:	Finger Jetties:	Ramp Approach:
1	Albany Town Boat Harbour	2	Urban	Sectional concrete panels with waffle pattern and concrete kerbing.	1 x floating pontoon	2 separate lanes, not marked but with dedicated turning areas
2	Little Grove	1	Urban	Concrete Flexmat lower ramp with insitu concrete upper ramp	1 x timber jetty with concrete abutment	Straight from facility entrance, turning area not clearly defined
3	Emu Point	3	Urban	Concrete sectional ramp with diagonal grooves	1 x timber jetty with wooden piles, steel head stocks and 1x floating pontoon (relatively new)	Paved and marked ramp approach areas, however turning area not clearly defined. Old line marking still evident
4	Frenchman's Bay (Murray Rd)	1	Rural	Insitu Concrete	None	Bitumen sealed surface on steep hill
5	Cosy Corner (Hartmans) <sup>1</sup>	1	Rural	Gravel ramp onto beach for beach launching.	None	Down steep narrow gravel track.
6	Lower King	1	Urban	Flexmat ramp units below water with insitu concrete upper ramp, poured on top of flexmat. Concrete abutment and wooden kerbs.	One wooden finger jetty with 150mm high step down.	Gravel turn in from The Esplanade
7	Cape Riche	1	Rural	Gravel ramp on to beach for beach launching.	None	Gravel road, no clear turning area although plenty of area to turn
8	Nullaki Peninsula	1	Rural	Gravel upper with flexmat lower.	1 x timber jetty with two level landing approx. 35m long	Sealed bitumen
9	Cheyne's Beach	1	Rural	Gravel ramp onto beach for beach launching.	None	Bitumen surface, no clear delineation of ramp or turning area

#### 3.2. Associated Facilities

##### 3.2.1. Boat Trailer Parking

An assessment of available parking facilities was also made to determine the current capacity of each facility in terms of trailer and car parking bays. Where parking bays were not delineated an approximation of the likely number of trailer parking spaces was made.

Table 3.2 provides a summary of the field inspection notes for parking facilities at each boat ramp.

<sup>1</sup> Cosy Corner (Hartmans) boat launching facility was inspected in March 2016. Cosy Corner (Cosy Corner Rd) was inspected in September 2015 but identified as an "additional site" in this report (refer Section 3.6)

**Table 3.2 Field Inspection Notes on Parking Facilities**

ID	Ramp	Sealed (Trailer): Parking	Sealed Parking (car):	Sealed (ACROD): Parking	Unsealed Parking: Trailer	Overflow Parking: Trailer	Total number of Trailer Bays	Rigging Bays:	De-rigging Bays:	Boat washdown area / tap:
1	Albany Town Boat Harbour	72	4	0	0	On gravel area (~50)	122	0	0	Possibly combined washdown and fish cleaning facilities
2	Little Grove	22	0	0	0	Potential use of grassed area behind sailing club (~5)	27	0	0	None observed
3	Emu Point	53	7	2	0	On adjacent reserve (~10).	63	1	1	None observed
4	Frenchman's Bay (Murray Rd)	0	0	0	10		10	0	0	None observed
5	Cosy Corner (Hartmans)	0	0	0	8	On beach (~2)	10	0	0	None observed
6	Lower King	0	0	0	~ 20	On road reserve (~10)	30	0	0	None observed
7	Cape Riche	0	0	0	~ 5	In campsites (~5)	10	0	0	A number of non-potable water taps around
8	Nullaki Peninsula	~20	0	0	0	Parking possible on access road.	20	0	0	None observed
9	Cheyne Beach	~ 8	0	0	~7	Possibly along road.	15	0	0	None observed

### 3.2.2. Community/User Facilities

The community/user facilities included facilities in addition to the boat launching and parking facilities, such as BBQ areas, fish cleaning stations, toilet etc.

Table 3.3 outlines a summary of the community/user facilities available at each of the boat ramps inspected.



Table 3.3 Field Inspection Notes on Community/User Facilities

ID	Ramp	Toilets:	Lighting (ramp/jetty):	Lighting (carpark):	Drinking Water:	Shade Shelters:	Landscaping:	Fish Facilities: Cleaning	Bins:	Signage Safety): (Marine	Signage (General):	BBQ:
1	Albany Waterfront Marina	☐	1		☐		Some landscaping of traffic islands but minimal	☐	1	☐	RBFS signage Department of Fisheries (DoF) signage	
2	Little Grove		4	1			None observed		1	☐	Customs signage RBFS signage DoF signage	
3	Emu Point	☐	3	2	☐	☐	In landscaped area to north	☐	5-10	☐	Safety signage No end of ramp signs on jetty. Be prop aware sign on floating pontoon.	1
4	Frenchman's Bay (Murray Road)						None observed.		1	☐	Fisheries signage Safety signage Marine rescue signage	
5	Cosy Corner (Hartmans)						None observed		1		Coast Risk signage	
6	Lower King	☐					Grassed area to South with bin and small grassed area to North next to toilets.		3	☐	Safety signage RBFS signage	
7	Cape Riche	☐			☐	☐	Ramp surrounded by bushland	☐	2	☐	Fisheries signage.	2
8	Nullaki Peninsula						Grassed area to E of ramp with picnic tables			☐	RBFS signage	
9	Cheyne's Beach	☐					Grassed area next to fish cleaning station and BBQ area	☐	3	☐	Signage for fish cleaning station and for swimmers at Cheynes Beach	1

### 3.3. Survey

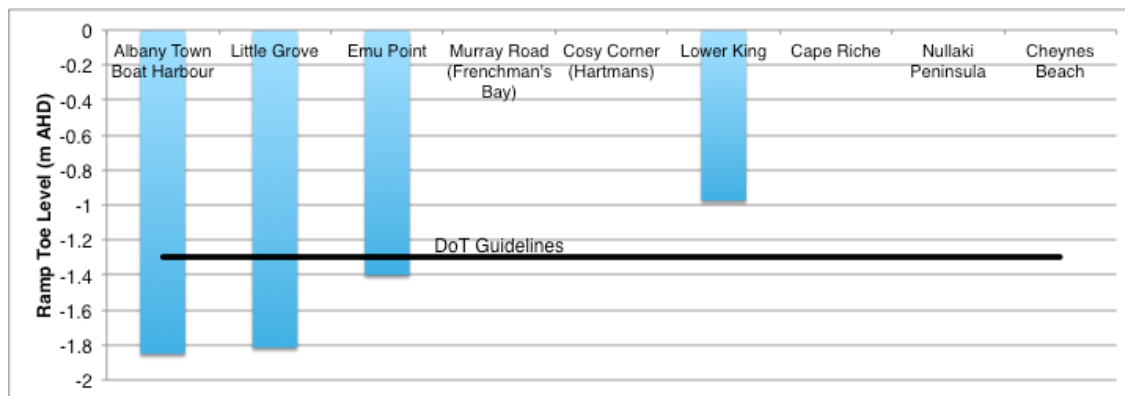
A typical section through the boat ramps was surveyed relative to ocean water levels during the site inspections using a Lufkin Automatic Level and staff (Figure 3.1)<sup>2</sup>.

<sup>2</sup> The survey accuracy is nominally  $\pm 0.15\text{m}$ .



**Figure 3.1 Typical Boat Ramp Section Survey (Cheynes Beach)**

The boat ramp toe elevations<sup>3</sup> are summarised in Figure 3.2. Department of Transport guidelines recommend a launch depth of 0.6m below Lowest Astronomic Tide for new facilities, allowing launching of reasonable size recreational vessels in most tidal conditions. In Albany, this corresponds to a level RL -1.3mAHD.



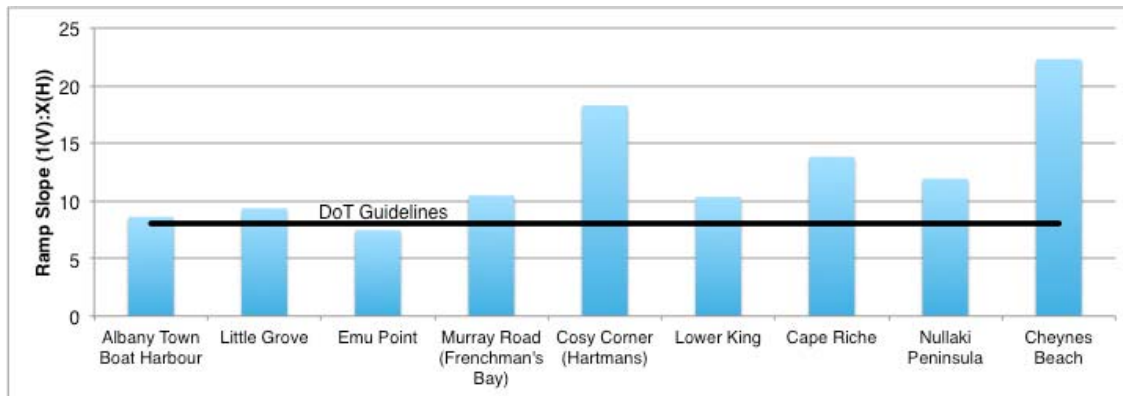
**Figure 3.2 Boat Ramp Toe Elevation (mAHD)**

It is noted that:

- Good launching depths are available at all tides at the main boating facilities at Albany Town Harbour, Emu Point and Little Grove.
- Surveyed depths at Lower King (RL-1.0mAHD) provide restricted launching conditions to larger vessels at lower tides.
- Surveyed depths at Nullaki Peninsula (RL-0.7mAHD) provide restricted launching conditions to most vessels at lower tides<sup>3</sup>.
- Rural ramps provide access to the back of the beach for beach launching. Vessel launching will be restricted by both tide, sea-state and beach condition.
- Depths are not provided for beach launching sites as they vary throughout the year, and the toe of the Murray Road boat ramp was not able to be readily surveyed.

The boat launching slopes are summarised in Figure 3.3. Department of Transport guidelines recommend a ramp slope of 8H:1V for new facilities.

<sup>3</sup> The survey method generally identifies the sand or ramp level. The presence of wrack was observed at a number of sites (Little Grove, Murray Rd, Lower King, Nullaki Peninsula, Cheynes Beach) that may further restrict launching.



**Figure 3.3 Surveyed Boat Launching Slopes**

It is noted that:

- Ramp slopes in the order of 8H:1V are available at most urban sites.
- The ramps at Lower King (10H:1V), Murray Road (10H:1V) and Nullaki (12H:1V) are slightly flatter, which can make launching and retrieval at lower tides more difficult.
- The assumed slope for the beach launching sites is the beach slope from the berm to the water level at the time of survey. Cheynes Beach is particular flat, with shallow water evident in the nearshore.

### **3.4. Coastal Exposure**

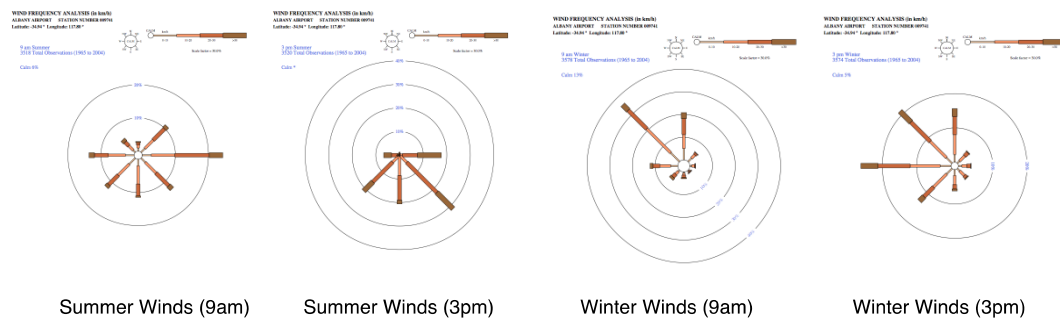
An initial assessment of coastal exposure was undertaken for the inspected sites. This included boat launching sites within Oyster Harbour, Princess Royal Harbour, King George Sound, Wilson Inlet and generally east facing beaches of the Southern Ocean.

#### **3.4.1. Oyster Harbour**

Oyster Harbour is a 16km<sup>2</sup> estuary that is shallow along the eastern shore but more than 5m deep near the western shore and the southern basin. The narrow entrance channel to King George Sound is scoured to over 10m deep between the sandy spit of Emu Point and the rock of the eastern shore (Clark and Hodgkin 1990). There are two main boat launching sites within Oyster Harbour, and a number of informal sites at the entrances to the King and Kalgan Rivers.

The Emu Point facility is located in a dredged basin along the south western corner of the Harbour and is generally sheltered from both summer south easterly winds (common in the afternoons) and winter storms from the north west (Figure 3.4). Whilst there is a 3km fetch exposure to summer easterly winds (common in the morning), the intertidal flats and commercial jetties provide additional shelter at the boat ramp.

The Lower King boat launching facility is located in a dredged basin along the north western corner of the Harbour and is generally exposed to summer winds from the east (morning) and south east (afternoon) (Figure 3.4). In particular there is a 4km fetch exposure to summer south easterly winds. Localised shelter is provided by a rock abutment to a commercial jetty. In general the site is more exposed than Emu Point (Figure 3.4).



**Figure 3.4 Oyster Harbour – Coastal Exposure**



### 3.4.2. Princess Royal Harbour

Princess Royal Harbour is a large natural harbour with a shipping channel to King George Sound. The southern and western sides of the harbour are relatively shallow with deeper waters to the north (Chart WA1083). There are two main boat launching sites within Princess Royal Harbour, and an informal site at Rushy Point (Figure 3.5).

The boat launching facility within Albany Boat Harbour is within protected waters, and is the only facility within the City of Albany likely to meet Australian Standards for safe boat launching throughout the year.

The Little Grove facility is located within a dredged basin along the south western shoreline of Princess Royal Harbour at Pagoda Point, adjacent to the Princess Royal Sailing Club. The site is exposed to summer winds from the east (~2km) through to the south east (4.5km). The intertidal flats provide some additional sheltering.

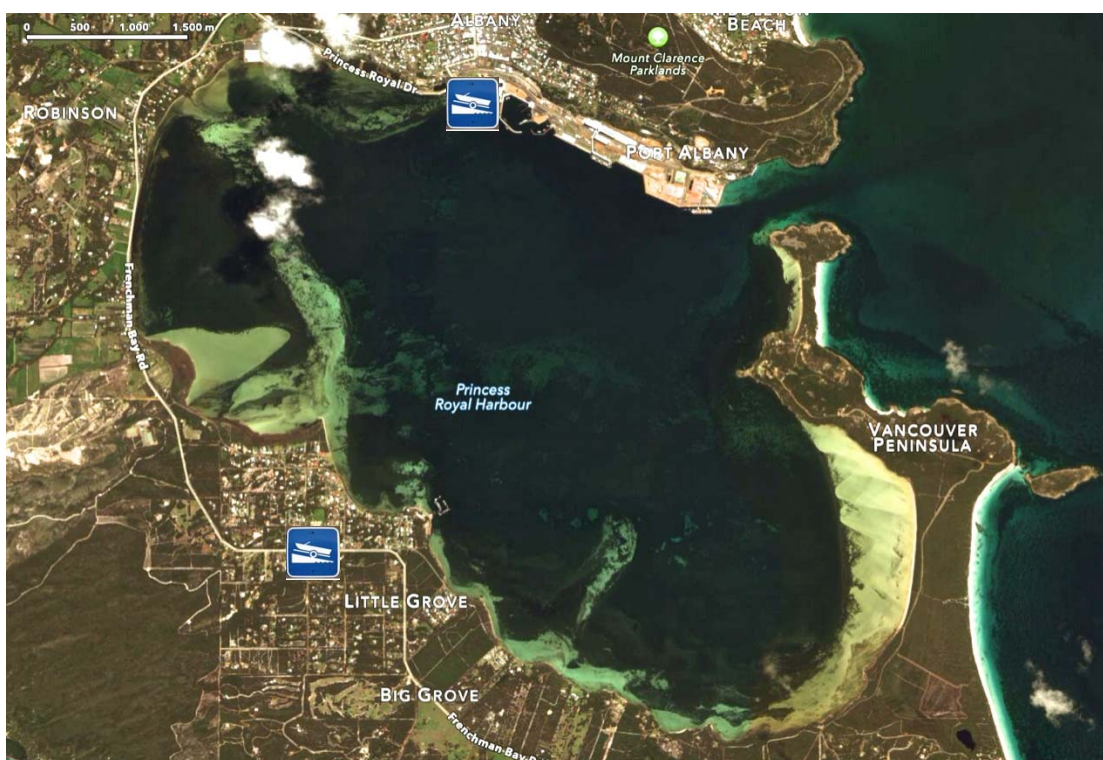
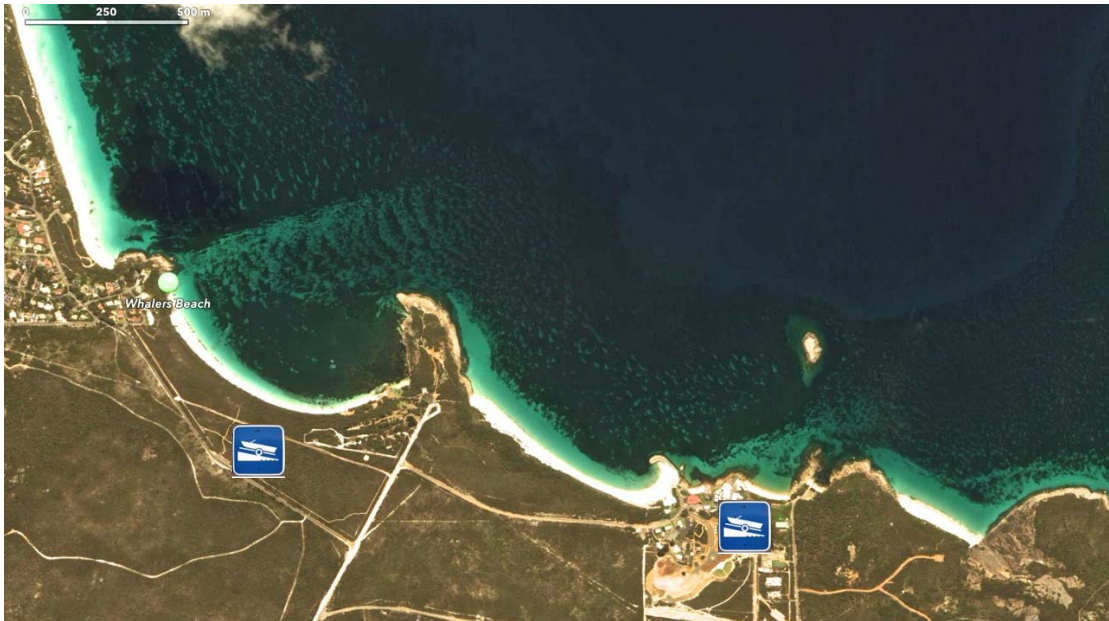


Figure 3.5 Princess Royal Harbour

### 3.4.3. King George Sound

Boat launching sites along Frenchman's Bay provide direct access to King George Sound. Whilst these typically north facing beaches are sheltered from summer winds, they are effectively open ocean sites exposed to ocean swells and longer period surges. Whilst a detailed assessment of exposure has not been undertaken, these sites can only be considered to be suitable for launching in calm weather and sea-state by experienced boat users familiar with local conditions.



