

Port of Albany

Port Master Plan



Foreword

Southern Ports has developed a Port Master Plan for the Port of Albany. The Plan has assessed potential trade for a 30-year planning period, considering current and future trade opportunities and how this could influence development within the Port.

Potential development items have been produced for short, medium and long-term horizons within the 30-year planning timeframe, with the process to reach these development items outlined.

The Port Master Plan for the Port of Albany seeks to set out how particular areas can (as opposed to will) develop and redevelop into the future. The document is not considered to be a statutory planning document, but rather is available as a strategic tool to support development and investment decisions within the Port.

This plan was endorsed by the Board of Southern Ports on 16 March 2023.



Section 1: Introduction and Background

This section summarises the strategic Port Master Plan objectives, outlining what a Master Plan is and what benefits it can offer. Southern Ports’ values and the sustainability considerations imbedded into the Port Master Plan are described.

A snapshot of the Port through time is also provided, demonstrating how the Port of Albany came to be and illustrating historical trade throughput.

Section 2: Port Master Planning Process

The process undertaken to produce the Port Master Plan is outlined in this section, providing an overview of the stages and methodology.

Stakeholder engagement is a key part of the Master Planning process. As such, a summary of some of the key outcomes from engagement activities is provided, leading into a summary of the opportunities and constraints specific to the Port of Albany.

Section 3: Trade Forecast Scenarios and Infrastructure Needs

Trade is one of the core influences behind the Port Master Plan. This section outlines how differing trade scenarios were developed and how these influence infrastructure and land requirements within the Port.

Section 4: Albany Port Master Plan

This section defines the Port Master Plan development items, outlining how the Port could look in the future considering short-,medium-, and long-term infrastructure and development solutions. A breakdown of each item is provided describing the scope of each item.

A brief discussion around the future of Ports and a document conclusion is also provided in this section.

01.

Introduction and Background

The Port of Albany is located on the southern coast of Western Australia approximately 390 km south-east of Perth, supporting the broader Great Southern region. Albany was the location of the first port in Western Australia, operating as the State’s only deep-water port for 70 years. The Port has offered a natural safe haven for ships since 1826 and has a rich maritime, military and cultural history.

The currently utilised wharves have been brought into operation at various times since the 1950s, with the Port undergoing a variety of changes since that time to support the diverse industries that utilise the Port.

The Port is uniquely located within the protection of Princess Royal Harbour and maintains close interfaces with the city of Albany. This linkage with the city and recognition of the regions rich history are a key consideration when planning for the long-term, sustainable development of the Port.

Southern Ports is responsible for managing the Port of Albany facilities, along with the Ports of Bunbury and Esperance.



Strategic Port Master Plan Objectives

Port Master Plan Objectives

The Port of Albany Port Master Plan aims to:

- Clarify and further define Southern Ports’ strategic planning for the Port over a 30-year horizon
- Guide and facilitate future developments, including infrastructure developments
- Maintain port land and infrastructure corridors for future developments, if required
- Align with the overarching development plans prepared for Albany, the Great Southern region and wider Western Australia
- Consider opportunities, constraints and risks from various perspectives such as trade, maintenance and port expansion, environmental, and social aspects
- Build in flexibility to allow future updates to the Plan, in line with ever changing planning parameters

What is a Port Master Plan?

A Port Master Plan is a document which describes a high level development concept for a port, seeking to :

- Set out how a particular area can (as opposed to will) develop and redevelop in future
- Set out objectives and strategies to manage development and change over time
- Define what is important about a place and how its character and quality can be conserved, improved and enhanced

What are the benefits of a Port Master Plan?

An effective Port Master Plan will:

- Create additional economic value via increased industry and investment confidence
- Assist in overall supply chain management by integrating the Port into broader network considerations, and ensuring that vital infrastructure is delivered when and where it is needed (via well-considered staging options).
- Maximise significant economic and productivity improvements through efficient management of critical infrastructure delivery and protection
- Provide increased environmental protection by identification of critical environmental values early in the design process
- Help to inform port users, employees and local communities as to how they can expect to see the Port develop into the future

The Port Master Plan is used to coordinate the preparation of more detailed plans, and guide the Port development planning process over the next 30 years.

Southern Ports Values

Southern Ports is focussed on creating optimum value for all stakeholders, including integration of best practise sustainability principles.

Our Vision

Strong regional ports, strong regions.

Our Values

- Safety: Demonstrating an uncompromising commitment to safety at all times
- Integrity: Holding high standards of conduct and decision-making to ensure confidence and trust
- Teamwork: Working as one team to achieve a common goal
- Future focus: Building a sustainable future aligned with our vision, while respecting our history.
- Accountability: Empowering people to perform well, demonstrating initiative and acting responsibly

Southern Ports has adopted and operates to fulfill the roles of a Port (set out in Figure 1.1) that relate to the key overarching themes of Prosperity, Environment and People and Partnerships.



	Maximise the opportunity to create value.
	Own the underlying seabed and land which comprise the Port boundaries on behalf of the state.
	Own all common user infrastructure to ensure optimal access to current and future trades through the Port.
	Manage port infrastructure and provide port services through the most appropriate governance model.
	Focus on things that are best done by ports.
	Play a central role in assisting the private sector to fund Port expansion.
	Create synergies in planning logistics and project development by facilitating the free flow of information between government, community and industry.
	As a gateway port, plan beyond port boundaries in considering how government, industry and community interests are affected by local, national and international supply chain activities.
	Act as a conduit between government and industry (and the community in some cases)
	Are part of the community in which they operate.
	Take overall responsibility for maintaining the Port environment.
	Maintain a flexible and nimble organisation structure. With clear accountabilities for competent, knowledgeable, thinking personnel.
	Have strong corporate governance practices.

Figure 1.1
Roles of a port
Source: SP SDP 21-30

Sustainability

Sustainability Considerations & Alignment

Sustainability has been a key consideration during the Port Master Plan process. ‘Core Sustainability Principles’ were established and considered during the Port Master Plan project – seen below in Table 1.1.

Consideration and alignment between items below is set out in Table 1.2:

- Key ‘Options Analysis’ considerations
- Southern Ports Sustainability Themes
- Key ‘Materiality Issues’ (identified during the project stakeholder survey) and the relevant UN Sustainable Development Goals.

The preferred Port Master Plan solution has included consideration of these matters - ensuring an enduring, sustainable ‘plan’ which meets the expectations of Southern Ports and the wider community.



‘Core Sustainability Principles’ to meet:	Achieved in Port Master Plan?
Drives Land Use Efficiency	✓
Facilitates Economic Growth	✓
Ensures Resilient & Adaptive Infrastructure	✓
Manages the ‘Port-City’ Interface	✓
Included Early Consideration (& subsequent protection) of Environmental Values	✓
Identifies & Protects Critical Supply Chains	✓
Included Stakeholder Engagement, Inclusiveness & Transparency	✓
Maintains Port Safety & Security	✓

Table 1.1 Core Port Master Plan Sustainability Principles

Sustainability Alignment			
Sustainability Theme	PMP Materiality Issues	United Nations SDGs	PMP ‘Options Analysis’ Considerations
Prosperity	- Facilitating/Supporting Trade Growth & Diversity - Supporting & Activating City, Regional and WA Economic Activity - Providing Confidence for Investment within the region		Enabling infrastructure and regional development
Partnerships Prosperity	- Driving Port Efficiency - Clarifying the 'Vision' for the Port of Albany - Exploring joint venture partnerships/opportunities for future development		Planning & Delivery
Planet Prosperity	- Focusing on Safe and Clean Shipping - Driving Port Efficiency - Clarifying Dredging/Sediment Management projects		Navigation
Planet Prosperity	- Driving Port Efficiency - Clarifying Dredging/Sediment Management projects		Operability - Berth
Prosperity	Driving Port Efficiency		Ensures Resilient & Adaptive Infrastructure
Prosperity Partnerships	- Ensuring Efficient and Protected Supply Chains and Corridors (Road, Rail & Sea) - Driving Port Efficiency		Operability - Land - Materials Handling Corridors (Supply Chains etc)
Prosperity Partnerships	Driving Port Efficiency		Operability - Land - Road Interface
Prosperity	Ensuring Business Flexibility, Resilience & Adaptation		Scalability
Prosperity	- Investigating Local Supply Opportunities - Ensuring Business Flexibility, Resilience & Adaptation		Construction Fronts / Schedule
Partnerships	- Ensuring safety & security of people at and around the port - Openness & Transparency with the Township - Investigating Local Supply Opportunities - Clarifying the 'Vision' for the Port of Albany		Social Impacts
Planet Partnerships	- Managing potential Port Impacts (eg. Air, Noise, Stormwater) - Managing & Preserving Biodiversity around Port Precinct - in partnership with City of Albany - Management of Separation Distances (ie. Port Buffers) - Ensuring 'Sustainability' informs decision-making - Addressing Climate Change Resilience & Adaptation		Impacts on the Environmental Aspects
Prosperity	Providing Confidence for Investment within the region		Financial Aspects

