



Port of Gold Coast - Ocean-side Cruise Ship Terminal

Initial Advice Statement

16 August 2019

CITY OF
GOLDCOAST.

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Foreword

The City of Gold Coast (The City) considered a feasibility study including a business case for the Port of Gold Coast – Ocean-side Cruise Ship Terminal (OCST) in May 2017 and endorsed the submission of an application to the Coordinator General’s office based on that business case. An Initial Advice Statement (IAS) was lodged in September 2017 and subsequently refused in February 2018, in recognition of the State’s Governments decision to undertake The Southport Spit Master Plan. The State Governments master planning process has recently concluded and the Port of Gold Coast – Ocean-side Cruise Ship Terminal as considered by the CoGC is included as a possible option in the master plan. As such the City is re-submitting the IAS with supporting evidence based on the documentation as previously prepared and considered by The City with minor amendments.

Since the City considered the OCST business case the Port of Brisbane reached an agreement (in October 2017) with the State Government to build the Brisbane International Cruise Terminal (BICT) at Luggage Point. Construction of the new BICT has commenced and The Port of Brisbane has agreed a long term agreement for berthing schedules with a cruise ship operator. The May 2019 OCST business case included in its economic assessment the BICT. The business case findings are still valid as the demand profile methodology focussed on the regional population and market penetration and included the BICT.

The following diagram forms the basis of the demand profile within the business case.

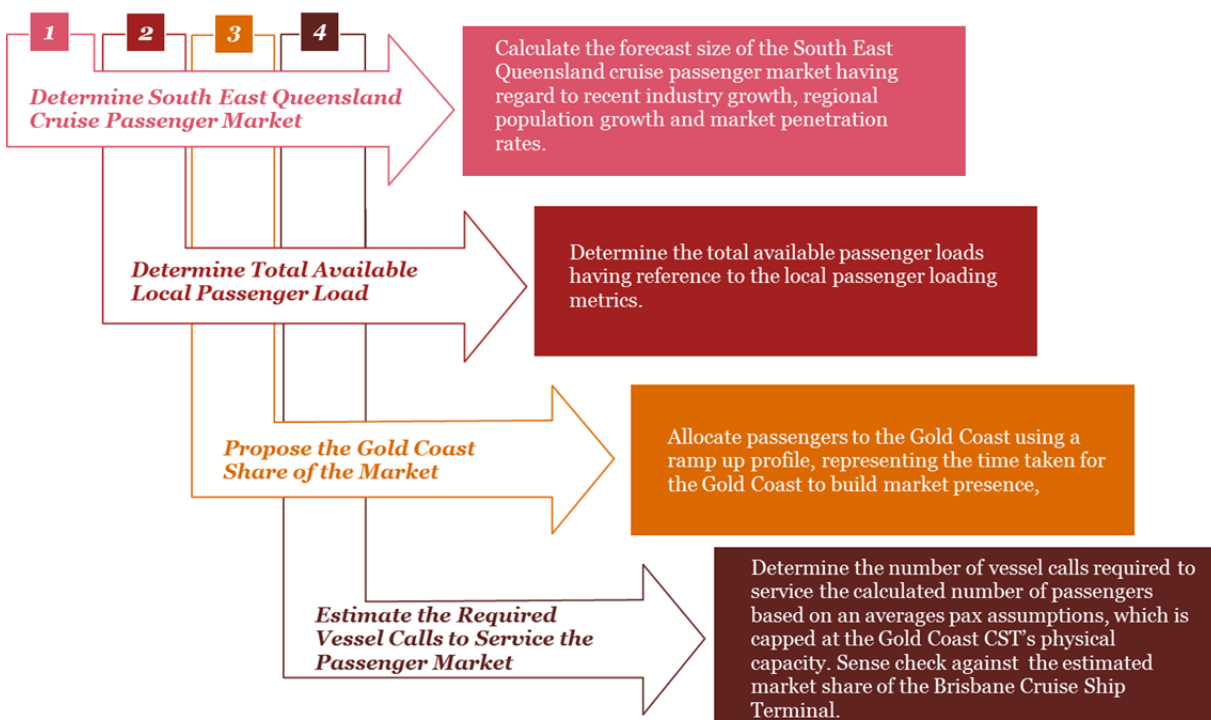


Figure 1: Demand Profile Methodology

The overall demand for SEQ was allocated evenly between Brisbane and the Gold Coast with a ramp up period allowed for in the Gold Coast demand.

The Australian cruise industry participation has continued to grow in 2016 – 2018 post the development of the feasibility study. Whilst the Australian cruise industry growth has slowed in 2017 and 2018 the Australian market penetration has remained strong, with cruise industry representative body CLIA attributing the slow down to infrastructure constraints and the resultant impact on cruise lines’ ability to position new capacity (ships) in the region. The Port of Gold Coast Project aim is to assist with the infrastructure constraints identified by the industry representative body. As part of the EIS process and continued market sounding the economics of the project will continue to be investigated.

Executive Summary

This IAS has been prepared by The City with support from AECOM Australia Pty (AECOM) and PricewaterhouseCoopers Australia (PWC).

The purpose of this IAS is to provide the Coordinator-General with sufficient information regarding the project and its potential environmental, social and economic impacts to determine whether to declare the proposal to be a 'coordinated project' under SDPWO Act.

It is also intended to provide the Coordinator-General with sufficient information to determine which type of coordinated project should be declared being either a project that requires an Environmental Impact Statement (EIS) or Impact Assessment Report (IAR). Subsequent to the declaration of the project, the information contained in this IAS will be used to determine the content of a draft terms of reference (TOR) if an EIS is required for the project. The project will be developed in accordance with Commonwealth, State and local government requirements.

The City is the proponent undertaking the development of the Gold Coast Ocean-side Cruise Ship Terminal (OCST) project. The City is the second largest local government in Australia covering a region with an estimated population of 555,000 (ABS 3218.0, 2016), which is expected to reach 800,000 by 2031 (Queensland Government population projections to 2031: local government areas, 2011). The City employs more than 3,200 staff and administers annual city revenue of over \$1.5 billion.

The proposed Gold Coast OCST will be located at Philip Park on Seaworld Drive, Main Beach, more fully described as Lot 3 on Plan SP104014, in an area known locally as the 'The Spit'. The project would be located both on land and within Queensland State waters, extending from Philip Park to approximately 1,200 metres (m) off the east coast of Australia.

The OCST is proposed as an ocean-side port facility that is designed to permit use by the range of cruise ships typically operating around Australia as well as the world's largest cruise ship vessels. This includes Royal Caribbean's Oasis, Quantum and Freedom classes, Norwegian Cruise Line's Norwegian Epic and Cunard's Queen Mary 2. Passenger capacity ranges from 2,500 to 6,500 passengers for the largest vessels, excluding crew. A port declaration administered through the *Transport Infrastructure Act 1994* will be required to undertake port functions which involve Ministerial processes separate to the coordinated project process.

The location of the OCST in an ocean-side setting requires particular marine infrastructure to allow access for passengers to the wharf and to provide a high standard of service and navigational safety for cruise ships intending to berth at the facility. This includes the capacity of the OCST to act as a visiting port (or day port) in addition to providing sufficient infrastructure to support home port (or base port) activities. A home port would include landside infrastructure and logistic capabilities to support cruise ships at the start and end of a journey. This would include passenger check in, passport control (for international journeys), baggage handling and support services for the cruise ship.

A dedicated OCST on the Gold Coast has long been advocated as having considerable potential to stimulate tourism growth on the Gold Coast and Queensland. The plans for a Gold Coast OCST date back to 2001 with the Queensland Cruise Shipping Plan identifying the Gold Coast as one of the key locations for improved infrastructure to support and promote the growth of cruising in Queensland. Since this time there has been significant growth in the Australian cruise ship market which offers tourists / family packages to a variety of destinations and experiences.

The City is committed to ensuring this development is delivered in an environmentally and socially responsible manner, and intends to put in place practical approvals, people / contractors, systems and processes to implement best practice environmental and social management. In addition to the coordinated project process, Council will be undertaking parallel processes to meet the legislative requirements for the establishment of a port. These include the resolution of Native Title and the declaration of a port.

Project environmental and social management will apply throughout the life of the project from design through to planning approval, construction and operation stages. This will be achieved by requiring environmental, social

and economic issues to be addressed systematically via an accepted environmental and social management system.

Potential impacts upon existing coastal processes and sand movement may alter the existing beach profile, location and frequency of key surf breaks or the physical land form of The Spit. The project will have a direct impact upon the foreshore environment along The Spit and there will be some localised removal of existing vegetation. However the landside area is already substantially cleared and existing vegetation is largely domestic or park style landscaping rather than natural habitat.

The project will interface with both the beach area and foreshore walking tracks, including the Federation Walk. This impact would be minimised with the community still able to pass under the jetty structure as it traverses the foreshore and beach area. The project would provide the opportunity to manage invasive weed species and enhance the foreshore, both with vegetation and appropriate beneficial community infrastructure.