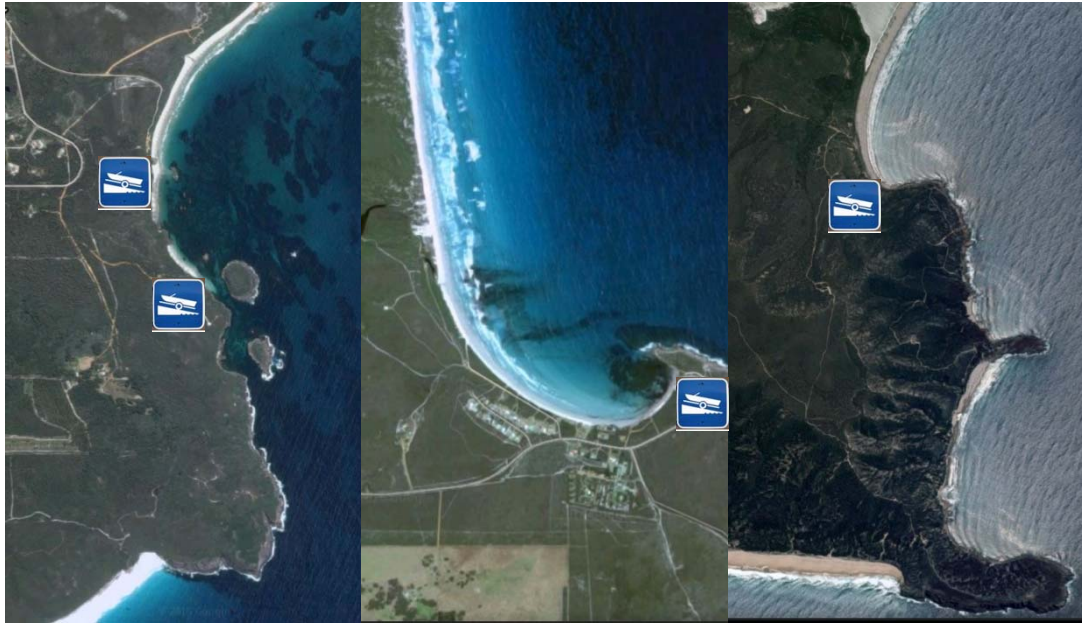
**Figure 3.6 Frenchman's Bay**

#### **3.4.4. Southern Ocean Beaches**

Boat launching sites along the southern ocean beaches are generally located at the southern end of large, east facing embayments with sandy beaches. This provides relative shelter in the lee of a local rocky point, headland or island. In particular:

- Cosy Corner (Hartmans): Launching across a north east facing sandy beach in the lee of a small island.
- Cheynes Beach: Launching across a shallow north-west facing beach in the lee of a headland. Nearshore waters are shallow and local reefs provide additional protection.
- Cape Riche: Launching across an east facing sandy beach in the lee of a large headland.

Whilst a detailed assessment of exposure has not been undertaken, it is clear there will be very few days each year where the ramp will be sheltered from waves larger than 0.2m, as is required by Australian Standards. As such, these sites are only considered be suitable for launching in calm weather and sea-state by experienced boat users familiar with local conditions.



**Figure 3.7 Coastal Exposure at Cosy Corner, Cheynes Beach and Cape Riche.**

#### **3.4.5. Wilson Inlet**

The boat ramp on Nullaki Peninsula is located on the southern shoreline and provides access to the Wilson Inlet for residents of the local subdivision and surrounding farming properties. The inlet is generally shallow and intermittently open to the ocean. The ramp is sheltered from typical summer winds but exposed to the north.

### **3.5. Boat Ramp Condition Assessment**

A visual condition assessment of the boat ramps was undertaken during the inspections (**Error! Reference source not found.**). This included inspection for cracking, deterioration, scour (downdrift and undermining), kerbing damage, and panel subsidence. A number of the rural 'boat ramps' are gravel access tracks to the beach, with boat launching directly from the sandy beach.

The condition of a number of these boat ramps had been recently assessed during inspections of the associated finger jetties (MRA 2015). For consistency, the condition rating and maintenance priority scales used in this previous report for the City of Albany have been applied (Refer **Error! Reference source not found.**).

In general the ramps are in reasonable condition and suitable for their intended purpose. The 'urban' ramps are generally concrete panels, flexmats or slabs with some of the older structures potentially requiring maintenance or replacement in 5-10 years. The rural ramps generally require more immediate maintenance, although this would be limited to inspection, grading, drainage and resurfacing of gravel access ramps to the beach.



**Table 3.4 Boat Ramp Condition Rating and Maintenance Priority**

ID	Ramp	No. Lanes:	Urban/ Rural	Construction Type:	Cond. Rating <sup>4</sup>	Maint . Priority <sup>5</sup>	Notes:
1	Albany Town Boat Harbour	2	Urban	Concrete panels.	1	A	
2	Little Grove	1	Urban	Concrete Flexmat and concrete slab.	1	B	Immediate maintenance of jetty abutment scour noted in MRA (2015)
3	Emu Point	3	Urban	Concrete panels	1	B	
4	Frenchman's Bay	1	Rural	Concrete slab.	2	B*	Formwork for slab exposed and broken. Inspection for asbestos.
5	Cosy Corner	1	Rural	Gravel beach access.	3	D	
6	Lower King	1	Urban	Concrete Flexmat and concrete slab.	2	C	
7	Cape Riche	1	Rural	Gravel beach access.	3	D	
8	Nullaki Peninsula	1	Rural	Concrete flexmat and gravel.	3	D*	Immediate maintenance of ramp launch depths through removal of wrack noted in MRA (2015)
9	Cheynes Beach	1	Rural	Gravel beach access.	3	D	Gravel

### 3.6. Additional Sites

There were a number of additional boat launching sites that were identified during the stakeholder workshop (refer Section 5). Detailed inspections were undertaken at four of these additional sites, being:

- 10: Cosy Corner (Cosy Corner Road)
- 11: Frenchman's Bay (Frenchman's Bay Road)
- 12 Two Peoples Bay
- 13 Bettys Beach

Boat launching sites on Princess Royal Harbour (Princess St), Lower King Bridge, Nanarup Rd (Lower Kalgan) and East Bay (Two Peoples Bay) were also briefly inspected. These are smaller beach launching sites with minimal parking and are not considered in further detail in this study.

With regard to the four additional sites it is noted that:

- Cosy Corner (Cosy Corner Rd) provides additional beach launching capacity near Cosy Corner (Hartmans) but the site is probably less sheltered and the beach softer than Hartmans.
- Frenchman's Bay (Frenchman's Bay Rd) provides additional beach launching capacity along Vancouver Peninsula to Murray Rd. Whilst the site only provides beach launching it has additional sheltering from the east (refer Figure 3.6).
- Two Peoples Bay provides relatively sheltered ocean beach launching about 30min east of Albany, with access to deep water fishing and good onshore facilities.

<sup>4</sup> Condition rating assumes a remaining percentage of design life as 1: 100% – 80%, 2: 80% – 60%, 3: 60% – 40%, 4: 40% – 20%, 5: 20% – 0%

<sup>5</sup> Maintenance Priority assumes A: No maintenance items recommended within next 10 years, B: Maintenance/replacements within 5 – 10 years, C: within 2 – 5 years, D: within 1 – 2 years, E: recommended immediately

- Bettys Beach provides beach launching for commercial salmon fishermen but access is difficult for recreational boat launching.



**Figure 3.8 Boat Launching at Cosy Corner (a), Frenchman's Bay (b), Two Peoples Bay (c) and Bettys Beach (d).**

The following tables summarise the boating, parking and community/user facilities at the four additional sites inspected.

**Table 3.5 Field Inspection Notes of Boat Launching Facilities (Additional Sites)**

ID	Ramp	No. Lanes:	Urban/ Rural	Construction Type:	Finger Jetties:	Ramp Approach:
10	Cosy Corner (Cosy Corner Rd)	1	Rural	Limestone access ramp for beach launching.	None	Single lane track.
11	Frenchman's Bay (Frenchman's Bay Rd.)	1	Rural	Gravel access ramp for beach launching.	None	Paved road to gravel turnaround area.
12	Two Peoples Bay	1	Rural	Paved access with gravel ramp for beach launching.	None	Paved road and turnaround area. Scour at edge of paved turnaround.
13	Bettys Beach	1	Rural	Sand access track for beach launching.	None	Paved road to gravel turnaround area.

**Table 3.6 Field Inspection Notes on Parking Facilities (Additional Sites)**

ID	Ramp	Sealed Parking (Trailer):	Sealed Parking (car):	Sealed Parking (ACROD):	Gravel Parking (Trailer):	Overflow Parking:	Total number of Trailer Bays	Rigging Bays:	De-rigging Bays:	Boat washdown area / tap:
10	Cosy Corner (Cosy Corner Rd)	0	0	0	5	~10	15	0	0	None observed.
11	Frenchman's Bay (Frenchman's Bay Rd.)	0	0	0	10	0	10	0	0	None observed
12	Two Peoples Bay	10	10	1	0	Nominally 12 on beach.	22	0	0	None observed
13	Bettys Beach	0	0	0	5	Approx. 5 trailer bays within campsite.	10	0	0	None observed



**Figure 3.9 Frenchman's Bay Boat Launching Facility**

**Table 3.7 Field Inspection Notes on Community/User Facilities (Additional Sites)**

ID	Ramp	Toilets:	Lighting (carpark):	Lighting (ramp/ettv):	Drinking Water:	Shade Shelters:	Landscaping:	Fish Cleaning Facilities:	Bins:	Signage (Marine Safety):	Signage (General):	BBQ:
10	Cosy Corner (Cosy Corner Rd)	☐				☐	Numerous grassed areas associated with picnic /BBQ sites		☐	☐	DoF signage Vehicle access signage Safety signage	☐
11	Frenchman's Bay (Frenchman's Bay Rd.)	☐	☐			☐	Numerous grassed areas associated with picnic /BBQ sites		☐	☐	DoF signage Safety signage	☐
12	Two Peoples Bay	☐			☐	☐	Numerous grassed areas associated with picnic /BBQ sites		☐	☐	DoF signage Safety signage No Driving on Beach signs.	☐
13	Bettys Beach	☐					Small picnic area.	☐	☐		Safety signage	

## 4. Boating Demand

### 4.1. Population

The estimated residential population of the City of Albany as of June 2014 was 36,940<sup>6</sup> persons, one of the largest regional local government areas in Western Australia. The population size is similar to the City of Busselton (35,562) and City of Bunbury (34,225), which are also located on the coast and have substantial recreational boating communities.

Population distribution within the City of Albany has been assessed based on the Australian Bureau of Statistics 2011 Census data and their Aggregated Census Collection Districts (ACCD). The City of Albany population is concentrated in the urban areas of Albany itself (Figure 4.1). This also shows population density together with the locations of the main boating facilities. In general, boating facilities are available within 10km of higher density population areas. All outlying districts have population density lower than 200 persons/km<sup>2</sup> (Figure 4.2).

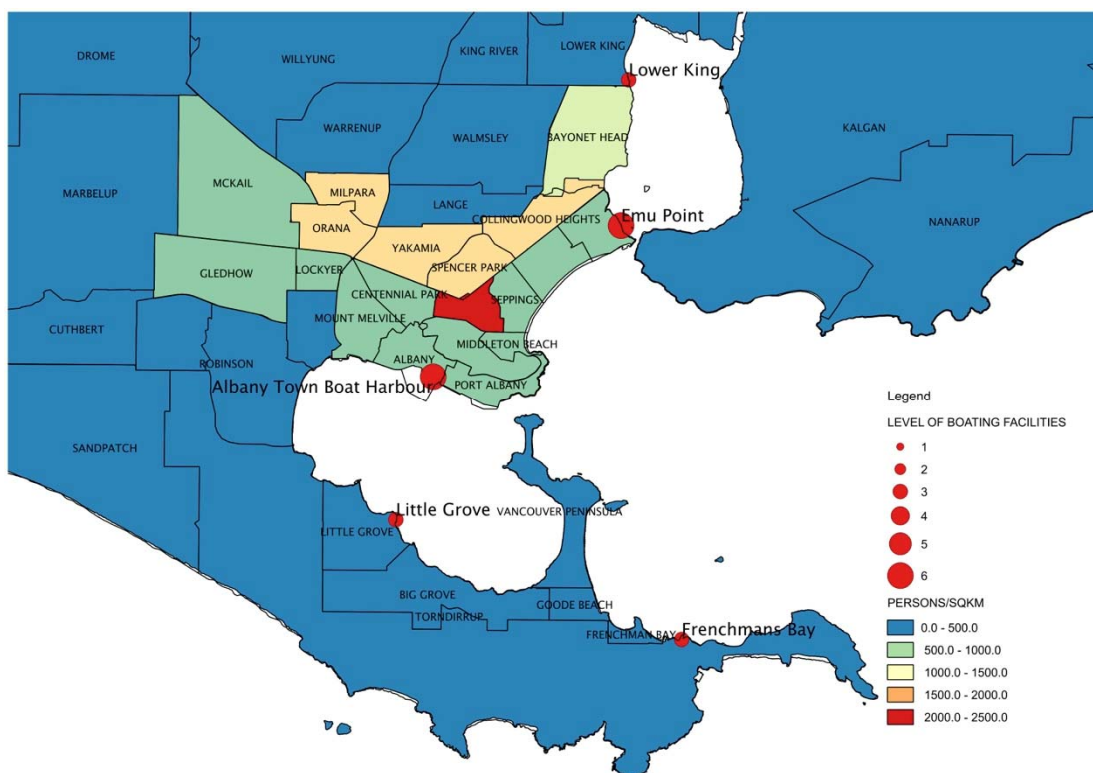
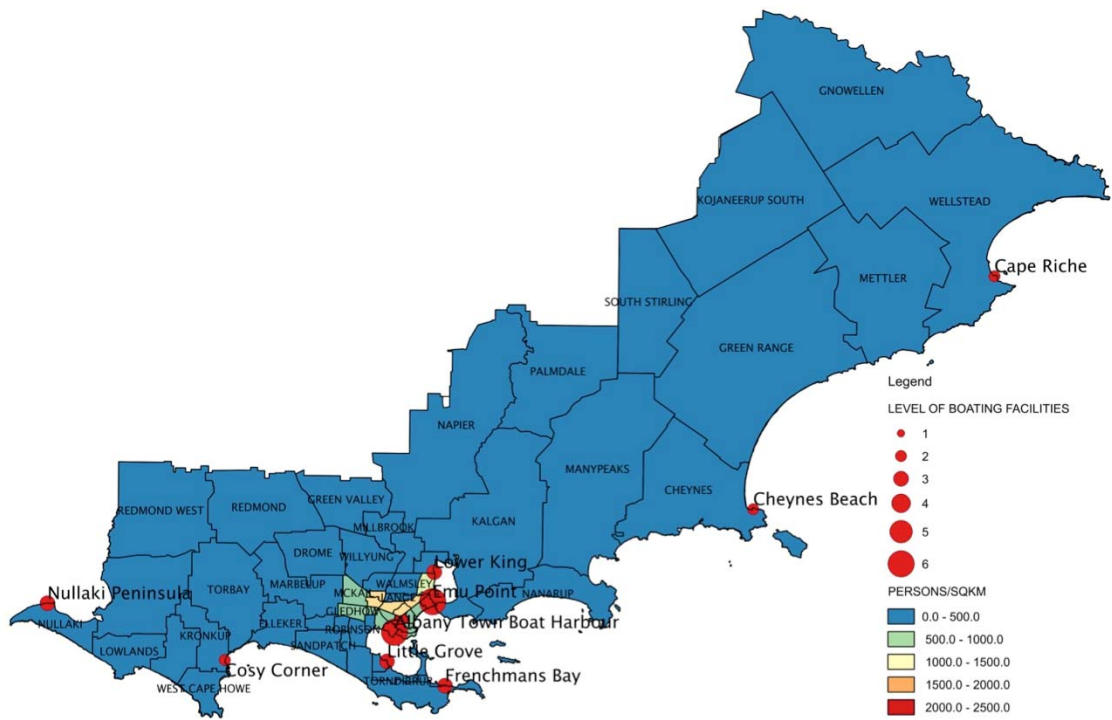


Figure 4.1 Albany Urban Population Density 2011 (ABS)

<sup>6</sup> This is based on the Estimated Residential Population as of June 2014 from the Australian Bureau of Statistics (ABS). This figure is also noted on City of Albany Profile ID website.



