



Department of  
Transport

# Ports Handbook

## Western Australia

### 2011





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# Opening comments from the Minister

The State Government recognises the importance of and the contribution our ports make to the State's economy, and strives to support their development, in policy, administrative and budgetary terms. To this effect, over \$217 million was spent on port infrastructure in 2010/11 and the State Government has already committed another \$491 million over the next four years to further enhance port infrastructure.

Western Australia's economy is forecast to grow by 4.5 per cent in 2011/12 and to continue growing by four per cent annually for the next three years. The State Government is working in partnership with mining and resource companies to develop infrastructure that will drive economic development and provide sustained growth into the future.

As a key example of this undertaking, the State Government is supporting plans for a multi-user deepwater port at Anketell, 30 kilometres east of Karratha and 10 kilometres from Cape Lambert, to handle more than 350 million tonnes per annum (mtpa) of export capacity. This development includes an adjacent industrial area and transport and services corridor, catering for a wide range of commodities.



Hon Troy Buswell MLA

The State Government is supporting the proposed development of a new 8,000 hectare Ashburton North Strategic Industrial Estate and Port in the Pilbara, 14 kilometres from Onslow. Chevron's \$30 billion Wheatstone LNG project is expected to be the inaugural user of the Ashburton North facilities, along with the Exxon's Scarborough project and BHPB's Macedon domestic gas project.


Eight port authority ports operate under the *Port Authorities Act 1999* with individual boards of directors. Their main functions include trade facilitation, strategic planning, and the provision of safe, efficient and responsible port operations. They are required by law to operate under prudent commercial principles and to protect their port environment.

## Ports review

In August 2011 the Department of Transport (DoT) completed a WA Port Governance Review. This review encompassed all matters concerning port governance and performance. This was undertaken by a cross agency steering committee, chaired by the DoT and comprised of senior representatives of various Government departments and ports, with written and verbal input from stakeholders.

A report was provided to Cabinet which agreed in principle to the following actions.

1. Subject to the terms and conditions of existing contracts and agreements, consolidate the WA port authorities and amend legislation by creating:
  - A southern ports authority comprising the ports of Bunbury, Albany and Esperance with Fremantle port to remain separate;
  - A mid west ports authority comprising the port of Geraldton, proposed port of Oakajee and the *Shipping and Pilotage Act 1967* (SPA) ports at Cape Cuvier and Useless Loop;
  - A Pilbara ports authority comprising the ports of Port Hedland and Dampier, proposed ports at Anketell, Cape Preston and Ashburton North and the SPA ports at Port Walcott, Varanus Island, Barrow Island, Airlie Island, Thevenard Island and Onslow; and
  - A Kimberley ports authority comprising the ports of Broome, Derby, Wyndham, Cockatoo Island, Koolan Island and the proposed port at James Price Point.

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2. Encourage and support appropriate private sector port infrastructure investment at ports; and
  3. Develop a State Port Strategic Plan following completion of the Regional Freight Transport Plan and the Metropolitan Freight Plan.

### **National ports strategy**

In December 2010, Infrastructure Australia and the National Transport Commission presented a draft National Ports Strategy for consideration by the Council of Australian Governments (COAG) to improve the way major Australian ports are planned and managed so that private sector investment can be attracted into the sector.

In February 2011, COAG announced its endorsement of the need for a national ports strategy. COAG recommended, however, that the National Ports Strategy be an integral part of the National Freight Strategy, which is under development. It will improve productivity, promote better long-term planning around ports and bring a greater focus on performance to Australia's waterfronts. An implementation plan for a final National Ports Strategy is being undertaken.

In conclusion, with the growing role of ports in the State's economy and the need for strategic port planning and investment, this Government has adopted a more strategic view of the State's ports and their investment needs over the next decade and beyond.

I have requested that the Department of Transport (DoT) take a more active role working with and assisting ports in coordinating and reviewing ports' planning and investment needs.

**HON TROY BUSWELL MLA  
MINISTER FOR TRANSPORT**



# Introduction

**Shipping is a genuinely global industry and is therefore an industry that is subject to some of the biggest challenges of our time, including climate change and the global financial crisis.**

As the largest island continent, Australia's economic future is inextricably linked to safe and productive shipping. More than 99 per cent of Australia's international exports and imports are carried by sea. This represents the world's fifth largest shipping task.

Over 4,000 internationally-flagged vessels make more than 22,000 visits to Australian ports each year, many of them moving through the environmentally sensitive Torres Strait and Great Barrier Reef. In 2008 this amounted to 834 million tonnes of international cargo entering and leaving Australia. A further 52 million tonnes of cargo was moved between Australian ports. The Australian Competition and Consumer Commission predicts demand at our ports will triple over the next 20 years.

The Western Australian coast is a diverse and unique environment. More than 14,000 km in length, the coast is one of the State's greatest assets in terms of its environmental, economic, social and cultural resources.

## Growth and performance

Western Australia led the way in national seaborne trade in 2010/11, handling 53 per cent of Australia's trade tonnage with a combined throughput of 517 million tonnes and \$124 billion in trade value terms. The Port Hedland and Dampier port authorities were ranked as the top two largest tonnage ports in Australia in 2010/11. Port Walcott in the Pilbara and the Fremantle Ports were also among the top 10 Australian ports by volume of trade.

WA ports have experienced an increasing trend in trade volume over the past decade. Trade volumes have increased by 131 per cent from 224 million tonnes in 2000/01 to 517 million tonnes in 2010/11. Compared to 2009/10, trade volumes increased by four per cent.

The anticipated growth in WA will be mainly driven by mineral and hydrocarbon resource developments. Added to this are trade activity investments from the private sector on ports infrastructure throughout Western Australia.

These include:

- The \$43 billion Gorgon LNG Project in the Pilbara, which is Australia's biggest resource project. Plans for the Oakajee Port and Rail project in the Mid West are being progressed. The project involves developing a deepwater port to cater for cape size vessels and rail infrastructure connecting Mid West iron ore mines to a port at Oakajee. An estimated \$4.37 billion is expected to be spent on developing proposed port and rail infrastructure at Oakajee. The Oakajee Port and Rail project involves developing a deepwater port capable of servicing the anticipated needs of the mining industry in the Mid West region of WA, and rail infrastructure connecting the mines to the port at Oakajee. Once developed, the Oakajee port will operate under the jurisdiction of the Mid West Port Authority.
- The proposed deepwater port at Anketell is supported by the State Government, with plans for multi-user deepwater facilities at Anketell, 30 kilometres east of Karratha and 10 kilometres from Cape Lambert, Anketell will handle more than 350 mtpa of export capacity, together with an adjacent strategic industrial area and transport services corridor, catering for a wide range of users and different mineral commodities, particularly iron ore. This multi-user port is likely to be built by a private proponent under a State Government Development Agreement. It is expected to provide Pilbara communities with further business and development opportunities.

- The State Government is supporting the proposed development of a new 8,000 hectare Ashburton North Strategic Industrial Estate and adjacent port in the Pilbara, 14 kilometres from Onslow. Chevron is the lead proponent for the port and related LNG production facilities, as part of its \$30 billion Wheatstone LNG project. Ashburton North is expected to include a port precinct, under the jurisdiction of the Pilbara Port Authority, multi-user facilities on the coastal strip, and a multi-user infrastructure corridor.
- BHP Billiton and partners Apache Energy have announced their decision to develop the Macedon gas field, a \$1.5 billion project that will utilise the industrial estate at Ashburton North. This project will provide for gas to be piped 100 kilometres to onshore processing facilities and into the Dampier-Bunbury Gas Pipeline. The gas plant is projected to produce about 200 million cubic feet of natural gas per day, which is equivalent to about 20 per cent of the State's current usage.
- Rio Tinto has announced a total of \$5.1 billion in new investment in Western Australia's Pilbara region to increase its annual iron ore production capacity to 283 mtpa by 2013. Related expansion projects include a dredging program, construction of an additional 1.8 kilometre jetty and a four-berth wharf at Cape Lambert (Port Walcott).

### Ports and industry groups

Under the *Port Authorities Act 1999* there are eight port authorities, which include Albany, Broome, Bunbury, Dampier, Esperance, Fremantle, Geraldton, and Port Hedland port authorities. Non-port authority ports, established under the *Shipping and Pilotage Act 1967*, include Carnarvon (which includes Cape Cuvier and Useless Loop), Onslow (which includes Airlie Island, Thevenard Island and Onslow), Barrow Island, Varanus Island, Port Walcott (at Cape Lambert), Derby, Port Preston, Wyndham, and Yampi Sound (which includes Cockatoo Island and Koolan Island).

These non-port authority ports are usually comprised of one or more single user export facilities. These ports and related facilities are generally operated by resource companies as single user facilities, with limited State Government involvement. Unlike other non-port authority ports, the port of Wyndham handles general cargo and provides export facilities for the Kimberley region as a common user port. The management of Wyndham is contracted out by the DoT.





There are three ports industry groups, Ports WA, the Western Australian Port Operations Task Force and the Freight and Logistics Council of Western Australia.

Ports WA is an association that represents the Statutory Port Authorities, their profile and identity in Western Australia. Its key focus is the development of policy advice to the Minister for Transport on matters pertaining to ports; provision of representation to government committees, inquiries and policy forums; promotion of the role and importance of ports; fostering collaboration between Western Australian ports to enhance efficiency and effectiveness; supporting the training and development of human resources across the port and maritime sectors; identifying and responding to future trends in port management, operation and policy and collaborating with Western Australia Government departments regarding port and maritime matters. The DoT is a member of Ports WA.

The Western Australian Port Operations Task Force, established in 1987, comprises a broad representation of Fremantle port users and service providers, port authorities and relevant government agencies. The task force's current role is to look at operational issues and determine practical resolutions to identified operational issues in order to ensure efficient passage of goods and vessels through Western Australian ports. The Taskforce is Fremantle focussed.

The Freight and Logistics Council of Western Australia focuses on strategic policy issues, especially those with a national perspective. The Freight and Logistics Council was formed in 2009, consolidating previous modal councils, and reflects the trend in industry towards broad-based freight logistics outcomes. The objective of the council is to enhance strategic policy outcomes for the benefits of both government and industry through ongoing liaison at a senior level between the public and private sectors.

### **In summary:**

- Ports are a critical link in the logistics chain for exports and imports.
- Western Australian ports include some of the largest tonnage ports in the world.
- Trade volumes have increased by 131 per cent, from 224 million tonnes in 2001/02 to 517 million tonnes in 2010/11.
- Major developments and planning are underway to meet increasing demand from the minerals and resources industry.
- In 2010/11 Western Australia handled 53 per cent of Australia's trade volume and 32 per cent in value terms.
- The Port Hedland and Dampier port authorities were ranked as the top two largest tonnage ports in Australia in 2010/11.
- \$80 billion worth of projects are currently proposed around Western Australia's existing and newly planned ports. This trend is expected to continue into the future.

# Western Australian port authorities imports and exports for 2011





# Port of Albany

35° 02'S 117° 55'E

**Albany is located 409 kilometres south-east of Perth on the south coast of Western Australia and was the first port established in the State, being settled in 1826 before Perth and Fremantle. It now serves the agricultural region of the Great Southern and its primary exports are grain and woodchips.**

## Trade performance

The Albany Port Authority (APA) throughput in 2010/11 was 3.1 million tonnes or a decrease of 10 per cent on the prior year. This decrease was due to a poor harvest, driven by low rainfall. The harvest for 2011/12 is double the previous year due to very good rains. Fluctuating grain trade is a feature of the port, driven by variable rainfall. The port mainly handles woodchips, wheat, canola and barley. Other commodities traded through the Albany port include fertiliser, petroleum products and silica sand. Cruise ship visits are a significant boost to the local tourism economy with around 10 visits a year, including some of the largest ships in the market.