During construction, measures to minimise environmental and social risks will be included in a fit for purpose Construction Environmental Management Plan to align with regulatory requirements, approvals and relevant national, State and local guidance. Construction equipment, materials and practice will be in accordance with relevant Australian and / or international standards, and effectively maintained to minimise noise and air quality impacts.

The City will require a comprehensive monitoring program to measure and record project-specific environmental and social performance and compliance with conditions of approval. Regular audits of environmental, safety and community performance will be undertaken by the proponent.

The investment, construction and operation of the Gold Coast OCST represent a significant economic contribution to the region. It will contribute an increased demand for goods and services across a broad range of service, with the additional benefit of a cruise ship service industry being established to support home port activities and logistics. It will also support the fulfilment of the City's Economic Development Strategy which set aspirational targets for lifting future visitor expenditure, from approximately \$4 billion in 2010 to \$7 billion by 2020 (City of the Gold Coast, 2014a). As of March 2019, visitor expenditure has risen to \$5.7 billion indicating additional visitor attractions are required to reach the target.

A Gold Coast OCST would generate a significant economic return for the region and would generate new industries and job opportunities for local residents. The scale of the economic benefits makes this a worthwhile investment for The City to pursue its growth and liveability agenda.

1. Introduction

The City proposes to develop the Gold Coast Ocean-side Cruise Ship Terminal (OCST) at Philip Park, Main Beach, Queensland (the project), and is seeking to have the project declared a 'coordinated project' under the Queensland *State Development and Public Works Organisation Act 1971* (SDPWO Act).

1.1 Purpose and Scope of the IAS

This IAS has been prepared by The City with support from AECOM Australia Pty (AECOM) and Pricewaterhouse Coopers Australia (PWC).

The purpose of this IAS is to provide the Coordinator-General with sufficient information regarding the project and its potential environmental, social and economic impacts to determine whether to declare the proposal to be a 'coordinated project' under SDPWO Act.

It is also intended to provide the Coordinator-General with sufficient information to determine which type of coordinated project should be declared being either a project that requires an Environmental Impact Statement (EIS) or Impact Assessment Report (IAR).

Subsequent to the declaration of the project, the information contained in this IAS will be used to determine the content of a draft terms of reference (TOR) if an EIS is required for the project.

1.2 Background

The City has identified a cruise ship terminal (CST) as being strategic marine industry infrastructure that has the potential to support national, regional and local tourism and related service industries. It will provide a new gateway for the expanding cruise ship market in Australia with access to the high quality tourism and visitors experiences of the Gold Coast and enhance The City's reputation as a world class tourist and lifestyle destination.

Presently the global cruise ship market is in a period of sustained growth with the Australian market representing a significant portion of that growth. Cruise shipping is one of the fastest-growing tourism sectors in the world and Australia is the second fastest-growing market (behind China) within the industry (Cruise Line International Association Australasia, 2015).

There has been a 600 per cent (%) increase in the total passenger numbers for Australian cruises from 2004 to 2015 (from 158,000 to 1,000,000 annually or 30.1% year-on-year growth) (Cruise Lines International Association, 2016). Annual passenger numbers are forecast to reach 2 million by 2020. According to the Australian Cruise Association's (ACA) 2015-16 Economic Impact Assessment of the Cruise Industry in Australia, 1,015 vessels visited Australia across 39 different Australian ports (including coastal islands) (ACA, 2016).

The project will encourage major capital investment to deliver infrastructure of strategic significance to the Gold Coast region and Queensland, as well as provide employment and economic development opportunities. Further economic benefits would be realised through the establishment of the OCST as a base port as it would provide facilities to support cruise ships at point of origin and destination for all passengers and include logistics support for berthed cruise ships.

To support the delivery of a CST, The City has prepared a business case to examine the feasibility of the project (PWC, 2017). The report assessed:

- The Australian cruise ship market and the demand for cruise ship visits to the Gold Coast
- Early concept design and capital budget required to deliver the project
- Economic benefit for the region for hosting cruise ships and the financial feasibility of the project
- Preliminary environmental assessment to determine potential impact and approval pathway for the project.

The Gold Coast already hosts more than 13 million visitors annually, and holds more than 60 major events each year (City of the Gold Coast, 2014a) with tourism making a \$3.6 billion contribution to the regional economy (2014-15) (City of the Gold Coast, 2014b). The introduction of the OCST on the Gold Coast is seen as having significant potential to enhance the tourism industry and increase the range of tourism, economic and employment opportunities available to the region. The Gold Coast's tourism assets, including both the natural and built environment, represent a significant drawcard for cruise line operators to visit the Gold Coast and there is an opportunity for the Gold Coast to provide an additional destination option to Sydney and Brisbane for cruise operators on the eastern seaboard. The Gold Coast region offers a broad range of day trip opportunities for passengers and when combined with the proximity of two international airports and local holiday options has the potential to support base port functions.

The expected continued growth in the cruise ship industry coupled with strong market interest in the Gold Coast as a cruise ship destination provides a strong case for the OCST as a project that would support the region's tourism and economic growth needs. The Gold Coast needs to facilitate the upkeep of its international brand as a world-class tourist destination. New marine and tourism infrastructure such as the OCST, and other related initiatives such as a new plan for The Spit, have the potential to provide greater investment confidence and in turn, lift visitation rates.

2. The Proponent

The City is empowered by the *Local Government Act 2009* which allows The City to make and enforce laws, regulations and policies necessary to effectively manage and govern the local area. The City is the proponent undertaking the development of the OCST project.

The City is the second largest local government in Australia covering a region with an estimated population of 555,000 (ABS 3218.0, 2016), which is expected to reach 800,000 by 2031 (Queensland Government population projections to 2031: local government areas, 2011). The City employs more than 3,200 staff and administers annual city revenue of over \$1.5 billion.

The City has experience in the management, maintenance and delivery of services and operations across a range of asset classes. The City also has a long experience working collaboratively to deliver major projects. This includes planning and delivery of Stage 1 of the Gold Coast Light Rail which commenced operation in 2014, and delivery of Gold Coast Light Rail Stage 2 which is an additional 13 kilometre (km) route from the Gold Coast Hospital to Helensvale. Other highlight projects include the planning and delivery of Hinze Dam Stage 3, competition and non-competition precincts and venues to support the Gold Coast 2018 Commonwealth Games, and a \$10 million capital program to further create the Broadwater Parklands and upgraded Gold Coast Aquatic Centre.

The City operates under an internal Environmental Management System and can demonstrate a satisfactory record of responsible environmental management. To ensure continuous improvement in environmental management, key areas within the organisation operate within an integrated management system based on the principles of ISO14001. The City holds a range of permits and approvals that cover the services and operations that are required to construct and operate the project relevant to the consideration of coastal areas, the City holds environmental approvals for:

- Sand dredging for the Seaway Delta and the Gold Coast Waterways Sand Management Plan (Environmental Management Framework)
- Offshore dredging and beach nourishment along the Gold Coast
- Recycled water release and associated monitoring

Future stages of environmental assessment, design and construction for the project will be undertaken by suitably qualified consultancy, procurement and contractor teams. The City will retain oversight of the project to ensure that design and construction is carried out in a responsible manner and in accordance with The City's corporate objectives.

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3. Nature of the Proposal

3.1 Project Location

The proposed Gold Coast OCST will be located at Philip Park on Seaworld Drive, Main Beach, more fully described as Lot 3 on Plan SP104014, at the southern, development end of an area known locally as the 'The Spit' in within a precinct of compatible and complementary land uses. The project would be located both on land and within Queensland State waters, extending from Philip Park to approximately 1,200m off the east coast of Australia. Figure 2 shows the general project location.



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www.aecom.com



Data sources:
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**Oceanside Cruise Ship Terminal
Initial Advice Statement**

PROJECT LOCATION

| | | | |
|---------------|-----------------|--------|----------|
| PROJECT ID | 021701 | Figure | 1 |
| CREATED BY | JL | | |
| LAST MODIFIED | AL - 28/07/2017 | | |
| VERSION | 1 | | |

Figure 2: Project Location

3.2 Project Description

The OCST is proposed as an ocean-side port facility that is designed to permit use by the range of cruise ships typically operating around Australia as well as the world's largest cruise ship vessels. This includes but is not limited to Royal Caribbean's Oasis, Quantum, Freedom and Voyager Classes, Norwegian Cruise Line's Jewel Class and Cunard's Queen Mary 2.

The size of typical vessels currently operating in Australian waters varies significantly from the Pacific Eden (P&O Cruises) at 219m long, 30.8m beam (or width) and 7.5m draft up to the Ovation of the Seas (Royal Caribbean) at 348m long, 41.2m beam and 8.5m draft. The passenger capacity of these cruise ships ranges from 1,200 up to 5,000 (all excluding crew) and actual passenger numbers depend on cabin configuration and excluding crew. The world's largest cruise ships are Royal Caribbean's Oasis Class at 360m long, 47m beam and 9.3m draft and can carry up to 6,500 passengers, although the Queen Mary 2 has the largest draft at 10.3m of any cruise ship.