**Figure 4.2 Albany Rural Population Density 2011 (ABS)**

**4.1.1. Historic Population Growth**

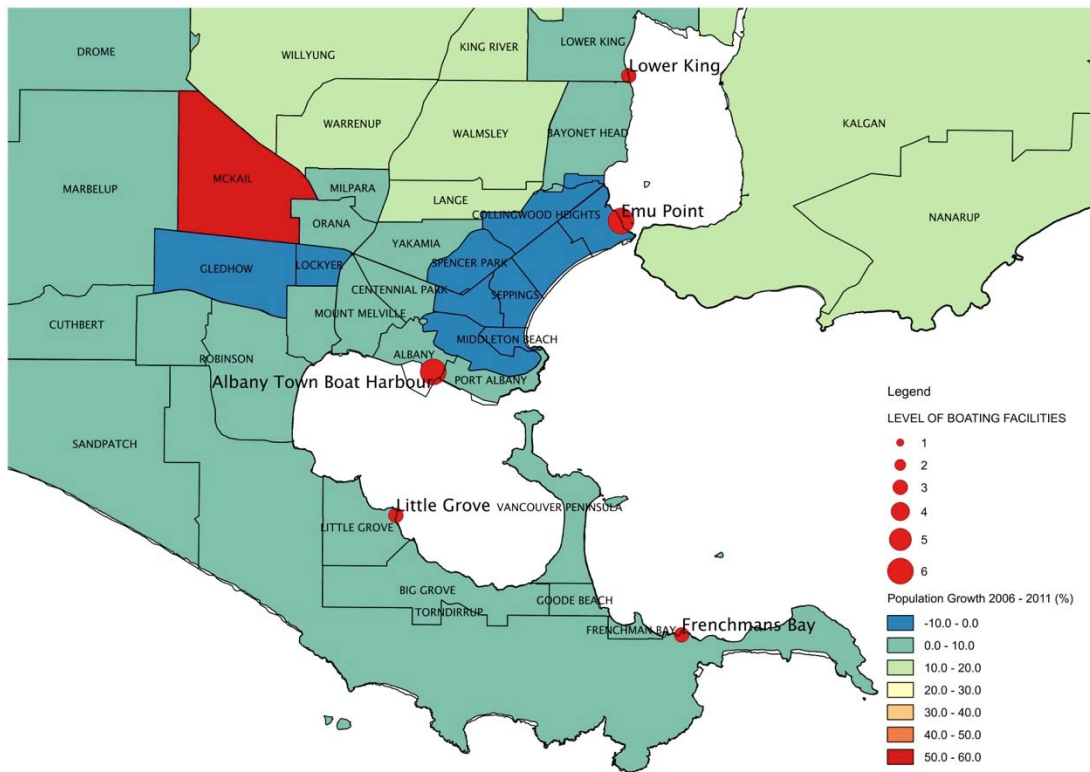
Figure 4.3 illustrates the population growth across Albany urban areas between 2006 and 2011. Figure 4.4 shows population growth within each ACCDs between census years since 1991. From this it can be seen that the City of Albany has experienced steady but slightly slowing growth in population between 1991 and 2011. The mean population growth rate over this period is approximately 1.4% with a range from 0.9% to 1.8%.

The highest rate of population growth has been McKail, to the west of the town centre. The districts adjacent to the Lower King ramp (Lower King and Bayonet Head) grew significantly in the 1990s, but experienced slower growth between 2001 and 2011. Anecdotally, there are currently significant subdivision works in these district.

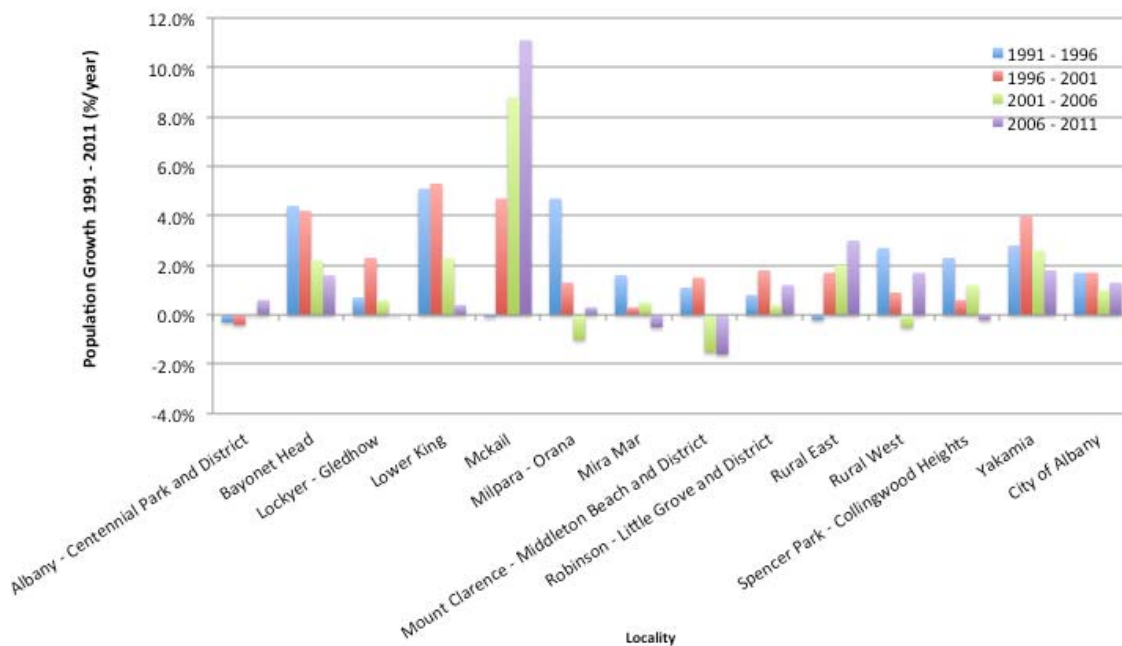
The other localities appear to show only minor changes in the growth rate over the last 20 years and appear to be largely in keeping with the overall Albany growth rate.

The localities between Emu Point and Albany Town Boat Harbour facilities had negative population growth between 2006 and 2011, i.e. the population in these localities reduced by 0 to 10%.





**Figure 4.3 Albany Urban Population Growth 2006-2011 (ABS)**



**Figure 4.4 Albany Population Growth per Annum by Locality (ABS)**

#### 4.1.2. Projected Population Growth

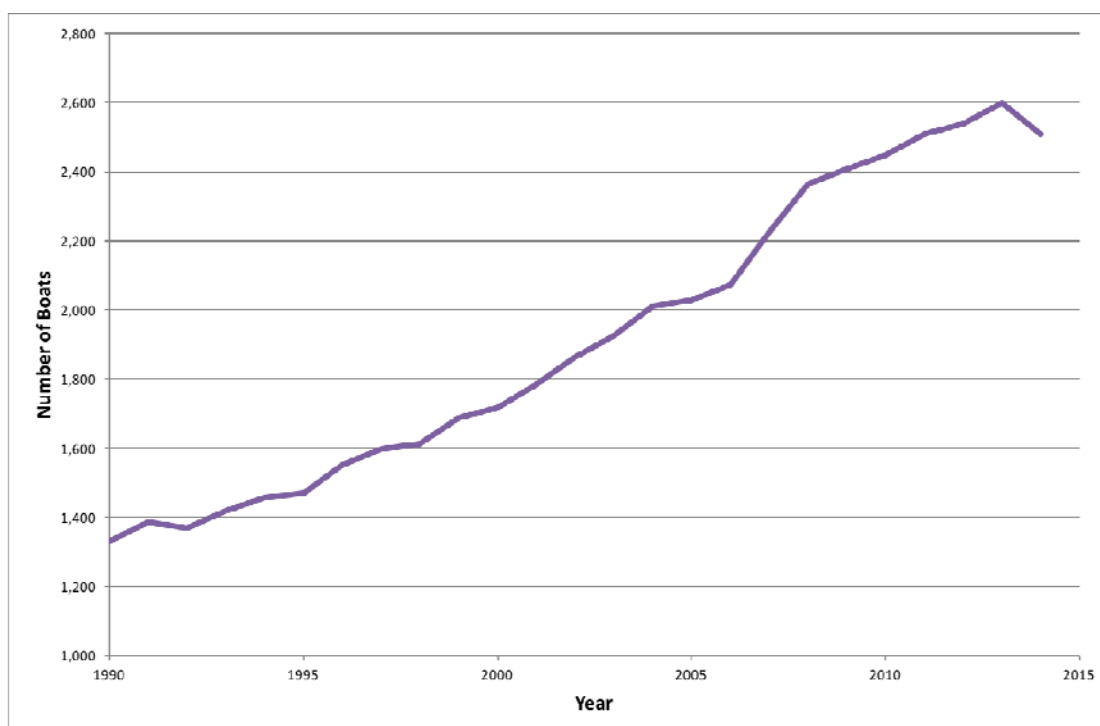
Based on the assessment of historic population growth the projected population growth for the next 30 years within the City of Albany LGA is summarized in Table 4.1. This shows the projected population assuming both the minimum observed (1%) and maximum observed (2%) population growth.

**Table 4.1 Projected City of Albany Population**

Year	Projected population at 1% growth	Projected population at 2% growth
2014	36,940	36,940
2016	37,679	38,418
2026	41,373	45,806
2036	45,067	53,194

#### 4.2. Vessel Registrations

Vessel registration data has been obtained from the Department of Transport (DoT). This data provides the number of registered vessels based on payments of vessel licenses and is calculated on an annual basis. Data is available from 1990 to 2014 for the whole of the City of Albany LGA. There were 2,509 registered vessels in the City of Albany in 2014. The majority of these registered vessels are in the smaller length category (0-7.5m) with only 3% over 7.5m in length. Boat ownership per capita was in the order of 7.7%. The distribution of vessel registrations throughout the City is not available. The historic growth in registered vessel numbers from 1990 to 2014 is shown in Figure 4.5.



**Figure 4.5 City of Albany Vessel Registrations by Vessel Length (1990 – 2015)**



### 4.2.1. Projected Growth in Vessel Registrations

Growth in boat registrations between 1992 and 2014 has had more variation from year to year than population growth (Figure 4.6). The mean boat registration growth between 1992 and 2014 has been 3% with a modal growth rate of 2%. The maximum growth rate was over 7% in 2007, however in 2014 there was negative growth rate of nearly 4%.

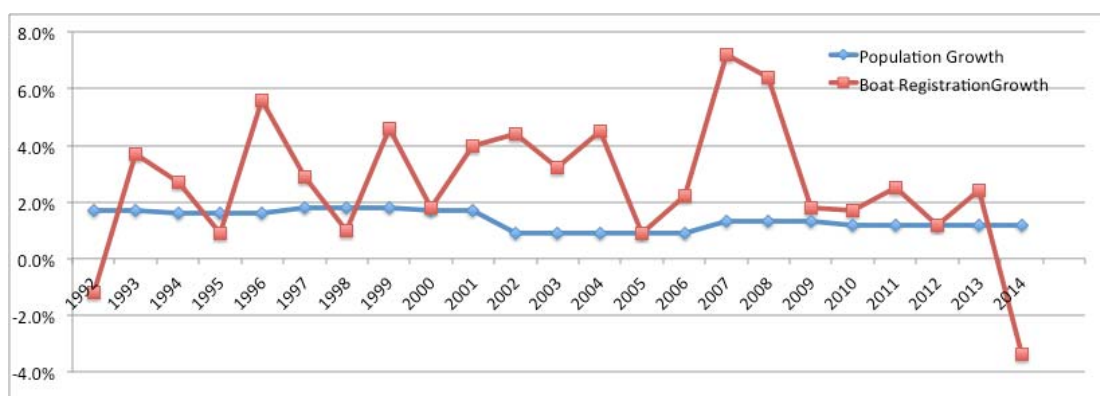


Figure 4.6 City of Albany Population and Boat Registration Growth Rates

Table 4.2 shows the projected boat registration growth assuming the mean and modal growth rate between 1992 and 2014 applies into the future.

Table 4.2 Projected Boat Registration Growth

Year	Projected boat registrations at 2% growth	Projected boat registrations at 3% growth
2014	2,509	2,509
2016	2,609	2,660
2026	3,111	3,412
2036	3,613	4,165

### 4.3. Peak Boating Demand

There is a high degree of uncertainty in estimating peak boating demand within the City of Albany and at particular facilities. In general, peak demand occurs during holiday periods when weather conditions are ideal for recreational boating.

Three methods have been used to assess peak demand within the City of Albany. These are:

- Peak Demand Model (Method 1): This method was used by DoT for the Peel Boating Strategy. It is a simple method for assessing City wide demand with a high degree of sensitivity to some underlying key assumptions with regard to local boating numbers and local/visitor ratios.
- Daily Launch and Retrieval Counts (Method 2a): Historic records of boat launching and retrieval are available from the Department of Fisheries for one boating facility (Emu Point) and two periods. This provides an estimate of peak demand at one of the major boating facilities based on analysis of CCTV footage of the ramp.
- Traffic Counts (Method 2b): Historic records of vehicle traffic counts are available at a number of boating facilities and were supplemented by a targeted traffic count program at four sites over the 2015/16 summer period. This is a simple method for assessing vehicle movements in the vicinity of boating facilities, but has a number of potential uncertainties in regard to assumptions of vehicle behaviour and interpretation of vehicle class data.

#### 4.3.1. Peak Demand Model (Method 1)

Peak demand for boating facilities has been assessed based on the method for assessing peak demand outlined in the Peel Region Recreational Boating Facilities Study (DoT 2011). This assumed that 5% of local vessel owners would go boating on a peak day. In addition, based on the information outlined in (Smallwood and Sumner 2007), during peak demand boating days, it is assumed visitor numbers would contribute 30% of the total number of boating facility users at the urban boating facilities (Figure 4.7).

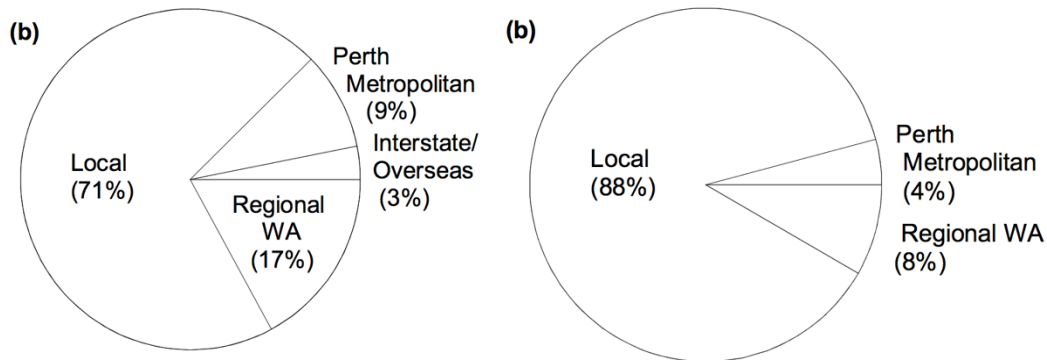


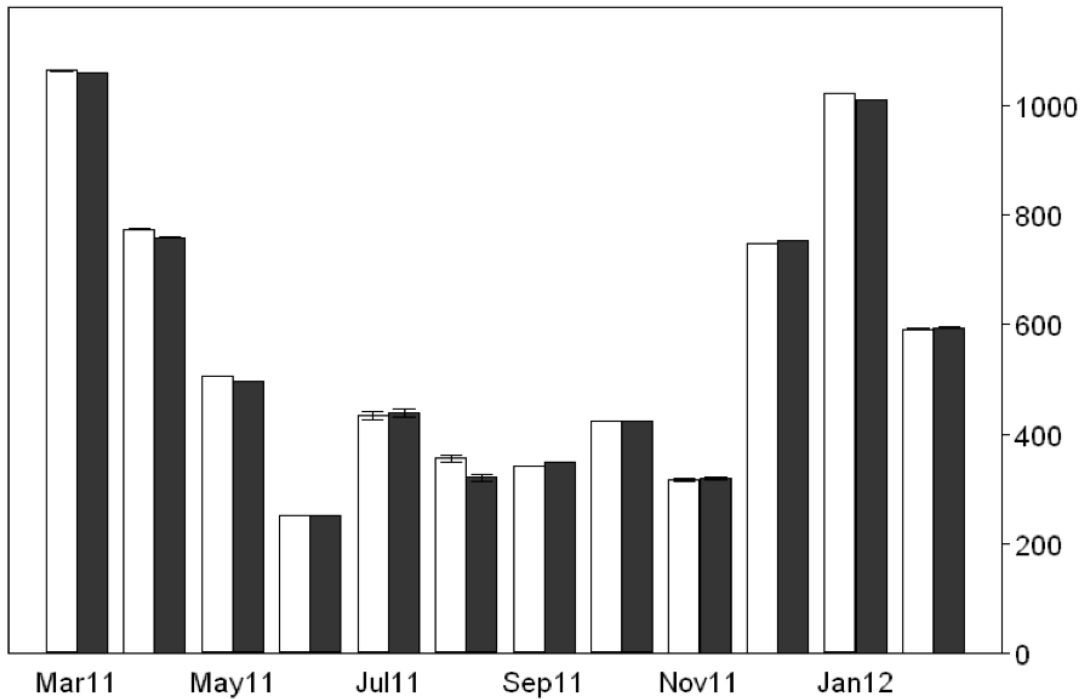
Figure 4.7 Origin of Ramp Users at Emu Point (L) and Princess Royal Harbour (R)

This modelling approach predicts that **180 vessels go boating in the City of Albany region on peak days** with 126 local vessel owners and 54 visiting vessel owners. It is assumed the majority of this demand would be at the urban ramps.