Exports represent 96 per cent of the total trade volume for 2010/11. Woodchips represent 45 per cent of total 2010/11 trade. The second largest commodity exported through the Albany port is various grains at 1.32 million tonnes, representing 43 per cent of 2010/11 total trade. The woodchip trade has increased by 15 per cent over the previous year although the trade is currently at lower levels than originally predicted due to lower demand from Japan and a high Australian dollar.

In September 2009, the APA commenced exporting a new trade in biomass fuel pellets, which are manufactured from blue gum plantation timber by Plantation Energy at the Mirambeena Industrial Estate. Plantation Energy is building their capacity to export 250,000 tonnes per annum. To accommodate this new biomass fuel pellet trade, the APA has constructed storage and handling facilities. A full summary of Albany port's trade performance and throughput follows.

## Achievements for 2010/11

The APA continues to seek to optimise the use of rail and has identified appropriate corridors and grade separation for future expansion of the rail network within the port area. Capacity improvements are proposed.

In late 2010 approval was given to dredge 12 million cubic metres of spoil to deepen the channel and allow iron ore exports from the Southdown Joint Venture magnetite mine near Wellstead (approx 100 kilometres east of Albany), subject to a range of environmental conditions. The conditions relate to monitoring requirements for seagrass, reef communities and local aquaculture operations in and around the Albany port. Further, the APA is required to implement a comprehensive water quality monitoring program.

This dredging in Princess Royal Harbour and King George Sound is proposed as part of the upgrade of the port to facilitate the Southdown Joint Venture (SDJV) export of iron ore in cape size vessels. The proposal was approved by the Environmental Protection Authority (EPA) subject to APA's compliance with prescribed conditions. Minor modifications were made to these conditions following the consideration of appeals by the State Appeals Convenor. The Commonwealth has granted Federal environmental approval for the project.

If progressed, the SDJV project will involve expenditure in the range of \$2 billion to \$3 billion by the proponent and will triple trade at the port. SDJV will be required to fund the dredging and the berth construction.

## Strategic directions

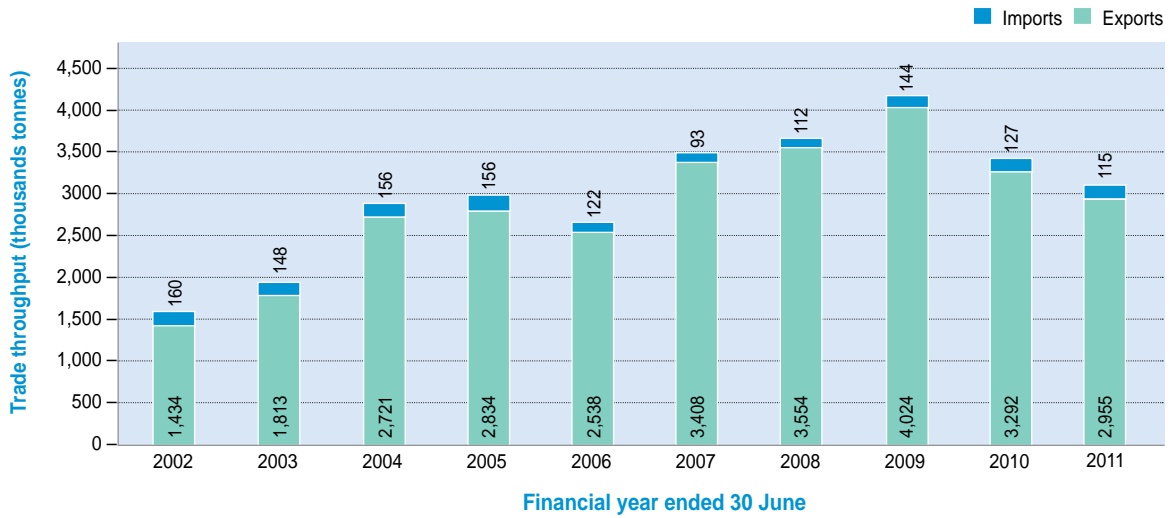
Dredging will be undertaken to accommodate larger iron ore ships as part of the SDJV Project, to export magnetite concentrate. Planning work for this iron ore project includes due diligence, contract and consultant management, financial modelling, contract negotiations and community consultation.

Given the extremely high scenic and heritage values at the port, emphasis is given to developing good links with the community to reflect these values. Planning is also underway to commemorate the centenary of the departure of the ANZAC fleets, with a major re-enactment planned for November 2014. This will be a highlight of the ANZAC centenary celebrations and will receive international and national exposure. The port also provides sponsorship and interpretive signage to enhance the ports connection with the community.

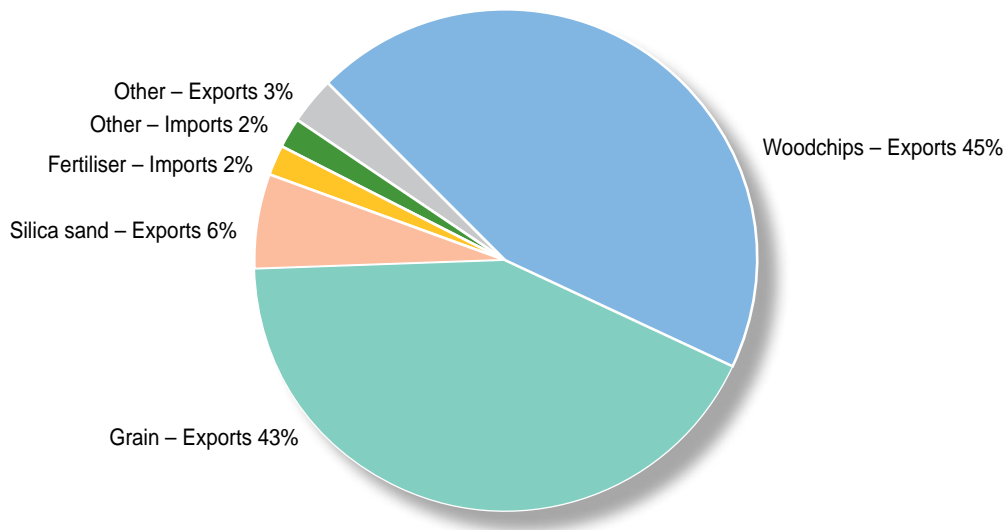




**Albany Port Authority throughput 2001/02 to 2010/11**



**Albany Port Authority percentage throughput by commodity 2010/11**



Port capacity			
Berths	Length of berth (m)	Depth at berth (m)	Max. draft of vessel (m)*
<b>Port Authority facilities</b>			
1 General purpose	209.0	10.4	9.8
2 General purpose	172.0	10.4	9.8
3 Grain, containers, ro/ro	227.0	12.2	11.5
6 (Dolphin) Woodchips	216.0	12.2	11.5

\* This is an indicative figure only. The maximum sailing draft of a vessel is variable depending on the limitations of the tides and should be confirmed with the Port Harbour Master, prior to the vessel's entry into the port.



# Port of Broome

17° 58'S 122° 14'E

**The Port of Broome is located 2,237 kilometres north-east of Perth, and is situated in the south-west Kimberley region. The State Government managed the Port of Broome from 1889 to 1999.**

On 1 January 2000, the Broome Port Authority (BrPA) was gazetted and became Western Australia's eighth statutory port authority. The BrPA is primarily a services model entity with income derived from stevedoring operations and wharfage. Oil and gas support constitutes 55 per cent of the BrPA's business.

## Trade performance

Port business and shipping includes the importation of petroleum products and cement, livestock exports, cruise liners and expeditionary cruise vessels, coastal trading vessels, pearling, fishing and tourism charter, BrPA also supports the Browse Basin offshore oil and gas exploration industry including seismic geophysical vessels and supply/anchor handling vessels.

In 2010/11, BrPA achieved a total cargo throughput of 233,564 tonnes with 996 vessels visiting the port. Trade volume continues to be dominated by petroleum product imports for the region.

Imports of drilling equipment and materials, plus exports of livestock and bunker fuel oil, decreased from 2009/10 figures, largely due to the imposition of Commonwealth government regulatory constraints that affected offshore oil and gas exploration, and livestock exports. Consequently BrPA's drilling equipment and offshore exploration chemical imports decreased by 45 per cent.

Total exports during 2010/11 decreased by 14 per cent and notably, only 31 livestock vessel visits occurred with 91,991 head of Kimberley cattle exported – 10 per cent less than the previous financial year.

Total imports improved by 12 per cent over the previous year, and fuel imports in particular increased by 22 per cent due to an increased demand from Kimberley onshore mining activities and support industries.

## Achievements for 2010-11

The following capital works were completed during 2010/11:

- Upgrade of wharf concrete deck;
- Installation of a new gatehouse and first aid room;
- 100-tonne crane half life refit;
- A pilot study on a new type of wharf pylon treatment, which may significantly reduce long term wharf maintenance costs;
- Installation of new ablution block for port users;
- Ongoing blasting and painting of wharf pylons; and
- Upgrade of the 14" fuel pipeline.

## Strategic directions

The Western Australian State Government tasked BrPA with initial planning responsibilities towards maritime oversight and compliance at the proposed greenfields port at James

Price Point. This wider strategic direction related to Browse LNG brings new and diverse challenges for the port authority. At Broome, BrPA continues bringing port land towards a state of project readiness and expects to construct a new utilities corridor with underground services by the first quarter of 2012. This relocation of utilities will also support a new commercial precinct adjacent to the port boundaries that will be managed by BrPA in partnership with the traditional owner corporation Nyamba Buru Yawuru PBC (NBY), with commensurate trade, business and employment opportunities for the entire community. Creating additional commercial land will assist BrPA in its endeavours to serve as a diversified intermodal hub and logistics gateway for the Kimberley.

This total land parcel aligned to port customer support compares favourably with land availability at Dampier and Darwin. Woodside has taken an option over approximately 10 Ha of land for logistics base purposes and in 2011/12 intends to develop this land towards support of both its James Price Point and Browse Basin exploration and development activities.

The State Government continues to progress the development of a small vessel facility on port lands.

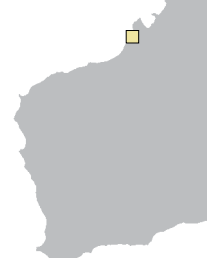
The Broome wharf is BrPA's present major infrastructure asset and funding is being sought to extend the life of the wharf beyond its specified 50 year design life. The original section of the wharf was constructed 47 years ago and an extension was added in 2006.

In December 2010, Cabinet approved \$2.42 million of expenditure towards the BrPA's master plan. Further funding is to be considered for the 2012/13 budget year.