The location of the OCST in an ocean-side setting requires particular marine infrastructure to allow access for passengers to the wharf and to provide a high standard of service and navigational safety for cruise ships intending to berth at the facility. This includes the capacity of the OCST to act as a visiting port (or day port) in addition to providing sufficient infrastructure to support home port (or base port) activities. A home port would include landside infrastructure and logistic capabilities to support cruise ships at the start and end of a journey. This would include passenger check in, passport control (for international journeys), baggage handling and support services for the cruise ship. A plan of the OCST concept design is provided as Figure 3.

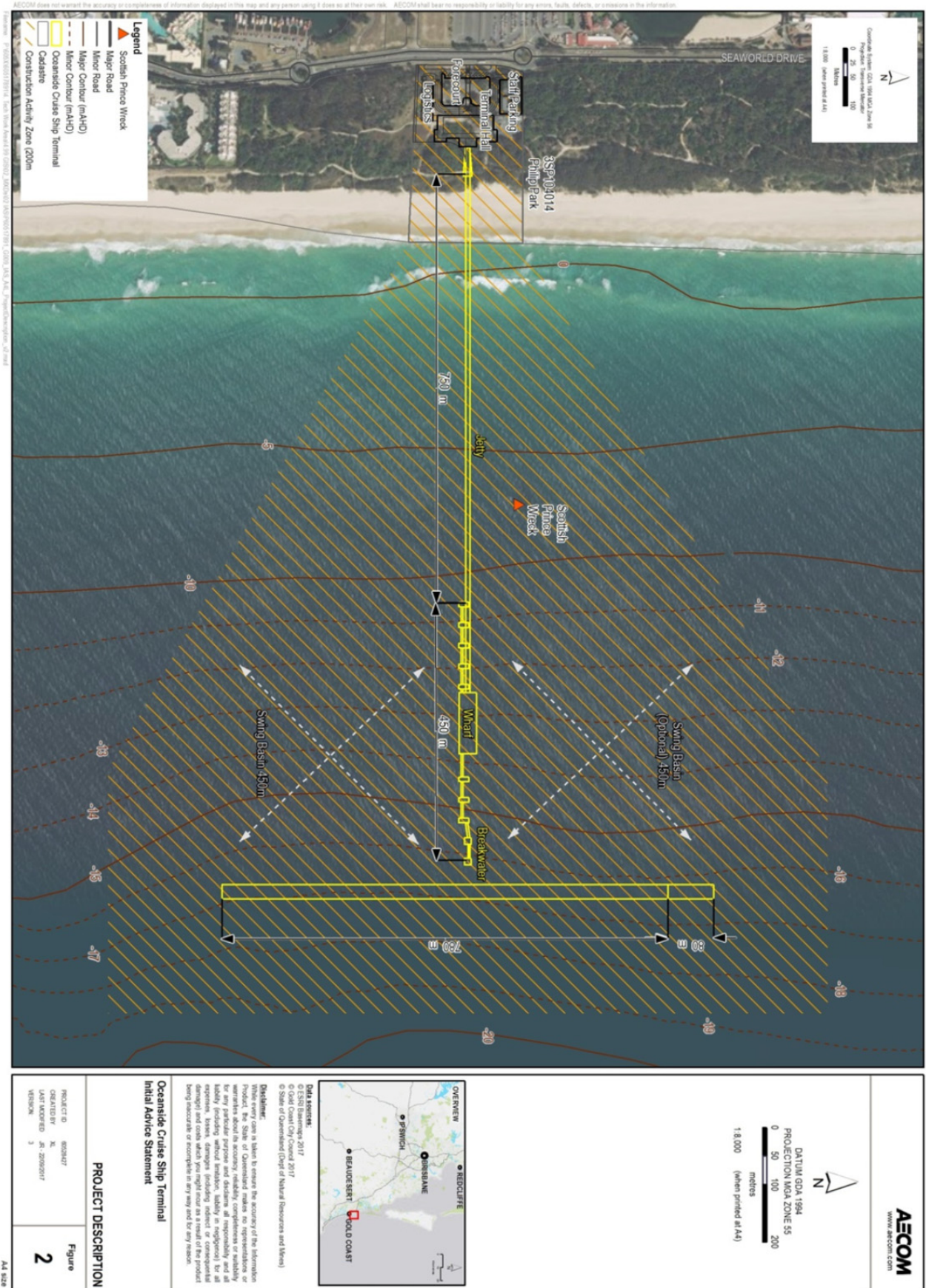


Figure 3: OCST Concept Design

The following is a summary of the key elements of the project, which remain subject to further refinement and optimisation during the development of the EIS and as further industry feedback is received for the project:

Jetty: From the centre of Philip Park, the jetty structure will extend 950m offshore to connect with the wharf as illustrated on Figure 3. The jetty platform will provide a carriageway to move passengers, staff and supplies to/from berthed vessels utilising an appropriate transport system.

Transport from the terminal to the ship (kerb to cabin) via the Jetty is a key issue for cruise lines and their passengers. During the Detailed Business Case phase, the Proponent investigated a number of options for passenger transfer from the terminal to the ship including bus vehicles that would shuttle passengers. The bus vehicles would be fully accessible and would include provisions for access by mobility impaired persons.

Wharf: The wharf structure will include mooring and berthing dolphins and a wider platform to provide an adequate area for transfer of luggage, personnel and supplies required for a base port as illustrated in Figure 4. The wharf would also include mooring dolphins extending beyond the wharf and accessible via connected gangway. These are the primary mooring structures used to secure the cruise ship while at berth.

The wharf has been positioned within water of sufficient depth to permit vessel and navigation manoeuvring without the need for dredging to create a swing basin or navigational channel. A 450m diameter swing basin has been nominated for the wharf to demonstrate the available depth of water in relation to the berth.

The wharf is also designed to permit a staged construction. The current concept design shows mooring for only one cruise ship on the southern side of the wharf. With additional mooring dolphins the wharf has the ability to accommodate a northern berth and provides additional operational flexibility for the OCST. The nature of the additional berth and likely usage will be refined as part of the EIS.

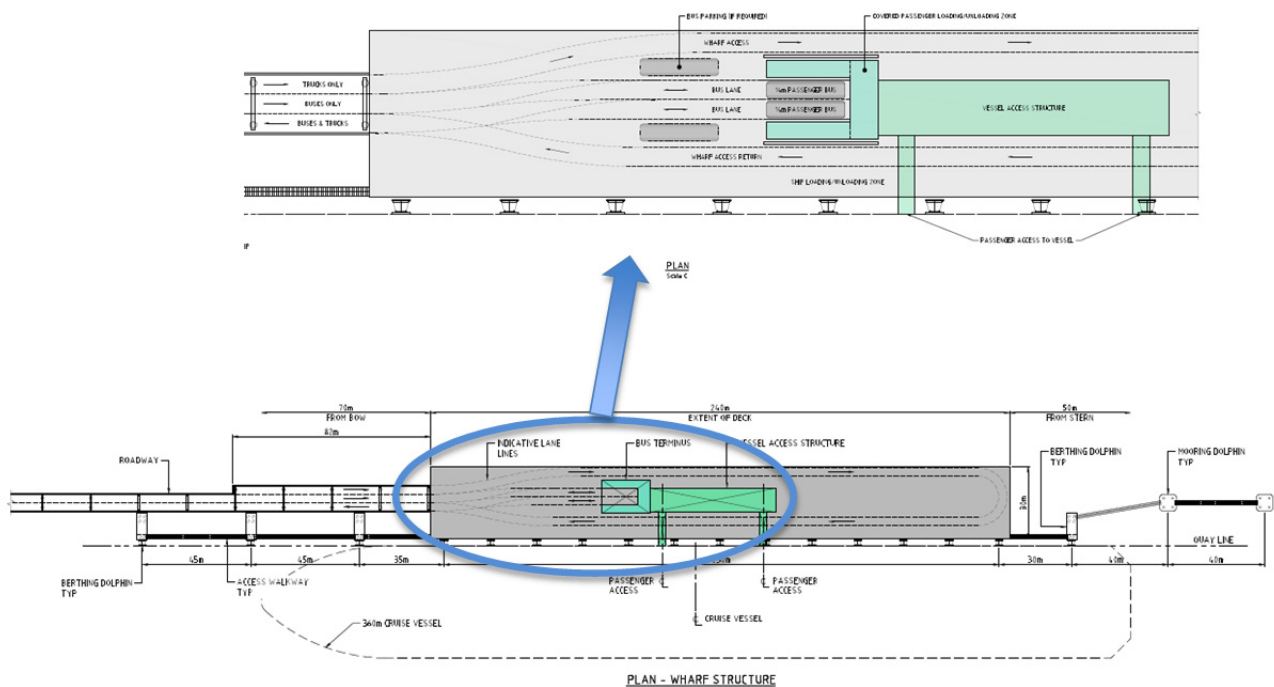


Figure 4: Indicative Wharf Structure

Breakwater: The breakwater is a structure installed in the ocean to protect the terminal infrastructure and manoeuvring or berthing cruise ships from the ocean swell and high energy waves as shown in Figure 5. The breakwater design will be the subject of detailed and complex hydrodynamic and engineering investigations; however current plans indicate a structure of 780m in length will be installed perpendicular to the beach and wharf in water 18 m deep and standing approximately 3-5m above sea level. The breakwater would be constructed from concrete caisson blocks, which would be fabricated off site and placed into position, sunk and

then filled with sand or similar material. Rock armour may be placed as a bedding material and for seaward protection of the caisson structure.