#### 4.3.2. Daily Launch and Retrieval Counts (Method 2a)

The Department of Fisheries installed cameras at Emu Point for 12 months in 2011-12 (Ryan, et al. 2013). The cameras were also installed again for 12 months in 2013-14 (Ryan, Hall, et al. 2015). This was undertaken as a component of a wider boat based recreational fishing study and includes data on daily counts of boat launches and retrievals at 5-minute intervals from remote camera survey. Raw count data was kindly provided by the Department of Fisheries for this study.

The boat launch counting campaign at Emu Point in 2012/12 showed that in the peak boating months of March 2011 and January 2012 boat launches exceeded 1000 in a month (Figure 4.8). This equates to an average of over 33/day including all weather conditions, weekends and workdays.



**Figure 4.8 Emu Point Power Boat Monthly Launches (White Column) and Retrievals (Black Column) for 2011/12**

Source: Ryan et al 2013

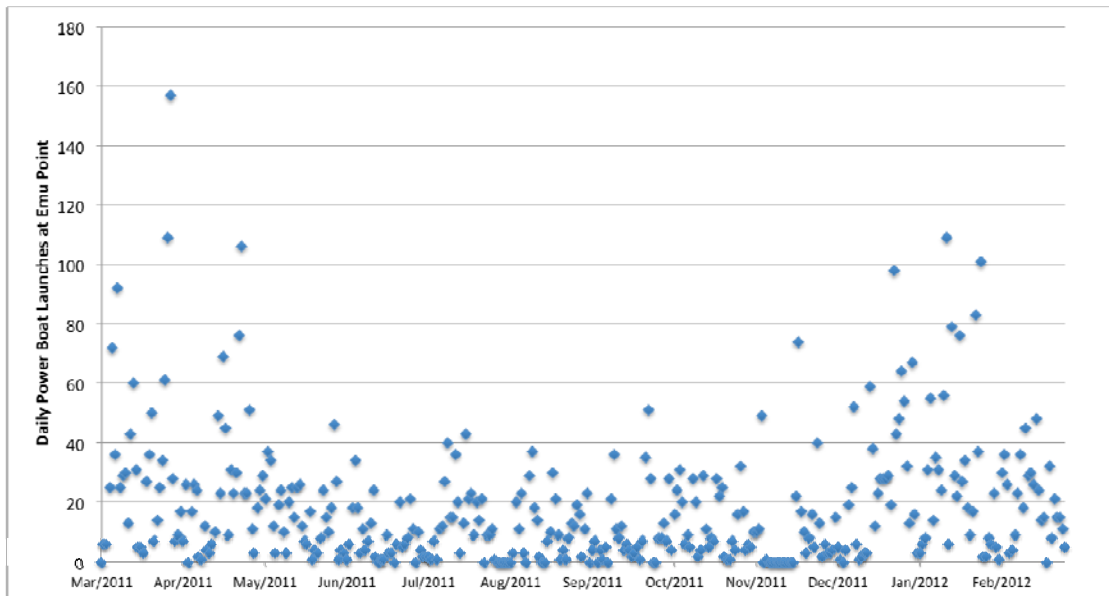
The Department of Fisheries provided daily launch counts from 2011/12 for Emu Point for this study (Table 4.3 and Figure 4.9).

**Table 4.3 Daily Boat Launches at Emu Point (2011/12) as Percentiles**

Percentile	25%	50%	75%	90%	95%	98%	100%
Daily Boat Launches	4	12	26	42	59	83	157

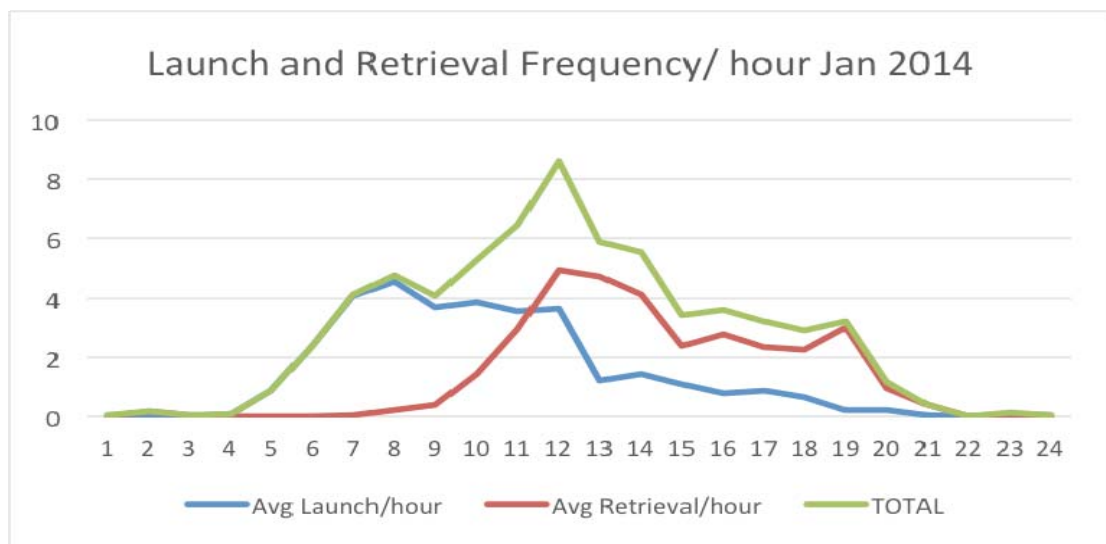
The following is noted:

- There were 157 boat launches on Saturday 27/03/11, which was the busiest day.
- More than 100 boat launches occurred on 5 days over the 12-month period. However, this represents almost the 99<sup>th</sup> percentile of boat launches over the period
- The 95<sup>th</sup> percentile was 59 vessel launches.
- The median number of daily boat launches was 12 (50<sup>th</sup> percentile).
- The median number of daily boat launches in January 2012 was 24, and on weekends in January 2012 was 37.
- Boat launches are significantly higher in summer than in winter.



**Figure 4.9 Daily Power Boat Launches at Emu Point (DoF)**

The hourly launch and retrieval data also provides an indication of peak demand throughout the day (Figure 4.10). In general launching occurs in the mornings and retrievals in the afternoon, however there is a peak period in the middle of the day where both launching and retrieval occurs. For January 2014, the busiest month on record, this averages as about 8 launches and retrievals per hour (Figure 4.10). This represents about 12% of the daily activity occurring during this period (i.e. 8 launches/retrievals an hour on a day when there were 66 launches/retrievals). For a busy day (160 launches and retrievals) this could equate to demand for in the order 20 launches and retrievals per hour.



**Figure 4.10 Emu Point Power Boat Hourly Launches and Retrievals Across the Day in January 2014**

### 4.3.3. Traffic Counts (Method 2b)

#### *Historic Data*

Traffic count data was initially obtained from the City of Albany archives. This information was not specifically targeted for assessing boat ramp traffic or peak boating demand. Notwithstanding this some of the information obtained provides sufficient detail to be able to make an assessment of peak boat ramp usage. A summary of the traffic count information from the City of Albany archives is presented in Table 4.4.

**Table 4.4 City of Albany Archived Traffic Count Information**

<b>Boating Facility</b>	<b>Traffic Counting Location</b>	<b>Traffic Counting Period</b>	<b>Peak Class 2 vehicles/ day</b>
<b>Lower King</b>	Esplanade (Elizabeth - Thorne) north and adjacent to Lower King facility	Mon 23-Apr-12 to Sun 20-May-12 (Easter)	15
<b>Lower King</b>	Esplanade (Rae - Thorne) 700m north of Lower King facility	Mon 21-Jul-14 to Sun 24-Aug-14 (Mid-winter)	10
<b>Emu Point</b>	Swarbrick St (Start - Miller) road leading to Emu Point	Mon 17-Dec-12 to Sun 20-Jan-13 (2012/13 Christmas and New Years)	88
<b>Emu Point</b>	Swarbrick St (Miller - Greeble) road before road leading to Emu Point	Mon 25-Nov-13 to Sun 22-Dec-13 (Pre-Christmas 2013)	108
<b>Little Grove</b>	Chipana Dr (Hill St - Yacht Club X-Over) road to west of Yacht Club entrance	Mon 21-Jun-10 to Sun 11-Jul-10 (Mid-winter)	9
<b>Little Grove</b>	Chipana Dr (Harbour Esplanade - Paulas) road approximately 150m to south of boating facility entrance	Mon 21-Jun-10 to Sun 11-Jul-10 (Mid-winter)	36
<b>Cheynes Beach</b>	Cheynes Beach Rd (bald island - end) road leading to Cheynes Beach boating facility	Mon 14-Apr-14 to Fri 02-May-14 (Easter)	65
<b>Cosy Corner</b>	Cosy Corner Rd (Lwr Denmark - Hartman) Cosy Corner Road 3km north of boating facility	Mon 22-Feb-10 to Sun 14-Mar-10 (After summer school holidays)	18
<b>Cosy Corner</b>	Cosy Corner Rd (Hartmans - Coombes) Cosy Corner Road 1.3km north of boating facility	Mon 22-Feb-10 to Sun 14-Mar-10 (After summer school holidays)	62
<b>Cape Riche</b>	Sandalwood Rd (Mettler Rd to The End) Road leading to Cape Riche boating facility	Mon 13-Aug-07 to Sun 02-Sep-07 (Mid-winter)	5

From the above information it can be seen that the highest peak daily traffic counts for Class 2 vehicles (Short Towing – Trailer, Caravan, Boat) occurred at Emu Point with 108 Class 2 vehicles travelling to and fro along the facility access road. However, assuming all these vehicles are boat trailers, this would only account for 54 launches which is significantly lower than the peak observed from the Fisheries Data (method 2) over the same period. The second highest peak daily class 2 traffic count was observed at Cheynes Beach over the 2014 Easter period with 65 Class 2 vehicle movements recorded.

The remaining traffic count data was obtained over periods outside of the anticipated peak boating days or the location of the counter introduced uncertainty as to the intended destination of vehicle crossing the traffic counter (Cosy Corner in particular). Consequently as part of the process for this investigation a traffic counting campaign targeted at Emu Point, Lower King, Cheynes Beach and Hartmans (Cosy Corner) was recommended over the 2015/16 Christmas period.

#### 2015/16 Traffic Counts

Traffic counters were installed by the City of Albany at four sites identified in the stakeholder workshop (Table 4.5). The following is noted:

- The highest daily traffic count occurred at Emu Point, with 146 Class 2 vehicle movements. This is a significant increase in comparison to previous traffic counts at this site, but still only equates to 73 boat launches which is still significantly lower than outlined in Section 4.3.2 (Method 2a).
- The second highest counts were at Cheynes Beach, with 74 vehicle movements (37 launches), a slight increase in previous records.

**Table 4.5 City of Albany 2015/16 Christmas Period Archived Traffic Count Information**

<b>Boating Facility</b>	<b>Traffic Counting Location</b>	<b>Traffic Counting Period</b>	<b>Peak Class 2 vehicles/ day</b>
<b>Lower King</b>	Esplanade South of Facility	Thurs 17-Dec-15 to Weds 27-Jan-16 <b>(Christmas &amp; New Years)</b>	15
<b>Lower King</b>	Esplanade North of Facility	Tues 5-Jan-16 to Mon 25-Jan-2016 <b>(Summer School Holidays)</b>	19
<b>Cheyne Beach</b>	Cheyne Beach Road between caravan park entrance road and boating facility	Thurs 17-Dec-15 to Weds 20-Jan-16 <b>(Christmas &amp; New Years)</b>	74
<b>Emu Point</b>	Swarbrick St (Start – Miller) road leading to Emu Point	Thurs 17-Dec-15 to Weds 20-Jan-16 <b>(Christmas &amp; New Years)</b>	146
<b>Hartmans (Cosy Corner)</b>	Stuart Island Road (track leading from Torbay Road to boating facility)	Thurs 17-Dec-15 to Weds 03-Feb-16 <b>(Christmas &amp; New Years)</b>	23

## 5. Community Consultation

The general approach to consultation for the City of Albany's Recreational Boating Facilities Strategic Plan for the Albany region coast is based upon participation and involvement. Involving stakeholders in the decision making process is a way to encourage and retain ownership of the outcomes.

A Consultation and Communication Strategy was prepared by Carolyn Walker and Associates to assist with the coordination and management of the community consultation process for this Study. The approach aimed to satisfy the following:

- Ensuring representative stakeholder participation and developing a shared vision;
- Willingness to act on stakeholder input and reasonable requests;
- Promoting open communication and clear and consistent messages;
- Managing stakeholder expectations; and
- Promoting stakeholder ownership of outcomes.

In particular, the aim was to balance stakeholder expectations in line with the project's Terms of Reference and required outcomes, and ensure a steady flow of accurate and timely information to engage stakeholders in consultation.



**Figure 5.1 Boat Launching at Emu Point and Cheynes Beach.**

### 5.1. Internal Consultation

Initially internal consultation was undertaken with the City of Albany, in particular to identify key issues and stakeholders for participation in a stakeholder reference group (SRG). Initial discussions were also undertaken with DPaW and the Cities Indigenous Liaison Officer regarding the potential for specific issues to inform the SRG, with an invitation extended to attend the stakeholder workshop.

### 5.2. Stakeholder Workshop

A one-day workshop was facilitated by Estill & Assoc. in November 2015 that aimed to:

- Discuss the functionality of key recreational boating facilities;
- Agree on a list of criteria for assessing strategic priorities for the next five years;
- Agree on a broad vision for 10 key sites drawing on local knowledge; and
- Agree on a list of boating facility priorities for the development of a future five-year Program of Works by the City of Albany.

The workshop focused on:

- Recreational boat launching facilities around Albany.
- Parking at these facilities.
- Community uses and spaces.
- Safety / risk / all weather access.
- Strategic locations or needs for the future.



Workshop attendees reviewed the sites and identified two urban sites (Emu Point, Lower King) and two regional sites (Cheynes Beach and Hartmans (Cosy Corner)) as priorities for further assessment. The Lower Kalgan River sites were also assessed in further detail at the workshop. Smaller groups then identified and prioritised potential improvements to recreational boating, parking and community/user infrastructure at these sites.

The detailed notes from this workshop are provided in **Error! Reference source not found.** and were distributed to the City of Albany and workshop participants in February 2016. The outcomes from the workshop are discussed further in Section 6. The workshop was considered to be productive and stakeholders thanked for their participation. Further briefing of the Stakeholder Reference Group on the draft outcomes of the strategic plan and workshop notes were requested.

**Table 5.1 Stakeholder Workshop Attendees**

Organisation	Attended	Invited / Apologies
<b>City of Albany</b>	Coordinator Indigenous Involvement, Works & Services, Land & Heritage, City Reserves, City Assets, City Leasing, City Projects, City Planning, Tourism	
<b>State Government</b>	Department of Parks & Wildlife, Albany Ports, Department of Fisheries, Department of Transport (Albany), South Coast NRM,	Department of Water; Department of Transport (Fremantle)
<b>Community Groups, Progress Associations</b>	Middleton Beach Group, South Coast Progress Assoc., Albany Rowing Club, Princess Royal Yacht Club,	Friends of Emu Point, Lower Kalgan Progress Assoc., Wellstead Progress Assoc., Albany SLSC, Albany Sea Rescue, Nullaki Peninsula Wilderness Estate, Albany Waterski Club.
<b>Fishing Groups</b>	Recfish West, Professional Fishermen, Albany Boating and Offshore Fishing Club Inc., Cheynes Beach Professional Fishermen.	