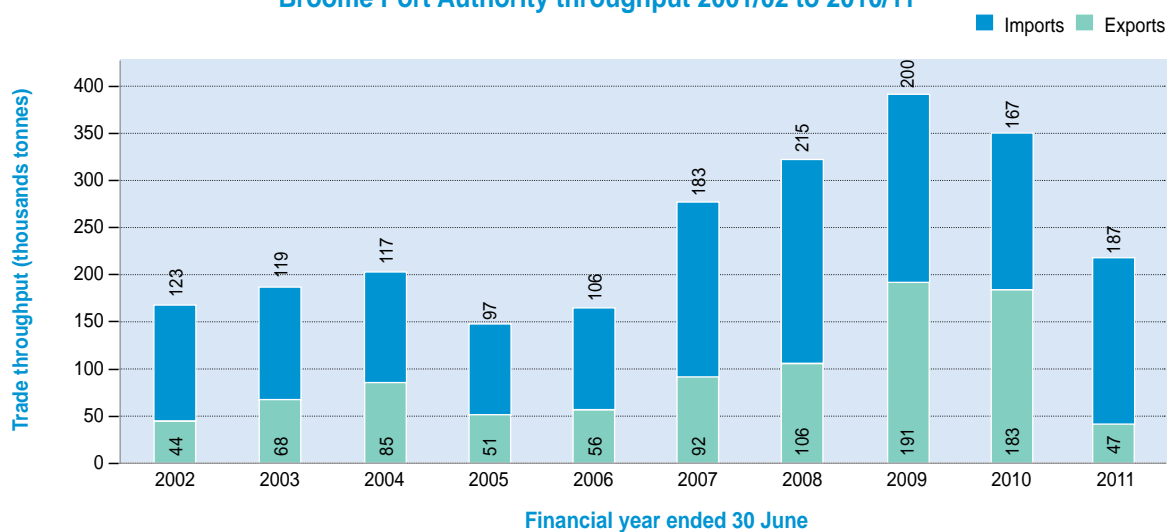
Woodside Petroleum is currently examining the engineering feasibility of a production facility at James Price Point. Several other WA-based oil and gas companies are now planning the development phases for their Browse Basin offshore development projects, including Shell, Inpex and Conoco-Phillips.

In relation to the development of a port at James Price Point, the Department of State Development is currently progressing associated negotiations with Woodside. The Government has agreed that the proposed port should be placed under the BrPA's jurisdiction.

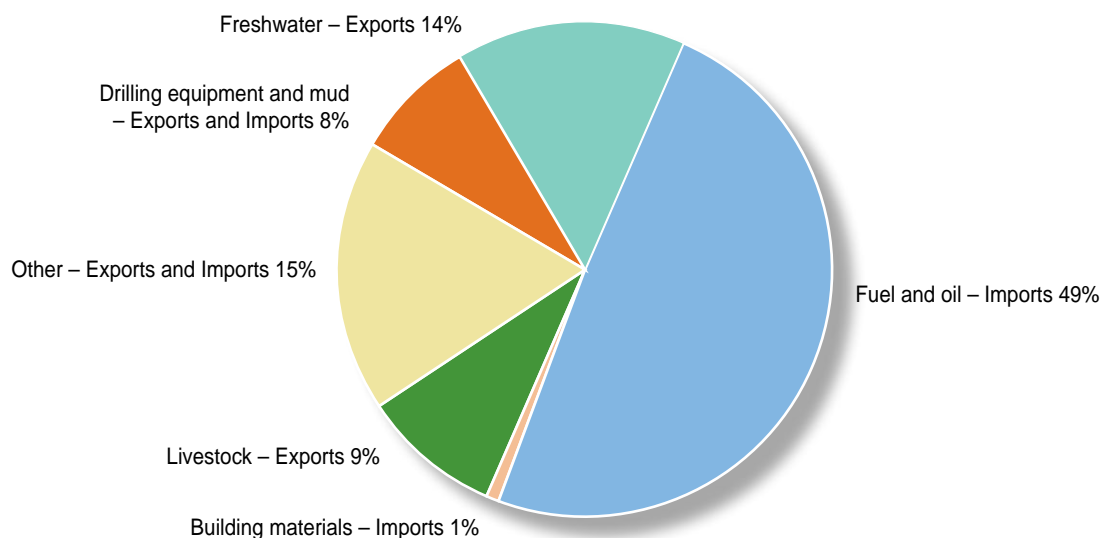




### Broome Port Authority throughput 2001/02 to 2010/11



### Broome Port Authority percentage throughput by commodity 2010/11



Port capacity			
Berths	Length of berth (m)	Depth at berth (m)	Max. draft of vessel (m)*
<b>Port Authority facilities</b>			
Outer Common user	331.0	10.0	9.6
Inner 1 Common user	170.0	8.0	7.6
Inner 2 Common user	96.0	7.0	6.6

\* This is an indicative figure only depending on a ship's location at the outer berth. The maximum sailing draft of a vessel is variable depending on the limitations of the tides and should be confirmed with the Port Harbour Master, prior to the vessel's entry into the Port.



# Port of Bunbury

33° 19'S 115° 38'E

**Proclamation of the Bunbury port occurred in 1909. Bunbury is one of the State's major exporting ports with total throughput in 2010/11 of 14 million tonnes. Bunbury is located in the South West region of Western Australia, about 180 km south of Perth.**

## Trade performance

The Bunbury Port Authority (BPA) reported a record trade of 14.0 million tonnes and 414 commercial ship visits in 2010/11 despite the global economic downturn. Alumina exports remain the major commodity handled by the Bunbury port, with 9.44 million tonnes exported in 2010/11, which represents 67.4 per cent of the total trade and 76.3 per cent of total exports. Other export trades include wood chips, mineral sands and spodumene. A new trade, which commenced during the year, was iron concentrate with a total of 20,000 tonnes handled by the port.

## Achievements for 2010/11

The BPA has commenced the implementation of the inner harbour structure plan. This structure plan is a planning policy document that will pave the way for the BPA's growth over the next 25 to 30 years and will support the staged planning for the future construction of facilities and land use development to meet customer needs, while giving due consideration to minimising the impact of port operations on nearby communities.

A tender was awarded for the construction of the Berth 8 waste water management system, at a cost of \$4.5 million. The project's practical completion occurred in January 2011 and will minimise the potential of waste water from the Berth 8 facility entering the marine environment.

Stage 1 of the Koombana Drive screen wall commenced in June 2010. Practical completion of the first 900 metre section was achieved in April 2011. The wall, which is 3.5 metres tall, 900 metres long, and constructed by a post and panel method, will screen port activity from local residences and also define the port authority's southern boundary along Koombana Drive.

## Strategic directions

The BPA has identified the future need for a new Berth 14 for bulk products such as coal. Discussions have commenced with potential exporters of coal and other bulk cargo from the South West. The business case for Berth 14 will be developed by the BPA, with funding for the project coming from private developers, and will be subject to agreement

and receipt of firm commercial commitments to the project by these export companies. Privately funded rail infrastructure, dredging and a ship loader will also be required.

In regards to the Preston River relocation which is a significant project for the BPA, the BPA is currently planning to acquire land sufficient to progress this realignment of the river.

The BPA is continuing its negotiations with Perdaman Chemicals and Fertilisers (PCF) for the export of up to 2 million tonnes per annum of urea from their proposed \$3.5 billion coal to urea conversion plant in Collie, using Collie coal as feed stock. The expected commencement of this exciting new export trade is in the first half of 2015.

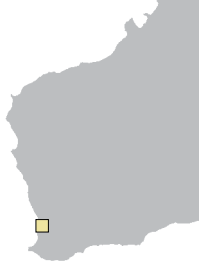
BPA can only facilitate PCF's requirements on Berth 5 (a multi-user berth). Consequently, BPA is proposing to redevelop Berth 3 from a dolphin structure to a land backed berth and install a common use shiploader at Berth 3 at an estimated cost of \$159 million. The BPA is working on the business case and investigating private funding land backing of Berth 3, together with Berth 5, to provide a total berth length of up to 380 metres.

The BPA is also having discussions with an exporter in regards to their proposed future export of iron concentrate. Two trial shipments have been conducted during 2011 using new tippler bin technology, with long term exports to continue at 200,000 tonne per year with shipment flexibility through both the inner and outer harbour.

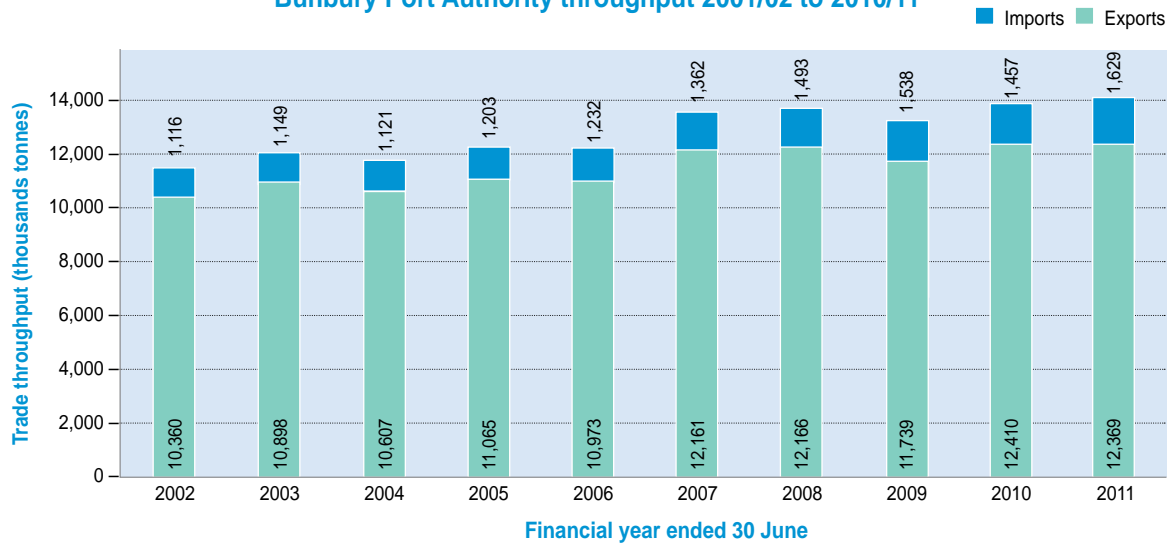
The BPA has established the following strategic outcomes or targets for the period 2010 to 2016:

- A waste water management system at Berth 5 to capture and return waste water and wash-down water;
- A wash water system at Berth 5 for the Perdaman shiploader and conveyor system;
- The purchase of freehold land at Glen Iris, required to allow the port authority to progress with plans for the future Preston River relocation project;
- The harbour basin rock removal, required for an area of basalt rock, to reduce the risk of a vessel grounding and remove the constraints on the movement of large vessels in and out of Berth 5;
- A new road system for Berth 5 to allow access for future development;
- A Berth 5 third party access road hopper, as a common user road hopper, that will connect directly to the Perdaman conveyor system to allow other compatible cargoes to be loaded over the Perdaman shiploader at Berth 5;
- A new storage shed for bulk products such as mineral sands; and
- A new administration office (outer harbour) proposed to cater for the growth in staff at the Port, required to handle the increasing trade development at the port.