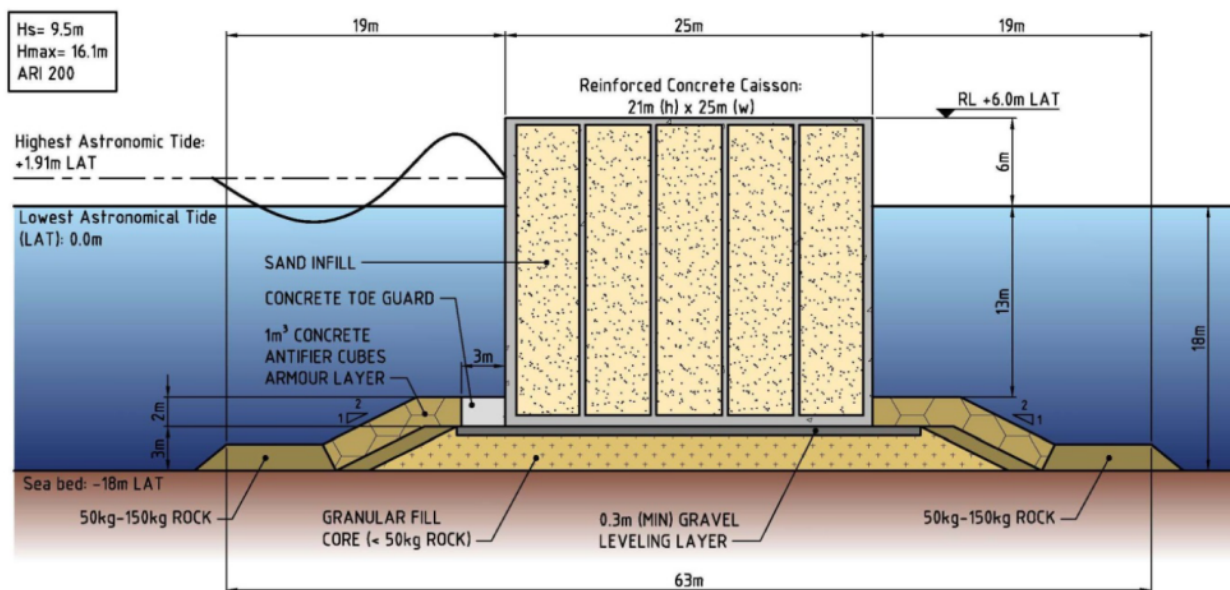


Figure 5: Indicative Concrete Caisson Breakwater

Cruise Ship Terminal and Landside Facilities: A terminal building and landside infrastructure is required to support the OCST as illustrated in Figure 6. The main building would accommodate all passenger, security and administrative functions associated with the operation of the OCST. In addition, external areas of the site would be used for ground based transportation, staff car parking and logistics areas, required for the management of supplies to a berthed cruise ship.

The terminal will likely include additional ancillary activities, for example a café, tour operator offices and retail outlet for waiting passengers. It may also include a restaurant or function room that could be available to non-passengers and used outside of ship visit days.

The land side infrastructure would align with the findings of the Spit Master Plan and any future port masterplan required as part of a port declaration process.

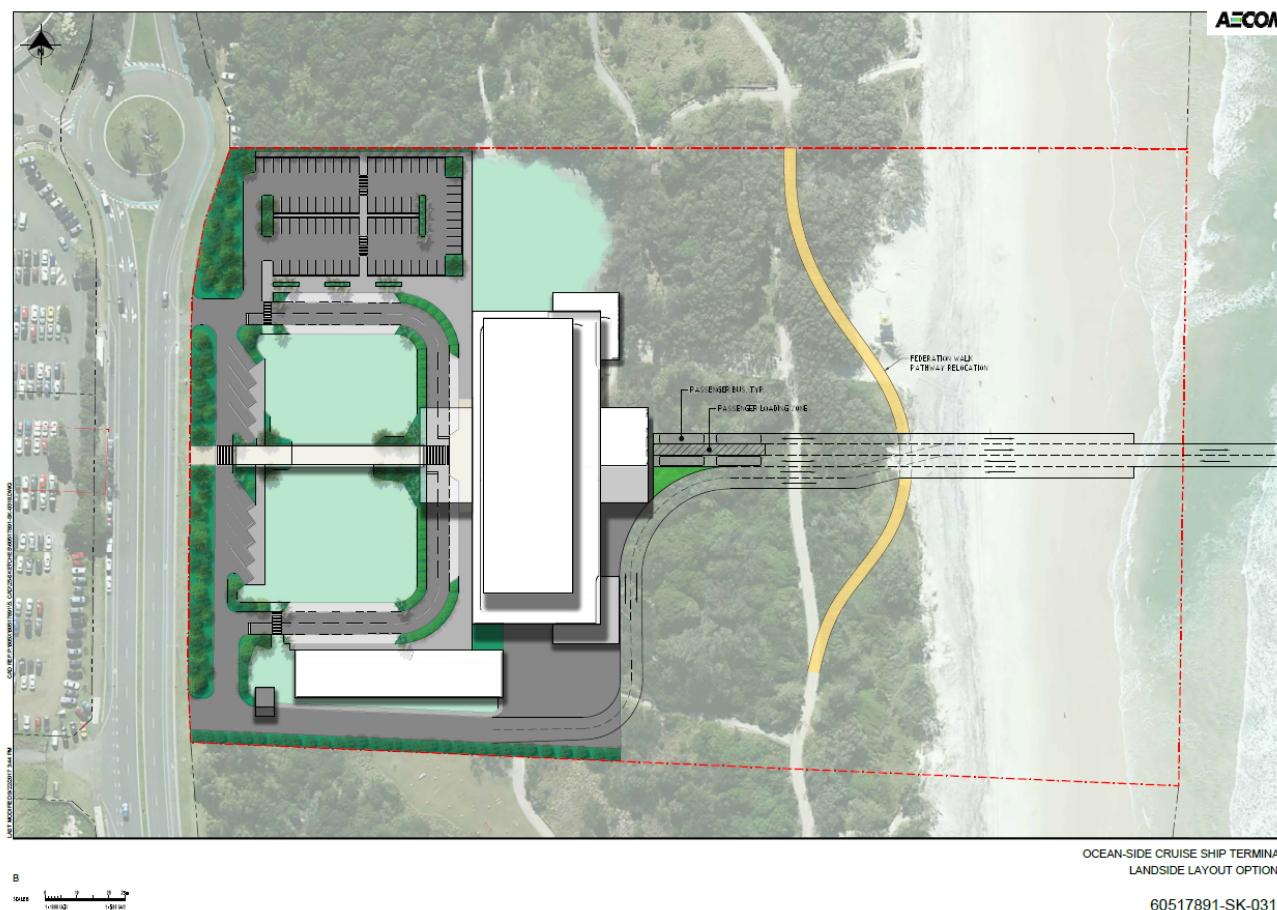


Figure 6: Indicative Landside Facility Layout

Additional Features: The jetty has the capacity to accommodate additional features which may enhance visitation and community benefit associated with the OCST. The selection of these will be refined through the design development of the project which may also include other features not listed below. This list currently includes:

- Dive platform to promote access to the Scottish Prince Wreck and offer an additional visitor attraction
- Pedestrian walkway to allow public access to the jetty
- Viewing platform incorporated into the jetty to permit views of the cruise ships and ocean environment

Supporting infrastructure: The terminal facility will require connection to power, potable water, sewerage and waste services. Access to short term passenger drop off and bus parking will be via Seaworld Drive, south of the roundabout. Only an appropriate amount of car parking for staff will be provided onsite with no long term passenger car parking provided. Supporting infrastructure would align with the findings of the Spit Master Plan and any future port masterplan required as part of a port declaration process.

3.3 Land Use

The subject site (Lot 3 on SP104014) is State land for which The City is the trustee. The land extends to 5.98 hectares and is located within the Open Space Zone of the Gold Coast City Plan (The City Plan) and the designated urban area of The City Plan's strategic framework map. The site currently contains a public parking area and amenities for community access to Philip Park, the Federation Walk Coastal Reserve and the beachfront. Lot 3 was previously part of a larger allotment (Reserve 993) set aside for Local Government and Sewerage purposes. Historically, this reserve was being investigated for recycled water ocean release infrastructure, prior to delivery of the current system that is operating in the Gold Coast Seaway. The subject site adjoins a 92.3 hectare property (Federation Walk Coastal Reserve) to the north which is within the Conservation Zone of The City Plan.

Prominent land uses in the vicinity of the project area include the Sea World theme park and Nara resort complex, the Sheraton Mirage, Versace Hotel, Marina Mirage Shopping Centre, and Mariners Cove. The areas north and south of the central tourist area include the Southport Yacht Club, Queensland Government Waterways Administration Centre (regional office) and the Carters Basin wharf area. These developments are marine oriented and include activities associated with the operation of the fishing fleet, the repair and maintenance of boats and associated waterfront activities, boat berthing and regulatory services.