**Figure 5.2 Stakeholder Workshop Participants**

### 5.3. Lower Kalgan Site Visit and Workshop

Lower Kalgan was identified in the stakeholder workshop in November 2015 as requiring additional stakeholder consultation due to the usage and complexities associated with the area. Whilst the scope for the Lower Kalgan River was limited to a Pre-Feasibility study (refer **Error! Reference source not found.**), a key priority identified at the workshop was to engage Lower Kalgan Stakeholders in developing a future vision, to be completed after a review of lease



arrangements by the City. A small stakeholder workshop and site visit with Lower Kalgan stakeholders was undertaken in March 2016 to gain further feedback from key stakeholders.

These stakeholders included:

- Albany Waterski Club (AWSC).
- Lower Kalgan Progress Association (LKPA).
- Albany Rowing Club (ARC).
- Great Southern Grammar (GSC).
- Department of Transport (DoT).
- Department of Sport and Recreation (DSR).
- City of Albany.

The aim of the Lower Kalgan workshop was to inform the scope of a potential feasibility study to determine a longer-term plan for this stretch of waterway by:

- Providing an update to stakeholders on current leasing arrangement for the Albany Water Ski Club (AWSC) and gain feedback on the leasing.
- Provide information on potential technical studies for the feasibility study (Environmental, Planning / Land Tenure and Leasing, Bank Erosion, Boating Demand).
- Discuss options for resolving AWSC facilities.
- Seek further input from Stakeholders into the vision for the Lower Kalgan River identified in Workshop 1.
- Discuss further targeted consultation for the feasibility study.



**Figure 5.3 Lower Kalgan River Site Visit and Stakeholder Workshop**

Four sites were visited along the Lower Kalgan River including the Albany Rowing Club site (leased from the Lower Kalgan Progress Association) where boat launching was available for rowing vessels and small trailer vessels at different ramps, a foreshore site where environmental values were discussed, the Albany Water Ski Club Site and the Luke Penn Walk. At each site key stakeholders were asked to inform the group how the site is used, what the key management issues are and how the site may be used, managed or developed in the future. Detailed workshop notes were distributed to participants and provided in **Error! Reference source not found.**

The outcomes of the workshop were as follows:

- A stand-alone feasibility study for the Lower Kalgan is required.
- Area requires balance between space and ownership – what works physically?
- Scope for feasibility study to include:
  - Technical and environmental studies
  - Design (landscape/engineering, roads etc.)
  - Land tenure
  - Indigenous heritage and consultation
  - Further consultation, including landowners. Also Fishability, Recreational Fishing Groups, canoe users, dragon boats, South Coast NRM, environmental groups.
- Funding opportunities to be considered.

The Project team thanked volunteers for their time and ongoing voluntary commitment to their groups; also thanked the school, City of Albany and State Government representatives for their after hours involvement.

#### **5.4. Further Consultation**

Following this targeted consultation, a draft strategic plan for the wider City of Albany recreational boating facilities has been developed (this report). A pre-feasibility study for the Lower Kalgan River has also been drafted. This has considered stakeholder input, the condition of existing facilities, boating demand and financial issues. Further consultation with local Indigenous groups is required.

The recommendations of this draft strategic plan for recreational boating facilities were presented to the City of Albany, elected members and stakeholders in 2016, and will be advertised for wider community consultation. Feedback will then be assessed and the strategic plan finalised.

## 6. Strategic Planning

Strategic planning is required to ensure a rational and sustainable approach to the future provision of recreational boating facilities in the City of Albany. This requires consideration of demand, available boating facilities, stakeholder expectation and strategic constraints on meeting existing and future demand.

In particular the following has been considered:

- Existing (0yrs) and future (20yr) boating demand has been estimated within the limitation of available data.
- Existing boating facilities have been assessed in terms of the range of facilities provided throughout the City (i.e. from beach launching through to boat harbours), the number of available boat launching lanes and trailer parking bays, the condition of infrastructure and requirement for renewal, and the proximity of these facilities to populated residential areas and future growth areas.
- Stakeholder expectations as outlined in the facilitated stakeholder workshop.
- Constraints on expansion of the existing boating facilities to meet existing and future demand including coastal exposure, safety, land area and tenure, marine area and tenure, topography, geology, Australian Standards, strategic location, proximity of residences and adjacent land uses.



**Figure 6.1 Boat Launching at Albany Town Harbour (L) and Cape Riche (R)**

## 6.1. Boating Demand

The assessment of boating demand is detailed in Section 4. For the purpose of strategic planning we have assumed the following:

- Existing demand (2016) is based on available data and is used as a basis for short term planning to coincide with the 5-year local government budget cycle.
- Future demand is based on a 20-year planning period, nominally 2036.

### 6.1.1. Present Peak Boating Demand

The assumed peak boating demand based on the method adopted for the Peel Boating Strategy and 2,509 registered vessels (as of 2014) assumed 179 boat launches within the City of Albany on a peak day (Method 1). Allowing for 2% annual growth this provides what is considered to be a *lower estimate* of present peak boating demand of *186 boat launches per day*.

Collating available camera counts (Method 2a), traffic counts (Method 2b) and assumed demand at other sites based on site inspections and stakeholder input, an *upper estimate* of present peak boating demand has been determined (Table 6.1). This nominally represents the 100<sup>th</sup> percentile, and suggests the present peak boating demand may be as high as *392 boat launches per day*.

However, based on the DoF camera counts at Emu Point, the 98<sup>th</sup> percentile of peak demand (i.e. the number of boat launches exceeded about 7 days per year) is about half the 100<sup>th</sup> percentile (i.e. the busiest day of the year) and there are only 5 days over the 12 month period with more than 100 boat launches.

The assumed demand for the purposes of strategic planning is *289 boat launches per day*, the average of the upper and lower estimate of the two methods for estimating present peak demand. This provides a figure for strategic planning but also demonstrates the high degree of uncertainty ( $\pm 35\%$ ) in the estimations of boating demand.

**Table 6.1 Peak Boating Demand by Site**

Site	Assumed Peak Demand	Confidence	Source
<b>Urban Sites (Oyster Harbour)</b>			
Emu Point	150	High	DoF Camera Counts
Lower King	20	Moderate	Traffic Counts
<b>Urban Sites (PRH)</b>			
Albany Boat Harbour	80 <sup>7</sup>	Low	ABH Desktop Study (DPI 2003)
Little Grove	20	Moderate	Traffic Counts
<b>Urban Sites (Vancouver Peninsula)</b>			
Murray Rd	10	Low	Assumed
Frenchman's Bay	10	Low	Assumed
<b>Rural (East)</b>			
Nullaki	10	Low	Assumed
Hartmans	15	Moderate	Traffic Counts
Cosy Corner	10	Low	Assumed
<b>Rural (West)</b>			
Two Peoples Bay	12	Low	Community consultation workshop minutes ( <b>Error! Reference source not found.</b> )
Bettys Beach	5	Low	Assumed
Cheynes Beach	40	Moderate	Traffic Counts
Cape Riche	10	Low	Assumed
<b>Total (Upper Estimate)</b>	<b>392</b>	<b>290 (Urban); 102 (Rural)</b>	

### 6.1.2. Future Demand

Available statistics from 2011 suggest on average 19% of households in the City of Albany have a registered recreational vessel. These households require boat launching ramps within the City to use these vessels on local waterways.

While there was a small fall in vessel registrations from 2014 to 2015, in recent decades vessel registrations have increased by an average of between 2% and 3% per year. As the City of Albany's population has also been growing (by between 1% and 2% per year), it is reasonable to assume overall demand on recreational boating facilities will continue to increase.

<sup>7</sup> ABH peak demand has not been escalated from 1993 estimate, but should be confirmed by traffic counts or similar.

**Table 6.2 Future Peak Boating Demand (Boat Launches per Day)**

<b>Year</b>	<b>Lower Estimate</b>	<b>Median Estimate</b>	<b>Upper Estimate</b>
<b>2016</b>	186	289	392
<b>2026</b>	222	345	467
<b>2036</b>	258	400	543

The assumed future demand is based upon a 2% per annum growth in boat registrations. This assumes there would be over 4000 registered recreational vessels in the City of Albany in 2036. The median estimate of peak demand in 2036 (20 years) is 400 boat launches.

The present and future demand, however, is not evenly distributed across the Local Government Area, so strategic planning needs to consider the demand at each boating facility.

## **6.2. Existing Boating Facilities**

### **6.2.1. Type of Facilities**

Recreational boat launching facilities are classified by the Department of Transport according to the amenities offered at each facility. The following levels or standards are identified:

- Level 1 An effective sea search and rescue organisation in the region
- Level 2 A minimal recreational boat-launching facility
- Level 3 Local boat-launching facility with finger jetty and ramp for 2WD vehicles
- Level 4 District facility with finger jetty and two-lane ramp
- Level 5 Regional facility with finger jetty, ramps, toilets and channel access
- Level 6 Major boat harbour with boat pens and multiple ramps

These levels identify the assets boat users would normally expect at these types of facilities (



Table 6.3). The inspected facilities have been assigned a level based on available boat launching, parking and community/user facilities (Table 6.4). In some cases, additional assets are required to meet the nominated standard but it is considered that the boating facility functions at this standard. Additionally, some sites have additional facilities (above the standard for this type of facility) but not enough to be considered at the next level. For example, whilst Little Grove has lighting and channel access expected at a district facility (Level 4), there is only one ramp so it is considered a local facility (Level 3).

Table 6.3 Interpretation of DoT Boating Facility Standards

DoT Facility Standard	6	5	4	3	2	1
Sea Search and Rescue Service	✓	✓	✓	✓	✓	✓
rubbish collection (bins)	✓	✓	✓	✓	✓	
maintenance	✓	✓	✓	✓	✓	
Informal/Unsealed parking	✓	✓	✓	✓	✓	
signage	✓	✓	✓	✓	✓	
At least one ramp suitable for 2WD	✓	✓	✓	✓		
Holding jetty/ jetties	✓	✓	✓	✓		
some formal sealed parking	✓	✓	✓	✓		
landscaped surroundings	✓	✓	✓	✓		
More than one ramp	✓	✓	✓	✓		
navigation aids	✓	✓	✓	✓		
shade trees	✓	✓	✓	✓		
playground	✓	✓	✓	✓		
shade shelter with fish cleaning	✓	✓	✓	✓		
public toilets and showers	✓	✓	✓	✓		
channel access	✓	✓	✓	✓		
boat wash-down facilities	✓	✓	✓	✓		
lighting	✓	✓	✓	✓		
recreational, shopping and tourist facilities in close proximity	✓	✓	✓	✓		
boat pens	✓	✓	✓	✓		
club facilities	✓	✓	✓	✓		
service jetty	✓	✓	✓	✓		
boat repair facilities	✓	✓	✓	✓		
boat refuelling facilities	✓	✓	✓	✓		
sullage pump-out facilities	✓	✓	✓	✓		
associated ) and residential development	✓	✓	✓	✓		

The following is noted with regard to this assessment:

- There are effectively two major boat harbours (Level 6) within the City, being Albany Boat Harbour and Emu Point, although they are missing some amenities recommended for this level of facility.
- There are no sites considered to be district (Level 4) or regional boating facilities (Level 5).
- There are four local boating facilities being Lower King, Little Grove, Murray Road and Nullaki Peninsula, all with a single ramp and, except Murray Rd, a finger jetty. Lower King is the only site that could be readily upgraded to a regional facility.
- There are three ‘minimal recreational boat launching facilities’ (Level 2) at Cheynes Beach, Cosy Corner and Cape Riche. Whilst these sites primarily offer beach launching for 4WD vehicles and experienced users, the available parking and community assets are more commensurate with a local facility (Level 3).

This analysis reveals a number of amenities required for each of the Level 3 and Level 6 facilities to fully achieve the standard recommended, which is a reflection of the standard of amenity commonly expected by boat users at a facility of this level. At some sites, however, it is likely that the existing facility level is not the level best suited to strategic needs at that location, in particular at Lower King.

**Table 6.4 Classification of Albany Boating Facilities**

Existing Ramp Facilities	Sea Search and Rescue Service	rubbish collection (bins)	maintenance	Informal/Unsealed parking	signage	At least one ramp suitable for ZWD	Holding jetty/ jetties	some formal sealed parking	landscaped surroundings	More than one ramp	navigation aids	shade trees	playground	architecturally designed shade shelter with fish cleaning facilities	public toilets and showers	channel access	boat wash-down facilities	lighting	recreational, shopping and tourist facilities in close proximity	boat pens	club facilities	service jetty	boat repair facilities	boat refuelling facilities	sullage pump-out facilities	associated commercial and residential development	Existing Facility Standard	
Emu Point																											6	
Albany Town Boat Harbour																												6
Lower King																												3
Little Grove																												3
Frenchmans Bay																												3
Nullaki Peninsula																												3
Cosy Corner																												2
Cape Riche																												2
Cheynes Beach																												2

Available facilities  
 Required facilities (to meet standard)  
 Additional facilities (above standard)

*Regional Context*

The City of Busselton and the City of Bunbury are of comparable size to the City of Albany, whilst the largest regional local government area in WA is the City of Geraldton. These four regional population centres are all located on the coast with substantial recreational boating communities. The population, vessel registrations and available facilities are summarised in Table 6.4.

The City of Albany is the only regional LGA of equivalent size with two major boat harbour facilities available for recreational boating (Emu Point and the Town Boat Harbour). However, the relative absence of medium sized regional or district boating facilities is notable.

**Table 6.5 Regional Boating Facilities in WA**

<b>Local Government Area</b>	<b>Albany</b>	<b>Bunbury</b>	<b>Busselton</b>	<b>Geraldton</b>
<b>Estimated Residential Population (2014)</b>	36,940	34,225	35,562	41,037
<b>Registered Vessels (2014)</b>	2,509	1,778	3,310	2,682
<b>% of Population with Registered Vessels</b>	6.8%	5.2%	9.3%	6.5%
<b>Boat Harbours (L6)</b>	2	0	1	1
<b>Regional Boating Facilities (L5)</b>	0	1	0	0
<b>District Boating Facilities (L4)</b>	0	1	4	1
<b>Local Boating Facilities (L3)</b>	5	2	0	0
<b>Minimal Boating Facilities (L2)</b>	6	2	4	4
<b>Total No. of Boating Facilities</b>	13	6	9	6

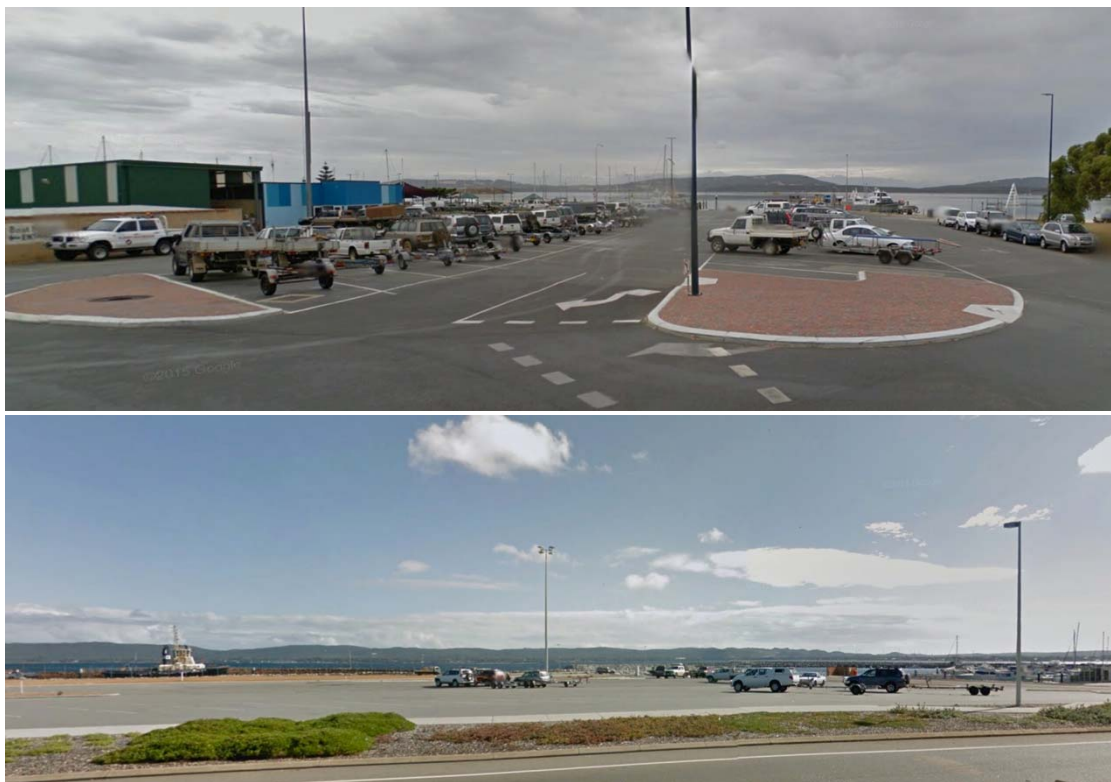
Note: Surrounding areas of Bunbury and Geraldton have not been included.

### 6.2.2. Parking Capacity

The total capacity for boat trailer parking within the City of Albany is approximately 364 (262 urban and 102 rural). This capacity could cope with a demand equivalent to ~10% of vessels registered in the City of Albany going boating on any one day (assuming 70% local and 30% visiting) (Smallwood and Sumner 2007). This is provided boat facility users are distributed evenly across all facilities.