Table 1.2 Sustainability Alignment

Albany Port Layout and Security Zones

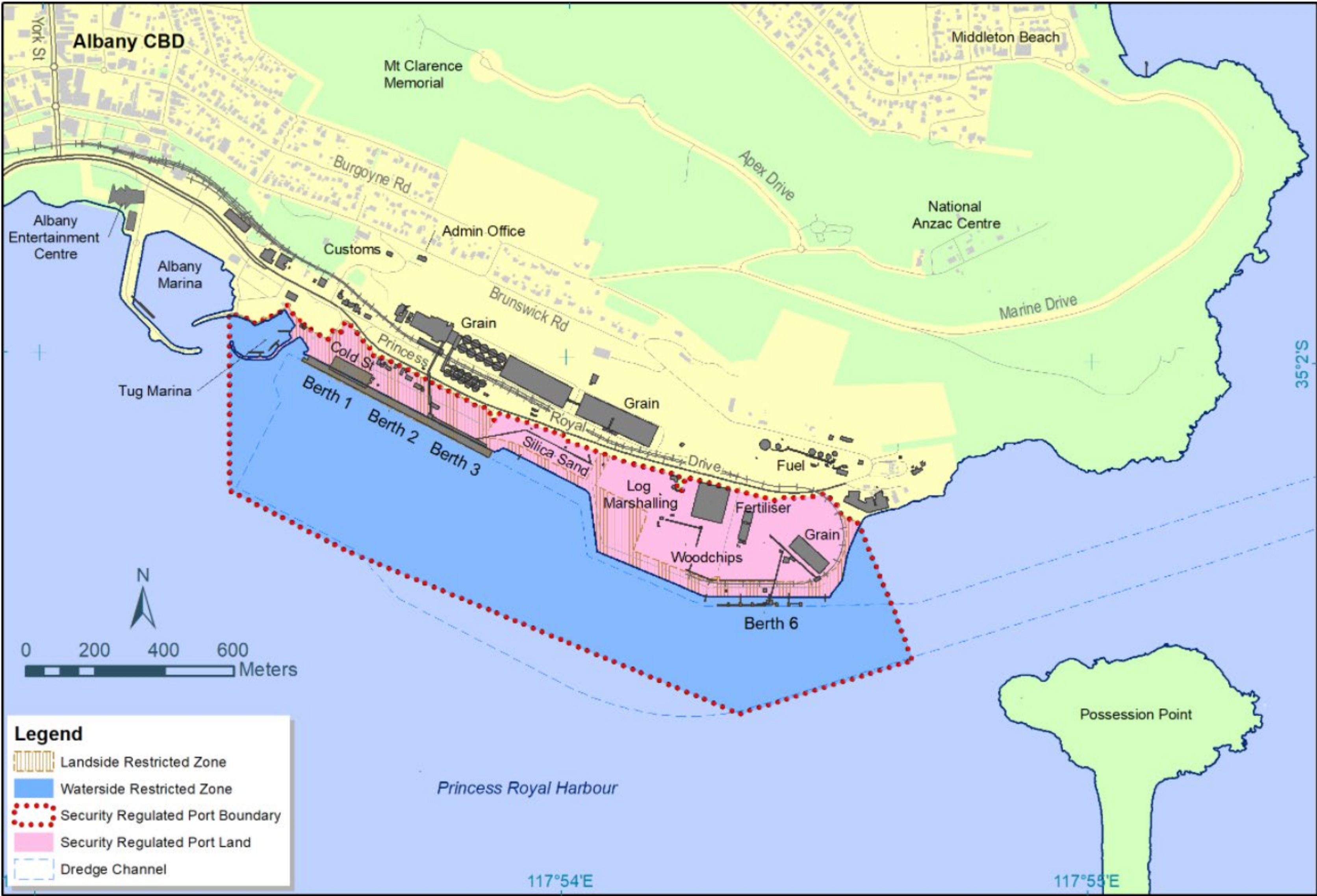


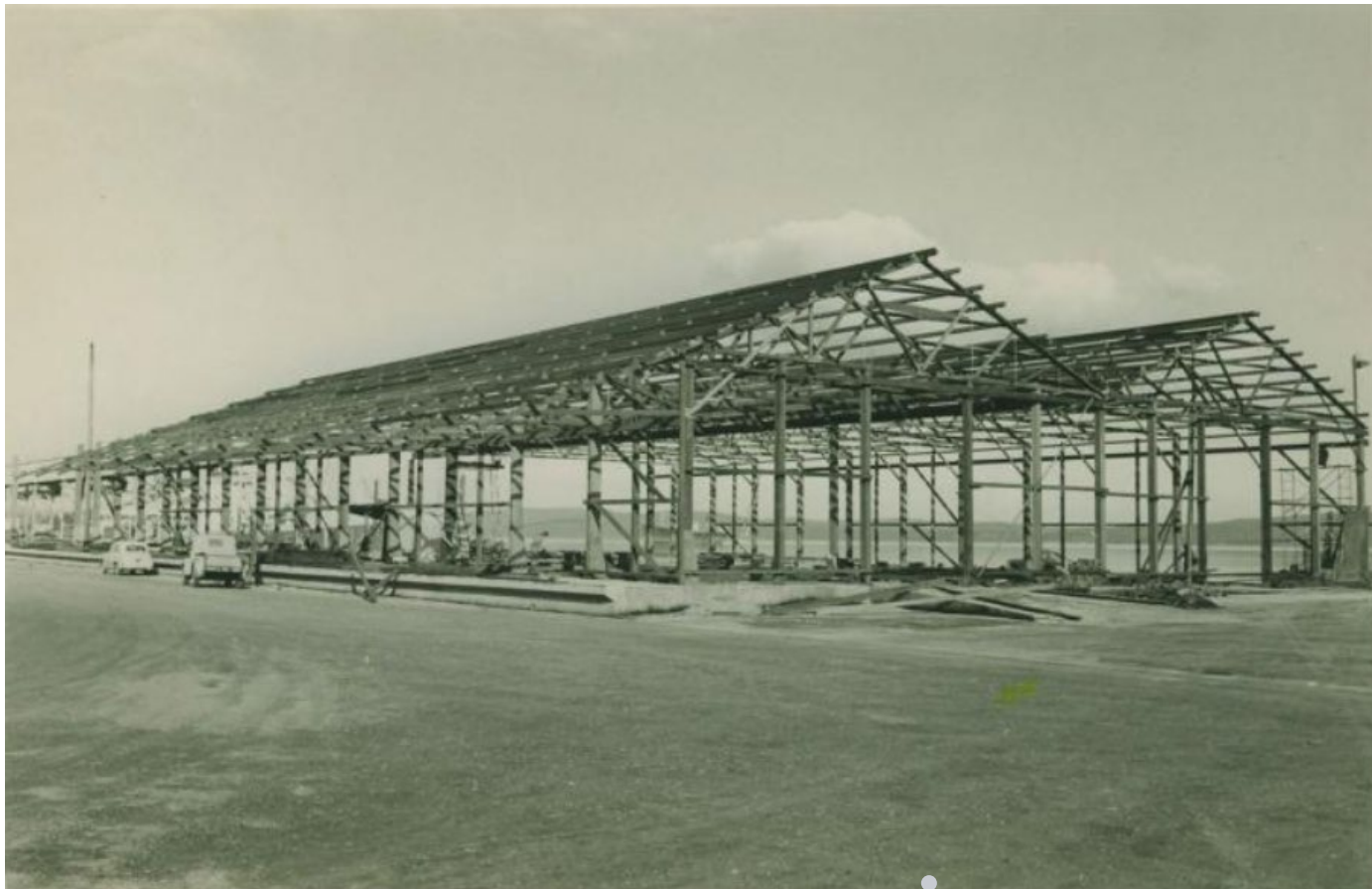
Figure 1.2
Current Port of Albany layout and security zones
Source: Southern Ports Authority

History

The Port of Albany has been in operation in various forms since the formation of Albany townsite in the 1800s. The Port has undergone many changes since then to evolve to the current configuration as the gateway for trade. Southern Ports is responsible for managing the Port of Albany, and is governed under the Port Authorities Act 1999.

The Port’s main trades are grain, woodchips and silica sand exports, while also supporting fertiliser and fuel imports.

The Port of Albany has played a vital role in the development of Albany and the surrounding region. The Port has been expanding in its current form since the mid-1900s, following a development journey described in the adjacent timeline.



Port of Albany

1834-40

24 ships called into Albany. Imports included salted meat, flour, beer and spirits, tobacco, rice, oils, sheep and cattle.

The first Town Jetty was constructed.

1850

Construction began for Town Jetty 2. Winter rains caused the project to be abandoned.

1858-59

Point King Lighthouse and Breaksea Island Lighthouse was constructed.

P&O Jetty was constructed.

1862-66

Town Jetty 3 was constructed.

The P&O Floating Dock was constructed.

1889

Deep Water Jetty was constructed, with a maximum depth of 10m. The Jetty was formally opened on June 1, 1889, despite being utilised by ships since the year before.

1908-14

In 1908 American battlecruisers anchor in Princess Royal Harbour as part of the Great White Fleet’s visit to Albany.

In 1914 two convoys of ships carrying troops and their equipment departed from King George Sound to Egypt and World War I.

1926

Eclipse Island Lighthouse was constructed

1951-57

The first official meeting as the Albany Harbour Board was convened in April 1950.

First rock phosphate shipment was unloaded at the Deep Water Jetty in 1954.

SS Rowanbank is the first vessel at new land-backed wharf (now Berth 2). A total of 5,886 tonnes of rock phosphate was discharged.

Construction of the second land-backed berth (now Berth 1) begin in 1957 and was in operation later that year.

1961-72

Construction of the second stage CBH silos was completed. The second stage, which doubled the storage capacity to 5.8 million bushels, was completed in 1968.

Albany Harbour Board renamed Albany Port Authority.

Berth 3 was constructed (195 m) and a 28.6 m extension to berth 1 created a continuous wharf face of 563 m.

The straight arm section of the Deep Water Jetty was demolished.

History continued



Port Master Plan Pathway

The Port has operated for a long time, has experienced many changes, and evolved to the current configuration.

The Port supports and is critical to the Great Southern region and the local Albany community.

Main trades are grain, woodchips and silica sands.

Improved efficiencies or new port infrastructure must have foresight to accommodate the long term growth potential for the region.

1973-78

Old 135 tonnes slipway decommissioned with a new 300 tonnes slipway constructed.

Whaling station closed being the last such entity in Australia.

1992-1996

Deep Water Jetty was demolished, with 4,200 tonnes of timber given to charities and local residents.

Albany Cold stores opened with the capacity of 2,500 tonnes.

Export of Silica Sand commenced. First shipment was 23,885 tonnes to Japan.

Port service facility constructed to accommodate the Port's Pilot Launch, Tugs and Workboats.

2000 -2020

The world's first purpose-built 'Albany Max' class vessel, the *MV Albany Pioneer*, was launched in Japan to accommodate the woodchip trade.

Berth 6 (woodchips) opened and exports of woodchips commenced.

CBH upgraded with 10 new steel cells to provide an additional 60,000 tonnes storage capacity.

Export of biomass pellets commenced September 2009.

Albany, Bunbury and Esperance Ports amalgamated to form Southern Ports Authority from 1st October 2014.

The Cunard's MS Queen Elizabeth makes its maiden call in Albany in December, 2019.

Restoration works on the Albany Pilot Station begins. The site includes the Coxswain's Quarters (1889) and the Pilot Crew Quarters (1902). It is listed on the State's Register of Heritage Places (2002).

NOW

SHORT-TERM
<5 years

MEDIUM-TERM
6-11 years

LONG-TERM
11-30+ years



Historical Port Throughput

Historical Port throughput is dominated by grain, fertiliser, silica sand and woodchip products. In the 2021 financial year, commodity throughput included:

Exports

Commodity	Throughput
Grain	2.70 mtpa^
Silica sands	0.15 mtpa
Woodchips and timber products	0.90 mtpa

Imports

Commodity	Throughput
Fertiliser	0.17 mtpa
Oil / Petroleum	0.04 mtpa

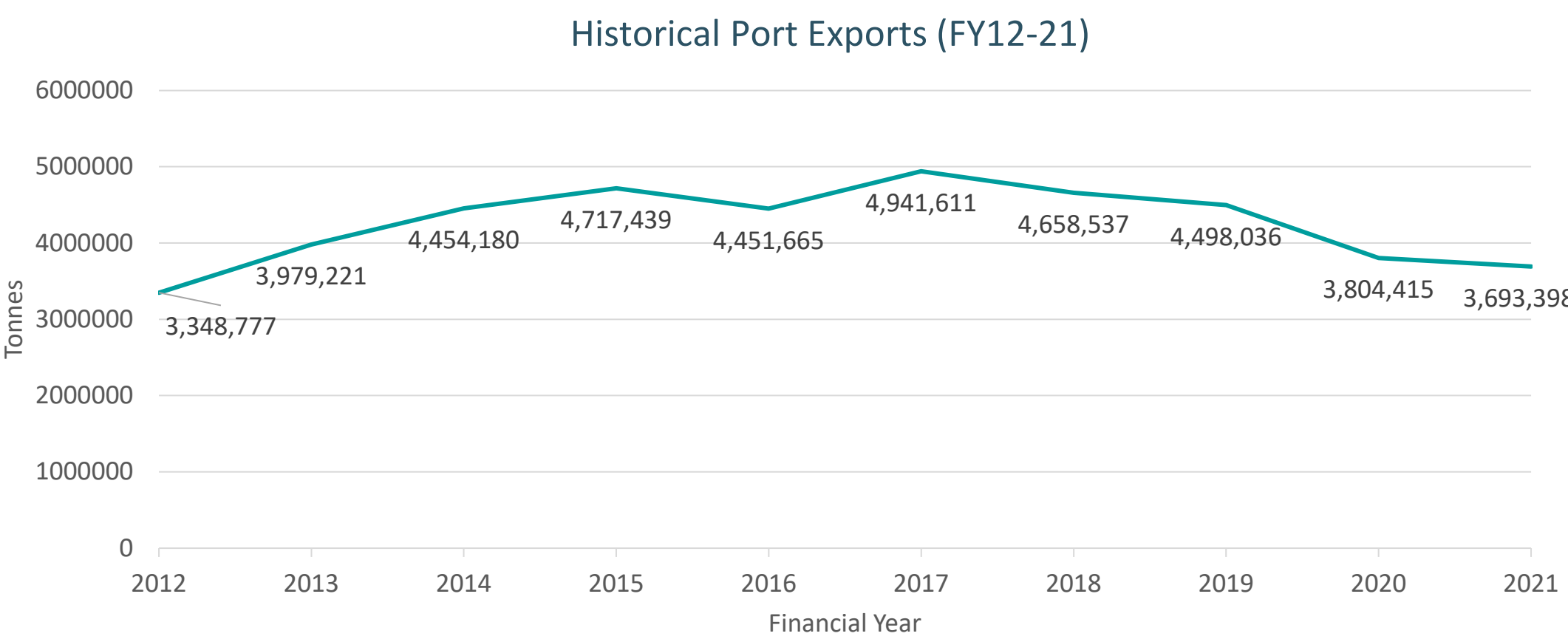
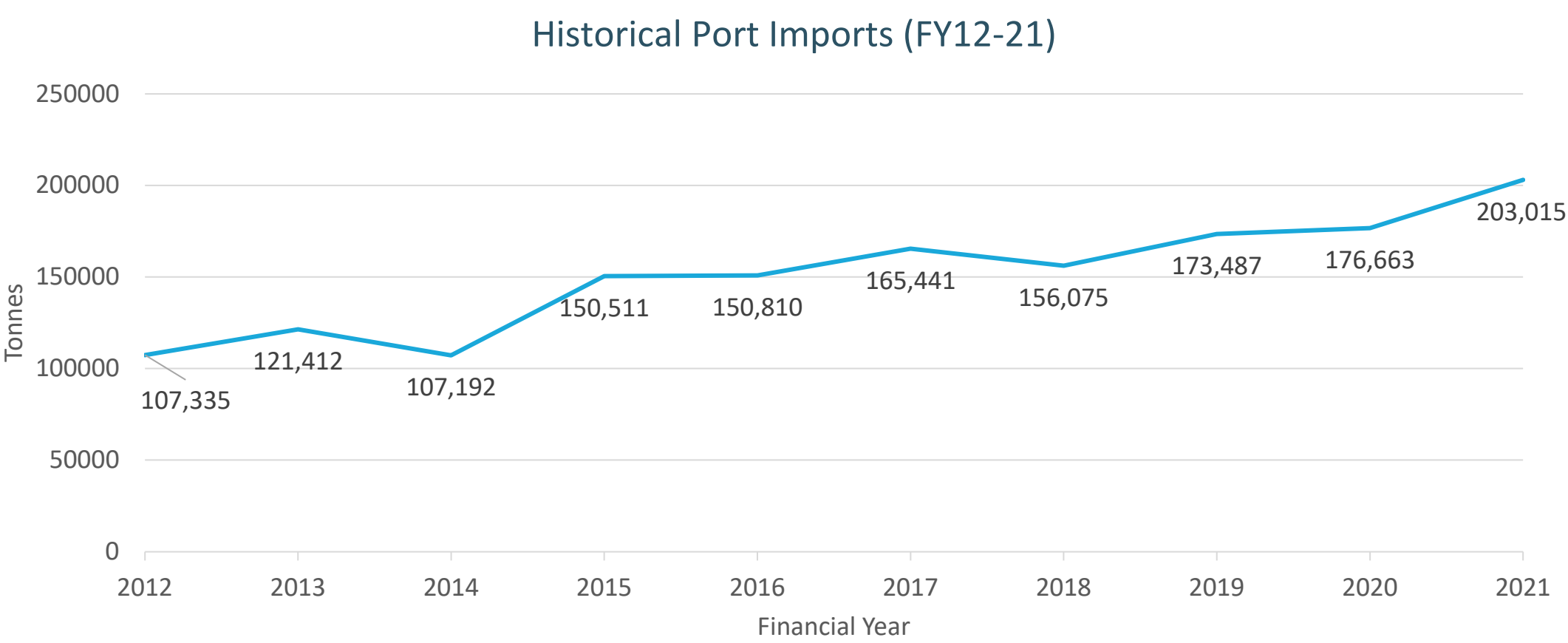
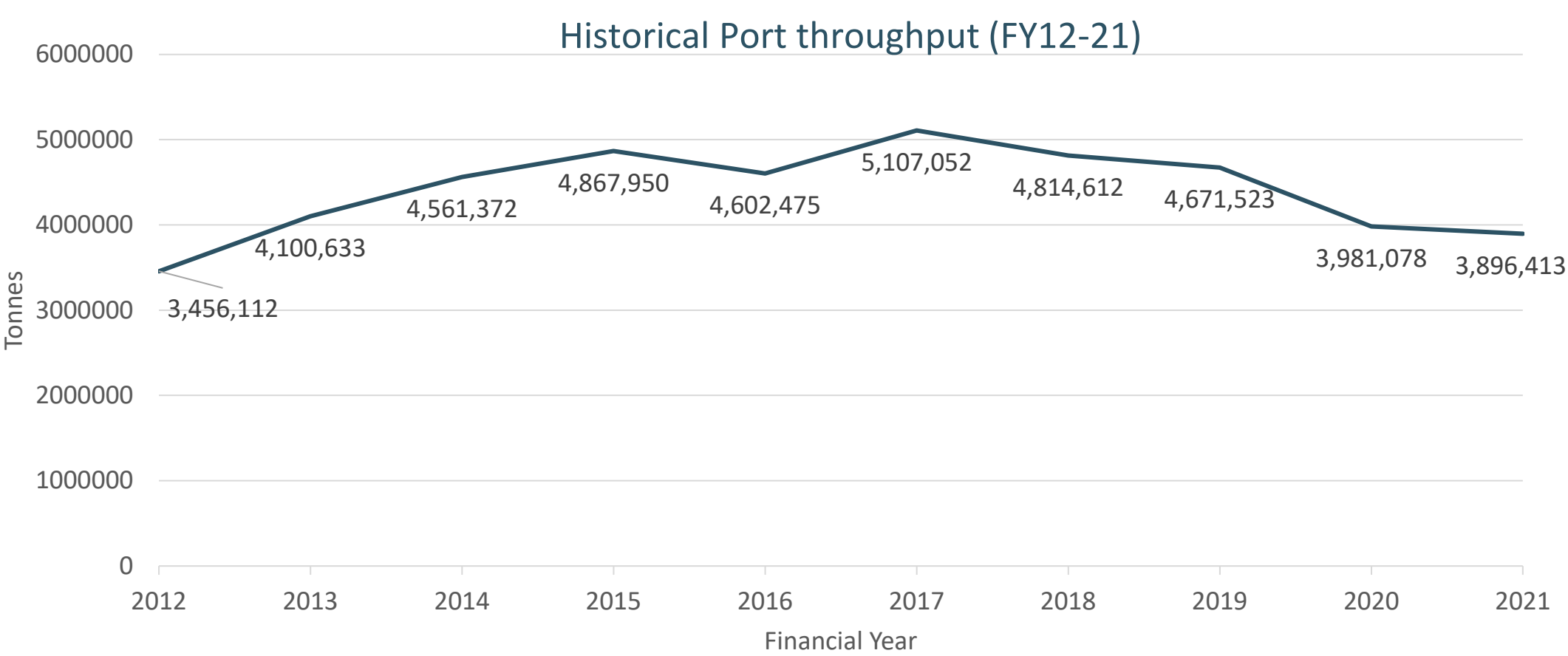
Over the last nine years total cargo trade volumes have risen from a low of 3.46 mtpa in FY2012 to a peak of 5.1 mtpa in FY2017, with the total falling again in recent years to just under 3.9 mtpa with exports accounting for the majority of the Port’s throughput.