The proposed future land use of the site will reflect that of a mixed use landside terminal facility to support the ongoing operation of the terminal and provide logistical support while a ship is berthed. Onshore infrastructure and service requirements will include a terminal building and ancillary uses, road access, sewer, water, electrical, gas and communications infrastructure.

For the home port option, there are a greater number of logistical support functions required reflecting the increased demand on the facility by the ship and passengers. Additional facilities include passenger check-in and luggage handling, passport and immigration control, back of house services in addition to logistical facilities for ship re-provisioning.

3.4 Project Need, Justification and Alternatives Considered

A dedicated OCST on the Gold Coast has long been advocated as having considerable potential to stimulate tourism growth on the Gold Coast and Queensland. The plans for a Gold Coast OCST date back to 2001 with the Queensland Cruise Shipping Plan identifying the Gold Coast as one of the key locations for improved infrastructure to support and promote the growth of cruising in Queensland. Since this time there has been significant growth in the Australian cruise ship market which offers tourists / family packages to a variety of destinations and experiences. To date the Gold Coast has failed to access this large growing tourism market, and at the same time has experienced a decline in tourism growth.

The Gold Coast is also competing with other Australian and international destinations and must continually focus on managing its world class natural assets, enhancing visitor attractions, improving accessibility, growing investment and stimulating demand. To achieve sustainable economic activity and growth, and to reinvigorate the declining growth in the Gold Coast's tourism industry, there needs to be significant new investment in tourism infrastructure and services as well as a broadening of relevant demand sources and target markets. Attracting additional sources of demand creates resilience within the sector and supports overall economic growth.

With the objective of enhancing the Gold Coast Tourism sector, the following alternative options to the current proposal have been evaluated.

3.4.1 Strategic Rationale

Aligning with State and Federal Government business case guidelines (i.e. Building Queensland Business Case Development Framework and Infrastructure Australia's Assessment Framework), an investment logic map was developed during the strategic planning stages of the project and preparation of the business case through 2016 and early 2017. This process established the strategic need for an OCST and ensured that the project was driven by problems or opportunities that need to be addressed for the wider economic benefit of the Gold Coast region. To further grow and stimulate the Gold Coast economy, preliminary consultation with the Gold Coast community revealed that the region needs additional tourism drawcards. The preliminary consultation involved several workshops held with community, business neighbours and other local government stakeholders. The Gold Coast needs to facilitate the upkeep of its international brand as a world-class tourist destination, provide marine and tourism infrastructure and implement a plan regarding the future of The Spit, all of which is strategically aligned with local, State and national infrastructure and tourism policies and initiatives.

The strategic assessment proposed the benefits which would accrue to the Gold Coast should the problems be addressed, while also enhancing the Gold Coast's tourism drawcards and making optimal use of the growing international cruise ship market. As part of a robust feasibility process, non-infrastructure solutions and strategic interventions have been considered as potential options, such as tourism awareness or tendering facilities. The

expected continued growth in the cruise ship industry coupled with strong market interest in Gold Coast as a cruise ship destination provides a strong case for a Gold Coast OCST as a solution to address the region's tourism and economic growth needs.

3.4.2 Do Nothing

Currently the Gold Coast is not directly serviced by a CST. Anecdotally, some visitors to the Brisbane CST may also visit the Gold Coast.

Recent tourist expenditure growth has been limited and The City's Economic Development Strategy set aspirational targets for lifting future visitor expenditure, from approximately \$4 billion in 2010 to \$7 billion by 2020 (City of the Gold Coast, 2014a). Data from the Tourism Research Australia (TRA) (2016 Q2) shows that total visitor expenditure is still around \$4 billion, indicating the scale of the challenge to reach \$7 billion by 2020. As of March 2019 visitor expenditure has risen to \$5.7 billion. There needs to be a significant increase in visitation to The City for the 2020 target to be achieved. This requires additional visitor attraction, repeat visitation and/or exposure to additional tourism markets.

The expenditure targets set by The City are a goal that needs to be supported through investment that is focused on visitor attraction. The state-level tourism forecasts produced by TRA indicate that there is expected to be strong capacity for growth over the next several years. While there remains strong investment within the leisure and hotel sector across the Gold Coast, in the absence of major new 'destination' infrastructure, such as the Gold Coast OCST, it is unlikely that the tourism expenditure growth targets, and associated economic and employment benefits will be realised.

3.4.3 Alternative Locations

A number of locations and iterations of a potential CST have been proposed by different proponents. The location for a CST has largely been focused on the Broadwater and The Spit area, recognising the natural protection that is provided to the Broadwater by The Spit and South Stradbroke Island, and existing maritime infrastructure at the Gold Coast Seaway (the Seaway). However, none of the proposals for a CST within the Broadwater have been able to be successfully delivered for a variety of technical, environmental, financial and political reasons.

The current proposal has exclusively considered an ocean-side location for the CST on the basis that it would reduce hydraulic and navigational complexity associated with entering the Seaway or the Broadwater and would significantly limit the need for maintenance dredging for any shipping channels or swing basins that might be required for ship access.

Before the selection of Philip Park as the preferred location, alternative locations on The Spit have been considered. This included integration and adaptive reuse of the southern training wall of the Seaway or the existing Sand Bypass System Jetty. However these options were discounted on the following basis:

- Increased capital cost associated with the upgrade of existing infrastructure and assets not designed for cruise ship functionality
- Potential watercraft exclusion zone around the each terminal location impacting navigation and use of the Seaway by other craft
- Impact upon The Other Side (TOS) surf break (off South Stradbroke Island)
- Physical separation from existing tourism activity centres along The Spit (Sea World Theme Park, Marina Mirage Shopping Centre and existing hotels).

The proposed location at Philip Park is able to contain landside infrastructure within the existing cleared area associated with the public car park and amenities area.

3.4.4 Queensland Government – The Spit Master Plan May 2019

After an extensive 18-month process including public consultation on The Spit Master Plan the Queensland Government announced on the 28 May 2019 the release of the final master plan (refer <https://planning.dsdmip.qld.gov.au/planning/better-planning/projects/southport-spit-master-plan>).

The master plan was led by the Department of State Development, Manufacturing, Infrastructure and Planning and undertaken in collaboration with the City of Gold Coast and the Gold Coast Waterways Authority.

With regard to the Port of Gold Coast - OCST, the final “*Queensland Government - The Spit Master Plan - May 2019*”:

- makes provision for a potential cruise ship terminal being located in the northern part of Philip Park by ensuring the effects of the terminal can be appropriately managed should the terminal be subsequently approved and constructed; with the balance of the park providing recreational facilities and open space areas
- considers how the connections from the terminal facility to the Village Centre and other nearby attractions can be maximised to capitalise on visiting passengers
- advises that a decision, whether the potential cruise ship terminal may or may not proceed, will be subject to a separate process of approval that the City may pursue once the master plan has been released

3.5 Components, Developments, Activities and Infrastructure that Constitutes the Project to be Declared and Coordinated

All components of the project are requested for consideration and declaration as a significant project under Section 26 of the SDPWO Act. Information on the different development components that collectively make up the project is provided in Section 3.2

Key aspects of the proposal that are likely to form part of the declared coordinated project include:

- All buildings: This would include all buildings located within the landside area, primarily comprising the terminal building but would also include any secondary and ancillary logistics, storage and administrative building that might be located landside and upon the jetty or wharf. This in addition to all external areas, hardstand, driveways and parking area.
- Jetty, Wharf and Breakwater Infrastructure: This includes all ancillary infrastructure located within the jetty or alongside the wharf for the purposes of providing services, mooring of vessels or undertaking activities normally associated with the operation of an OCST.
- Key Activities: The core activity will be as a CST operating as either a visiting port or home port with the ultimate capacity to accommodate two berthed cruise ships. This would include all ancillary activities associated with the operation of the OCST including passenger check in, passport control, biosecurity, passenger lounge and logistics area. Other ancillary uses such as a cafe, restaurant, function room, tourist shop etc. may also be established and could be made available to the general public.

Section 8 provides additional project approvals and Ministerial processes (to undertaken in parallel to the coordinated project process) that are required to enable the project.

3.6 External Infrastructure Requirements

External infrastructure requirements primarily relate to the provision of adequate roads, power, communications, fuel, water and sewer reticulation. The provision of external services forms an integrated part of the overall project requirements.

It is expected that the OCST would be connected to all standard utilities and services and would utilise the local and regional road network to allow the movement of passenger and services to the OCST.

- Water Supply: Seaworld Drive has an existing 300 millimetre (mm) diameter water main (AC pipe) in the north bound verge. A property service connection could be brought across the road to the subject site.