In reality, on peak boating days the majority of facility users will attempt to launch at an urban (inner and outer) facility, as this is where the majority of vessels are registered. The urban boating facilities can cope with a demand of 7% of vessels registered in the City of Albany going boating on any one day (Smallwood and Sumner 2007).

For context, the 2015 site inspections identified 125 sealed delineated trailer bays at urban sites, split between Emu Point (53) and Albany Town Boat Harbour (72). There is also space at these facilities (informal, unsealed and not delineated) for approximately 60 additional trailers bringing the total capacity between these two facilities to in the order of 185 trailer bays.



**Figure 6.2 Boat Trailer Parking at Emu Point (top) and Albany Boat Harbour (bottom) from Google Street view (Feb-2015)**

**Table 6.6 Parking Capacity**

<b>Site</b>	<b>Assumed Peak Demand</b>	<b>Assumed Parking Capacity</b>	<b>Assumed Excess Capacity</b>
<b>Urban Sites (Oyster Harbour)</b>			
Emu Point	150	63	-87
Lower King	20	30	+10
<b>Urban Sites (PRH)</b>			
Albany Boat Harbour	80	122	+42
Little Grove	20	27	+7
<b>Urban Sites (Vancouver Peninsula)</b>			
Murray Rd	10	10	0
Frenchman's Bay	10	10	0
<b>Rural (East)</b>			
Nullaki	10	20	+10
Hartmans	15	10	-5
Cosy Corner	10	15	+5
<b>Rural (West)</b>			
Two Peoples Bay	12	22	+10
Bettys Beach	5	10	+5
Cheynes Beach	40	15	-25
Cape Riche	10	10	0
<b>Subtotal (Urban)</b>	<i>290</i>	<i>262</i>	<i>-28</i>
<b>Subtotal (Rural)</b>	<i>102</i>	<i>102</i>	<i>0</i>
<b>Total</b>	<b>392</b>	<b>364</b>	<b>-28</b>

### **6.2.3. Boat Launching Capacity**

Multiple boat ramps are available at Emu Point (#3) and Albany Boat Harbour (#2). However the remaining 11 boat launching facilities inspected generally had either one sealed lane (Little Grove, Lower King, Murray Road, Nullaki) or beach launching. Whilst it is possible to launch multiple boats at some beach launching sites, they are generally identified as 'single lane' facilities. It is assumed for strategic planning that 16 'lanes' are available for boat launching in the City of Albany at any one time, subject to weather conditions and sea state.



#### 6.2.4. Condition of Existing Boating Facilities

The condition of boating facilities has been assessed for boat ramps (this report) and jetties (MRA 2015) and is summarised Table 6.7. The Emu Point finger jetty is the main structure that requires replacement within the next 2-5 years, due to marine borer attack on the timber piles. Besides this structure, the boat ramp and jetties are considered to be generally in a reasonable condition. With the recommended maintenance, these facilities should be able to provide a similar level of boat launching functionality to present over a 5-year period without significant replacement of assets<sup>8</sup>.

**Table 6.7 Boating Facilities Condition Rating**

ID	Facility	Ramp Condition Rating <sup>4</sup>	Jetty Condition Rating <sup>5</sup>	Notes:
1	Albany Town Boat Harbour	1	1	
2	Little Grove	1	2	Denso wrap and anode pile caps required immediately to extend jetty life (M)
3	Emu Point	1	*1/4	<b>Timber jetty requires significant repairs or replacement within 2-5 years *Pontoon is nearly new</b>
4	Frenchman's Bay	2	n/a	Repairs to ramp concrete required to extend ramp life
5	Cosy Corner	3	n/a	Grading and repairs required to gravel ramp (ongoing) (M)
6	Lower King	2	2	
7	Cape Riche	3	n/a	Grading and repairs required to gravel ramp (ongoing) (M)
8	Nullaki Peninsula	3	3	Isolated ramp with inadequate launch depths, exacerbated by wrack build-up. MRA note Maintaining present facilities will require repairs within 2-5 years and regular clearing of wrack.
9	Cheynes Beach	3	n/a	Grading and repairs required to gravel ramp & carpark (ongoing)

It is noted that Table 6.7 considers condition of major elements, and does not include items such as repair and replacement of kerbing units or tightening or replacing select bolts. Such items recommended in the MRA report and the site inspections from this project include:

- Albany Boat Harbour: replacement of kerbing bolts on ramp
- Little Grove: Repair scour by ramp and repair insitu concrete at top of ramp
- Emu Point: Replace kerbing by sides of jetty
- Frenchman's Bay: Inspect for asbestos
- Lower King: Tighten bolts on finger jetty

#### 6.2.5. Proximity of Boating Facilities to Population and Population Growth

The majority of the population, and thus the majority of recreational boaters, are clustered around the town of Albany itself. This is reflected in the high usage at Emu Point and the Town Boat Harbour.

Recent population growth has been concentrated in the McKail district, on the northwest boundary of the town. The three boating facilities within an easy drive from this area are Emu Point, the town

<sup>8</sup> Marine structures remain vulnerable to damage from severe storms during this period

boat harbour and Lower King. There are also residential subdivisions being developed in the immediate vicinity of the Lower King Ramp.

The three facilities close to both population centres and population growth are Emu Point, the Albany Boat Harbour and Lower King.

The population in the vicinity of the rural beach launching ramps is much lower and generally stable, with potential increased seasonal demand.

### 6.3. Stakeholder Input

A Community and Stakeholder Engagement (CSE) Strategy was developed to engage key stakeholders and the community in the development of this study (refer Section 5). A one-day workshop was facilitated in November 2015 with detailed notes in **Error! Reference source not found.**

Following a presentation by Seashore Engineering on the scope of the study and an initial assessment of boating demand, feedback was provided on the key assessment criteria with the results of the facilitated discussion outlined in Table 6.8.

A second presentation on the condition of the existing boating facilities was followed by facilitated group feedback on specific sites. Workshop attendees reviewed the sites and identified two urban sites (Emu Point, Lower King) and two regional sites (Cheynes Beach and Hartman (Cosy Corner)) as priorities for further assessment. The Lower Kalgan River sites were also assessed in further detail at the workshop. Discussion of sites for possible decommissioning and potential future additional sites was also facilitated and outlined further in Section 7.

Smaller groups then identified and prioritised potential improvements to recreational boating, parking and community/user infrastructure at these sites, which is outlined further in Section 7.



**Figure 6.3 Stakeholder Workshop Participants**

**Table 6.8 Stakeholder Feedback on Key Assessment Criteria**

KEY ASSESSMENT CRITERIA		FEEDBACK
1	Boating facilities available at site (e.g. ramps, jetties, dredging)	<ul style="list-style-type: none"> <li>• Allowing for seasonal demand and use.</li> <li>• Offering universal access where opportunities exist in a holistic way – not just for one element.</li> </ul>
2	Parking facilities available at site (e.g. paved designated parking, overflow parking)	<ul style="list-style-type: none"> <li>• Allowing for seasonal demand and use.</li> <li>• Fit for purpose parking facilities with drive through capacity.</li> </ul>
3	Associated facilities available at site (e.g. fish cleaning, toilets, landscaping etc.)	<ul style="list-style-type: none"> <li>• Toilet and other facilities are important inclusions.</li> <li>• These are key recreational destinations for picnics, BBQs, etc. and multi-functional use by non-boat users too.</li> <li>• Land management and location of public facilities.</li> <li>• Shelter for people.</li> </ul>
4	Coastal exposure (e.g. waves, wind, wrack, sand, weather)	<ul style="list-style-type: none"> <li>• The coastal exposure of various sites and resultant seasonality are important consideration in prevailing winds.</li> <li>• The return journey is also a consideration to ensure protected ramps are available.</li> <li>• Some people have designed their launching gear to make use of sand ramp and avoid congestion.</li> </ul>
5	Condition of boating facilities	<ul style="list-style-type: none"> <li>• Existing assets vary in condition from poor to very good.</li> </ul>
6	Functionality and safety of boating facilities	<ul style="list-style-type: none"> <li>• Safety – boating facilities in regular use as a safe working environment and in all weather.</li> <li>• Promoting safe and compatible multi-functional use with practices and procedures to protect the natural environment.</li> <li>• Allowing for seasonal demand and use.</li> <li>• There is a need for a Code of Conduct to ensure safe and consistent usage and social etiquette.</li> <li>• With established Agreement/s to ensure existing community groups and users and plans for the future are protected over time.</li> <li>• Offering Universal Access.</li> </ul>
7	Strategic location and future integration with land use planning (e.g. travel distance to ramp, travel distance to boating destination, surrounding land uses).	<ul style="list-style-type: none"> <li>• Potential for rationalising or retiring outdated facilities to focus future investment.</li> <li>• Asset ownership – across State, Local Government and private ownership that are available to the public in context of CoA future planning.</li> </ul>

#### 6.4. Strategic Constraints

There are a number of strategic constraints in planning for boating facilities. These constraints were assessed for each site during the site inspections (refer **Error! Reference source not found.**) and further discussed during the community workshop, and include:

##### *Boating Facilities*

- Coastal Exposure: Swell, Sea, Wind (Safety);
- Coastal Exposure: Sand; Wrack.
- Marine Area and Tenure (existing and surrounding).□
- Topography / Geology.
- Environmental.
- Australian Standards / Guidelines.□
- Strategic Location (travel distances).□
- Adjacent Marine Uses / Conflicting Uses.

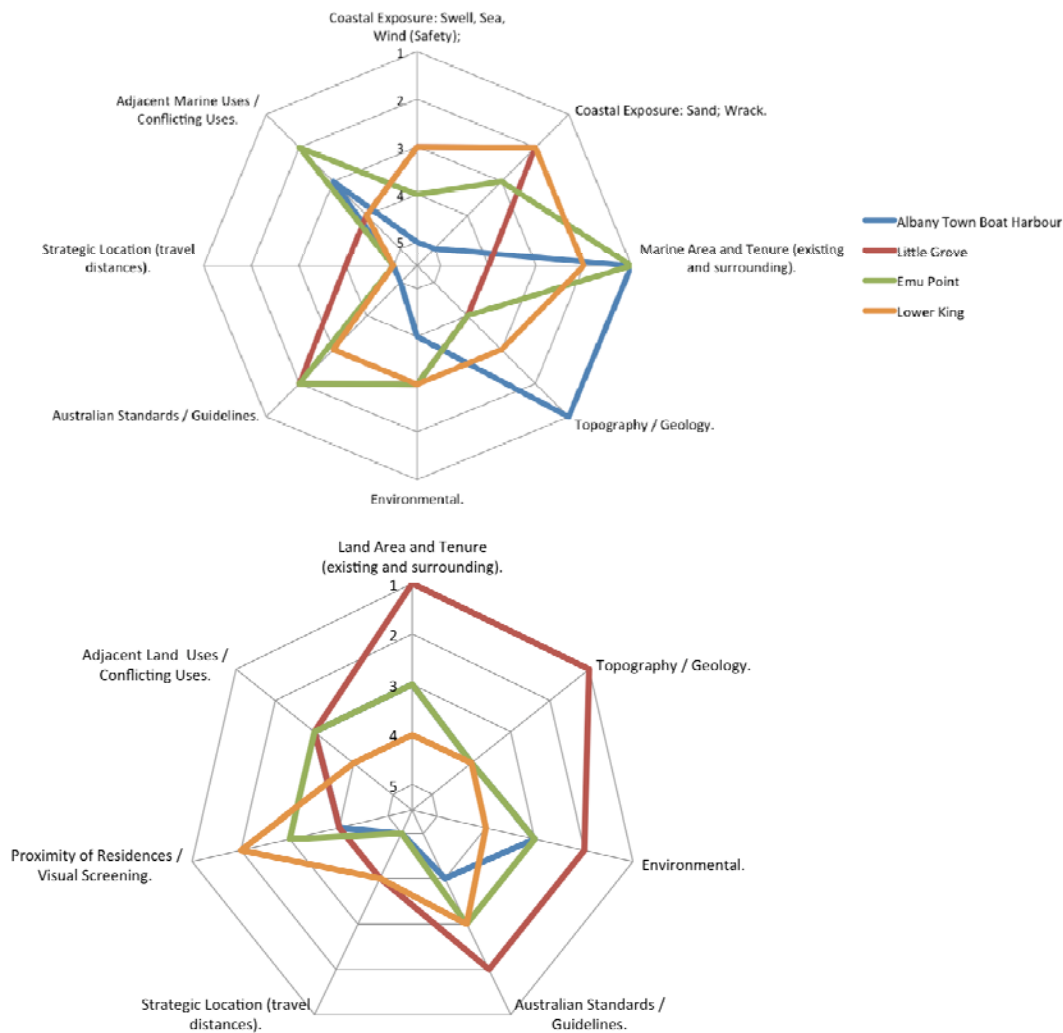
##### *Parking Facilities*

- Land Area and Tenure (existing and surrounding).
- Topography / Geology.
- Environmental.
- Australian Standards / Guidelines.□
- Strategic Location (travel distances).□
- Proximity of Residences / Visual Screening.
- Adjacent Land Uses / Conflicting Uses.

A basic multi-criteria assessment of the constraints of expanding these boating facilities to meet future demand has been undertaken. Nominal values have been assigned to each criteria ranging from 1 (criteria is a significant constraint on expansion of the facility) to 5 (criteria does not constrain expansion of the facility). The results of this analysis are shown as 'radar graphs' for urban ramps (Figure 6.4) and rural ramps (Figure 6.5).

Based on the strategic consideration outlined above, the following is noted with regard to the urban facilities:

- There are constraints at Emu Point and Albany Boat Harbour in providing additional boat launching facilities due to marine area and tenure issues (i.e. not enough space readily available for additional ramps and jetties).
- The Lower King facility also requires has consideration of marine area and tenure issues associated with the adjacent commercial jetty and the aboriginal heritage significance of Oyster Harbour.
- There are significant limitations at Little Grove in providing additional parking facilities due to constraints of land area and tenure and topography/geology. Expansion of parking facilities at Lower King is less constrained although the proximity of residences / visual screen requires consideration, as does adjacent land uses at Emu Point.
- All sites require careful consideration of environmental issues.

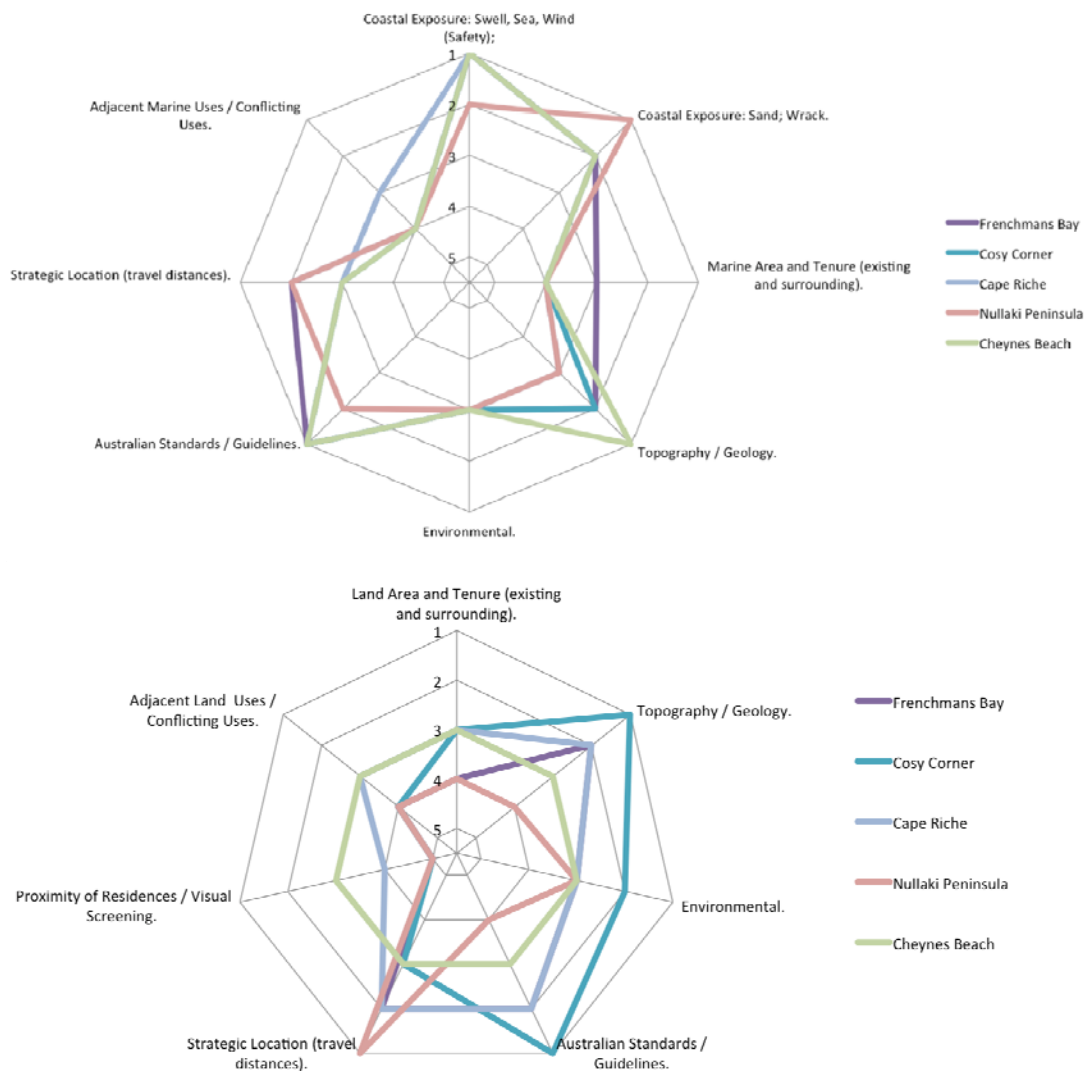


**Figure 6.4 Multicriteria Analysis – Constraints on Expansion of Urban Boating (upper) and Parking (lower) Facilities.**

Based on the strategic consideration outlined above, the following is noted with regard to the rural facilities:

- Coastal exposure and Australian Standards for safe boat launching conditions are a significant limitation in providing additional boat launching facilities at many of the regional ramps.
- Expansion of Nullaki Peninsula is significantly constrained by wrack accumulations (and the potential cost of clearing the ramp regularly) and travel distances.
- Expansion of Cheynes Beach is significantly limited by the topography/geology of the shallow nearshore reef system, limiting navigable depths to the ramp approach at lower tides.
- Expansion of parking facilities to meet Australian Standards at Cosy Corner (Hartmans) is constrained by local topography (steep road access). This is much less of an issue at Cheynes Beach.
- All sites require consideration of environmental issues.