The decline from 2017 is predominantly due to reductions in woodchip export volumes as nearby catchments have been depleted with land then being developed for agricultural purposes instead of re-planting trees. This land-use switch will however translate into increases in agricultural production including grain (exports) in the future, which partnering with increased yields from improved farming practices and crop varieties is likely to support ongoing growth in agricultural trade through the Port of Albany.

Imports have historically been limited to fuel and fertiliser products, with steady growth over the last nine years resulting in circa ~0.2 mtpa going through the Port in FY2021.

The adjacent figures provide an overview of the historical Port throughput for key commodities.

^ mtpa = Million Tonnes per Annum



Transport Connectivity

Port throughput is limited by the capacity of the Great Southern regional transport corridors that support the transfer of goods between the Port and its hinterland.

The Port Master Plan seeks to provide a forward development path that can be integrated within the greater regional transport network planning.

The primary transport corridors that support the Port of Albany are the Albany rail system and the local and regional road network made up predominantly of Princess Royal Drive, Hanrahan Road and the Albany and South Coast Highways, the future Albany Ring Road and Chester Pass Rd.

The Albany Highway is the main road connecting Perth and Albany, as well as several of the southern Wheatbelt’s major regional centres. The Ring Road is a proposed (2 stage development) heavy haulage route that will allow large freight trucks to bypass local traffic to and from the Port of Albany.

The rail network to the Port of Albany provides access for grain and woodchip operators, this connects with Tier 1, 2 and 3 systems in the State. The network connecting to Albany is currently benefitting from a regional investment programme in track and signalling infrastructure that will help relieve some existing limitations on rail network capacity (train length, grain load out facilities and numbers of trains able to operate). At Albany Port the rail network is constrained by track configuration and lack of rail loop which limits train length that can operate in the Port precinct. Required controls include splitting trains and the use of two locomotives which reduces rail system efficiency and adds operational cost. Key options to extend the rail network further into Mirambeena Agri precinct are also being considered which would offer a pathway for shifting some road based grain products onto rail in the future.

The regional road networks to the Port are mostly certified to accommodate RAV 7 (36.4m long, 107.5 tonne maximum) vehicles (excluding the South Coast Highway to the west, which is RAV 4 only), but there is an ever increasing trend towards larger vehicles to increase freight cost efficiency. Road maintenance and upgrade expenditure needs to match modern truck mass limits and dimensions. Future planning, funding and capacity increases within the road networks will be required to match growth in hinterland commodity growth.

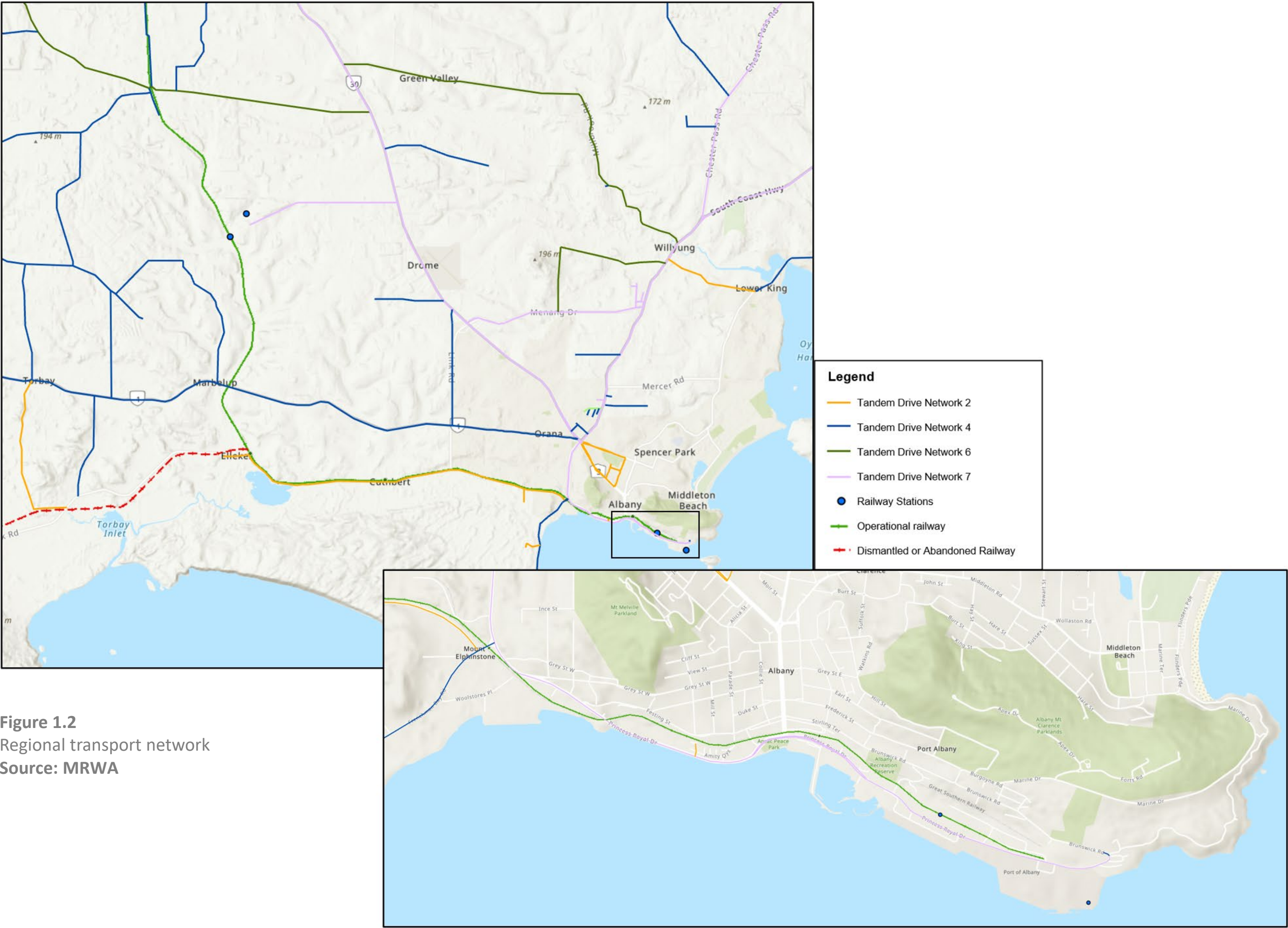


Figure 1.2
Regional transport network
Source: MRWA

02.

Port Master Planning Process

The process undertaken to produce the Port Master Plan is outlined in this section, providing an overview of the stages and methodology.



Process and Methodology

The process adopted for Albany Master Plan closely aligns with International Port Planning and Ports Australia Guidelines for port development and has followed a series of stages tailored to suit the unique requirements of the Port of Albany.

The process comprises 3 key steps:

- Baseline Establishment
- Option Development
- Preferred Plan Development

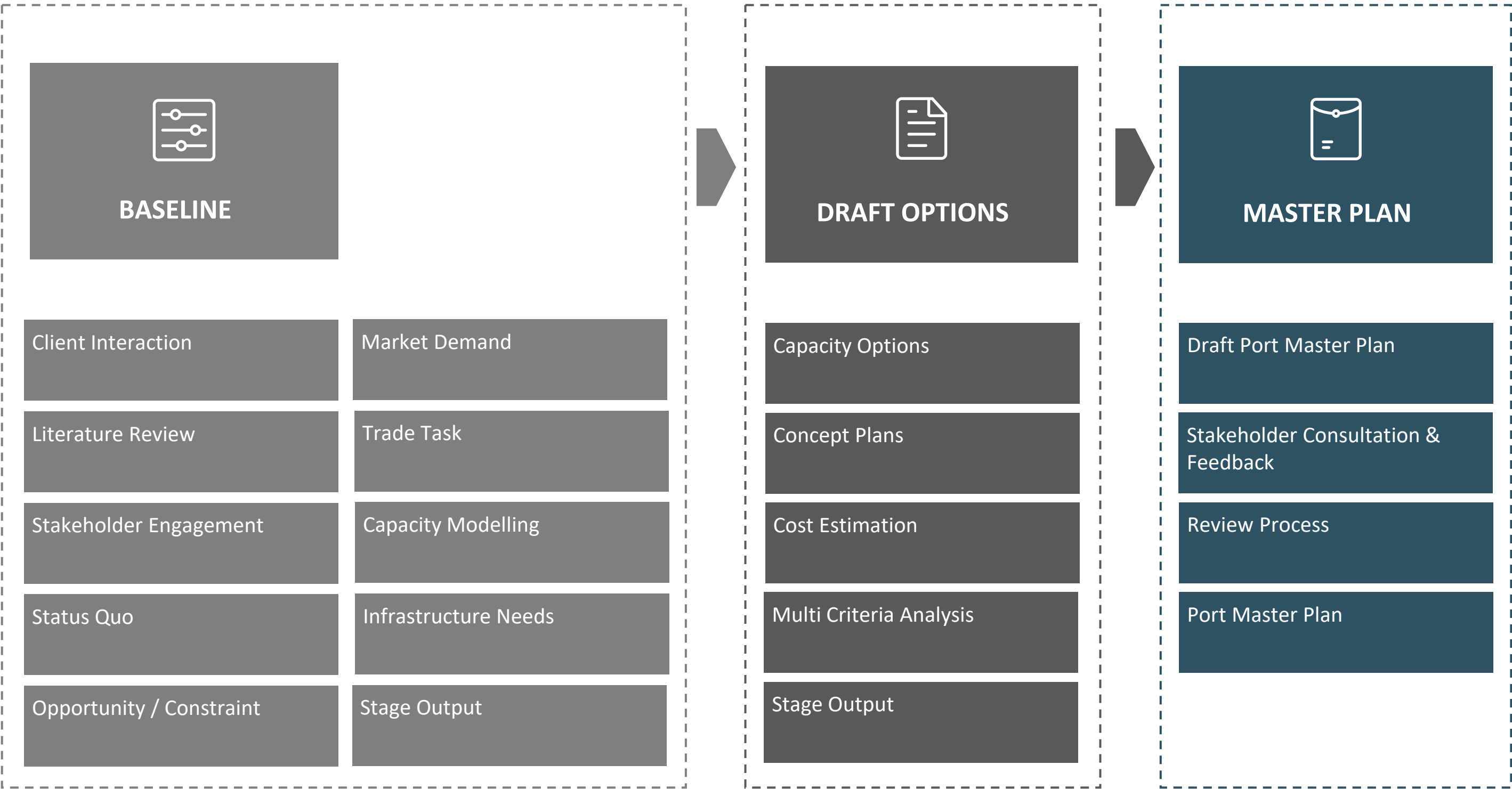


Figure 2.1
Port Master Plan study process

Engagement Process and Outcomes

Efficient communication, consultation and engagement of stakeholders and potential proponents are critical steps toward achieving a comprehensive Port Master Plan. This creates an effective balance between the various and sometimes conflicting interests, concerns and considerations of key stakeholders. Stakeholder consultation was aimed primarily to achieve the following goals:

- To identify and classify external stakeholders based on their interests, involvement and concerns in the future development of the Port
- To obtain vital input from stakeholders, where applicable, about their future trade, operational procedure, vessel sizes, project timing and other critical data which may dictate modification to the default master planning assumptions
- To obtain stakeholder views including governmental and community-based groups on how the Port development is to be planned, funded and managed into the future

An overview of the overall stakeholder consultation process is provided below.