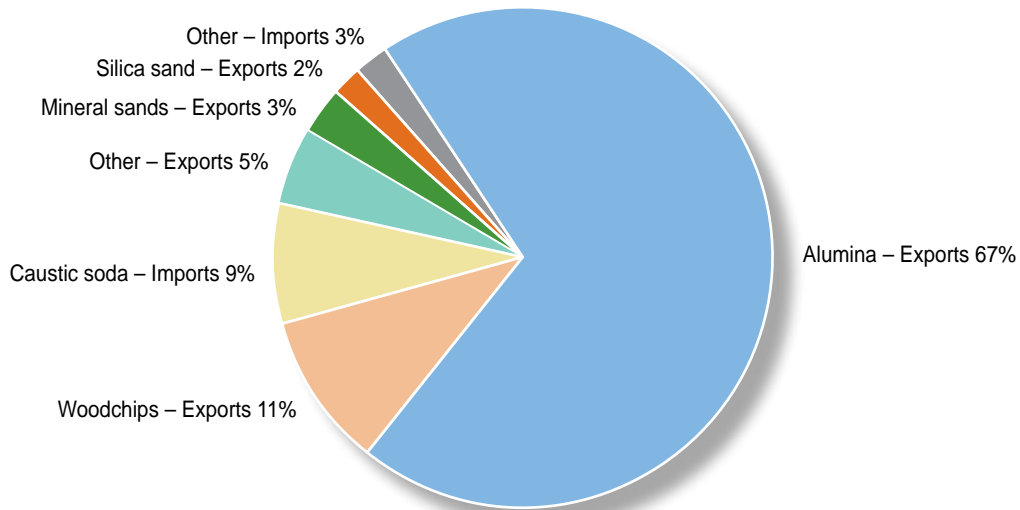




### Bunbury Port Authority throughput 2001/02 to 2010/11



### Bunbury Port Authority percentage throughput by commodity 2010/11



Port capacity			
Berths	Length of berth (m)	Depth at berth (m)	Max. draft of vessel (m)*
<b>Port Authority facilities</b>			
1 Mineral sands	184.0	9.7	9.1
2 Methanol, general purpose	184.0	8.1	7.5
3 (Dolphin) Woodchips	229.0 <sup>(1)</sup>	12.2	11.6
4 (Dolphin) Alumina, caustic soda	229.0 <sup>(1)</sup>	12.7	11.6
5 General purpose	240.0	12.2	11.6
6 (Dolphin) Alumina, caustic soda	229.0 <sup>(1)</sup>	12.7	11.6
8 Bulk materials shiploader	250.0	12.2	11.6

\* This is an indicative figure only. The maximum sailing draft of a vessel is variable depending on the limitations of the tides and should be confirmed with the Port Harbour Master, prior to the vessel's entry into the port.

(1) Denoted length refers to maximum length of vessel.



# Port of Dampier

20° 37'S 116° 38'E

**The Port of Dampier will continue to grow on the back of extensive regional project construction activity and high international demand for resources. It is a key port supporting the oil and gas industry and the construction activities in the Pilbara, being at the heart of a logistics network. The supply chain extends 350km inland to the iron ore rich deposits of the Pilbara region and 200km seaward to the oil and gas fields of the North West Shelf, with the Port of Dampier a central focus of activity.**

## Trade performance

It is anticipated that further capacity will be created within the Port of Dampier over the next five years, which is likely to see total tonnage near 200 million per annum by 2016. The Dampier Port Authority (DPA) projects that iron ore exports from Rio Tinto alone will achieve a maximum production capacity of 160 mtpa by 2015/16.

The DPA is one of the world's largest bulk export ports and despite the tough economic times, the DPA continues to report record exports. In 2009/10, the DPA had a total throughput of 171 million tonnes. This decreased to

165 million tonnes (- 3.51 per cent) in 2010/11, mainly due to interruptions to production by cyclonic activity. Iron ore continues to be the predominant product exported from the Port of Dampier, accounting for 82.42 per cent of trade in 2010/11. Further, approximately 17.1 million tonnes of LNG exports were recorded, representing 10.36 per cent of the total port trade. Other commodities handled by the port include salt, condensate, LPG, ammonia, and petroleum products.

## Achievements for 2010/11

Key highlights for 2010/11 include:

- Recording the second highest tonnage ever recorded from Dampier at 165.0 million tonnes;
- A 30 per cent increase in vessel arrivals at the port at 6,003 vessels, a new record and reflecting a similar increase in general cargo activity;
- Dampier handling \$31.5 billion of goods and materials;
- A program of expansion including planning for the new Dampier Marine Services Facility;
- The release of the Dampier Development Plan 2010/20; and
- Achieving a 8.7 per cent rate of return.

The proposed Dampier Marine Services Facility project (subject to funding approval) will see further berth space (up to 240m of land-backed berth, and 600m of added jetty berth space), as well as proposed dredging works and land reclamation, which will be an important addition to the capacity of this vital area of trade, providing construction and ongoing support for the Gorgon, Pluto and other oil and gas projects.

## Strategic directions

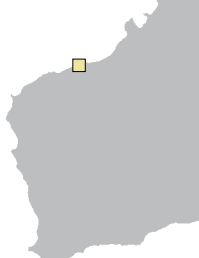
The DPA has undertaken significant investigation, preliminary concept and detailed design work, environmental and heritage planning, and business case work to ensure that general cargo facilities are expanded to keep pace with future demand. The proposed Dampier Marine Services Facility involves two stages; reclamation of

22 hectares of land and creation of land backed wharves, followed by the Stage 2 construction of a 300 metre jetty. The expansion project is still to receive its final funding approval, but is planned to commence in early 2012 and be operational by the end of 2013.

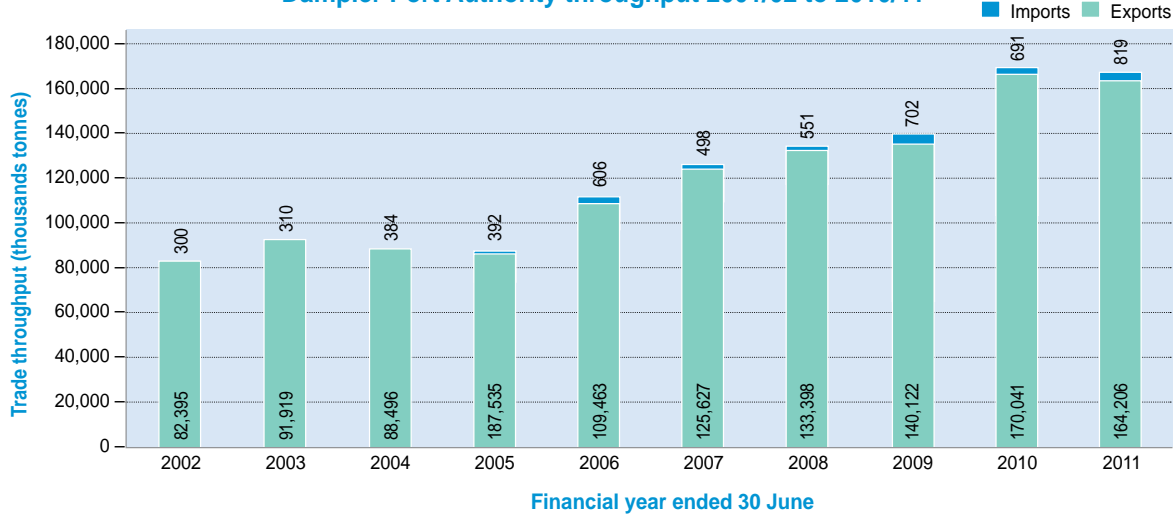
The DPA is also involved in the planning of the new strategic industrial estate at Ashburton North, adjacent to the port of Onslow. The State Government has allocated land to the DPA to facilitate common-user port access and nominated the DPA as the operator of the proposed port facilities at Ashburton. Chevron is the inaugural proponent and will commence development of port facilities in early 2012. Further opportunities to extend the jurisdiction of the DPA are expected over the next five years, including port operations at Mt Anketell, which is adjacent to the existing Port Walcott area. Government has approved the DPA having jurisdiction over the proposed port, with development negotiations now being progressed with various proponents by the Department of State Development (DSD), DPA and LandCorp.

DPA aims to facilitate and promote a "whole of port" approach to all elements of port operations, utilising strategic partnerships to manage resource needs and strengthen response capabilities. Over the next five years, the DPA will continue its program of upgrading the King Bay Estate. Improved roads, lighting, signage, drainage, and general amenity are all key elements in achieving a safer and more effective layout of this key industrial area.

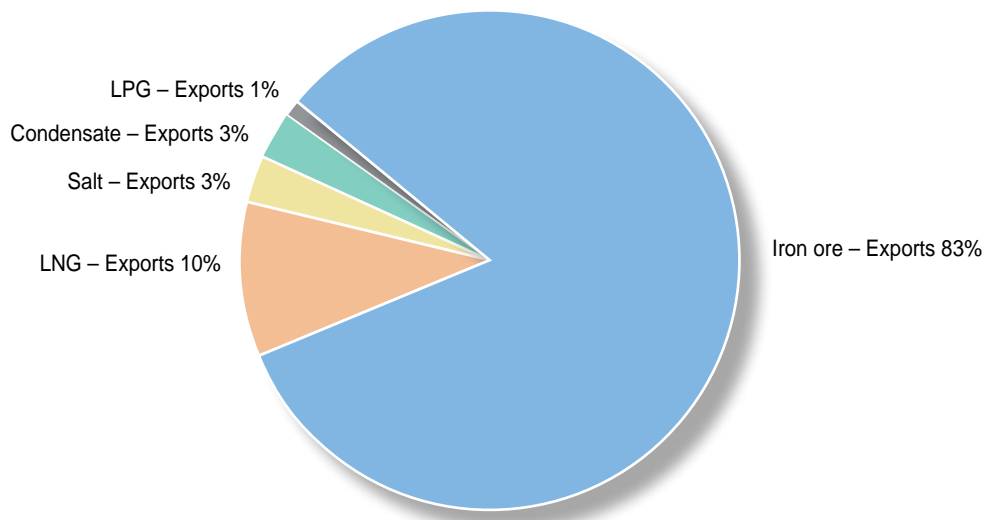




Dampier Port Authority throughput 2001/02 to 2010/11



Dampier Port Authority percentage throughput by commodity 2010/11



Port capacity			
Berths	Length of berth (m)	Depth at berth (m)	Max. draft of vessel (m)*
<b>Iron ore loading facilities</b>			
East Intercourse Island	341.4	21.5	20.5
Parker Point - Berth 1	268.9	17.2	16.2
Parker Point - Berth 2	455.0	19.5	18.5
Parker Point - Berth 3	330.0	19.5	18.5
<b>Salt loading facility</b>			
Mistaken Island	358.2	12.0	11.0
<b>LNG, LPG and condensate loading facility</b>			
Withnell Bay - LNG	360.0	13.2	12.2
Withnell Bay - LPG	300.0	13.5	12.5
<b>Port Authority facilities</b>			
Dampier Cargo Wharf - Main (West)	209.6	10.0	9.0
Dampier Cargo Wharf - Inner (East)	142.0	6.5	5.5
Bulk Liquids Berth	215.0	13.0	12.0

\* This is an indicative figure only. The maximum sailing draft of a vessel is variable depending on the limitations of the tides and should be confirmed with the Port Harbour Master or relevant Wharf Manager as appropriate, prior to the vessel's entry into the port.