**Figure 6.5 Multicriteria Analysis – Constraints on Expansion of Rural Boating (upper) and Parking (lower) Facilities.**

## 6.5. Financial Considerations

### 6.5.1. Nominal Asset Value

A nominal replacement cost has been estimated for the nine City of Albany boating facilities outlined in the brief to determine asset values. It is understood that the financial value of these facilities has not been established on a City of Albany asset register. The asset value has been estimated by:

- Replacement costs for boating facilities including ramps, jetties based on nominal unit rates.
- The cost to re-establish dredged basins and approach channels evident at a number of sites and critical to their operation as a boating facility.
- Cost of parking facilities on a \$/m<sup>2</sup> rate.
- Nominal costs for community facilities including toilets, fish cleaning facilities etc.

There is no allowance for the value of the land that these sites occupy as they are generally coastal reserves, although their potential value for alternate uses is acknowledged. The nominal Asset value is outlined in **Error! Reference source not found.** and summarised in

Table 6.9

**Table 6.9 Nominal Asset Values – Boating Facilities**

ID	Ramp	Nominal Asset Value	Note
1	Albany Town Boat Harbour	\$8.3M	Largest asset value associated with breakwater that provides sheltered launching.
2	Little Grove	\$1.3M	Although finger jetty and ramp value has depreciated, replacement costs for these structures are relatively high. Largest asset value associated with dredged approach channel.
3	Emu Point	\$5.3M	Although finger jetty and ramp value has depreciated, replacement costs for these structures are relatively high. Largest asset value associated with dredged approach channel. Value of community user facilities also high.
4	Frenchman's Bay (Murray Rd)	\$0.3M	Largest asset value associated with concrete ramp.
5	Cosy Corner (Hartmans) <sup>9</sup>	\$0.1M	Small rural facility.
6	Lower King	\$2.5M	Although finger jetty and ramp value has depreciated, replacement costs for these structures are relatively high. Largest asset value associated with dredged approach channel.
7	Cape Riche	\$0.1M	Small rural facility.
8	Nullaki Peninsula	\$0.5M	Replacement costs for jetty relatively high
9	Cheynes Beach	\$0.3M	Small rural facility.

### 6.5.2. Maintenance Costs

The City of Albany noted that maintenance of these boating facilities is undertaken in response to regular inspections and customer service requests. Records are not available to assess maintenance costs for each facility, nor maintenance costs for boating facilities as a whole. Maintenance works are generally undertaken as part of wider City contracts such as cleaning. The costs of maintenance works to boating facilities or individual sites is not identified in the City's financial system as individual accounts, but rather included in various areas in the Road, Reserves or Trades maintenance accounts.

The City has noted the following maintenance is undertaken to boating facilities:

- Boat Launching Facilities: Maintenance of ramp and navigation lights; Painting/repair of jetties; Removal of sand/seagrass wrack from ramps (ramp cleaning)
- Parking Facilities: Road and parking area sweeping, Pot hole repair; Repairs to gravel parking/roads and tracks associated with the facilities, Repairs to lighting
- Community / User Facilities: Emptying of bins; Maintenance/cleaning of fish cleaning stations, Toilet cleaning; Cleaning of BBQs
- Responds to customer service requests and completes regular inspections to address maintenance issues.

The highest maintenance costs for boating facilities can be associated with maintenance dredging of navigation channels. We are not aware of significant maintenance dredging works being undertaken by the City of Albany in recent years.

<sup>9</sup> Cosy Corner (Hartmans) boat launching facility was inspected in March 2016. Cosy Corner (Cosy Corner Rd) was inspected in September 2015 but identified as an "additional site" in this report (refer Section 3.6)

### 6.5.3. Cost Benefit Considerations

The City of Albany public boat launching facilities provide a social benefit to users and the wider community. Whilst there is no direct cost to use these facilities, many of the sites have been upgraded through the Department of Transport's Recreational Boating Facilities Scheme, which is partly funded by revenue from recreational boat registrations.

Quantitative cost benefit assessment is difficult, particularly in the context of uncertain maintenance costs. However upgrade works as a percentage of the asset value are outlined in Table 6.10 and the following is noted:

- A number of significant upgrades generally represent in the order of 15% of the facility value.
- Many of the short term works represent less than 1% of the facility value.

**Table 6.10 Works as % of Asset Value**

	Facility Standard	Approximate Facility Value	Proposed Work Value	Work as % of Asset Value
<b>Proposed short term upgrades to existing facilities</b>				
Emu Point	6	\$ 4,213,000	\$ 510,000	12%
Lower King	3	\$ 1,599,000	\$ 60,000	4%
Cheyne Beach	2	\$ 301,000	\$ 40,000	13%
Hartmans Rd	2	\$ 168,000	\$ 30,000	18%
<b>Proposed medium and longer term work on existing facilities</b>				
Cape Riche	2	\$ 239,200	\$ 10,000	4%
Two People's Bay	2	\$ 200,000	\$ 30,000	15%
Town Boat Harbour	6	\$ 8,296,000	\$ 120,000	1%
Little Grove	3	\$ 962,000	\$ 150,000	16%
<b>Proposed short and medium term repair work</b>				
Emu Point	6	\$ 4,213,000	\$ 30,000	0.7%
Little Grove	3	\$ 962,000	\$ 27,000	2.8%
Lower King	3	\$ 1,599,000	\$ 16,500	1.0%
Nullaki	3	\$ 540,000	\$ 500	0.1%

### 6.6. Sea Level Rise Considerations

The consideration of the impacts of sea level rise on coastal infrastructure in Western Australia, including boating facilities, and the adaptation of this infrastructure, is generally undertaken through a Coastal Hazard Risk Management and Adaptation Plan (WAPC 2014).

The impacts of sea level rise on the boating facilities in the City of Albany have not been reviewed in detail in this plan however the following is noted:

- Boating Facilities (Jetties): Floating finger jetties at boat ramps are generally more adaptable to sea level rise provided they are located in suitably sheltered environments and the approaches and piles have allowed for future sea level rise. The Department of Planning recommends planning for 0.9m SLR over a 100yr planning timeframe (DoT 2010). The design of the deck level for fixed jetties should allow for sea level rise at the time of replacement, ensuring however that it is functional (i.e. not too high) during it's design life.
- Boating Facilities (Ramps): Beach launching sites are likely to be more vulnerable to coastal change associated with sea level rise and should be monitored.
- Parking Facilities: Survey data suggests parking areas at Emu Point, Lower King and Little Grove are generally between 1.0m to 2.0m AHD and would become increasingly vulnerable to coastal flooding events under sea level rise. The recommended Master Planning process for Emu Point and Lower King should consider appropriate levels for parking and drainage and future coastal erosion protection at the time of replacement. Albany Boat Harbour parking is more elevated (above 2.0m AHD). Parking for rural sites, except Cheyne Beach, are generally high but would be vulnerable to coastal erosion associated with sea level rise.
- Community Facilities: Occasional coastal flooding of parking areas and community facilities may be acceptable. However, facilities that may be adversely impacted by sea level rise such as toilet blocks should have their floor levels surveyed and adaptation options considered.

## 7. Discussion

The strategic planning has considered boating demand, available facilities, stakeholder input and strategic constraints. Whilst the existing facilities provided reasonably meet demand for most of the year, particular sites are overwhelmed during peak days. Potential improvements to existing facilities are outlined below together with discussion of rationalising existing facilities, maintenance of existing facilities and potential new sites. General comment is also made in regard to boating safety, which has been identified by the City and stakeholders as a high priority.

### 7.1. Improvements to Existing Facilities

There were four sites identified in the stakeholder workshop where specific improvements to existing facilities were recommended within the next 5-10 years. These were Emu Point, Lower King, Cosy Corner (Hartmans) and Cheynes Beach. Subsequent demand analysis also identified these sites as high priority for improvements to parking and boating. Strategic considerations or constraints in implementing stakeholder requests are outlined. Detailed concepts for improvements at these sites are provided in **Error! Reference source not found.**



### 7.1.1. Emu Point

Emu Point is the busiest boat launching facility in the City of Albany. This site is a major boat harbour (Level 6) although there are no sheltering breakwaters. There is competing demand for parking by moored vessels, commercial vehicles and single vehicle tourism. The site has evolved over time since construction in the late 1960's, early 1970's and the condition of some infrastructure, in particular the main finger jetty at the boat ramp, is degraded.

During the stakeholder workshop it was noted that this is a busy facility, the finger jetties are too narrow and the 3 ramps and beach are bordered by commercial vessels, with some conflict. A number of issues were raised in regard to parking in the relatively large carpark including conflict in usage, problems with shore based fishers and single vehicles taking trailer bays, overflow parking being used by other groups and a generally poor traffic flow with a mix of traffic.

Recommended improvements from the stakeholder workshop are outlined in Table 7.1. The technical and strategic constraints at implementing these recommendations are also outlined. A detailed concept for improving the facility for short-term demand is provided in **Error! Reference source not found.**, with an Emu Point Boating Facility Master Plan being a pathway to responding to longer-term demand.

**Table 7.1 Emu Point – Recommended Improvements**

Infrastructure Type	Stakeholder Feedback	Priority (H M or L)	Strategic Considerations
<b>Recreational Boating Infrastructure</b>	1. Replace finger jetty with wider pontoon (move ramps slightly west)	H	Previous structural inspections suggest finger jetty needs replacement due to borers in timber piles. Wider pontoon constrained by marine area (commercial vessel mooring).
<b>Parking Infrastructure</b>	1. Better signage	H	Feasible. Should be consistent with other sites
	2. Formalise overflow parking for boats and single vehicles	H	Concept outlined in Dwg SE022-1-1 (Att C).
	3. City of Albany to consider single car parking behind offshore fishing club	H	Constrained by thick vegetation, undulating topography and distance from destination.
<b>Community / User Infrastructure</b>			
<b>Other priority considerations or inclusions</b>	1. Emu Point Master Plan	H	Pathway to responding to longer term demand.



**Figure 7.1 Emu Point - Single Vehicle Parking in Trailer Bays West of Ramp – Google Street View (Feb-2015)**

### **7.1.2. Lower King**

Lower King is strategically located along the western foreshore of Oyster Harbour in a dredged basin close to areas of high population density and the areas of highest population growth. This is a local boat launching facility (Level 3). This is one of the few sites with potential to upgrade boating and parking infrastructure to provide a district (Level 4) or regional (Level 5) facility to accommodate existing and future demand.

During the stakeholder workshop it was noted that the jetty is narrow, outdated and inadequate; the ramp is slippery and dangerous, with level differences and vulnerable to coastal processes (erosion); there is no formal parking and lack of parking generally; and no universal access provisions.

Recommended improvements from the stakeholder workshop are outlined in

Table 7.2. The technical and strategic constraints with implementing these recommendations are also outlined. A detailed concept for improving the facility for short term demand is provided in **Error! Reference source not found.**, with a Lower King Boating Facility Master Plan being a pathway to responding to longer term demand. In particular this would need to consider an appropriate size of the facility, adjacent landowners, the commercial jetty, aboriginal heritage significant of Oyster Harbour, coastal erosion to the north and the proximity of the ramp to the road.



**Figure 7.2 Lower King Ramp and Jetty**

**Table 7.2 Lower King – Recommended Improvements**

<b>Infrastructure Type</b>	<b>Feedback</b>	<b>Priority (H M or L)</b>	<b>Strategic Considerations</b>
<b>Recreational Boating Infrastructure</b>	1. Floating finger jetty (pontoon) at north side of ramp	H	Proximity of commercial jetty, coastal exposure (sand/wrack/waves), launching and approach depths.
	2. New ramp	M	As above.
	3. Repair current ramp and improve government regulatory system	H	Feasible but need to consider economics of repair versus replacement.
<b>Parking Infrastructure</b>	1. Design and implement car parking	H	Concept outlined in Dwg SE022-1-2 (Att C). Constrained by proximity of road.
<b>Community / User Infrastructure</b>	1. Lighting	M	Feasible.
	2. Fish cleaning facility	M	Feasible.
<b>Other priority considerations or inclusions</b>	1. Master Plan	M	Pathway to responding to longer term demand.
	2. Demand survey (wider consultation)	H	Traffic counts undertaken in 2015/16.

### **7.1.3. Cheynes Beach**

Cheynes Beach is a rural boat launching facility located about 45 minutes east of Albany and provides relatively sheltered beach launching to the ocean. This is a local boating facility (Level 3) that is popular during summer but suitable for smaller vessels due to shallow nearshore reefs.

During the stakeholder workshop it was noted that the site seems to work quite well but is very shallow at launch point, which is difficult to address, and exposed to swell. There is extensive sea wrack on the beach, which can constrain beach launching, which also occurs via a gravel track. There is no formal parking and dispersed uncontrolled parking results, which can limit access to launch. There is high seasonal use in summer and holidays and a mix of users (swimming, commercial operations, rock fishing). A lack of water pressure for fish cleaning was also noted.

Recommended improvements from the stakeholder workshop are outlined in

Table 7.3. The technical and strategic constraints with implementing these recommendations are also outlined. A concept for improving the facility for short term demand is provided in Attachment C. Whilst there is capacity to provide improved parking and community / user infrastructure, the shallow nearshore area limits improvements to boating infrastructure.

**Table 7.3 Cheynes Beach – Recommended Improvements**

<b>Infrastructure Type</b>	<b>Feedback</b>	<b>Priority (H M or L)</b>	<b>Strategic Considerations</b>
<b>Recreational Boating Infrastructure</b>	1. Traffic flow – remove grassy ridge/knob between beach/weed and gravel area	H	Feasible.
<b>Parking Infrastructure</b>	1. Lines / signage	H/M	Minor improvements outlined in SE022-1-3.
	2. Parking inadequate for peak times but large expense for a couple of weeks		Minor improvements outlined in SE022-1-3.
	3. Code of conduct signage		Feasible, but should be consistent for all similar sites.
<b>Community / User Infrastructure</b>	1. Adequate for growth		
<b>Other priority considerations or inclusions</b>	1. Signage		Feasible, but should have a consistent warning in regard to beach launching in open ocean conditions.



**Figure 7.3 Cheynes Beach Boating Facility**

#### **7.1.4. Cosy Corner (Hartmans)**

Cosy Corner (Hartmans) is a rural boat launching facility located about 30 minutes west of Albany and provides relatively sheltered beach launching to the ocean. This is a local boating facility (Level 3) that is popular during summer with local boat users but suitable for smaller vessels due to a narrow, steep gravel access track.

During the stakeholder workshop it was noted that the site is serviced by a sub standard track and only offers single lane access with no passing opportunities. There is also a tree to navigate when launching or accessing the site and the site is not suited to high usage. This site is relatively exposed, vulnerable to the wind and it is difficult to load boats in swells. It was noted that the adjacent site at Cosy Corner (Cosy Corner Road) offers better vessel access but is too open to swells. Hartman's was considered to be a good location to access fishing and diving spots and would be more popular with good facilities.

Recommended improvements from the stakeholder workshop are outlined in



Table 7.3. The technical and strategic constraints with implementing these recommendations are also outlined. A concept for improving the facility for short-term demand is provided in **Error! Reference source not found.** There is limited capacity to expand this facility to accommodate longer term demand.

**Table 7.4 Cosy Corner (Hartmans) Recommended Improvements**

<b>Infrastructure Type</b>	<b>Feedback</b>	<b>Priority (H M or L)</b>	<b>Strategic Considerations</b>
<b>Recreational Boating Infrastructure</b>	1. Access track resurface – short term fix	H	Feasible. May have occurred in summer 2015/16.
	2. Planning/feasibility study into two track one way loop in/out	M	Study feasible but steep topography constrains implementation.
	3. Remove tree at bottom of gravel access track	H	Tree roots stabilises bank. Further investigation prior to consideration of removal.
<b>Parking Infrastructure</b>	1. Walk path from parking area	M	Feasible as part of planning study.
	2. Gravel surface of parking and road	M	Feasible. May have occurred in summer 2015/16.
<b>Community / User Infrastructure</b>	1. Bibbulmun Track at Cosy Corner		
<b>Other priority considerations or inclusions</b>	1. Signage including consideration of whale watching		Feasible, but should have a consistent warning in regard to beach launching in open ocean conditions.