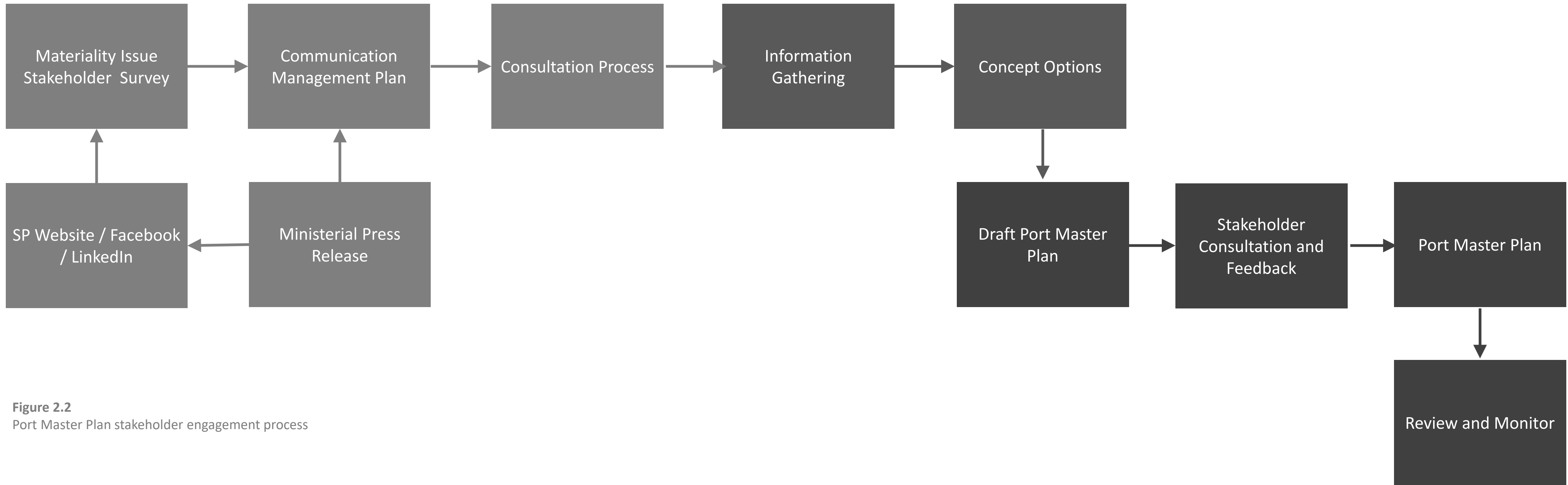


Figure 2.2
Port Master Plan stakeholder engagement process

Public Pre-Planning Survey

A public pre-planning survey was undertaken, intended to provide Port stakeholders, staff, and the wider community the opportunity to give their view on issues they thought important for the master planning process.

Survey requested ranking of important issues within three key themes, namely, People & Partnerships, Environment and Prosperity.

Respondents were asked to rate material issues in terms of importance, with the results summarised in Table 2.1 and Figure 2.3.

Item	Theme	Important Issues
1	People & Partnerships	Ensuring safety & security of people at and around the Port
2	People & Partnerships	Clarifying the 'Vision' for the Port of Albany
3	People & Partnerships	Management of Separation Distances (ie. Port Buffers)
4	People & Partnerships	Investigating Local Supply Opportunities
5	People & Partnerships	Increasing public education and awareness of port activities
6	People & Partnerships	Facilitating Waterfront Connections with the City and the Mounts area
7	Environment	Managing potential port impacts (eg. Air, Noise, Stormwater)
8	Environment	Ensuring 'Sustainability' informs decision-making
9	Environment	Facilitating 'Green/Renewable Energy' Partnerships
10	Environment	Focussing on Safe and Clean Shipping
11	Environment	Addressing Climate Change Resilience & Adaptation
12	Environment	Managing & Preserving Biodiversity around port catchment
13	Environment	Robust management of future dredging and land reclamation
14	Prosperity	Supporting Great Southern Regional growth and confidence
15	Prosperity	Facilitating/Supporting Trade Growth & Diversity
16	Prosperity	Facilitating increased Tourism activity (i.e. cruise / related activities)
17	Prosperity	Enabling 'fit for purpose' assets
18	Prosperity	Ensuring Business Flexibility, Resilience & Adaptation
19	Prosperity	Ensuring Efficient and Protected Transport Corridors (Road, Rail & Sea)
20	Prosperity	Exploring New Technologies/Digitalisation in Operations
21	Prosperity	Exploring joint venture partnerships / industry opportunities for future development

Table 2.1
Pre-Planning Survey Result

Community Feedback

The survey received 364 responses over the time period, with the respondents representing a wide range of stakeholders. This survey had one of the largest responses to any online survey that has been run in Australia to support a port master planning exercise.

All the materiality issues are considered to be of key importance (rank above 6.5) with the top five highest ranking issues being:

- 1

Ensuring safety & security of people at and around the Port
- 19

Ensuring Efficient and Protected Transport Corridors (Road, Rail & Sea)
- 14

Supporting Great Southern Regional growth and confidence
- 15

Facilitating/Supporting Trade Growth & Diversity
- 17

Ensuring ‘fit for purpose’ assets

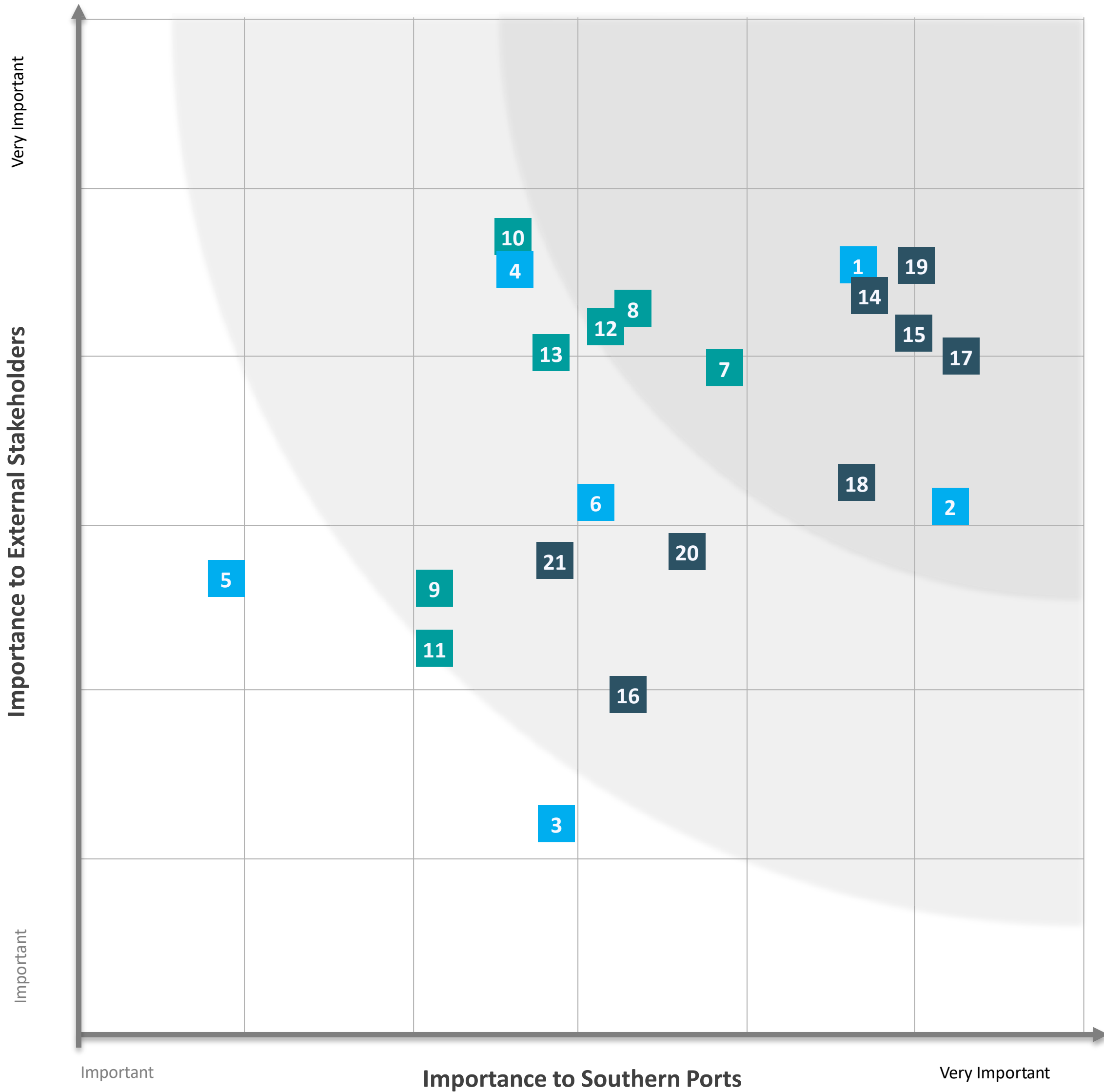


Figure 2.3
Pre-Planning Survey Result

Industry Consultation

Twenty two stakeholder groups of varying backgrounds and operations were consulted, seeking their input to the Port Master Plan process. A summary of some of the stakeholder groups engaged is provided in the adjacent figure.

The meeting and interview discussions were often broad in nature covering current and future operations.

The key themes were extracted and informed the identification of opportunities and potential constraints for the Port to consider in the master planning process.

22
stakeholder groups

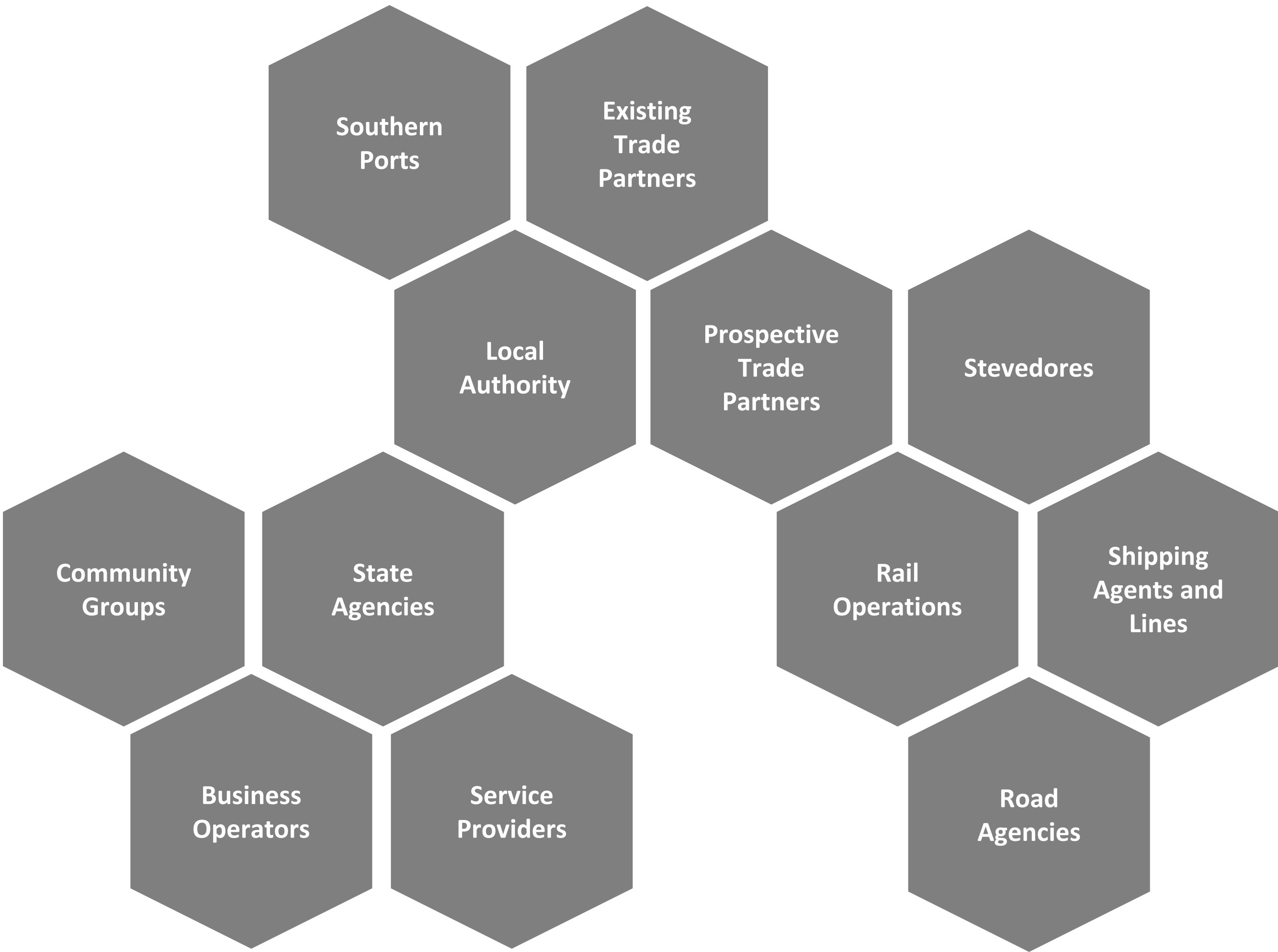
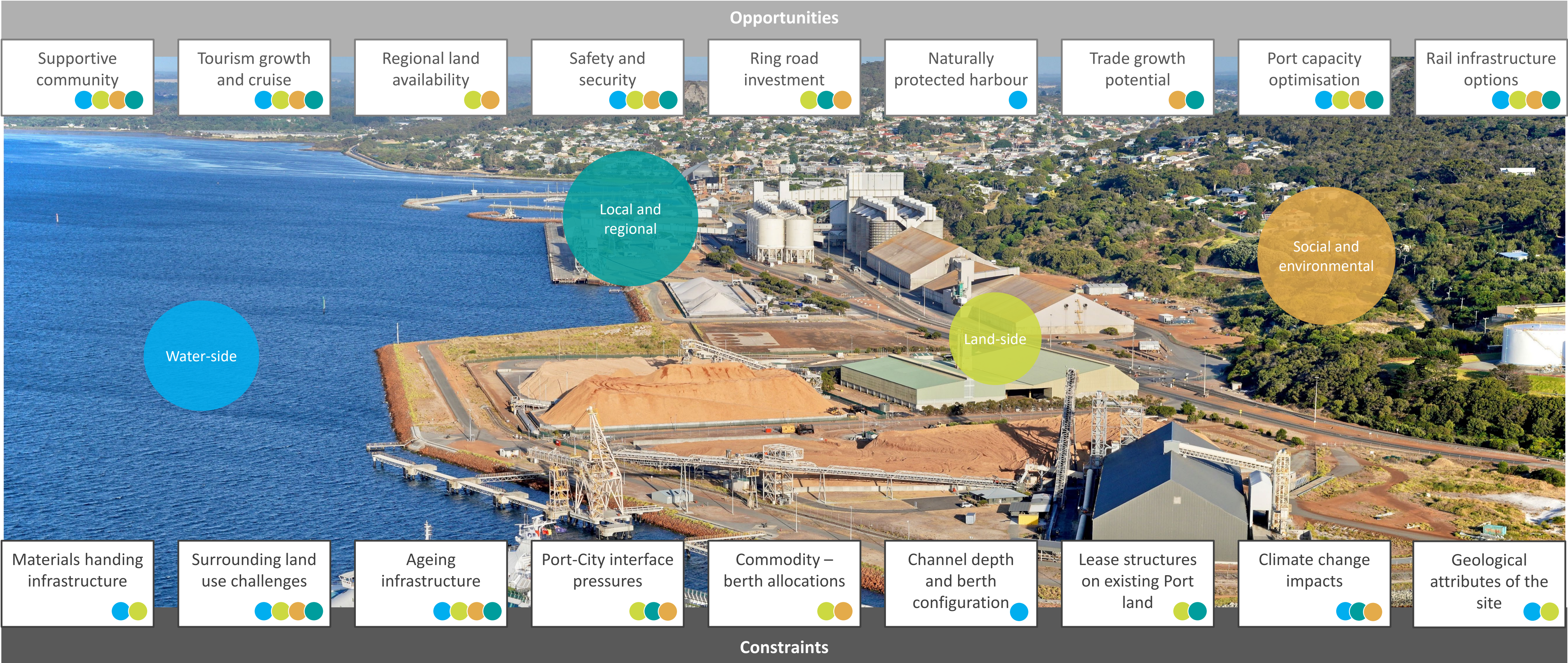