**Discovery of the area is generally credited to French Admiral Bruny d'Entrecasteaux, who entered the bay in 1792 with two vessels to take refuge from a storm. The town of Esperance was named after one of these vessels, L'Esperance. The beginnings of European settlement in the area occurred around the mid nineteenth century.**

The most significant economic boom for the region occurred during the 1960s with the opening up of the sand plain to agriculture through the use of trace elements, and the discovery of nickel. The Esperance Port Authority (EsPA) was proclaimed in 1968. The port is a critical link to the economy and lifestyle of the entire region. Esperance is located in the Goldfields-Esperance region of Western Australia, 720 km by road from Perth.

## Trade performance

Esperance port's total 2010/11 trade throughput decreased by one per cent, to 11.1 million tonnes. Iron ore exports totalled 8.8 million tonnes in 2010/11. Iron ore represents 79 per cent and grain exports 14.4 per cent of the port's total throughput.

Esperance remains the largest nickel exporting port in the southern hemisphere with 290,647 tonnes of nickel exported in 2010/11. 227,510 tonnes of this nickel was exported in containers, with bulk nickel exports totalling 55,182 tonnes and bagged nickel exports totalling 7,955 tonnes.

## Achievements for 2010/11

Due to the significant increase in iron ore trade over the last few years, the EsPA has secured approval under the *Environmental Protection Act 1986* to increase iron ore exports from 8.8 million tonnes a year to 11.5 million tonnes a year.

Nickel exports are forecast to increase to in excess of 400,000 tonnes per annum during the coming years, with other nickel products coming on stream, and the majority of the product being exported in containers.

BHP Billiton sold their Ravensthorpe nickel operation to First Quantum Minerals (FQM) in 2010. FQM have reopened the mine and imports of sulphur and containerised nickel exports are expected to commence later in 2011/12. When the mine is fully operational, annual trade is estimated to be 480,000 tonnes of sulphur, 40,000 tonnes of magnesia and 160,000 tonnes of nickel in containers.

The EsPA monitors dust, noise and sediment levels and publishes its findings on its website. The EsPA dust monitoring program combines depositional dust gauges, High Volume

Air Samplers (HVAS) and Tapered Element Oscillating Microbalance (TEOM) sampling, as recommended by the Education and Health Standing Committee *"Inquiry Into the Cause and Extent of Lead Pollution in the Esperance Area"*.

The EsPA has a Port Consultative Committee (PCC), which provides consultation mechanisms between the Port Authority and the Esperance community. The PCC provides both a forum for information sharing and a conduit of consultation between the EsPA and the community. The Education and Health Standing Committee *"Inquiry Into the Cause and Extent of Lead Pollution in the Esperance Area"* has recommended that similar committees be established in all Western Australian port authorities.

## Strategic directions

EsPA's ability to facilitate trade and its capacity to expand is underpinned by the transport corridor redevelopment currently planned to be completed by the end of 2013, which will enable the port to expand with community and government agency support.

The existing configuration of the Esperance transport corridor had generated safety and traffic concerns among the community. With the predicted growth in port trade from 11 million tonnes to 19-20 million tonnes within the life of its five year strategic development plan, community perception and support will be a significant factor in the future development of the port and expansion of trade. The transport corridor will go a significant way to allaying those concerns.

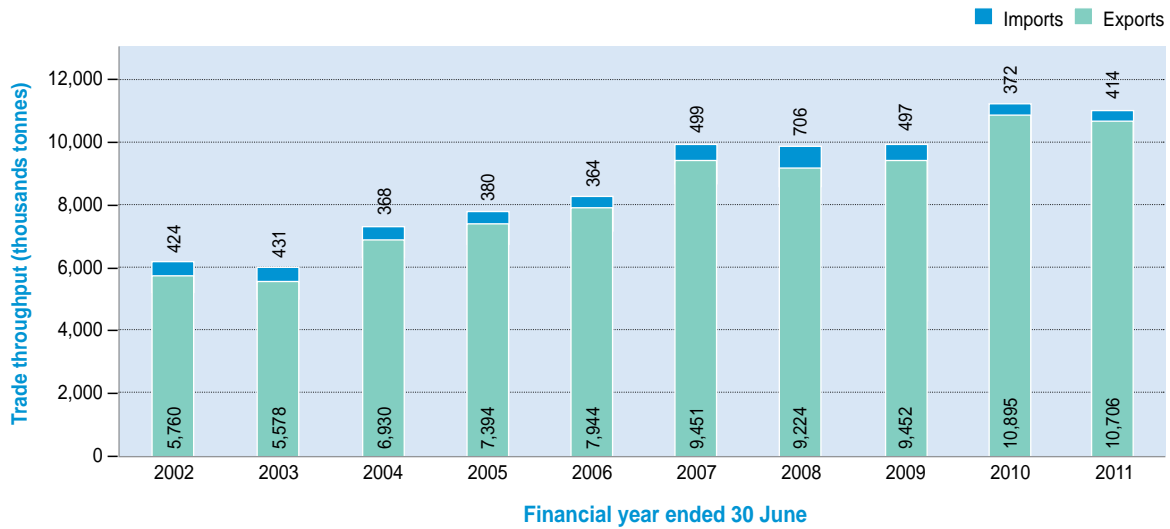
Discussions continue with prospective iron ore exporters based in the Yilgarn region for the additional throughput of up to 20 million tonnes per annum of their combined production. The port is in the process of commissioning a detailed demand assessment to gain clarity on the prospective demand and capacity requirements for additional throughput.

Galaxy Resources Ltd anticipated exporting 137,000 tonnes of spodumene commencing late in 2010. Due to a number of factors Galaxy commenced the short term export of its product through Bunbury port. The EsPA is continuing extensive discussions with Galaxy to establish storage and out loading solutions for the export of the product for 2012.

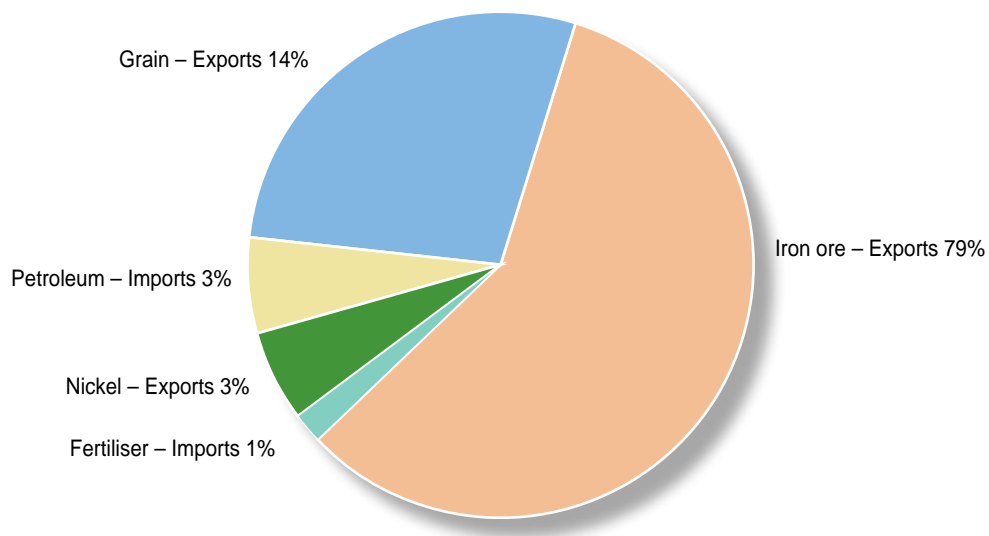




### Esperance Port Authority throughput 2001/02 to 2010/11



### Esperance Port Authority percentage throughput by commodity 2010/11



Port capacity			
Berths	Length of berth (m)	Depth at berth (m)	Max. draft of vessel (m)*
<b>Port Authority facilities</b>			
1 Grain	244.0	14.5	13.2
2 Nickel, fertiliser, fuel	213.0	14.5	13.2
3 Iron Ore	230.0	19.0	17.8

\*This is an indicative figure only. The maximum sailing draft of a vessel is variable depending on the limitations of the tides and should be confirmed with the Port Harbour Master, prior to the vessel's entry into the port.



# Port of Fremantle

32° 03'S 115° 44'E

**Fremantle Port Authority operates from two sites: the inner harbour, at the mouth of the Swan River, and the outer harbour, situated 20 km south at Kwinana. The Fremantle inner harbour provides modern deep-water facilities for handling container trade, break-bulk vessels, livestock exports and motor vehicle imports, cruise ships and visiting naval vessels.**

The Fremantle outer harbour is one of Australia's major bulk cargo ports, handling grain, petroleum, liquefied petroleum gas, alumina, mineral sands, fertilisers, sulphur and other bulk commodities, and has been identified as the best location to handle the expected growth of container trade once the capacity of the inner harbour is reached around the year 2020.

## Trade performance

As with most metropolitan city ports around the world, the global financial crisis impacted on trade through Fremantle, but the recovery in container and some other trades, such as new motor vehicle imports, has been faster than expected.

Total port trade for 2010/11 remained quite steady at 26 million mass tonnes. Fremantle mainly handles crude and refined petroleum, grains, alumina, fertilisers, coal, iron ore, motor vehicles, livestock and containers.

Alumina (2.80 million tonnes), wheat (2.55 million tonnes), refined petroleum (2.15 million tonnes) and black coal (1.13 million tonnes) are Fremantle Port's largest exports shipped during 2010/11, representing 66 per cent of the total exports trade. At 3.18 million tonnes, which represents 24 per cent of the 2010/11 export trade volume, grain represents Fremantle Port's largest export commodity.

## Achievements for 2010/11

Fremantle Ports has completed a \$277.4 million (including capitalised interest) project, to deepen the Inner Harbour and entrance channel and strengthen and upgrade the North Quay berths, to cater for larger ships.

The average size of container ships calling at Fremantle has increased by more than 85 per cent over the past 15 years. Deepening of the inner harbour and approach channels has been essential to ensure that WA importers and exporters retain access to competitive services, with benefits passed on to consumers. The deepening enables the larger container ships to call at Fremantle fully loaded. The project takes the container berths at North Quay to a depth of 14.7 metres, which provides for a 14 metre maximum vessel draft.

Associated with the deepening has been the reconstruction of Berth 10 on North Quay, providing an additional 180 metres of wharf length for container shipping. The other container berths on North Quay are being strengthened

to support the larger vessels ships and the bigger cranes needed to service them. New sheet piling was installed along the berth faces to allow for deepening of the container berth pockets.

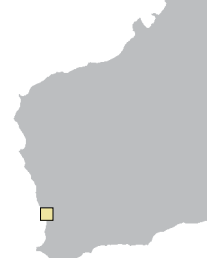
## Strategic directions

Fremantle Ports has significantly upgraded its facilities in the outer harbour at Kwinana in recent years and is planning for further expansion of bulk handling capacity to meet future trade needs.