**Figure 7.4 Cosy Corner (Hartmans) Boat Launching Facility**

#### **7.1.5. Other Sites**

There were a number of potential improvements to other sites identified during stakeholder workshop. These include:

##### *Urban Sites*

- Frenchman's Bay (Murray Rd): Minor lengthening of concrete ramp (possibly constrained by natural rock), installation of navigation aids and survey and update of boating guide.
- Little Grove: Wider jetty and improved navigation depths in approach channel.
- Albany Boat Harbour: Modifications to turning circle off access ramp, installation of fish cleaning facilities and universal access.

##### *Rural Sites*

- Cape Riche: Straighten ramp to carpark (one pitch angle) and improved surface drainage, separate access track to beach.
- Nullaki: Wrack accumulations noted, but stakeholder request was to leave as is with no upgrade or maintenance expenditure.

Potential improvements to Two Peoples Bay were identified during the inspection in March 2016; in particular improve steep drop-off at ramp and turning circle and consideration of further overflow parking along the road. The other sites were generally smaller rural facilities with beach launching to the open ocean, where maintenance and consistent warning signage require consideration.



**Figure 7.5 Two Peoples Bay Boat Ramp – Note Steep Drop-off**

## 7.2. Rationalisation of Existing Facilities

The rationalisation of existing facilities would allow the City of Albany to direct available funds to particular sites. The community workshop and subsequent strategic planning has identified the sites where resources are likely to have the greatest benefit to the boating public.

The following was noted in the stakeholder workshop regarding sites for rationalisation or potential de-commissioning:

- Selected Smaller Beach Launching Facilities: There are many sites where boat users launch small boats that the City could rationalise to potentially make better use of available funds. The City could rationalise localised launching over the beach at multiple sites in a controlled planning model.
- Nullaki Peninsula Boating Facility: The group noted closure may be possible and that:
  - This would impact mostly upon local residents but with low usage by them generally;
  - Poor serviceability of the existing facility limits usage;
  - Limited use by regional boat users;
  - Requires dredging, which is problematic; and
  - Potential to close this site subject to further assessment and consultation.
- Frenchman's Bay Boating Facility: Frenchman's facility near the swimming area (with potential for different user conflict) could be closed with Murray Road becoming the main facility for the Vancouver Peninsula area.



**Figure 7.6 Nullaki Peninsula Boating Facility**

The following should be considered by the City of Albany in this regard in a strategic planning sense:

- Rationalising smaller sites along Lower King (south of bridge) and Lower Kalgan (south of bridge) coincident with an upgrade to the existing Lower King Boating Facility would improve boat launching capacity in this area and reduce environmental impacts along the foreshore. However, the reduction in cost would be limited as the City of Albany expenditure at these small sites is minimal and usage is limited by available parking.
- Nullaki Peninsula has potentially high ongoing maintenance costs associated with wrack accumulations and the future maintenance and replacement of the Jetty. Whilst the site is relatively remote with anecdotally low usage, it is strategically important for local residents, providing access to Wilsons Inlet. Whilst the local residents associated were extended an invite to the stakeholder workshop they were unable to attend, so further targeted consultation is recommended. Notwithstanding this, the stakeholder reference group did not generally support high expenditure by the City of Albany at this site.

- Frenchman's Bay offers an alternate local boat launching facility on the Vancouver Peninsula to Murray Rd with different exposure and sheltering. However, the site appears popular with beach users so further attention to separation of boats and people could be considered. The City of Albany expenditure on the boat launching components of this site are expected to be low so would offer minimal cost savings in this regard.

### **7.3. Maintenance of Existing Facilities**

The requirements for maintenance of existing facilities are outlined in Section 6.

### **7.4. Potential New Facilities**

The installation of new boating facilities may be required at some time in the future to accommodate future demand. The demand analysis suggests this should focus on urban sites within Oyster Harbour in particular, and sites within Princess Royal Harbour.

Within Oyster Harbour there are limited new sites along the urban western foreshore. Existing sites at Emu Point, and Lower King in particular, provide the best opportunity to accommodate longer term demand, following a master planning process. These are established sites with existing dredged basins and approach channels.

There is potential to replace the existing Local (Level 3) facility at Lower King with a new district (Level 4) or regional (Level 5) facility. The scale of the facility requires consideration of potential impacts of reclaiming some of the shallow foreshore areas, the lease of the adjacent commercial jetty, aboriginal heritage significance of Oyster Harbour, Department of Water approvals, public foreshore reserves, the proximity of the road, and local residents.

Within Princess Royal Harbour, the potential to install a third ramp and finger jetty at Albany Boat Harbour, north of the existing ramps (there is a large drain that limits expansion to the south) and secure access to the overflow parking area in the longer term provide the best opportunity to accommodate longer term demand. This requires consideration of existing use of the site, potential conflict with swimming areas and the tenure and alternate future users of the gravel overflow parking area.

The potential to install new boating facilities was considered at the stakeholder workshop. The following was noted in this regard:

- Lower King: Alternative site may be suitable with a strategic approach needed to consider impacts for existing ramp.
- Two People's Bay: There would be some opposition to this based upon the need for an additional ramp with additional parking and accretion from overland flows in wet conditions. There is also limited space to manoeuvre and turn around for launching. A simple site offering some parking with sandy beach launching may be appropriate.
- Frenchman's Bay: Additional ramp possible and worth considering. Whaling Station with coastal protection could produce consolidation opportunity for Frenchman's Bay and Murray Road for all weather access.
- Black Swan Point: Needs additional community facilities with toilets to be built soon. Not so much need for boat launching facility improvements in low tide and prevailing winds resulting in seasonal use. The City could improve the parking and community facilities based on the use of the facility for wind and kite surfing with current ramp condition and usage maintained.

## 7.5. Boating Safety

The Guidelines for Design of Marinas (AS3962) provides guidance on design of onshore boat facilities. It is noted that boat launching ramps should be aligned to the dominant waves from swell, sea and wash, and *sheltered from waves larger than 0.2m*. Guidance is not provided on a recommended frequency of this wave height for boat launching. However, Section 4.8.2. (Wave Loads) of AS3962 identifies the criteria for 'good' wave climate within a harbour as a wave event exceeded *once a year* of less than 0.3m wave height.

Whilst a detailed analysis of coastal exposure has not been undertaken it is expected that there is only one site within the City of Albany (Albany Boat Harbour) where boat launching would be sheltered from waves larger than 0.2m. Whilst other sites may provide safe launching in 'favourable' weather conditions, wave heights are likely to exceed 0.2m in 'unfavourable' weather conditions. In particular, conditions may be favourable during launching, but unfavourable during retrieval due to waves generated by an afternoon sea breeze.

Boat launching facilities in Oyster Harbour and Princess Royal Harbour are likely to be sheltered from ocean swells, and these areas are designated 'smooth waters' for commercial operations. Boat launching facilities along Vancouver Peninsula are more exposed to swell and are designated 'partially smooth waters' for commercial operations. The other rural boat launching sites, whilst partially sheltered by natural headlands, are exposed to ocean swells and surge. Boat launching by experienced boat users in appropriate conditions can be undertaken safely at these sites.

Previous studies by the City of Busselton have used wave modelling to assess the relative exposure of boat launching sites and the frequency of wave heights exceeding 0.2m (APASA 2012). This approach could be adopted by the City of Albany, although the range of sites and processes operating is more complex. It is noted however that whilst this would better quantify the risk, and signage would increase awareness of boating facility users of this risk, it would not remove the risk. The potential liability of the City of Albany from public use of these facilities requires consideration.

It is recommended that:

- The City further investigates the risk associated with boat launching outside protected harbours, given boat launching by experienced boat users in appropriate conditions can be undertaken safely at these sites.
- Warnings are provided to the public through *consistent* signage (refer Figure 7.7) at boat launching facilities and boating guides.
- The potential liability of the City of Albany from public use of boat launching outside protected harbour is considered.
- The limitations of improving wave sheltering are considered.





Figure 7.7 Variable Safety Signage at Boating Facilities

## 8. Implementation

The implementation of works to improve, rationalise and maintain boating facilities in the City of Albany requires a planned and budgeted works program, generally based on the 10-year financial plan. Planning for new facilities to accommodate longer term demand will require budgeting beyond the 10-year cycle. A range of relatively smaller scale capital works to improve parking infrastructure at a number of sites can be budgeted for and implemented by the City of Albany in the short term. Larger works eligible for Department of Transport Recreational Boating Facilities Scheme grants.

Below is a table that provides a table of proposed works with priority listing and opinion of probable cost for consideration in long term financial planning.

**Table 8.1 Priority and Opinion of Probable cost**

ID	Boating Facility	Type	Urban/ Rural	Priority for Upgrade	Proposed Works (Upgrades)	Value of Proposed Works (\$ExGST)
<b>Boating Facilities</b>						
1	Albany Town Boat Harbour	Boat Harbour	Urban	Medium	Fish cleaning facility and improved ramp approach	\$135,000
2	Little Grove	Local Boating Facility	Urban	Low	Widen jetty	\$150,000
3	Emu Point	Boat Harbour	Urban	High	New wider finger jetty, revised parking layout, Master Plan and implementation.	\$3,510,000
4	Frenchman's Bay (Murray Rd)	Local Boating Facility	Rural	Low*	Survey (refer boating safety)	
5	Cosy Corner (Hartmans)	Beach Launching	Rural	High	Resurface gravel track and parking areas, planning study.	\$30,000
6	Lower King	Local Boating Facility	Urban	High	New regional boating facility, improvements to ramp and parking in interim.	\$5,060,000
7	Cape Riche	Beach Launching	Rural	Medium	Improve gravel access track.	\$10,000
8	Nullaki Peninsula	Local Boating Facility	Rural	Low	Planning to reduce maintenance costs.	
9	Cheyne's Beach	Beach Launching	Rural	High	Improved parking layout and signage.	\$40,000
<b>Additional Works</b>						
	Two Peoples Bay	Beach Launching	Rural	Medium	Improve ramp.	\$30,000
	Boating Safety	Review and upgrade marine safety signage, survey and education.				\$440,000
	Rationalisation of Existing Facilities	Reduce maintenance cost at Nullaki and review beach launching in Oyster Harbour.				\$20,000
	Lower Kalgan River	Feasibility study and implementation,				\$2,340,000
	Maintenance Works	Various maintenance works on boating facilities.				\$510,500
					<b>Subtotal (\$ExGST)</b>	\$12,275,500

Notes: (1) Boating Facility type based on Department of Transport boating facility classification. (2) Urban sites generally those in close proximity to Albany CBD and located in Oyster Harbour or Princess Royal



Harbour. (3) Priority based on stakeholder input and timing for upgrades. High priority sites targeted for upgrades in the short term. (4) Values are for proposed works at site over nominally a 10year financial plan.

## 9. Recommendations

The Albany Recreational Boating Facility Strategic Plan includes the outcomes of the inspection of boat launching facilities, an assessment of boating demand, community consultation, and a strategic assessment of the capacity of these facilities to meet existing and future demand. Recommendations are provided in Table 9.1 for improvements to, rationalisation of, and maintenance of existing boating facilities, potential new facilities and boating safety.

**Table 9.1 Recommendations – Summary**

No.	Recommendation
1.	<p>Data Gaps: The following survey and investigations are recommended to fill data gaps identified in the study:</p> <ul style="list-style-type: none"> <li>• Hydrographic surveys of selected boating facilities and approach channels.</li> <li>• Wave modelling and/or wave data collection to better define coastal exposure at selected boat launching sites.</li> <li>• Ongoing data collection to monitor and assess future peak boating demand, particularly at Lower King, Emu Point and Albany Boat Harbour.</li> </ul>
2.	<p>Consultation: The following consultation is recommended:</p> <ul style="list-style-type: none"> <li>• Targeted consultation with indigenous groups regarding proposals in the strategic plan at boating facilities in Oyster Harbour.</li> <li>• Targeted consultation on the future of the Nullaki Peninsula boating facility with the local residents association.</li> </ul>
3.	<p>Improvements to Existing Facilities: Potential improvements are outlined in Section 7, with a focus on short term improvement to boat launching and parking facilities at sites identified as priorities by the Stakeholder Reference Group (Emu Point, Lower King, Cheynes Beach and Hartmans). The development of a Master Plan for Emu Point to assess longer- term improvements to this key boating facility is also recommended.</p>
4.	<p>Maintenance of Existing Boating Facilities (Boat Ramps): In general boat ramps are in reasonable condition and suitable for their intended purpose, provided ongoing maintenance of access roads and boat launching facilities occurs. Previous studies have identified that the timber jetty at Emu Point requires replacement within 2-5 years, and immediate corrosion protection is required at the Little Grove jetty.</p>
5.	<p>Rationalisation of Existing Facilities: Opportunities to rationalise facilities at Nullaki Peninsula and smaller sites on Oster Harbour should be pursued.</p>
6.	<p>Potential New Facilities: Lower King provides the best opportunity to provide a new boating facility in the Albany region to meet future demand and alleviate pressure at Emu Point. The potential to replace the exiting local (Level 3) boat launching facility at Lower King with District (Level 4) or Regional (Level 5) should be considered. The design and timeframe for constructing a new facility at this site should be subject further monitoring of boating demand (Recommendation 1), environmental approvals and a consultative Master Planning process.</p>
7.	<p>Potential New Facilities: The installation of a third boat ramp and securing of overflow parking areas should be investigated for Albany Boat Harbour to accommodate longer-term demand within Princess Royal Harbour.</p>
8.	<p>Financial Considerations: A review of asset replacement values and maintenance expenditure for boating facilities is recommended. The high value of re-establishing dredged channels in Oyster Harbour and Princess Royal Harbour, which are critical to the ongoing function of these boating facilities, should be acknowledged. Maintenance costs of each boating facility should be identified.</p>
9.	<p>Boating Safety: The risks associated with boat launching outside protected harbours should be investigated further, and consistent warning provide to the public through signage at boating facilities and boating guides.</p>

No.	Recommendation
10.	Assisted Universal Access: The provision of ACROD bays and floating pontoons at boating facilities for Assisted Universal Access should be reviewed and improved.
11.	Lower Kalgan: The development of a feasibility study for the provision of boating facilities along the Lower Kalgan River is recommended.

## 10. References

- APASA. *Dunsborough Region: Wave Modelling Study*. City of Busselton, 2012.
- BSD. *Albany Harbour Planning Strategies*. Albany: Town of Albany, 1997.
- Clark, R, and E P Hodgkin. "Estuaries of the Shire of Albany." *Estuarine Studies Series (Estuaries and Coastal Lagoons of South Western Australia)*, 1990.
- CZM. *Geological Report Albany Harbour, Western Australia*. Coastal Zone Management Consultants, 1971.
- DoT. "Albany (Emu Point) Maritime Facility: Vessel Accommodation Plan." Department of Transport, January 2014.
- . "Albany Waterfront Marina." Department of Transport, 2014.
- . "Albany Waterfront Marina: Vessel Accommodation Plan." Department of Transport, January 2014.
- . "Boating Guide: Albany Marine Safety." Department of Transport, April 2013.
- . "Emu Point Boat Harbour." Department of Transport, February 2014.
- DoT. *Peel Region Recreational Boating Facilities Study 2010*. Perth: Department of Transport, 2011.
- DoT. *Sea Level Change in Western Australia Application to Coastal Planning*. Perth: Department of Transport Coastal Infrastructure, Coastal Engineering Group, 2010.
- DPI. *Albany Boat Harbour Desktop Preliminary Study*. Department of Planning and Infrastructure WA, 2003.
- Estill. *Denmark Strategic Boating Plan Desk Study and Stakeholder Forum Report*. Perth: Department of Planning and Infrastructure, 2007.
- IMC. *Albany Boat Harbour: Demand Study*. International Marina Consultants, 2001.
- MRA. *City of Albany: Condition Assessment Boardwalks and Jetties*. City of Albany, 2015.
- Ryan, K L, B S Wise, N G Hall, K H Pollock, E H Sulin, and D J Gaughan. *An Integrated System to Survey Boat-Based Recreational Fishing in Western Australia 2011/12*. Perth: Department of Fisheries, 2013.
- Ryan, K L, N G Hall, E K Lai, S B Smallwood, S M Taylor, and B S Wise. *State-Wide Survey of Boat Based Recreational Fishing in Western Australia 2013/14*. Department of Fisheries, 2015.
- SCNRM. *Southern Shores: A Strategy to Guide Coastal Zone Planning and Management in the South Coast Region of Western Australia*. South Coast Management Group, 2009.
- Shore Coastal. *Capes Region Boating Strategy*. Busselton: City of Busselton, 2010.
- Smallwood, C B, and N R Sumner. *A 12-month Survey of Recreational Estuarine Fishing in the South Coast Bioregion of Western Australia During 2002/03*. Perth: Department of Fisheries, 2007.
- Transport. *Strategic Plan for Maritime Facilities*. Perth: Transport, 1995.
- Tydeman, F W. E. "Report on Albany Harbour." 1948.
- WAPC. *Coastal hazard risk management and adaptation planning guidelines*. Perth: Western Australia Planning Commission, 2014.