Figure 2.4
Industry Consultation Groups

Opportunities and Constraints

The following items represent the key opportunities and potential constraint themes identified in the baseline phase of the port master planning process. The opportunities and constraints are factored into the development of the Port Master Plan options.

- Water-side
- Land-side
- Social and environmental
- Local and regional





03.

Trade Forecast Scenarios and Infrastructure Needs

Trade is one of the core influences behind the Port Master Plan. This section outlines how differing trade scenarios were developed and how these influence infrastructure and land requirements within the Port.



Trade Forecast Scenarios

The general approach used for development of the trade forecast scenarios comprised:

- Feedback from stakeholder consultation
- Incorporation of the recent business opportunity review work by Southern Ports
- Granular, bottom-up analysis using actual cargo throughputs and a list of prospects at a project level with defined assumptions
- Latest thinking, research and study outcomes of government agencies (WA and federal) on the possible future development of cities, populations, trade sectors and relevant innovations within the Port of Albany catchment area

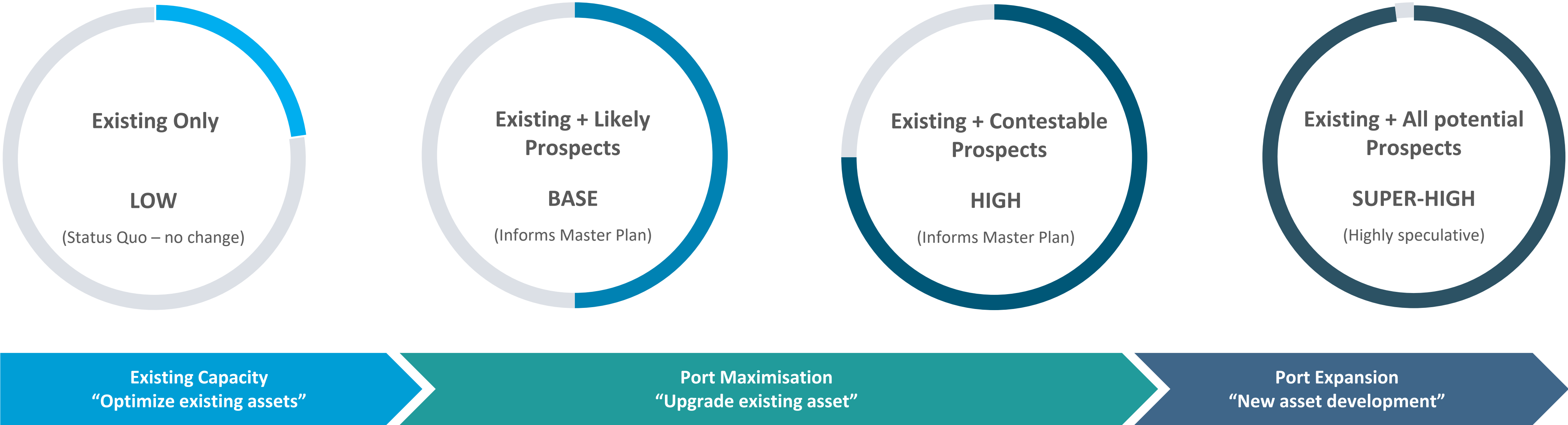
The trade forecasting time-frame reflects the Port Master Planning of up to 30 years.

Range of Scenarios

For each market sector, a range of four trade volume scenarios (Low / Base / High / Super-High) have been considered to test the scale of possible future infrastructure needs.

The Low scenario considers zero growth, no new business and speculative industry downturn scenarios which upon review do not have a material effect on the port master planning or future infrastructure needs.

The Base and High Scenarios are considered most important and relevant for the purposes of master planning as these inform infrastructure needs and key safeguarding actions. Whilst the Super-High scenario is considered more speculative it is considered within the development of the Port Master Plan options.



Commodity Forecast Scenarios

The trade forecast for each of the Low, Base, High and Super-High scenarios has been provided in the adjacent table for key commodities.

The High forecast scenario is used for the basis of future planning within the Port Master Plan.

As outlined in the table, grain is forecast to continue as one of the key trades at the Port of Albany. A number of potential new trades are also considered, including container trade and the possibility of magnetite export.

Magnetite export is an example of a speculative trade for the Port, with studies ongoing regarding the feasibility of exporting through Albany.

Commodity	2020/21 Throughput	Low Forecast	Base Forecast	High Forecast	Super-High Forecast
Grain	2.7 mtpa	2.6 mtpa	Up to 3.4 mtpa	Up to 5.5 mtpa	Up to 7.5 mtpa
Silica and construction materials (sand/clay)	0.2 mtpa	0.2 mtpa	0.2 mtpa	0.8 mtpa	2.2 mtpa
Woodchips and timber products	0.7 mtpa	0.7 to 1.3 mtpa	0.7 to 1.3 mtpa	Up to 1.5 mtpa	Up to 1.5 mtpa
Fertilisers	0.2 mtpa	0.2 mtpa	0.2 mtpa	Up to 0.2 mtpa	Up to 0.2 mtpa
Oil / Petroleum	0.1 mtpa	Up to 0.1 mtpa	Up to 0.1 mtpa	Up to 0.1mtpa	Up to 0.1 mtpa
Fish Products	-	-	-	-	Up to 0.1 mtpa
Containers*	-	-	-	Up to 11,000 TEU	Up to 36,500 TEU
Cruise ships	-	13	Up to 30	Up to 40	Up to 40
Summary	3.9 mtpa	4.4 mtpa	5.2 mtpa	8.1 mtpa + 11,000 TEU	11.6 mtpa + 36,500 TEU
Magnetite**	-	-	-	Potential start-up (circa ~5-7Mtpa)	10.0 mtpa
Total (with Magnetite**)	3.9 mtpa	4.4 mtpa	5.2 mtpa	15.1 mtpa + 11,000 TEU	21.6 mtpa + 36,500 TEU

Notes: * containers reflect estimate of local containerised freight demand
 ** Magnetite exports remain speculative for Albany whilst feasibility studies are ongoing

Table 3.1
Trade forecast scenario summary

Infrastructure Requirements

The assessment of port infrastructure capacity is a complex task due to the large number of variables and influencing factors.

To understand the existing capacity, and therefore the need for increased capacity to meet future demand, aspects such as historical trade, the vessel fleet, commodity parcel sizes, maximum operational rates and effective berth capacity have been considered.

The assessment considered three components: water-side (marine) infrastructure, land infrastructure, and land area. Each was assessed to determine the additional requirements needed to meet the forecast trade through the Port of Albany, noting the determined requirements have been based on current Port operations and throughput methodology.

Waterside Infrastructure Needs

A capacity model was used to develop the water-side and land-side infrastructure needs. On the waterside, the vessel berth occupancy and load rates at the wharf have been compared to forecast demand, allowing shortfall to be identified. The model also supported testing of various factors linked to latent capacity (e.g. change in wharf length, cargo load rates, and service hours, etc.).

Assumptions such as commodity allocation, berth outages, diverse commodity parcels and load rates have been considered, with Base, High and Super-High scenario outcomes produced.

Based on current commodity throughput achievable per berth (utilising existing materials handling infrastructure and rates), the quantum of berth infrastructure required to meet forecast scenarios was estimated as summarised in the Berth Requirements table provided.

Waterside infrastructure capacity modelling considered various factors including berth occupancy of vessels, current and potential future vessel fleet trends, commodity load rates, and how commodities are currently distributed throughout the Port.

Land Infrastructure Needs

To determine how much land needs to be earmarked to support various types of trade and the associated throughputs, existing land availability was compared to the forecast land requirements in line with the Base, High and Super-High trade scenarios. The outcomes of the assessment have been used to develop a Port landside concept sufficient to meet forecast demand.

The key in determining land requirements is maintaining maximum infrastructure flexibility so that the Port Master Plan will meet future demand even if things change over time.

Road and Rail Infrastructure

Similar to the berth capacity modelling, a truck (trip) generation model was developed. The model assessed inward and outward cargo movement via road, considering payload size, traffic count data at local intersections and trade forecast data to calculate truck volumes. The truck traffic forecast was then added to intersection road models to establish the impact on the Level of Service as defined by Main Roads WA.

The assessment indicated that all roads remained within the acceptable Level of Service, with only internal Port road upgrades to be considered further.

Rail efficiency, capacity and demand was also assessed. This highlighted how the existing configuration of rail within the Port operational precinct is sub-optimal and options to unlock the inefficiencies have subsequently been considered. The rail requirements table summarises the results of the rail options assessment, where the benefits of lifting rail capacity (train length) and efficiency has been compared against the forecast scenarios.

Infrastructure Requirements

Berth, rail and land area requirements are summarised in the following tables. Due to the current throughput and Low trade forecast scenario being similar in tonnage and profile, the infrastructure requirements for this scenario are not listed. The High scenario (highlighted frame) has been utilised to inform the potential infrastructure requirements to be considered in the Port Master Plan options.

Berth Requirements

Berth	Product	2021 Throughput	Current Capacity ¹	Berth Requirements (number of berths)		
				Base Forecast	High Forecast	Super-High Forecast
Berth 1	Cruise, fish products	0 cruise vessels	140 to 159 cruise vessels	0	1 ⁴	1 ⁴
Berth 2	Cruise, fertiliser, fuel, project cargo, containers, pellets, clay	0.3 mtpa	0.39 to 0.45 mtpa ² + 20,900 to 23,700 TEU ³	0		
Berth 3	Grain (CBH), silica sand	2.8 mtpa	3.8 to 4.3 mtpa	0		
Berth 6	Woodchips, grain, construction sand	0.8 mtpa	3.1 to 3.6 mtpa	0	0	0
New Berth: 'Berth 7'	Magnetite (dependent on feasibility – potential only)	-	N/A	0	1 ⁵	1 ⁵

1. Capacity based on current and predicted commodity profile and current operational load rates with average tonnage range related to Berth Commitment thresholds at 75% and 85%

2. mtpa = Million Tonnes per Annum

3. TEU = Twenty-foot Equivalent Unit (unit for containers)

4. Due to the increase in commodity variation and inability to service three vessels simultaneously at Berths 1, 2 and 3 or two large vessels across Berth 2 and 3 (insufficient quayline length), this quay line comes under pressure in a High and Super-High scenario. Additional berth capacity can be provided by a new berth or by accessing capacity available on Berth 6 (through modification) to meet the combined over-occupancy demand in the short to medium term. This latter option means that NO NEW BERTHS would be required in Albany

5. Due to the speculative nature of magnetite opportunities, the Master Plan considers a new berth ('Berth 7') will be commissioned, allowing the opportunity for land reclamation to support commensurate landside facilities. For reduced volume throughput scenarios and/or smaller ship size choice (by others) the use of ('Berth 5') could be considered as an alternative to Berth 7. For the purposes of this Master Plan, it is assumed that magnetite opportunities coming through the Port of Albany will be larger in scale and will require a specific magnetite berth to meet demand.

Table 3.2
Berth infrastructure requirements

Rail Requirements

Existing Capacity	Current Throughput	Rail Throughput (mtpa / number of trains)		
		Base Forecast	High Forecast	Super High Forecast
3 grain trains (assuming max length of 930m) and 6 woodchip trains (assuming length of 405m) per day ⁶	823 trains / annum (based on 2019/20 throughput)	1.7 mtpa (934 trains)	3.3 mtpa (1,425 trains)	4.5 mtpa (1200 trains) ⁷

6. The allowable length of a train is a key driver in the throughput capacity of the rail network, as trains must be split into smaller segments to visit the Port of Albany, increasing the overall time taken to unload. Therefore, options that support longer trains offer the greatest impact in terms of improvements to the Port's rail throughput capacity.