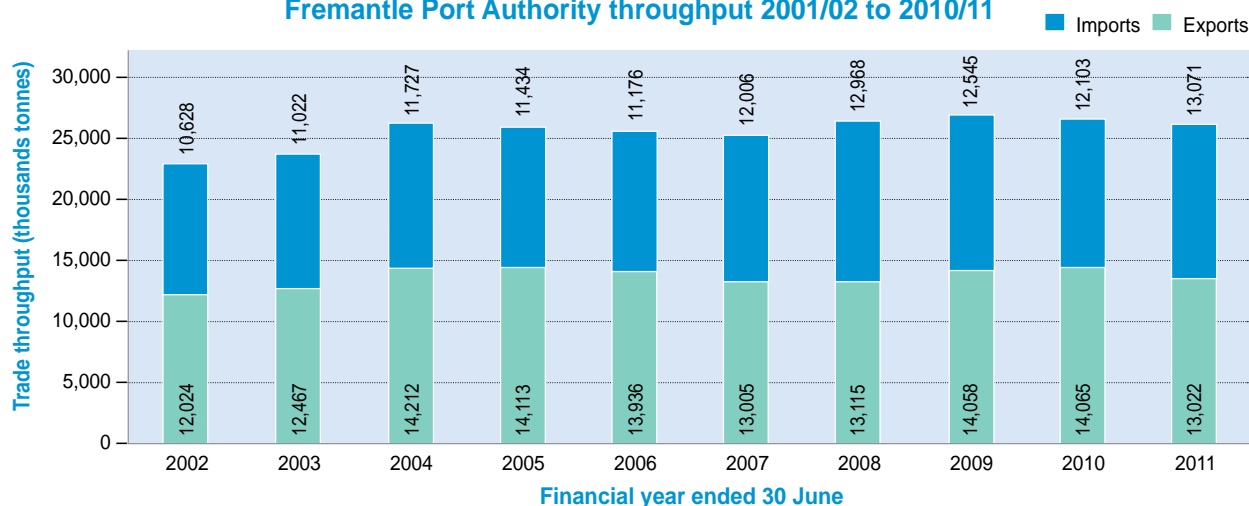
Working with the Department of Transport and other State Government agencies, Fremantle Ports is continuing to plan, in relation to the Kwinana Quay proposal, for additional container and general cargo port facilities and associated road and rail links at Kwinana.

In May 2011, the Minister for Transport announced:

- the inner harbour would be retained as a working port in the long-term with the core function of providing for container and general cargo;
- the inner harbour can expand its container handling capacity through a program of related initiatives to achieve an optimal container capacity of between 1.0 and 1.4 million twenty-foot equivalent units in about 10 years time;
- a series of strategies are being pursued and proposals are under development to allow the inner harbour to realise its optimal capacity;
- adoption of a three pronged plan of measures to:
  - enable rail to carry about 30 per cent of all containers to and from the port over the medium-term;
  - improve the performance of the logistics chain; and
  - upgrade road infrastructure on freight routes leading to and from the port; and
- that he would be requesting the Minister for Planning to seek from the Western Australian Planning Commission an overall planning assessment of the environmental, transport, planning and community issues associated with strategic port and industry development proposals in the coastal area from Naval Base to James Point, with a view to establishing an holistic framework for the necessary metropolitan region scheme amendments.



## Fremantle Port Authority throughput 2001/02 to 2010/11



Port capacity			
Berths	Length of berth (m)	Depth at berth (m)	Max. draft of vessel (m)*
<b>North Quay</b>			
1 Common user	207.0	11.0	10.5
2 Common user	175.0	11.0	10.5
4/5/6/7/8/9/10 Container terminal	1291.5	14.7	DUKC <sup>(1)</sup>
7/8/9 Container terminal	578.5	13.0	DUKC <sup>(1)</sup>
10 Container terminal	187.0	11.0	10.5
11 Common user	196.0	11.0	10.5
12 Common user	233.0	11.0	10.5
<b>Victoria Quay</b>			
D Common user	176.0	11.0	10.5
E Common user	230.0	11.0	10.5
F Common user	204.0	11.0	10.5
G Common user	206.0	11.0	10.5
H Common user	275.0	11.0	10.5
<b>Cockburn Sound – Kwinana</b>			
Alumina Refinery Jetty	326.0	11.6	DUKC <sup>(1)</sup>
Kwinana Bulk Berth No. 1	195.0	11.0	(not in use)
Kwinana Bulk Berth No. 2	268.0	12.2	DUKC <sup>(1)</sup>
Kwinana Bulk Berth No. 3	259.0	13.4	DUKC <sup>(1)</sup>
Kwinana Bulk Berth No. 4	221.0	13.4	DUKC <sup>(1)</sup>
Kwinana Grain Loading Jetty	291.0 <sup>(2)</sup>	16.8	DUKC <sup>(1)</sup>
Oil Refinery Jetty No. 1	291.0 <sup>(2)</sup>	14.7	DUKC <sup>(1)</sup>
Oil Refinery Jetty No. 2	291.0 <sup>(2)</sup>	14.7	DUKC <sup>(1)</sup>
Oil Refinery Jetty No. 3	262.0	14.7	DUKC <sup>(1)</sup>

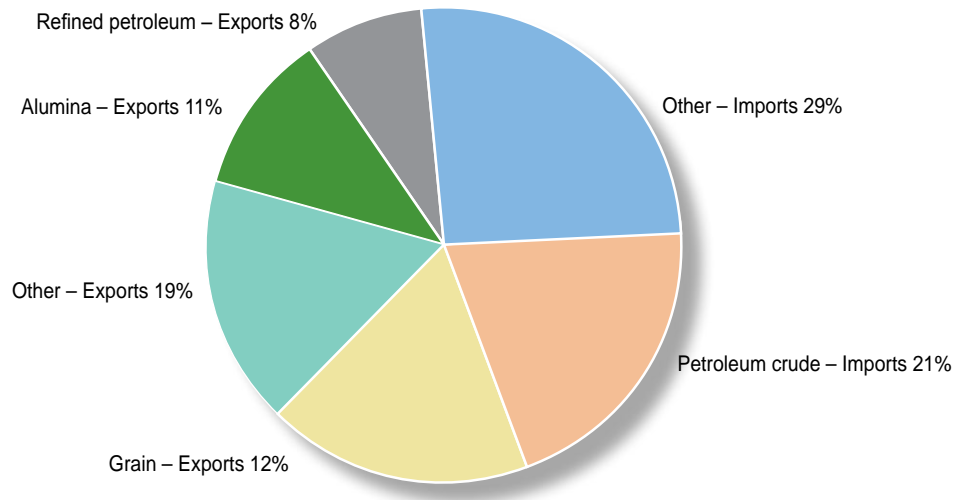
\* Indicates *design* depth at berth. Actual depth available may vary and will be noted as *declared* depths though the promulgation of Notices to Mariners.

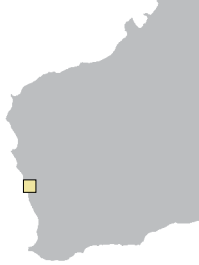
\*\* This is an indicative figure only. The maximum sailing draft of vessels is variable depending on the limitations of the tides, stability parameters of the vessel and declared depths at each berth. All vessel drafts should be confirmed with the Harbour Master, prior to the vessel's entry or departure.

(1) Maximal arrival and/or sailing draft is managed in accordance with the Dynamic Under Keel Clearance (DUKC) system which takes into account current tidal, tidal trend, meteorological and depth information to ensure safe passage whilst not exceeding a minimum under-keel clearance value for each area. This enables vessels to maximise cargo loading.

(2) "T" head provided. Denoted length refers to maximum length of tanker.

### Fremantle Port Authority percentage throughput by commodity 2010/11





**Geraldton is located in the Mid West region of Western Australia, 424 km north of Perth. Proclamation of the Geraldton port occurred in 1968. Since 2003/04, the Geraldton Port Authority has handled seaborne trade valued at more than \$3 billion annually.**

## Trade performance

For the first time total annual trade exceeded 10 million tonnes, reaching a record 10.007 million tonnes for the year ended 30 June 2011, an 11 per cent increase on the previous year's performance.

This Geraldton Port Authority (GPA) trade growth was principally as a result of improved performance by existing port customers although some iron ore from Karara Mining's mine site east of Morawa was handled through the port for the first time via the Sinosteel Midwest facilities. Iron ore exports increased a modest 10 per cent to 5.89 million tonnes (2009/10: 5.32 million tonnes) and mineral sands grew 126 per cent to 1.49 million tonnes. Grain exports fell 14 per cent to 1.828 million tonnes (2009/10: 2.132 million tonnes).

Imports totalled 1.141 million tonnes, a 141.75 per cent increase over the previous year (2009/10: 471,756 tonnes). The biggest share of this increase is attributed to Iluka Resource's importation of part-processed mineral sands (heavy mineral concentrate) from their zircon rich deposits in South Australia. The product is being delivered to Geraldton with self-discharging ships, which use Berth 2 when conditions allow, and alternatively either Berth 3 or 6. This cargo is processed at Iluka's processing plant at Narngulu and re-exported through Geraldton port.

## Achievements for 2010/11

- Record trade was handled through Geraldton port during 2010/11 driven principally by iron ore (5.89mt), grain (1.83mt) and mineral sands (1.49mt).
- GPA achieved recertification of its management system with the AS/NZS ISO 14001:2004 (Environmental Management), AS/NZS 4801:2001 (Occupational Health and Safety Management) standards.
- GPA's management system was, for the first time also during 2010/11, certified as compliant with the AS/NZS ISO 9001:2008 (Quality Management) standard.
- Documentation underpinning the significant activities of Karara Mining plans at Geraldton port was finalised and executed and Karara Mining's extensive construction activities are now underway.
- Documentation with Geraldton Bulk Handling was finalised and works to upgrade GPA's existing train unloader commenced.
- GPA's role as the "relevant authority" for the future Oakajee port was reinforced through the delivery of key GPA initiatives including the Oakajee Port Master Plan and due diligence studies.

- Final environmental approval of GPA's application for maintenance dredging was received and plans for delivery of a dredging program are being finalised.
- Major Berth 4 concrete works, to stabilise the berth and maintain its function, was delivered with minimal interference to shipping operations.
- GPA successfully hosted WA's largest state oil spill response exercise, which involved more than 165 participants, and substantially enhanced the region's response capability.
- Organisational restructuring was implemented to prepare the port for growth and a busier, more complex future, including jurisdictional responsibility for the proposed Oakajee port.

## Strategic directions

Although trade growth over the last five years has been strong, the GPA's focus continues to be on preparation for further anticipated growth as it looks ahead to surging iron ore exports at Geraldton over the next few years and to the start-up of Oakajee port.

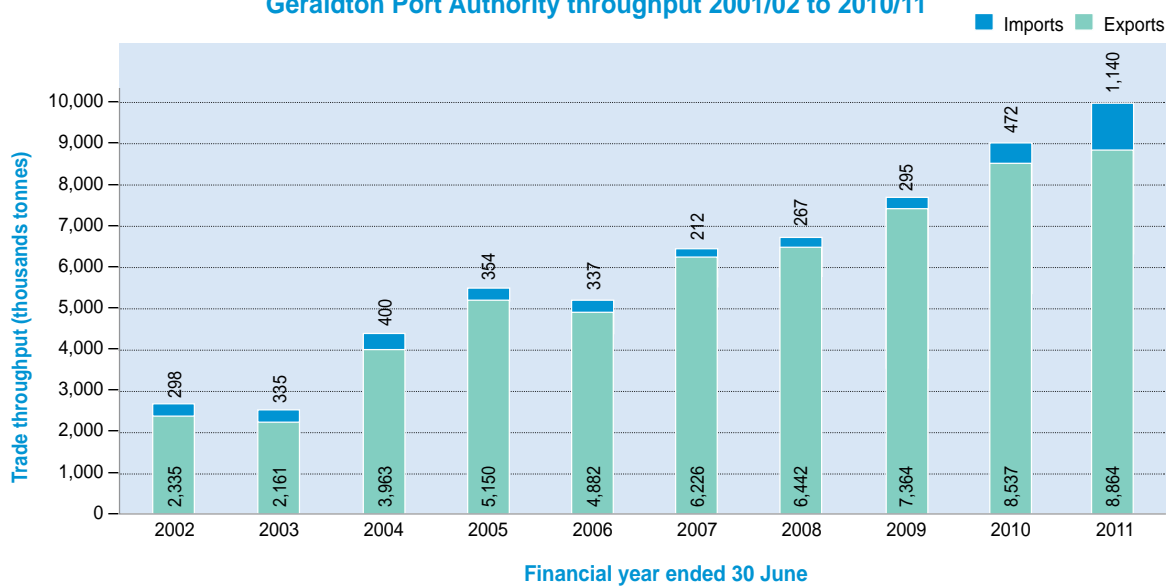
Total trade for 2010/11 represents almost a doubling of throughput over the last five years. As trade has grown the organisation has got busier and GPA's commitment to both internal and external stakeholders has been to identify and address pressure points, to ensure the sustainability and quality of its service delivery. This will continue to result in the careful expansion of resources and support infrastructure.