-
- Sewer: There is an existing 300mm diameter gravity sewerage main (AC pipe) available in the road frontage of the subject site. The gravity main has two manholes along the frontage to the subject site which would allow for suitable sewer connection points.
 - Stormwater: There is an existing stormwater line that collects road surface drainage in pits on the approach/exits to the Sea World roundabout. This stormwater from the roundabout vicinity is collected in a manhole 30m south of the Sea World roundabout on the eastern side of the road and exits via a 600mm diameter pipe, towards Philip Park. This can be made available as a future connection point for the OCST.
 - Power: There is existing underground electrical (low voltage < 33 kilovolts) available on both sides of Seaworld Drive for street lighting and property connections. The main conduit grouping is on the western side of the road with a single conduit only on the eastern side of the road.
 - Communications: Seaworld Drive has existing underground communication cables for both Optus and Telstra in the western verge that would be available for connection.
 - Transport and Access: Access to the site is from Seaworld Drive which is presently a dual carriageway and runs north-south from the Waterways Drive / MacArthur Parade roundabout in the south to the roundabout entrance to Sea World Theme Park. There is a median separating the dual carriageway. After the Sea World roundabout the constructed road reduces to a single-lane in each direction. Philip Park access is approximately 50m south of the Sea World roundabout on the eastern side of the road. The existing access driveway is approximately 4 m wide. There is a bus stop on the northbound lane which indicates that the roundabout can accommodate bus turning movements.

The augmentation or upgrades to these existing services will be considered through the design development and assessment process. The capacity of this infrastructure will be considered in detail as part of the EIS.

3.7 Timeframe for the Project

For the purposes of the IAS and subsequent assessment it has been assumed that construction will commence in 2022 and continue over a period of three years.

It is anticipated that operation of the facility will commence late in 2024, subject to change following consultation with stakeholders and confirmation of construction programs.

Some elements of the project may be staged. For example the provision of the second berth may be held over to a future stage in order to reduce the initial project cost and allow demand for the use of the OCST to develop. Any staging will be resolved as part of the EIS.

3.8 Construction and Operational Processes

The following construction and operational activities are likely to take place. Further refinement of these will occur through the design development phase of the project and following selection of a main contractor.

3.8.1 Construction

Depending on contractual arrangements and construction methodology, construction is likely to progress concurrently on the jetty, wharf and breakwater structures. Philip Park will be established as a site office and laydown area for the duration of construction, before landside development occurs. Construction activities will also take place ocean-side with a number of barges, construction vessels and support watercraft and potentially helicopter support deployed throughout the construction period.

The jetty and wharf is designed as a concrete deck structure atop driven piled supports. The construction is expected to involve an 'over the top' type of construction (Canti-traveller or similar) to progress the jetty seaward from the landside construction zone: driving three to four piles for a bent, placing the headstock on the bent; placing beams to allow the pile driving equipment to move forward; driving the next bent pile; and, laying the jetty platform into place behind. With a separate jetty and wharf work front, it is possible for the piling works to be undertaken within 12 - 18 months; although some allowance should be made for staging of the works and seasonal conditions.

The breakwater is currently proposed as caisson structure. The concrete caissons would likely be constructed off site within a temporary facility and then transferred into place via barge or semi-submersible vessel. This would be positioned atop a rock armour foundation and backfilled with sand or similar material.

Landside buildings and infrastructure would be constructed using standard techniques to achieve an appropriate standard of external appearance and finish to reflect the unique location of the site. External areas would be finished and landscaped to enhance the general appearance and amenity of The Spit and Seaworld Drive.

During this time appropriate access to water, sewer and power will be made. Management of stormwater and pollution control would also be implemented in accordance with standard practices and taking into account risk associated with discharge to a marine environment.

3.8.2 Operation

The cruise shipping schedule may provide for up to 160 cruise ship visits per year during first 10 years of operation and would involve a 24 hour operating berth for disembarking passengers, resupply of provisions, refuelling and boarding (assuming a base port scenario). Key operational activities that will need to be considered include:

- Access to water and sewer services
- Provision of power and communication services including back up power supply, radio communication and navigational equipment
- Water quality and stormwater management
- Management and disposal of waste
- Transport and delivery of goods and supplies for the reprovisioning of cruise ships
- Provision of refuelling service for cruise ships
- Daily transportation and parking for staff / workforce
- Transportation and logistics for the transfer of passengers and baggage
- Access for emergency services
- Security arrangements during ship and non-ship days.

3.9 Workforce Requirements during Construction and Operation

The project is expected to generate significant direct and indirect employment during both the construction and operational phase (in excess of 50 years). This will include specialist and highly skilled contractor workforce with experience of marine based projects. In addition to an operational workforce an ancillary service industry would be required for the management, operation and servicing of the cruise ship industry.

The following tables summarise the average direct and indirect workforce numbers during construction and operational phases of the project. Note that these values represent the average employment impact during the construction and operations phases versus maximum numbers of jobs created in a single year as reported in the business case. Average numbers are provided below as a conservative estimate for job creation over the life of the project.

Table 1 Average employment during Construction Phase

| Employment Sector | Average Employment Numbers | |
|---|----------------------------|---------------------|
| | Direct Employment | Indirect Employment |
| Construction | 312 | 285 |
| Professional, Scientific and Technical Services | 51 | 25 |
| Average Employment Impact | 363 | 310 |

Table 2 Average employment during Operation Phase

| Employment Sector | Average Employment Numbers | |
|---|----------------------------|---------------------|
| | Direct Employment | Indirect Employment |
| Electricity, Gas, Water and Waste Services | 1 | 1 |
| Construction | 0 | 0 |
| Wholesale Trade | 333 | 148 |
| Retail Trade | 318 | 55 |
| Accommodation and Food Services | 469 | 82 |
| Transport, Postal and Warehousing | 110 | 50 |
| Professional, Scientific and Technical Services | 15 | 7 |
| Arts and Recreation Services | 269 | 92 |
| Other Services | 42 | 5 |
| Average Employment Impact | 1557 | 440 |

3.10 Economic Indicators

The investment, construction and operation of the OCST represent a significant economic contribution to the region. It will contribute an increased demand for goods and services across a broad range of service, with the additional benefit of a cruise ship service industry being established to support home port activities and logistics.

- An estimated capital cost of \$463 million
- Estimated benefits of \$1.37 billion which provides a benefit-cost ratio range of 3.0 to 3.9 (over the three scenarios considered)
- Creation of an average of 673 construction and between 1,600 to 2,000 operational direct and indirect full time employment opportunities
- Attracting up to 160 cruise ships to the coast per year within the first 10 years of operation and increasing to meet market demand beyond this timeframe
- The number of cruise ship passengers is expected to range from 135,000 to 488,000 by 2041 based on a capacity of 212 cruise ship visits per year. These figures include a conservative ramp up of visits and are based on industry standard projects from the opening day of the OCST
- From the total cruise ship passenger numbers, there will be induced tourist visits to the Gold Coast of between 32,000 and 128,000 persons (passengers and crew) and between 97,000 and 383,000 visitor nights associated with the operation of the OCST, generating increased demand for associated goods and services
- Estimated annual passenger and crew expenditure of \$27million in the opening year, increased to \$97 million when at full operational capacity. This represents the most conservative of three potential scenarios considered (Scenario 1 of the business case).
- Contribution to the status of the Gold Coast as a global lifestyle and tourism destination.

A Gold Coast OCST would generate a significant economic return for the region and would generate new industries and job opportunities for local residents. The scale of the economic benefits makes this a worthwhile investment for The City to pursue its growth and liveability.

3.11 Financing Requirements and Implications

Port charges would be the key source of revenue which The City could use to fund the operation of OCST. Port charges revenue is highly dependent on the demand of cruise ship passengers visiting the Gold Coast. The demand assumptions applied in the financial assessment are considered relatively conservative. Three demand scenarios have been tested in the financial assessment and have been built from the bottom-up to arrive at an assumed number of cruise ship visits. The bottom-up approach has been based on:

-
1. Current and historical trends of the South East Queensland (SEQ) cruising population
 2. Current and forecast total SEQ population
 3. SEQ cruise ship market penetration rates
 4. SEQ local loading market penetration rates
 5. Application of market penetration caps to assume a cap at which Australia's current aggressive cruise ship growth slows down in line with population growth
 6. The City's assumed SEQ market share, given other CSTs in SEQ.

Given the significant capital outlay required for construction, direct revenue attributed from port charges alone is not likely to sufficiently offset the upfront construction cost and generate a commercial return. From an operational perspective, the financial assessment indicates that exclusive of capital costs, and given an adequate number of cruise ship visits, an operational OCST would be cash flow positive.

Port charges, as a source of funding, could also be further supplemented by the use of the facilities by private vessels, including charters and super yachts. There is also an opportunity for The City to lease retail space as an additional source of revenue. The City may also provide its facilities for short term rent and hire by private operators to help offset the ongoing costs to operate and maintain the facility. These may include a variety of ancillary operations such as event hire and recreational activities.

The City is considering options to finance the construction of the OCST, including:

- Council Finance: Allocation from The City's annual budget for partial investment into the project.
- Commonwealth & State Finance: Securing of grant funding or concessional loan from State or Commonwealth government for debt financial of the project.
- Private Finance: Private sector debt and equity can be used to finance capital expenditure through a Public Private Partnership.
- Delivering the OCST could be packaged in a number of ways including the establishment of a special purposes vehicle, design, build and operate model or similar structured delivery options.