7. While the throughput volume increases, the number of trains decreases. This is due to the Super-High scenario forecast considering grain trains only which are of a longer length and therefore greater throughput capacity.

Table 3.3
Rail infrastructure requirements

Infrastructure Requirements

Land Area Requirements

Landside infrastructure and land area requirements have been assessed in a similar manner to the waterside components, comparing the existing land capacity of the Port to forecast trade requirements.

As part of the assessment, efficiencies within the Port were determined such as grouping major and ‘like’ trade commodities, maintaining proximity to the appropriate berth, minimising changes to existing lease areas and minimising wholesale changes to land use.

The total area requirements to meet the High and Super-High Scenario trade forecasts are provided in the Land Area Requirements table. Due to the similarity of the current throughput to the Low and Base trade scenarios the land area requirement for these scenarios has not been considered.

Land for container operations can be particularly important in ports, as area can be needed for the storage of import, export and refrigerated containers. Proximity to the berth is also a key factor, to limit handling costs.



Infrastructure Requirements

Local Area Requirements

Product	Total Area Requirements (Ha)		
	Current	High Forecast	Super-High Forecast
Containers	-	1 – 2	3 – 4
Break bulk (clay)	-	-	1.5 – 2
Woodchips	9	4	4
Bio-pellets	-	0.1	0.1
Bulk fertiliser	1	1.8	1.8
Ad-hoc bulk	-	0.5	0.5
Silica sand	2	2	2
Construction sand	-	-	4
Existing bulk grain	24	24	24
New bulk grain	-	1.2	1.5
Iron ore (magnetite)	-	4	8
Project cargo	-	1.5 – 4	1.5 – 4
Cold store warehouse	0.2	0.2	0.2
Cruise	0.5	0.5	0.5
Total	36.7	40.8	52.6
Additional Area utilised	-	4.1	15.9

Table 3.4
Land area requirements



04.

Albany Port Master Plan

This section defines the Port Master Plan development items, outlining how the Port could look in the future considering short, medium, and long-term infrastructure and development solutions.



Port Master Plan Overview

The Port Master Plan at the highest level has two principle focus areas, namely:

Maximisation

Seeks to maximise the efficiency and development opportunity that exists within the existing Port area and available assets (limited changes to the surrounding Port environment). Maximisation includes for the optimisation of existing infrastructure and the continued life cycle upgrade investment in the economically critical port asset base.

Expansion

Focuses on identification, planning alignment and development of undeveloped or surrounding Port area adjacent to the Port boundary (reserve or protect land area critical to sustainable port operations and continued economic benefit to the region). Also includes the planning and development of future port infrastructure in the form of new land and wharves (as required) to support long term growth forecasts.

The Maximisation and Expansion principles each lend themselves to a natural development horizon. Initially, within the short to medium term (0 -15 year timeframe) the focus is on the Maximisation opportunities. The development opportunities contained within the Expansion phase are linked to longer term development horizons (e.g. 15-30 year period and beyond).

The Maximisation and Expansion planning principles culminate in an overarching preferred Port development option, as outlined in the following sections.

It should also be noted that the development of the Port Master Plan seeks to align at all times with Southern Ports principles such as sustainability, safety, and economic opportunity.

Ports, due to their function as nexus for trade and intermodal logistics are extremely dynamic environments. This version of the Port Master Plan with its specific opportunities and constraints represents the preferred port development option presently. However, as time progresses and new market dynamics come to play this could very well change. This is especially relevant to the longer term opportunities forming part of the Expansion phase. It is good to consider short term opportunities as having a higher probability of occurring than the longer term options, which have some inherent flexibility due to the time scale of the forecasts driving demand for this infrastructure.

Ongoing review of economic factors and comparison of the actual Port trade throughput compared to forecast will allow Southern Ports to monitor and assess the requirement for and schedule capacity driven port development.

The schedule for Port development projects, when linked to capacity requirement, is presently based on the High case trade forecast scenario. Development schedules linked to safety, efficiency and opportunity are driven by Southern Ports’, and the business sector’s, appetite for investment.

Port Development Projects for Key Commodities

Some specific overarching development strategies for key Port commodities are summarised as follows, outlining how the Port Master Plan seeks to secure these trades now and into the future, and to facilitate growth.

Optimising the use of existing assets – to support containers and bulk exports

Reconfiguration of land-side areas to improve Port efficiency and support multi-user operations.

‘Land-backing’ berth 6 to create enhanced functionality of this Port asset to promote multi-user functionality, provide enhanced shipping depth, balance berth utilisation across the Port (through commodity handling re-positioning) and defer investment in new berth infrastructure until trade volumes demand otherwise.

Grain

Modification or replacement of berth 3 to support new equipment or loaders (procured by operators) and provide deep water capability.

Supporting early re-configuration of the rail network and future loop construction to facilitate higher grain throughput on rail and lower operational costs.

Magnetite

Future berth development (Berth 5 or Berth 7) for magnetite throughput via new proponent*.

Supported by critical Port land, previously approved land reclamation, and dredging works to provide sufficient water-side manoeuvring area and water depth for magnetite vessels.

* Berth decision will be linked to start-up mode and ship size choice

Additional to the identified Port Development Projects, Southern Ports is in process of implementing a sophisticated asset management system to gain better understanding of the required renewals, maintenance and life cycle gaps to substantiate future work requirements on the existing asset base. This tool can be used to assist in understanding how existing assets and their condition may impact efficiencies within the Port in future Master Plan iterations.

Port Master Plan Development Items

The Port Master Plan development items in the short, medium and long term (up to 30 years) are summarised in the adjacent figure and the tables provided on the following pages. The tables provide additional details regarding the individual items, nominated timeframes and how the items align with themes considered during the stakeholder engagement phase.

Longer term (30 years plus) items are more flexible in terms of implementation timing and are dealt with in the Future Port Expansion Potential section.

The timing of the port development items becomes less certain into the longer term and ultimately all items are linked to trade triggers rather than defined short, medium and long term time periods. Should new or additional trade drivers manifest in the shorter term then current long term items could be developed in short term time frames.

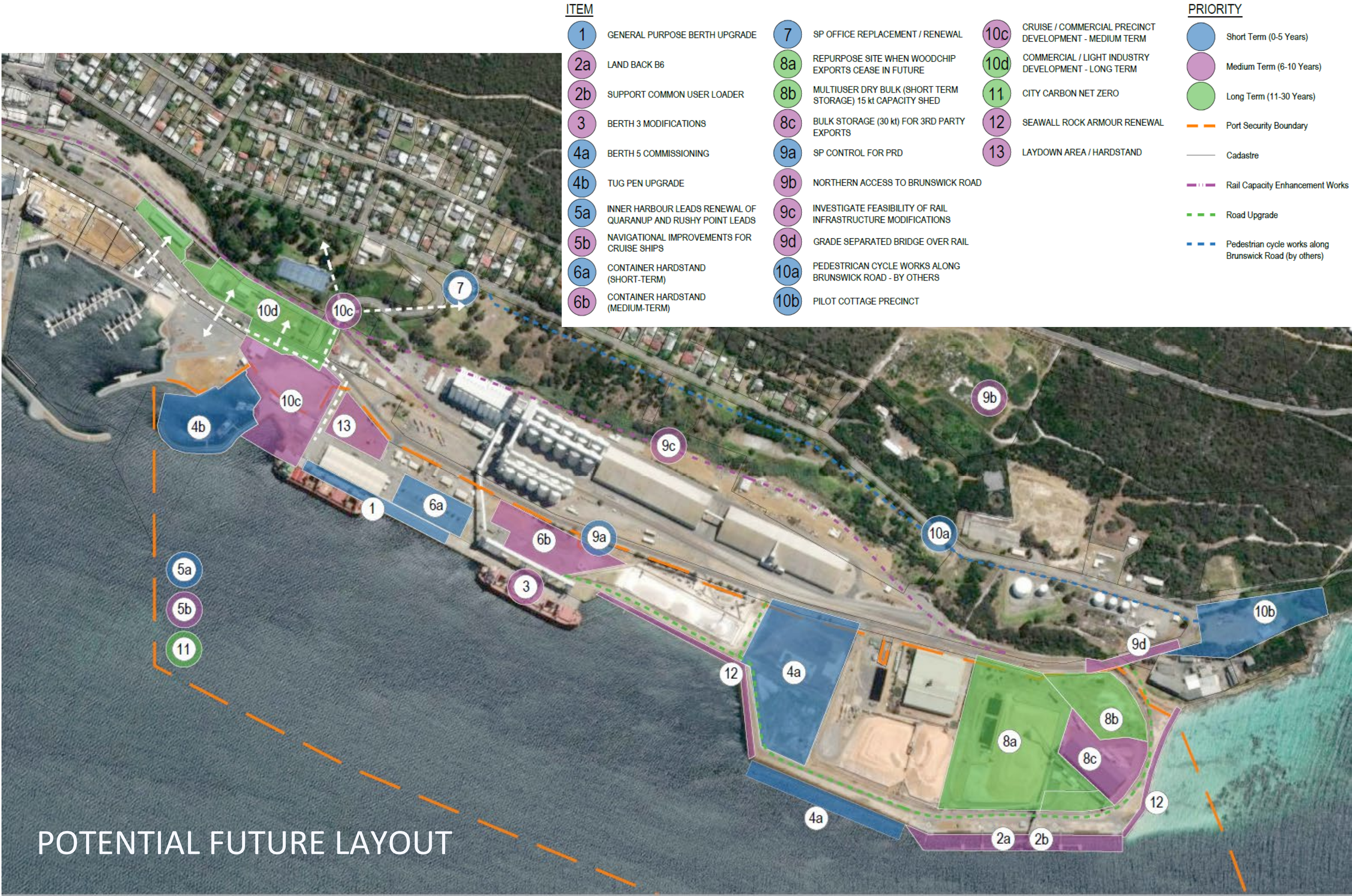


Figure 4.1
Short and medium term Port development items

Port Master Plan Development Items

Item		Description	Trade / Sector	Timeframe	Materiality Survey Theme
1) General Purpose berth upgrade		Complete upgrade if Berths 1 and 2 to create a new general purpose berth	General	Short Term	Prosperity
2) Berth 6 Capacity Development	2a) Land back B6	Relieve congestion on berth 1/2/3 that will materialise as trade grows - provides required Port capacity and functionality	All	Medium Term	
	2b) Procure or facilitate 3rd party common user loader	Currently no common user access to existing bulk loader on B6. Common user functionality to provide additional throughput opportunities			
3) Berth 3 modifications		Rails installed in B3 to accommodate a travelling loader procured by others	Grain	Medium Term	
4) Infrastructure upgrade	4a) Berth 5 commissioning	Dolphin style berth at B5 location with associated landside development	General	Short Term	
	4d) Tug pen upgrade	Extra tug berth or increased depth of water to accommodate future tugs	All	Short Term	
5) Navigational enhancements	5a) Inner Harbour Leads- Renewal of Quaranup and Rushy Point Leads	Construction of new inner harbour leads, comprising renewal of existing leads and other navigational requirements to support cruise vessel operation (scope to be determined)	All	Short Term	
	5b) Navigational improvements for cruise ships			Medium Term	
6) Container hardstand	6a) Container hardstand short term	Container and project cargo hardstand area in the shorter term	Containers	Short Term	
	6b) Container hardstand short term	Container and project cargo hardstand area in the medium term		Medium Term	
7) SP Office replacement / renewal		Investigations for new administration building	Administration	Short Term	Governance
8) Bulk commodity export capacity development	8a) Repurpose site when woodchips cease in future	Repurpose site following cessation of woodchip exports	Bulk	Long term	Prosperity
	8b) Multi user dry bulk (short term storage) 15 kt capacity shed	Multi-user dry bulk storage shed partitioned with 3 x 5kt areas. Including shed, truck access, services etc		Long term	
	8c) Bulk storage (30kt) for 3rd party exports	Dry bulk storage shed, including shed, truck access, services etc Upgrade of the outloading circuit equipment for bulk in lot 55 shed		Medium Term	

Port Master Plan Development Items

Item		Description	Trade / Sector	Timeframe	Materiality Survey Theme
9) Transport enhancements	9a) SP control for Princess Royal Drive	Security gate and fencing at entrance to Port on Princess Royal Drive	All	Short Term	Governance
	9b) Northern Access to Brunswick Road	New road connection to Brunswick Rd from the north		Medium Term	
	9c) Investigate feasibility of rail infrastructure modifications to support longer trains	Investigate feasibility of staged rail infrastructure improvements, including relocation of track, changed dump locations, development of the rail loop, etc		Medium Term	Prosperity
	9d) Grade separated bridge over rail	Maintain road access without level crossing over rail		Medium Term	
10) Port – City Interface Improvements (Tourism & Commercial)	10a) Ped / cycle works along Brunswick Road – by others	Support investigations for pedestrian works along Brunswick Road	Community / Public	Short Term	Partnerships and Planet
	10b) Pilot cottage precinct	Pilot cottage precinct re-design and revitalisation		Short Term	
	10c) Medium term port waterfront precinct development	Envisaged medium term development for community, commercial and cruise including: - including potential land reclamation at the end of wharf 1 to support expansion and enhancement of the of cruise service offering in Albany and WA. - Better separation of cruise passenger movement areas from other commercial port operations. - Improved integration of public movement areas with the marina and tug boat infrastructure to support future activation in small craft operations. - Enhanced buffers between public / community areas and freight routes - Future investment options for marine, commercial and other local businesses in the precinct to support port and tourism sector growth - Establishing a pathway to the future relocation of Princess Royal Drive to the north to be integrated with the rail corridor as it meets the port. Thereby enabling a truly ‘game-changing’ outcome for the port and City in the longer term.	Community / Public and Cruise	Medium Term	Prosperity
	10d) Commercial / light industry development – long term	Support development in the long term for commercial use including cruise operations		Long Term	
	11) Carbon net zero	Mixed initiatives to target net zero emissions in line with State requirements in the short through long term	All	Long Term	Environment
12) Sea wall rock armour renewal		Renewal of various rock protection structures within the Port		Medium Term	Prosperity
13) Laydown area / hardstand		Laydown area / hardstand provided to support project cargo operations	General	Medium Term	Prosperity

Future Port Expansion Potential

The Port Master Plan outlines the expected trade scenarios for the next 30 years, providing infrastructure solutions to meet this forecast trade.