GPA is committed to the multiple objectives of trade facilitation and protection of the environment, community and of all port workers. The delivery of these objectives is guided by Geraldton Port Authority's integrated management system, which has achieved professional standards certification.

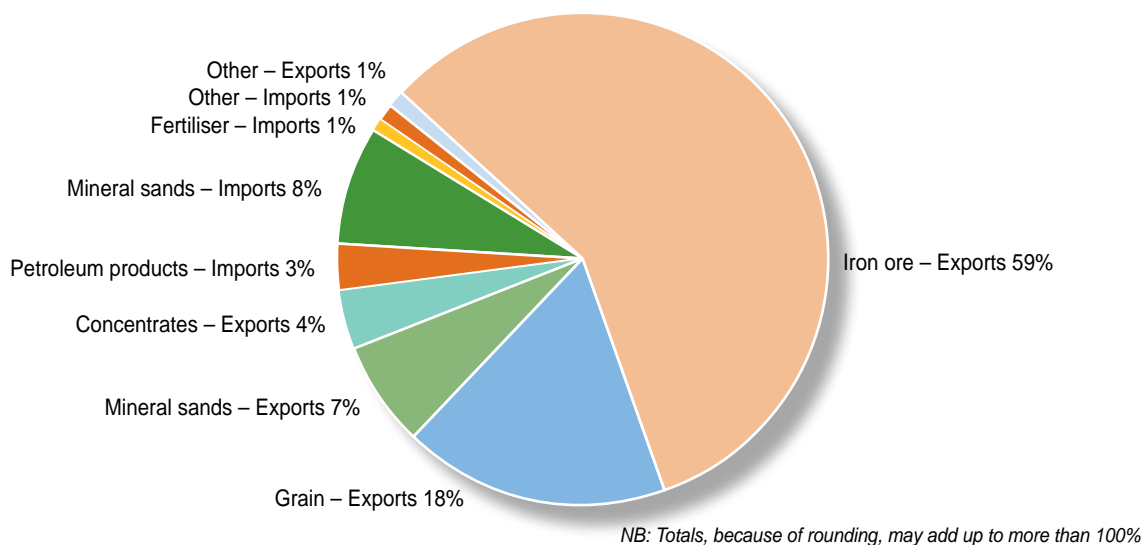
GPA is committed to the development of Oakajee port. The development of Oakajee will compliment existing Geraldton port facilities by providing higher capacity services and a surge in economic activity which could not be supported by Geraldton port alone.



### Geraldton Port Authority throughput 2001/02 to 2010/11

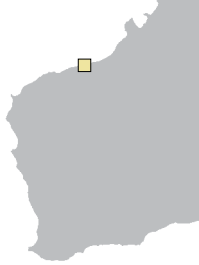


### Geraldton Port Authority percentage throughput by commodity 2010/11



Port capacity			
Cargo type	Berth	Length	Depth alongside*
<b>Port Authority facilities</b>			
General purpose	Berth 2	225m	9.8m
Grain and mineral sands importation	Berth 3	225m	12.5m
Mineral sand, concentrates and talc	Berth 4	225m	12.6m
Iron ore	Berth 5	225m	13.3m
Break-bulk and general purpose	Berth 6	190m	12.0m

\* This is an indicative figure only. The maximum sailing draft of vessel is variable depending on the limitations of the tides and should be confirmed with the Port Harbour Master, prior to the vessel's entry into the port.



**Port Hedland was named in honour of Captain Peter Hedland who in 1863, on board his vessel *Mystery*, entered the mangrove inlet currently the site of Australia's largest tonnage port and one of the world's largest bulk commodity ports by volume. Port Hedland remains predominantly a large volume bulk minerals export port.**

The port of Port Hedland is located in the Pilbara region of Western Australia, some 1,650 km by road from Perth, and services the mineral-rich eastern Pilbara region. The Port Hedland Port Authority (PHPA) owns and operates four berths within the inner harbour. The PHPA berths (PH1, PH2 and PH3) are used for handling bulk products and general cargo.

The PH4 berth at Utah Point is a multi-user bulk commodities berth. The berth caters for small cape size vessels of up to 120,000 dead weight tonnes. Atlas Iron holds the rights to a large portion of the berth capacity and its current development plans are concentrated on expanding its operations to fully utilise its Utah Point allocation.

Berths at Finucane Island and Nelson Point are used exclusively by BHP Billiton Iron Ore (BHPBIO). BHPBIO has an allocated inner harbour capacity of 240 million tonnes per annum (mtpa).

Fortescue Metals Group (FMG) / The Pilbara Infrastructure's (TPI) port facilities, currently comprising twin cape size berths are nearing its capacity of 52 to 55 mtpa. Construction of TPI's third berth at Anderson Point (AP3 increasing throughput to 95 mtpa) is scheduled to commence in the second quarter of 2011. TPI continues to progress development planning for its fourth berth in South West Creek, which when developed will provide TPI with its total allocated capacity of 120 mtpa.

Roy Hill Infrastructure, a subsidiary of Hancock Prospecting Pty Ltd (HPPL) has been allocated two berths in South West Creek with capacity of 55 mtpa. North West Infrastructure has been allocated two berths in South West Creek with capacity of 50 mtpa. Dredging of South West Creek is underway.

Construction of five of a total of 11 bulk berths envisaged to be developed within the inner harbour over the next five years are at varying stages of completion. These berths should bring the total inner harbour throughput close to its capacity of 495 mtpa.

When the inner harbour capacity (of 495 mtpa) is added to the proposed outer harbour, the PHPA projects a total capacity of about 900 mtpa.

## Trade performance

In 2010/11, the PHPA experienced the largest growth in total trade throughput compared to other Western Australian port authorities, mainly due to an increase in iron ore exports, which totalled 192.5 million tonnes. Iron ore exports accounted for approximately 97 per cent of the PHPA's total trade throughput of 199.0 million tonnes. Other commodities handled at the port include bulk minerals, salt, petroleum products, general cargo, livestock and acid.

## Achievements for 2010/11

With the increase in ship visits (1,303 vessels in 2009/10 to 1,474 vessels in 2010/11), ship size (100.04 million gross registered tonnes in 2009/10 to 112.08 million tonnes in 2010/11) and throughput at the Port Hedland inner harbour, the PHPA continues to investigate ways in which capacity can be optimised, whilst still ensuring that the harbour is managed with a high standard of safety.

The PHPA is negotiating a long term non-exclusive towage licence with BHPBIO, which currently provides the towage service within Port Hedland through a sub-contractor. The BHPBIO board has committed to major capital investment in new tugs and have sought certainty of tenure to achieve appropriate returns on their investment over time.

The port requires additional and larger tugs to mitigate the rising risk profile resulting from the increased numbers, and larger and wider ships, and the increased complexity of the port with additional berths within the creek system being required to meet the future tonnage throughput demands.

The Utah Point multi-use bulk export facility won the Golden Gecko Award for Environmental Excellence early in 2011. This was followed by being awarded the 2011 WA Engineering Excellence Awards (Resource Category) and then was further recognised nationally with a 2011 Australian Engineering Excellence Award.

## Strategic directions

The key strategic issues for PHPA for 2011/12 to 2015/16 include:

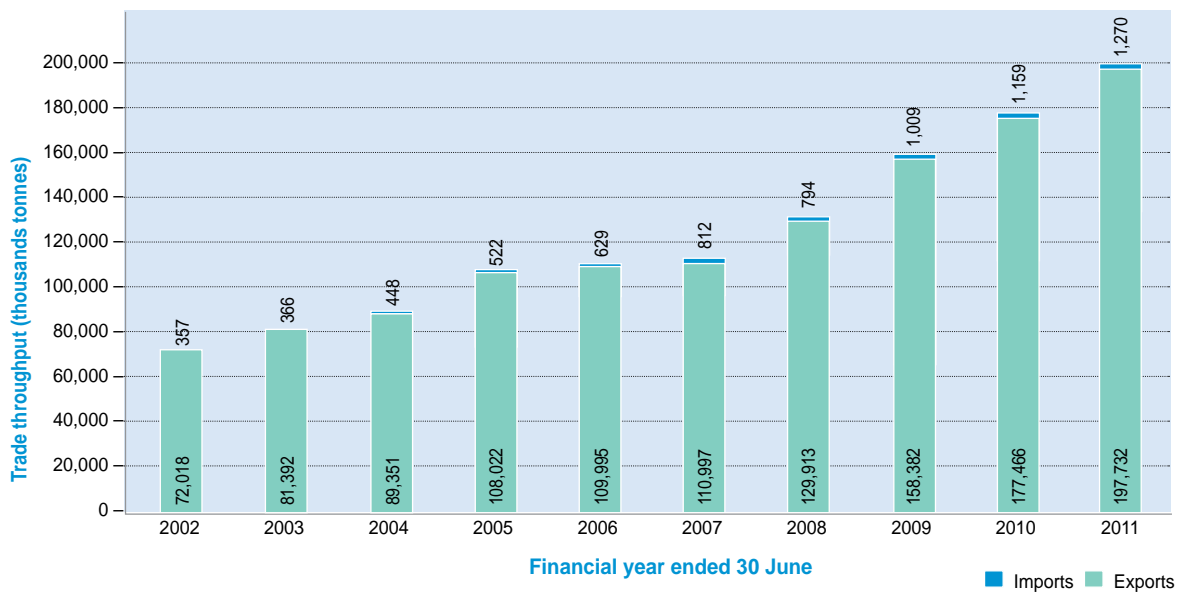
- The PHPA has been involved in inner harbour iron ore export capacity allocation discussions with BHPBIO, FMG, HPPL and the North West Iron Ore Alliance for some time. Those discussions have identified

the inner harbour as having a maximum capacity of 495 mtpa, subject to a number of operational enhancements, such as larger capacity tugs, dredging high spots in the channel and improved scheduling of sailing vessels.