4. Location of Key Project Elements

4.1 Location

The proposal will be developed at Philip Park, described as Lot 3 on Plan SP104014, and extend approximately 1,200m offshore, entirely within Queensland State waters. The location and context of the OCST is shown in Figure 7.

Philip Park is located at Main Beach toward the southern end of The Spit. The site is modified with a substantial proportion of the lot sealed for car parking facilities, access and public amenities. Unsealed pathways cut through a narrow band of remnant coastal vegetation to access the open surf beach. The southern entrance to Federation Walk starts from the northern end of the site. Federation Walk is a designated pathway that provides north-south access through the Coastal Reserve to the Seaway.

The site is adjacent to the Sea World theme park entrance and car park, is close to the existing Sheraton Mirage Hotel, and within the general vicinity of the Versace Hotel and Marina Mirage Shopping Centre. This location offers a number of advantages, including:

- No impact on the existing infrastructure or complex dynamics of the Seaway, its southern training wall or the sand bypass jetty
- No impact on surfing amenity and function of TOS / South Stradbroke Island
- Proximity to existing and proposed tourist attractions
- Opportunity to enhance amenity due to proximity to the Scottish Prince Wreck (diving) and safe swimming beach (from a more benign wave environment inside the breakwater).

For the purposes of this document, the proposal area includes the landside development area (approximately 6 hectares) and proposed marine infrastructure components, allowing a 200m buffer to accommodate construction activities such as equipment mobilisation and materials delivery.

4.2 Tenure

The current tenure of the 5.38 hectare land parcel (Lot 3 on SP104014) designated for landside OCST infrastructure is Reserve for the purpose of 'Park and Recreation'. The City is trustees of the land. The allotment was previously part of a larger parcel (Reserve 993) which was set aside for Local Government and Sewerage purposes.

Governance arrangements for the OCST are still under consideration and include the establishment of a Port Authority under the *Transport Infrastructure Act 1994*. The future tenure arrangements for the land beside the OCST will need to be determined and negotiated with the State Government (State), but the port authority will either need to obtain title to the land or obtain the right to occupy and use it, presumably under a long term lease from the State. This would include appropriate tenure over infrastructure located ocean side and placed on the seabed.

4.3 Native Title

Danggan Balun People are the Registered Native Title Claimants for the area.



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|--|--|---------------|--|------------|----------|---------------|----------|------------|----|--|--|---------------|-----------------|--|--|---------|---|--|--|
| <p>AECOM www.aecom.com</p> <p>Coordinate System: GDA 1994 MGA Zone 56 Projection: Transverse Mercator</p> <p>0 100 200 400 Metres 1:25,000 (when printed at A4)</p> | <p>Data sources: © ESRI Basemaps 2017 © State of Queensland (Dept of Natural Resources and Mines, Dept National Parks, Sport and Racing)</p> <p>Disclaimer: While every care is taken to ensure the accuracy of the information Product, the State of Queensland makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which you might incur as a result of the product being inaccurate or incomplete in any way and for any reason.</p> | | <p>Oceanside Cruise Ship Terminal Initial Advice Statement</p> <p>PROJECT CONTEXT</p> <table border="1"> <tr> <td>PROJECT ID</td> <td>60517891</td> <td>Figure</td> <td>3</td> </tr> <tr> <td>CREATED BY</td> <td>XL</td> <td></td> <td></td> </tr> <tr> <td>LAST MODIFIED</td> <td>JR - 22/09/2017</td> <td></td> <td></td> </tr> <tr> <td>VERSION</td> <td>3</td> <td></td> <td></td> </tr> </table> | PROJECT ID | 60517891 | Figure | 3 | CREATED BY | XL | | | LAST MODIFIED | JR - 22/09/2017 | | | VERSION | 3 | | |
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| LAST MODIFIED | JR - 22/09/2017 | | | | | | | | | | | | | | | | | | |
| VERSION | 3 | | | | | | | | | | | | | | | | | | |

Figure 7: Project Location

5. Description of the Existing Environment

This section provides an overview of the existing environment, social, land use and infrastructure values within and surrounding the project area. The information provided is based on previous assessments undertaken for the project and iterations of the project, as well as publically available information for the project area and the surrounds.

5.1 Natural Environment

5.1.1 Land

Topography and bathymetry

The topography of the landside project area primarily consists of low lying coastal land and foreshore dunes with gently sloping, sandy beaches down to surf beach. Information held by the City of Gold Coast indicates the potential presence of acid sulphate soil. This is consistent with low lying coastal areas and will be confirmed as part of site investigations.

The project extends from the intertidal area out to a depth of approximately 18 m below the lowest astronomical tide (LAT) over the 1,200m extent of the project (i.e. 1 m decline every 60m travelled eastward along the seabed). This is a dynamic coastal environment subject to natural variations.

The project is located within a dynamic coastal environment, dominated by natural longshore drift involving migration of sand in a northerly direction. The Spit sand bypass system provides artificial sand transport across the Seaway to maintain the natural coastal movement of sand, adequately nourishing South Stradbroke Island beaches. In addition to longshore movements, significant cross shore sand movements also occur. This is seen dramatically as beach erosion during storm events, when sand is eroded from the visible beach profile and deposited in shoals offshore. During calmer periods sand slowly moves back onshore to nourish the beaches.

Seabed geology, geomorphology and features

A study of the project area conducted by BMT WBM found that featureless sandy substrates covered most of the project area, with harder, more reflective substrate associated with the wreck of the Scottish Prince (BMT WBM, 2017). Large bedforms appear north and immediately west of the Scottish Prince, where it appears that parts of the wreck are buried by this highly ridged surface layer of sand.

The large bedforms may correspond to a layer of sand sitting over a harder surface such as indurated sands (coffee rock), however there were no protrusions of rock observed; all substrates observed apart from the Scottish Prince consisted of sand.

The bathymetry amongst the area of intense bedforms was relatively flat and regular, suggesting that the sub-surface composition, rather than depth was the result of the differing sea floor textures in this area. Other hard substrates were observed in the vicinity of the shark nets (located 150m east of the Scottish Prince Wreck) on the sidescan sonar. These were presumed to be infrastructure associated with anchoring the nets, such as concrete blocks and chain.

While Navico charts also mark the presence of another wreck to the north-east of the Scottish Prince; no evidence of this wreck was observed.

It is important to note that sands are high mobile, which can lead to exposure and burial of hard substrate. It is possible hard substrates are present below the sand surface, but were buried at the time of the survey. If such features exist, they may provide hard substrate (reef) habitat during periods of lower sand supply.

Protected Areas

The project does not intersect any declared conservation areas; however, there are areas of environmental significance in the broader region, including Moreton Bay Marine Park and Ramsar wetland, Commonwealth marine areas and reserves as well as South Stradbroke Island.

Character

The Gold Coast coastline has been subject to significant intervention over many decades, including the high rise development spine that defines the major tourism and business precincts adjacent to the beach and Broadwater, the construction of storm protection walls and groynes, the creation of extensive artificial waterway networks and marinas, and training of the Nerang (Gold Coast Seaway) and Tweed River Entrances and associated Sand Bypass System infrastructure including jetties. The City actively manages its beaches and dune systems through working the upper beach profile with machinery and pumping sand either directly onto the upper beach or into the near shore zone.

5.1.2 Water

The landside development site is located along a relatively high energy, dynamic coastline, subject to ocean swells from the Pacific Ocean, predominantly south-easterly and north-easterly, that show strong seasonal variability. The coastal location and dynamic processes are affected by east coast lows, with the major influence being waves, and minor influence of tides and cyclones. At 1,200m from the coast, swell up to 12 m above sea level has been recorded at a wave buoy immediately adjacent to the project area (Department of Science, Information Technology and Innovation, 2017).

The coast can be affected by strong coastal surge that can result in more suspended sediment particles and reduce the visibility in nearshore waters. Storm events often cause significant impacts on the coast and surrounding areas with impacts including flooding, beach erosion and wind damage.

The tidal regime at the Gold Coast Seaway is semi-diurnal (a tide which has a period or cycle of approximately half of 1 tidal day) and Table 3 provides information on the predicted astronomical tide levels.

Table 3 Predicted tidal levels at Gold Coast Seaway (Maritime Safety Queensland, 2017)

| Tidal Plane | Height above lowest astronomical tide (m) |
|---------------------------------|---|
| Highest Astronomical Tide (HAT) | 1.91 |
| Mean High Water Springs (MHWS) | 1.42 |
| Mean High Water Neaps (MHWN) | 1.13 |
| Mean Sea Level (MSL) | 0.76 |
| Australian Height Datum (AHD) | 0.760 |
| Mean Low Water Neaps (MLWN) | 0.39 |
| Mean Low Water Springs (MLWS) | 0.11 |

5.2 Coastal Processes

The ocean beaches are an important asset to the Gold Coast. The dynamic nature of the coastline is determined by interaction between the sand supply, waves, currents and winds. The coastline and near shore bathymetry is ever changing, with the beach profile on any given day representing the equilibrium of these forces and the available sand at that point in time. Any structure or works that interacts with these dynamic forces may result in a change in the equilibrium and a change in the coastal processes and therefore beach behaviour. The dynamic sand transport zone on the Gold Coast coastline extends out to the depth of the project, though the deeper areas are typically only mobilised during the more extreme weather events (very large waves).