However, there is an inherent level of uncertainty within these forecasts. As experienced in recent times in Australia, unexpected events can lead to significant changes in what and how ports trade, but can also open up new opportunities.

It is therefore important to build flexibility into the Albany Port Master Plan, but to also look towards and past the 30-year horizon to consider long-term possibilities, even if these are not completely understood or even expected in the present day.

Understanding how the Port Master Plan could lead into future expansion opportunities is a key part of the process, as a Port Master Plan seeks that you not do today what you must undo tomorrow.

The figure provided demonstrates how the Port could possibly expand in a 30, or even 30 to 100 year timeframe past the present Port Master Plan assessment period.

It also demonstrates that the Port is able to support increased existing, new or unexpected trades if required in the shorter term through expansion opportunities.

Future expansion opportunities could include new rail infrastructure, new wharf infrastructure, new land opportunities or a combination of all three depending on the type and quantum of future trade opportunities.

A key aspiration, linked to early development steps aligned to the tourism industry, comprises the future shift of the main highway between York St and the port to be integrated with the existing rail track corridor. This has significant potential benefits for use of the waterfront and port-city interfaces, whilst providing opportunities to enhance freight connectivity into the port.

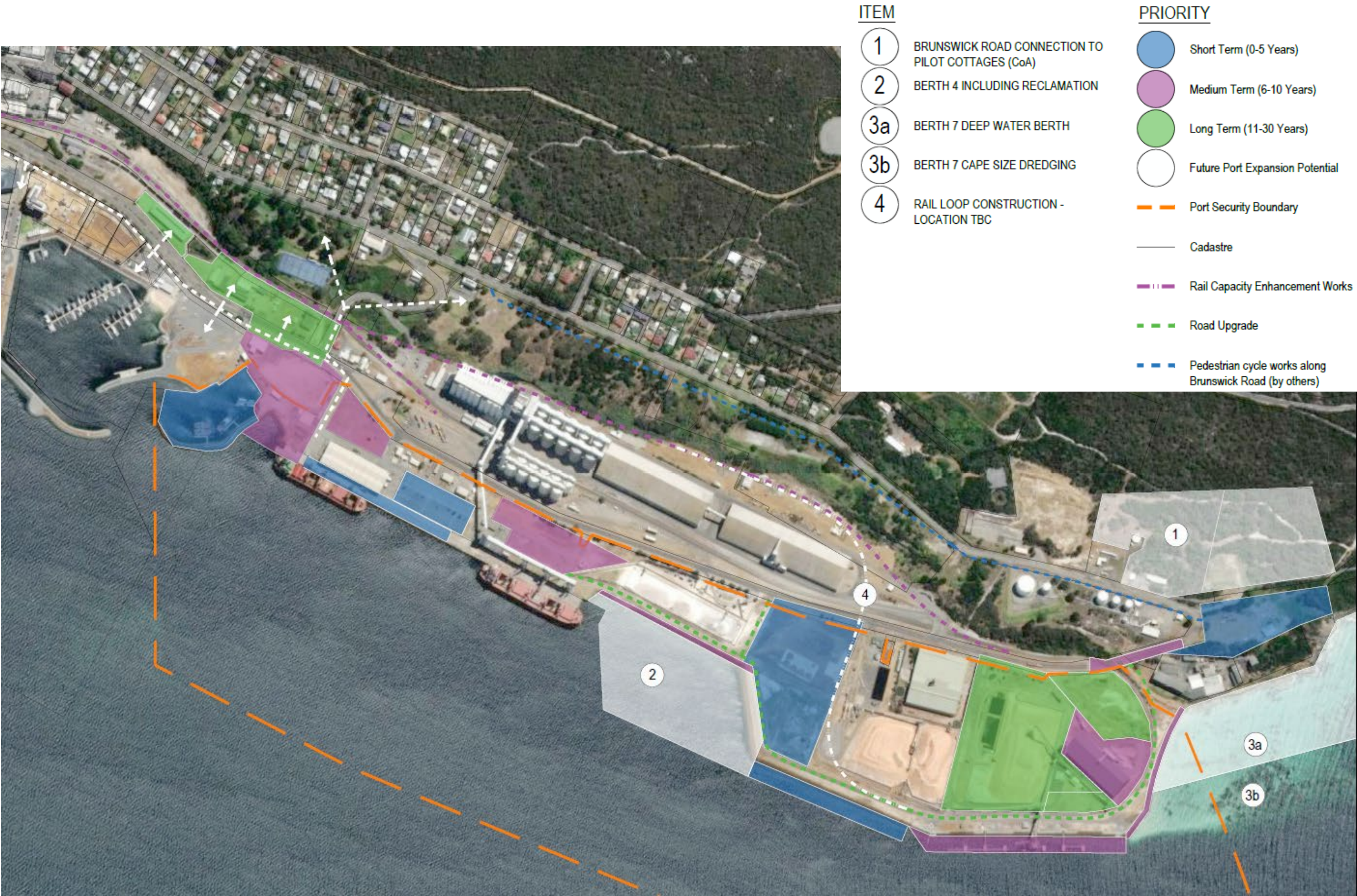


Figure 4.2
Future Port expansion potential



Home

Section 1

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Section 3

Section 4

Port Waterfront Precinct

The Albany Port Master Plan recognizes the importance of ensuring that synergies between the Port and community are maximized to enable the long-term, sustainable development of the Port in partnership with the City. The Port Master Plan requires understanding of the rich history of the area, as well as the requirement for ongoing protection of key port transport corridors and operational areas for the Port to sustain and grow trade.

However, the Port Master Plan also recognizes the opportunity to encourage a level of commercial development around the Port’s peripheries to improve integration with the community so as to maximise the value added by the Port to the Albany landscape and economy. Improvements of this nature can increase amenity for the community, improve the commercial development opportunities, and as a by-product also enhances the cruise experience offered by Albany for passenger transiting to and from the Port.

Cruise tourism is considered to be a growing industry in the Albany region, with the waterfront precinct a significant component of both attracting domestic tourism and offering cruise passengers their first view of Albany. The cruise season has historically run from September through till April. During this time an average of 11 ships have arrived at Albany Port, with anywhere between 500 and 2,500 people onboard each vessel. Currently these passengers move directly through the Port waterfront area into Albany township, however Albany Port itself offers a wide range of development opportunities which can turn the precinct into a destination in its own right. Development of the waterfront precinct will utilise the unique setting on the coast of the Princess Royal Harbour and activate the area for both locals and visitors.

Investigations into the various development possibilities are ongoing, with balance between tourism opportunities and ongoing Port and marina operations a key consideration.

These investigations are considering the staged development of the Port / waterfront precinct interface, as well as:

- Improved vehicular, rail and other transport connectivity into the port
- Enhanced buffers between public / community areas and freight routes
- Enhanced pedestrian, cycling and future sustainable transport connectivity
- Public open space opportunities
- Opportunities for vegetated areas
- Existing and potential land use
- Existing and potential commercial developments
- Mechanisms to collaborate with the City, State and Commonwealth to help them deliver compatible development projects that benefit the City and port.

Port Waterfront Precinct

As part of the investigations into how the port can support a successful transformation of Albany waterfront, improve and enhance the port – city interface, deliver enhanced cruise operations, a vibrant tourism sector and reduce transport conflicts around the port whilst enhancing future freight connectivity a draft (initial stage) cruise-precinct plan has been developed as a first step in achieving a long term port waterfront precinct vision for the Port and City.

This first stage concept plan is provided in the adjacent figure. The considers the following potential development steps over the next 5 and 10 years and seeks to incorporate improved pedestrian connectivity through and within an expanded precinct area.

Key development aspects:

- Land reclamation at the end of wharf 1 to support expansion and enhancement of the cruise service offering in Albany and WA.
- Better separation of cruise passenger movement areas from other commercial port operations.
- Improved integration of public movement areas with the marina and tug boat infrastructure to support future activation in small craft operations.
- Enhanced buffers between public / community areas and freight routes
- Future investment options for marine, commercial and other local businesses in the precinct to support port and tourism sector growth
- Establishing a pathway to the future relocation of Princess Royal Drive to the north to be integrated with the rail corridor as it meets the port. Thereby enabling a truly ‘game-changing’ outcome for the port and City in the longer term.

Future waterfront precinct development will be subject to a robust business case analysis and commercial proposition to ensure the viability and sustainability of this development opportunity.

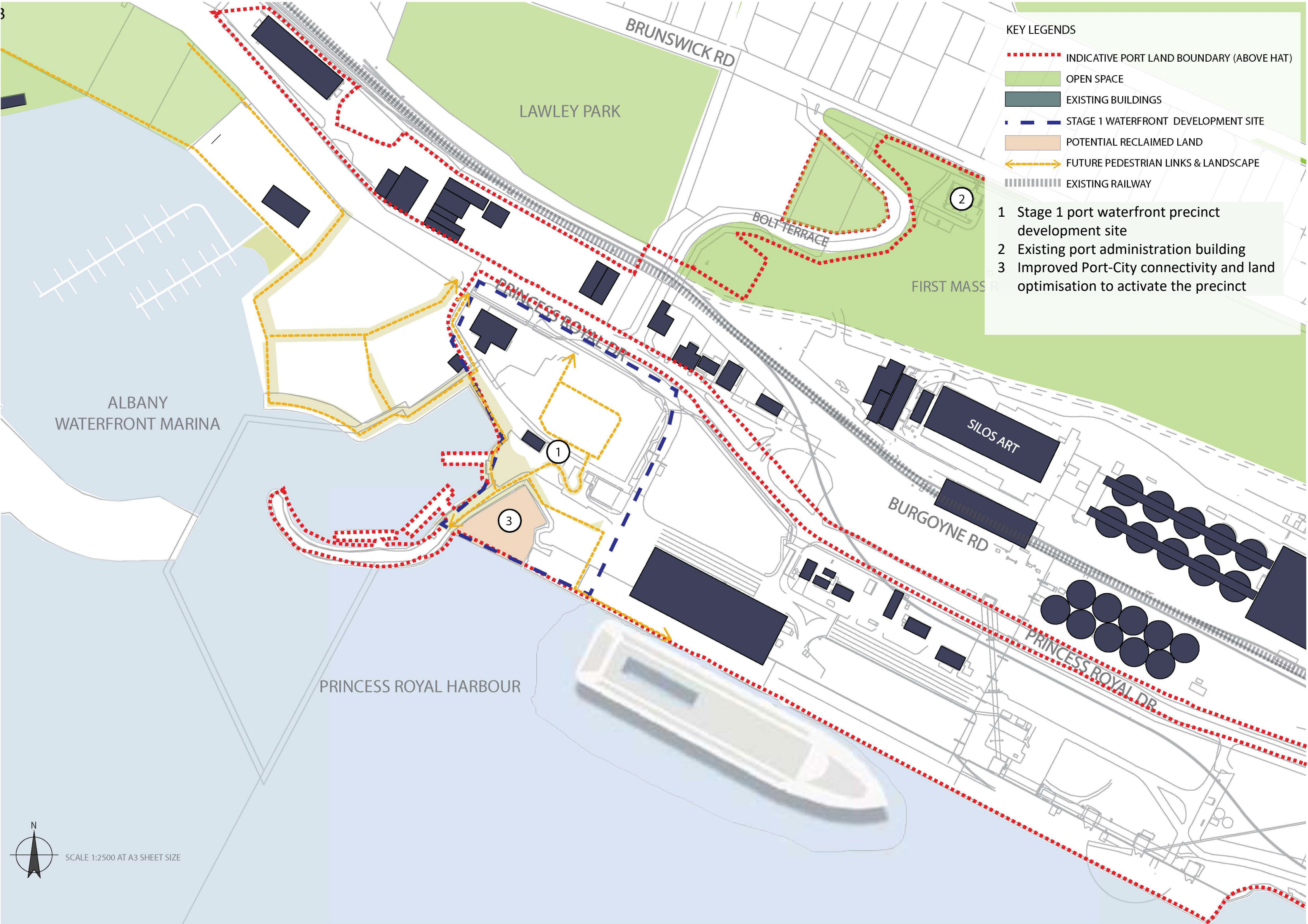


Figure 4.3
 Waterfront precinct potential development items

Sea Level Rise

Port land and the berths are protected from significant wave influence due to the Port’s location within the naturally protected Princess Royal Harbour. This natural protection, along with of a rock walls and breakwaters within the Port itself, protect Port operations and are the first line of defence protecting Port infrastructure.

The Western Australian Government has outlined Sea Level Rise (SLR) predictions till 2100, aiming to inform current and future developments as to the potential impacts of climate change along the coastline. In 2010 the WA Planning Commission specified that SLR should be taken as +0.9m by 2100.

A high level review of the Port’s wharves compares the relative level of both the quayline (front face) and rear of the wharves to Highest Astronomical Tide + SLR predictions for 2050, 2070 and 2100. The review indicates there is in excess of 1m between the highest predicted tide and all wharf levels in the short to medium term. In the longer term (2100), this buffer decreases to a little over 0.5m for the lowest wharf infrastructure. While storm surge would increase potential water levels during a storm event, the relative levels of the wharves are sufficient that the risk remains low in the short to medium term. Given the relatively protected nature of the Port, the impacts due to storm waves is considered low in the short to medium term.

The Coastal Hazard Risk Management & Adaptation Planning (CHRMAP) study for the region predicts coastal hazards from erosion and inundation over 100-year planning timeframe. The City of Albany has released their CHRMAP for nearby Ellen Cove to Oyster Harbour, which does not cover the Port but does provide some indication as to adaptation strategies.