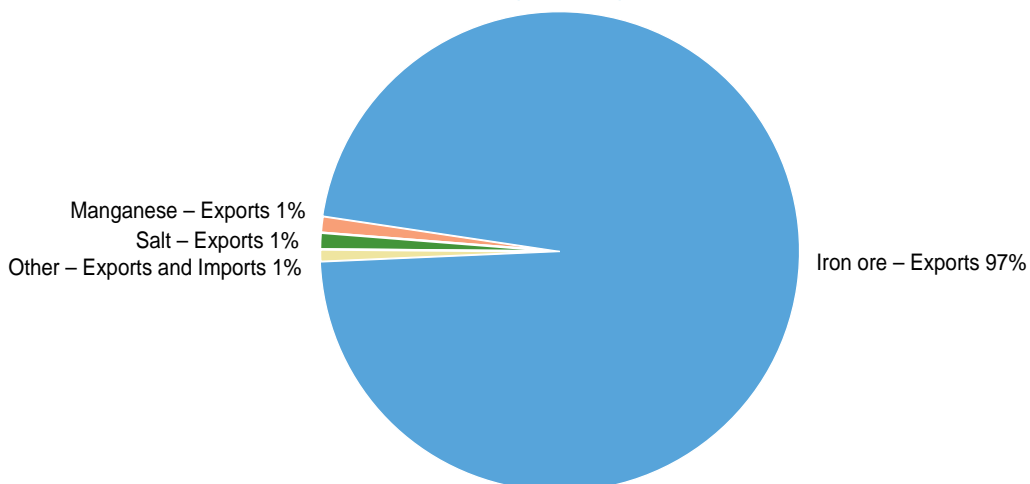
- The recent development of an Infrastructure Australia funding proposal highlighted two possible options to increasing the iron ore export capacity of the inner harbour at Port Hedland. One involves deepening the existing Port Hedland channel and selected widening to provide sections where vessels are able to pass. Port operations will be affected, however, as dredging will need to cease to allow the sailing of deep drafted vessels. The other alternative is to dredge a new channel, but at significantly greater cost, to support the outer harbour development.

- A multi user outer harbour, off Finucane Island to the west of Port Hedland, with an additional capacity in excess of 400 mtpa is envisaged to meet future bulk iron ore export demand from the east Pilbara from 2015 onwards, and will entail the construction of a new channel and 16 offshore berths, on two separate finger jetties. The inaugural proponent is BHPIO. Further planning is progressing.
- Commensurate with the allocation of the non-exclusive licence, BHPBIO is also seeking approval to build a tug haven for the new tugs at Hunt Point. Subject to port design requirements and other factors such as access for third party operators, PHPA will more than likely approve such a development.

**Port Hedland Port Authority throughput 2001/02 to 2010/11**



**Port Hedland Port Authority percentage throughput by commodity 2010/11**



Port capacity			
Berths	Length of berth (m)	Depth at berth (m)	Max. draft of vessel (m)*
<b>Iron ore loading facilities</b>			
Nelson Point Berth A & B	329.0	19.3	18.5
Nelson Point Berth C & D	421.5	19.2	18.5
Finucane Island Berth A & B	421.5	19.2	18.5
Finucane Island Berth C	360.0	19.2	18.5
Finucane Island Berth D	378.0	19.2	18.5
Anderson Point AP1, AP2 & AP3 (One continuous berth)	1100.0	19.7	18.7
<b>Port Authority facilities</b>			
1. Bulk products, containers and general livestock	213.0	13.2	13.0
2. General cargo, containers, livestock. Acid and heavy lifts	131.0	13.2	13.0
3. Bulk salt, livestock, petroleum products, general cargo and acid	183.0	13.2	13.0
4. Bulk minerals berth, manganese, chromite and iron ore	272.0	14.2	15.0

\*This is an indicative figure only. The maximum sailing draft of vessel is variable depending on the limitations of the tides and any draft gains indicated by the Dynamic Under Keel Clearance Program and should be confirmed with the Port Harbour Master or relevant Wharf Manager as appropriate, prior to the vessel's entry into the port.



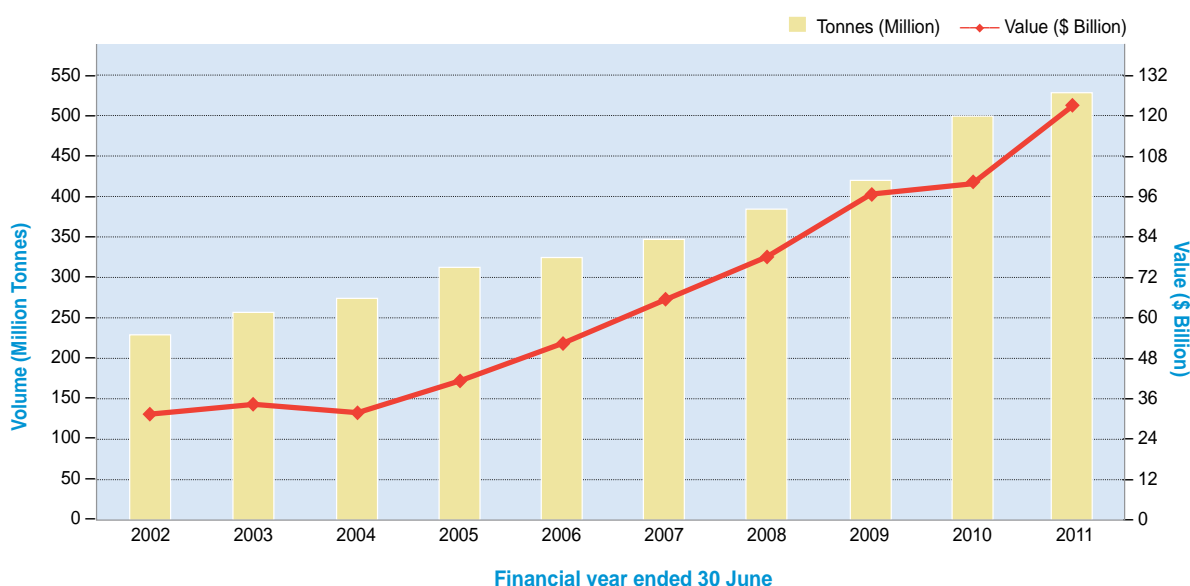
# Other ports

In WA, there are nine other ports which have been declared under the *Shipping and Pilotage Act 1967*. In general, these ports and related export facilities are operated by resource companies with limited guidance from the State Government. Most of these ports handle raw bulk commodity exports such as iron ore, crude oil and salt.

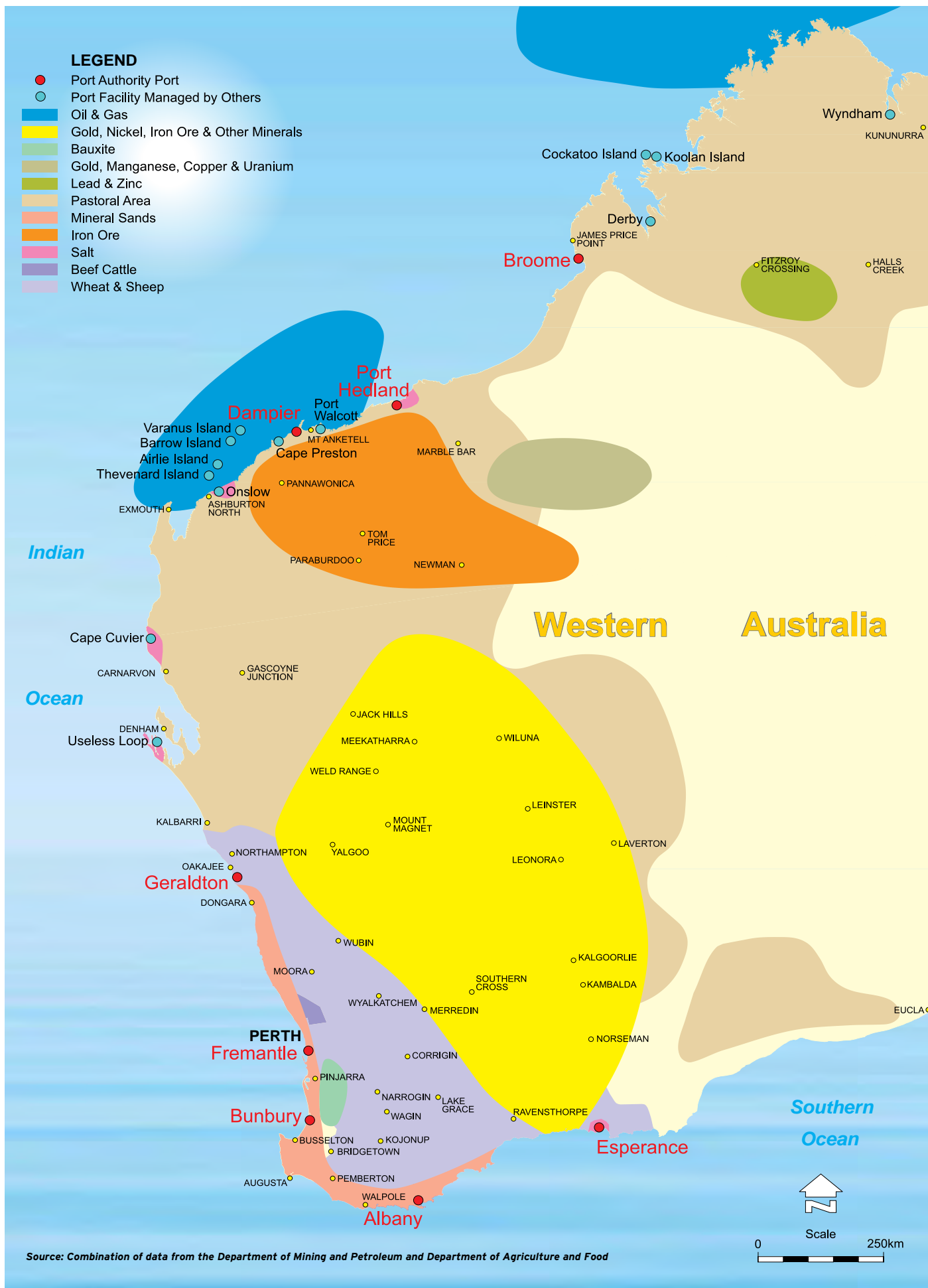
The largest of these is Port Walcott, one of three major iron ore exporting ports in the Pilbara region. Port Walcott is in the top five ports in Australia by volume (78.7 million tonnes in 2009/10). Details of WA's non-port authority ports are summarised in the following table.

Proclaimed port	Associated facility	Operator	Commodity
Wyndham		Cambridge Gulf Ltd	General cargo
Yampi Sound	Cockatoo Island	Cliff Natural Resources Inc	Iron ore
	Koolan Island	Mt Gibson Iron Ltd	Iron ore
Derby		Shire of Derby-West Kimberley	Currently inactive for exports
Port Walcott	Cape Lambert	Robe River Mining Co Pty Ltd (Rio Tinto Ltd)	Iron ore
Port Preston (under construction)		CITIC Pacific Ltd/ Mineralogy Pty Ltd	Iron ore
Varanus Island		Apache Energy Ltd	Crude oil
Barrow Island		Chevron Australia Pty Ltd	Crude oil
Onslow	Airlie Island	Apache Energy Ltd	Currently inactive for exports
	Thevenard Island	Chevron Australia Pty Ltd	Crude oil
	Onslow	Onslow Salt Pty Ltd	Salt
Carnarvon	Cape Cuvier	Dampier Salt Ltd (Rio Tinto Ltd)	Salt
	Useless Loop	Shark Bay Salt Pty Ltd	Salt

International seaborne trade through all Western Australian ports 2001/02 to 2010/11



# Western Australian ports and resources



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