Erosion hazard lines show that there is significant potential for loss of land due to coastal erosion in the medium to long term. The CHRMAP indicates options such as sand nourishment, protection (seawall) or managed retreat. As Port land is generally protected by existing rock walls, maintaining these protection structures into the future is key to maintain Port land.

Inundation hazard mapping for the CHRMAP study area shows inundation is expected to be a growing hazard over the next 100-years, mainly due to sea level rise. Sea level rise for 2070 is set to 0.5m in the CHRMAP process. Removing inundation pathways can also assist in reducing the risk to the Port, particularly when surrounding land lay may be lower. Consistent protection structures of sufficient height (rock walls) can minimise this risk, as can other options such as raising land levels or utilising bund walls. These options could be considered in the future to remove inundation pathways.

A CHRMAP is underway for the Princess Royal Harbour area, with the Port of Albany partnering with the City of Albany and the Department of Transport. However, the results of this assessment are yet to be released.



Future of Ports

As ports move forward into the future, there is a shift occurring in how ports operate, whether it be a change in the type of commodity throughputs, how ports are run from a carbon footprint perspective, or the ever increasing impact of digital technologies in the port environment.

The influence of renewable energy sources in the Albany region opens up an opportunity for new trade throughputs, where the resources and infrastructure to support renewable energy generation may pass through the Port. The Port of Albany itself can also make use of this renewable energy to minimise environmental impacts moving forward.

‘The Western Australian Climate Policy sets out the State Government’s plan for a climate-resilient community and a prosperous low-carbon future.’

The Western Australian Government has recently outlined their aspiration of achieving net-zero emissions by 2050 in its climate policy. As Port Authorities operate under the jurisdiction of the WA State Government, the Port of Albany is just one of the operations seeking to achieve this goal.

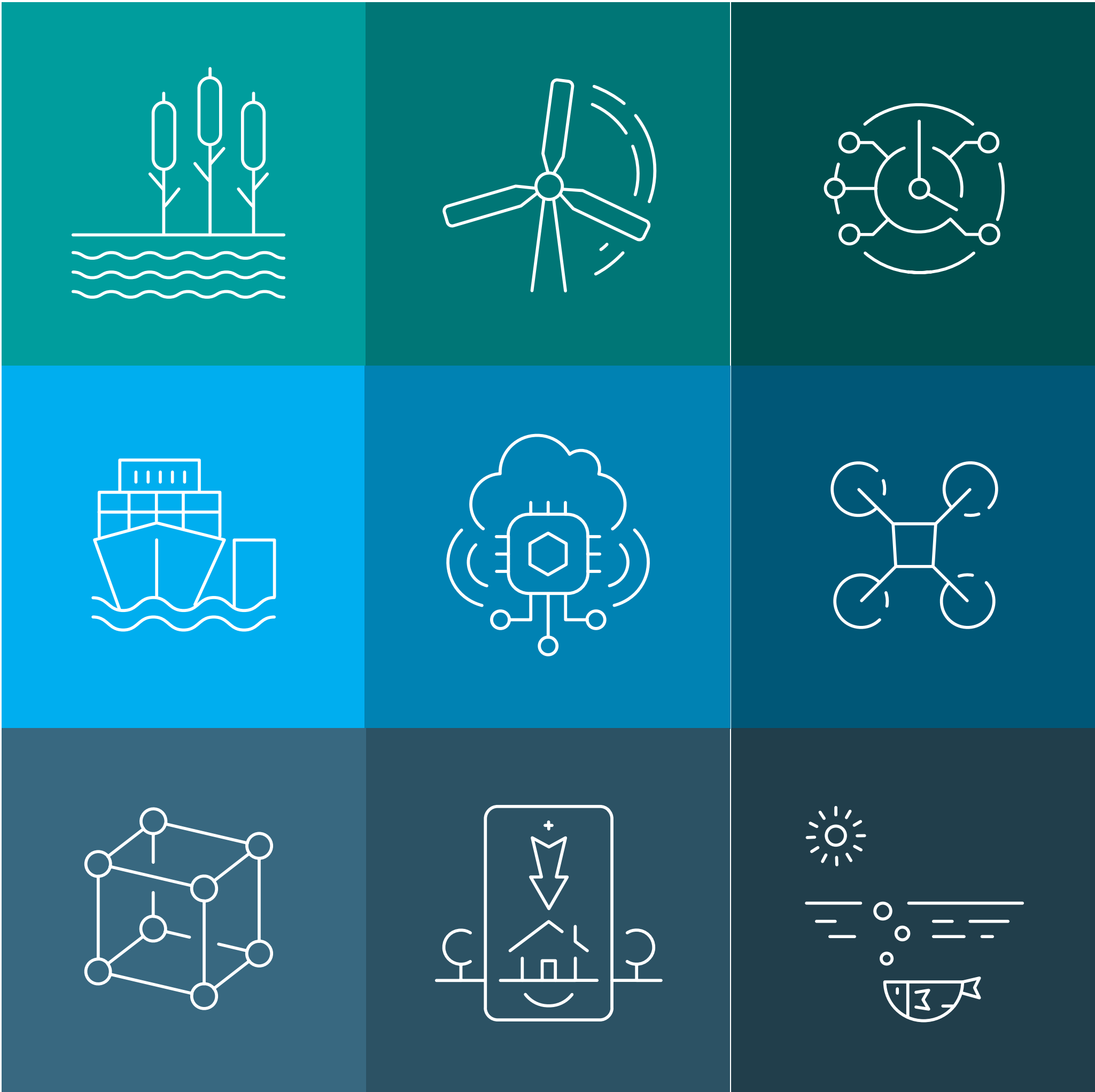
The influence of digital technology is another example of how the port environment may change into the future.

Digital technology is driving how people, businesses and governments think and operate.

Digital innovation has the potential to influence all aspects of port operations, with the ability to improve connectivity and scheduling, and to create and improve the efficiency of operational methods. Digital technologies also have the ability to change how a port views, measures, and reports various aspects across trade, infrastructure and the environment, with space for continuous improvement and innovation.

Examples of digital technologies within the port environment include the use of smart asset management systems, increased automation, drone technology, digital twinning and improved digital interfaces.

Another aspect to be considered in the changing port space is the increased weight being given to environmental, social and governance (ESG) metrics. These metrics, which aim to understand and integrate the value of intangible assets and influences into business decisions, allow a more well-rounded decision making process. ESG influences are some of the key drivers in the Port Master Planning process, and are becoming increasingly integrated into day-to-day decision making in the port environment.



Emerging Markets

Globally, reduction in fossil fuel use and developing sustainable energy security through the emergence of renewable based energy sources is a priority, with a focus to achieve high density and zero emissions fuel.

Australia has excellent natural resources to develop economically viable hydrogen and has developed a national Hydrogen Strategy to set a vision for the near and longer term development of a clean, innovative, safe and competitive hydrogen industry.

Western Australia has developed a Renewable Hydrogen Strategy that clearly sets out a vision of “WA will be a significant producer, exporter and user of renewable hydrogen”. The strategy sets out four key strategic focus areas, namely:

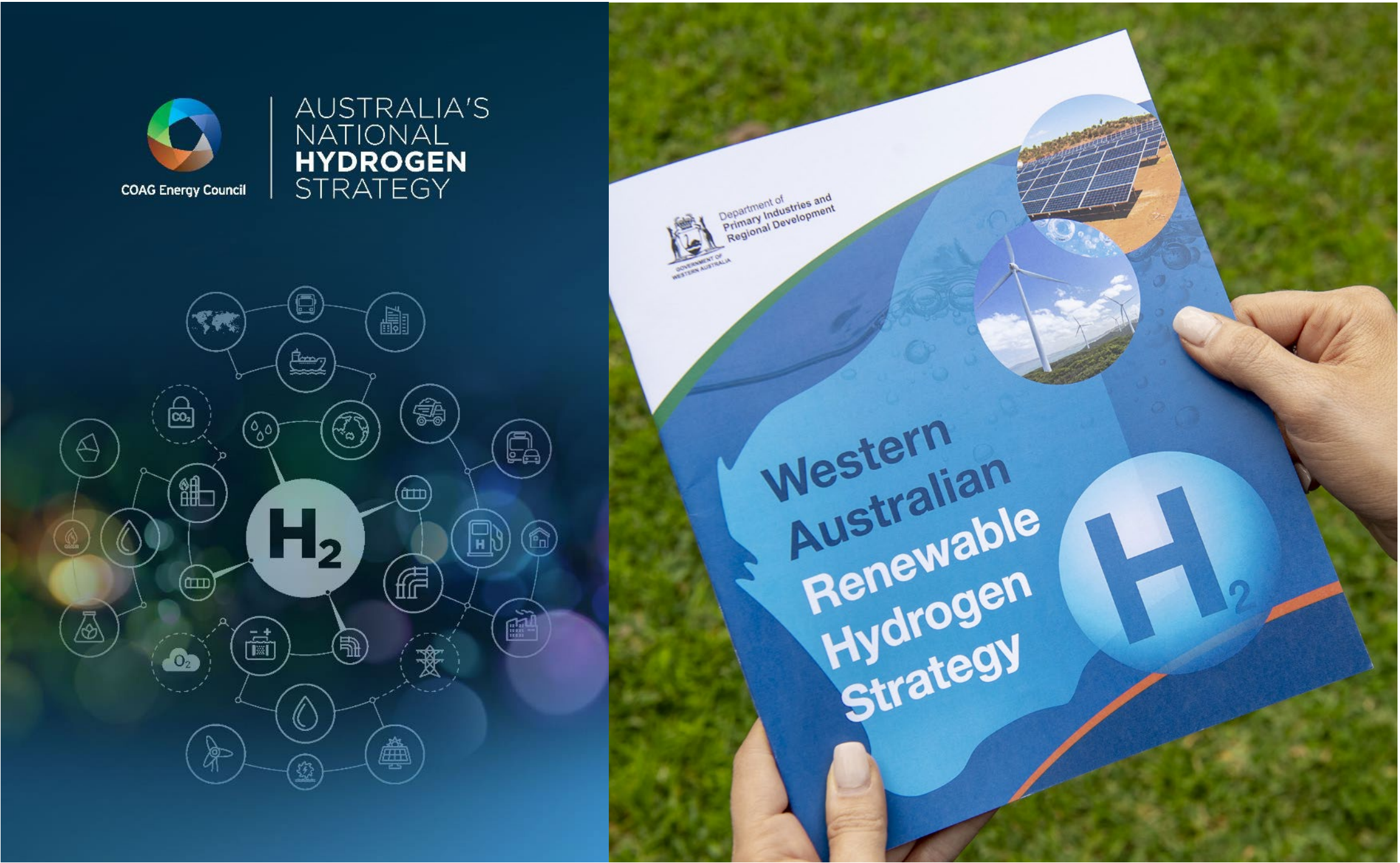
- Export – securing global market share and exporting renewable hydrogen products
- Remote applications – reducing reliance on diesel in remotely located industries and communities
- Hydrogen blending in natural gas networks – blending hydrogen into natural gas networks
- Transport – hydrogen utilisation for mobility and freight transport opportunities

The strategy sets out goals to achieve in the short and medium (by 2030) term timeframes. Notably, sustainable and economically viable renewable hydrogen production is dependent on large scale development of wind turbine and solar photo voltaic energy infrastructure components.

Ports are critical nodes in the supply chain that support the emerging renewable energy market. Initially, ports provide points of intermodal interface that allow the handling of project cargo (e.g. wind turbine structures, electrolyser components) to construct and maintain the renewable hydrogen production facilities. Once renewable hydrogen production is online the export of hydrogen based products will require port facilities to safely facilitate product transport, storage, loading and wharf operations.

The production of hydrogen using renewable energy sources, especially at large scale, is not a mature technology and still subject to extensive research and testing. Currently there are several industry initiatives that are focussing on the development of initial small scale developments with a view to grow into longer term export scale production. It is recognised that ports will support the development of the renewable hydrogen industry however the quantification of land and berth requirements within the port systems cannot accurately be assessed at this early stage.

The Port of Albany can support the initial project development phase that incorporates the import of modular project and containerised cargo while the longer term requirement for bulk hydrogen export potential will be quantified and accommodated in future iterations of the Port Master Plan.



Ports are critical enablers to develop and maintain the future production and export of renewable energy resources.

Conclusion

Southern Ports’ vision is “Strong regional ports, strong regions” and the Port Master Plan seeks to practically demonstrate the Port development pathway that supports the development of a strong regional port.

This Port Master Plan is considered a living document that forms the basis for the articulation of Southern Ports’ vision for the future.

Through promoting greater understanding of port needs, the Port Master Plan allows the integration of the Port into a broader network consideration with local, regional and state planning agencies and port related businesses.

Continued discussions with a broad range of Albany Port interested and affected stakeholders and frequent presentation of the plan will allow Southern Ports to capture commentary that allows the necessary testing, review and future updating of the plan.

The Port of Albany Master Plan demonstrates that the Port has notable growth opportunities in terms of trade throughput, in both existing and new commodities. The Port also has a level of residual capacity to meet this potential future demand, supported by improved efficiencies rather than significant Port expansion. Making best use of the existing land and waterside areas is key to this Master Plan and can allow the Port to meet future demand without undue impact on surrounding areas.

Key development items for the Port include optimising the use of existing assets to support containers and bulk exports, items to improve and increase grain throughput including berth and rail modifications, and the potential development of a berth for magnetite exports.

The Port Master Plan is built on the foundation of the market demand assessment. Review of the actual trade volumes compared to the market demand forecast volumes, and also the continuous testing and review of the assumptions that drive the market demand forecast is necessary. As such, regular review of the Port Master Plan, in the context of dynamic strategy, policy, trade, economics and stakeholder needs environment is encouraged, allowing for the plan revision to be rigorously undertaken from the ground up.

This Port Master Plan seeks to highlight the current and future opportunities presented by the Port of Albany, outlining a strategy to meet forecast trade which has been informed by a wide variety of stakeholders, regional economics and relevant port policies at a local through state and national level.

In combination, these elements make up the key drivers of the Albany Port Master Plan.



Source: Infrastructure Australia, 2013



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STRONG REGIONAL PORTS, STRONG REGIONS.

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