The project is located along a relatively high energy, dynamic coastline, subject to ocean swells from the Coral and Tasman Seas, predominantly south-easterly and north-easterly, that show strong seasonal variability. The coastal location and dynamic processes are affected by east coast lows, with the major influence being waves, and minor influence of tides and cyclones.

Storm events are often accompanied by coastal surges that can result in more wave energy reaching the beach, increased suspended sediments and reduced visibility in nearshore waters. Coastal hazard maps published by the State (2016) indicate a large proportion of the site is prone to erosion and inundation due to storm impact

and long term trends including sediment supply deficit. Natural sand transport (longshore drift) varies depending on coastal processes and can result in accretion or erosion of the beach over time. A sand bypass system has been installed by the Queensland Government to maintain the northerly longshore drift of sand to South Stradbroke Island (and beyond) and to help maintain the navigational function of the Seaway.

By far the most dominant force for coastal processes is waves. At a high level overview, waves drive sand transport on the Gold Coast to the north with a net transport rate of approximately 640,000m³ per annum. This rate of sand transport is variable from one year to the next and comprises both the dominant northerly transport and some southerly transport, with a gross transport rate estimated to be approximately 740,000m³ per annum. The transport of sand occurs all year round, but is significantly greater during storm events, when large waves widen the active transport zone, create intense bed shear, drive strong currents and as a result mobilise large volumes of sand along the coastline.

The sand movement is not only longshore. During storm events sand is redistributed cross-shore, with the upper profile (beach) eroding while areas offshore accrete. During calmer conditions the beaches of the Gold Coast slowly recover, with sand migrating back on shore. The beach profile that exists on the beach on any given day represents the dynamic response of the beach to these previous conditions.

The upper beach is also influenced by windblown sand. This typically drives the migration of the sand towards the land and is the primary force behind the formation of dunes. The role of dune vegetation in trapping windblown sand is a vital element in the formation of dunes and in creating an onshore sand buffer against future storm erosion events.

Water movements offshore are driven by large scale currents (e.g. East Australian Current) that typically flow towards the south. Tidal movements also influence the currents, especially near the Seaway. These currents however, are not sufficiently fast to drive extensive sediment transport in the vicinity of the proposal.

Overall the coastal processes for the Gold Coast are well understood and the impact of the proposed works on the coast can be broadly predicted.

5.3 Ecology

There have been a number of ecological assessments conducted in relation to the project area and surrounds. The following section provides a description of the flora and fauna values that may occur in and surrounding the project area. Relevant publically available information from Commonwealth and State databases and previous assessments undertaken for the project include:

- Oceanside Cruise Ship Terminal Matters of National Environmental Significance (AECOM, 2016) report to support a Referral under the *Environment Protection and Biodiversity Act 1999* (EPBC Act). This assessment drew on a number of existing ecological reports, environmental desktop search data, a site inspection and species likelihood assessments
- Terrestrial Ecology Assessment, Gold Coast Cruise Ship Terminal Main Beach (BAAM, 2017)
- Oceanside Cruise Ship Terminal Preliminary Business Case (PWC, 2017).

5.3.1 Terrestrial Flora

Site inspection records indicate the site supports primarily modified and regrowth vegetation with some patches of relatively intact vegetation concentrated on the coastal fore dunes. This area is dissected by several tracks used for beach access.

The vegetation is typical of the surrounding coastal regime. The canopy layer in this community is dominated by coastal sheoak (*Casuarina equisetifolia subsp. incana*), and also contains coastal banksia (*Banksia integrifolia subsp. integrifolia*) and tuckeroo (*Cupaniopsis anacardioides*). The shrub layer consists primarily of beach acacia (*Acacia sophorae*), macaranga (*Macaranga tanarius*) and lantana (*Lantana camara*). Hairy spinifex (*Spinifex sericeus*), beach flax lilly (*Dianella congesta*) and pigface (*Carpobrotus glaucescens*) are all locally dominant in the ground layer.

At the western extent of the site, adjacent to Seaworld Drive, a small patch of regrowth closed forest is present. The canopy in this vegetation community is dominated by narrow-leaved red gum (*Eucalyptus seeana*) and black she-oak (*Allocasuarina littoralis*). Other tree species present included macaranga (*Macaranga tanarius*), Moreton Bay fig (*Ficus macrophylla*), coastal hibiscus (*Hibiscus tiliaceus*) and white cypress-pine (*Callitris columellaris*). Planted lomandra (*Lomandra longifolia*) is dominant in the ground layer.

The field survey recorded *Lantana camara* (lantana), a Weed of National Significance (WONS), which is also listed as a Category 3 Restricted Matter under the *Biosecurity Act 2015* (Cth). State mapping does not identify regulated vegetation or remnant regional ecosystems within the vicinity of the proposal regulated under the *Vegetation Management Act 1999* (Qld). The protected plants flora survey trigger map published by DEHP (2016) shows that the site does not correspond to areas where particular provisions of the *Nature Conservation Act 1992* (NC Act) (Qld) apply to the clearing of protected plants.

No threatened ecological communities or species protected under EPBC Act were identified on site. The desktop assessment indicated that 17 conservation significant flora species had potential to occur on site; however no critically endangered, endangered or vulnerable flora species were recorded during the site inspection. There is potential for suitable habitat for vulnerable flora species to possibly occur within the proposed site, including:

- *Acacia attenuata* (no common name recorded)
- *Cryptocarya foetida* (Stinking cryptocarya)
- *Cryptostylis hunteriana* (Leafless tongue-orchid)
- *Thesium australe* (Austral toadflax).

Of these species, historical records of *Acacia attenuate* and *Cryptocarya foetida* are mapped on Atlas of Living Australia within 10 km of the proposed site.

5.3.2 Marine Ecology

Epibenthic Communities

Sandy beaches are an important ecosystem that links the ecology of sand dunes, the surf zone, intertidal zones and nearby rocky reefs. These ecosystems are generally dynamic with unstable substratum, which prejudice the establishment of substantial epibenthic communities.

The study of the project area conducted by BMT WBM found that hard substrates formed by the Scottish Prince wreck contained high densities of reef associated fish and epibenthic communities, and represent features of high biodiversity value at a local scale. By contrast, no high density epibenthic communities or seagrass meadows were recorded on sandy substrates. It is likely that a combination of mobile sands and wave disturbance prevent the establishment of seagrass meadows and dense epifauna assemblages. Epibenthic assemblages were very sparse in nearshore sandy environments, whereas further offshore in deeper areas, small clumps of red macroalgae and tubeworms, and occasional sea stars (asteroids), were observed at low densities (<1% cover).

Infauna

Sandy beach environments are inhabited by small invertebrates such as nematodes, crustaceans, polychaetes and molluscs (Jones, Gladstone, & Hacking, 2004). Most invertebrate animals recorded in sandy beach environments are represented as either meiofauna or macrofauna (McLauchlan & Brown, 2006).

Marine Mammals

The Gold Coast coastal waters are known to provide opportunistic feeding and efficient pathways for movement and seasonal migration of cetaceans and occasionally dugongs.

Wildlife and species searches have identified 14 species or species habitat that may, are likely, or are known to occur in the project area. Three of these species are classified as threatened: blue whale (*Balaenoptera musculus*: Endangered), southern right whale (*Eubalaena australis*: Endangered) and humpback whale

(*Megaptera novaeangliae*: Vulnerable). Bryde's whale (*Balaenoptera brydei*) is not classified as threatened, however it is listed as a migratory species.

Nine species of dolphin have been identified that are likely to occur within the project area, with four species being identified as migratory marine species: dusky dolphin (*Lagenorhynchus obscurus*), irrawaddy dolphin (*Orcaella brevirostris*), killer whale (*Orcinus orca*) and the Australian humpback dolphin (*Sousa sahulensis*).

Dugong (*Dugong dugon*) and its habitat may occur in the project area. Dugongs are listed as a marine and migratory species under the EPBC Act and are listed as Vulnerable in Queensland under the NC Act. Dugongs feed on seagrass and the distribution of dugongs is generally correlated with the presence of seagrass.

Major concentrations of dugongs along the Queensland coast occur in wide, shallow, protected bays and mangrove channels, in areas of significant seagrass beds. Moreton Bay is considered an important habitat for dugongs with a stable population of approximately 759 (\pm 181) individuals (Sobtzick, Hagihara, Grech, Jones, Pollock, & Marsh, 2015). The location of the proposal is considered to be on the southern tip of the dugongs usual distribution range; however there is a possibility that dugongs may transit through the area in search of seagrass beds and may be influenced by project construction activities.

Marine Reptiles

There are 11 EPBC listed species or species habitats that may, are likely, or are known to occur in the project area. Six of these species are classified as threatened: loggerhead turtle (*Caretta caretta*: Endangered), green turtle (*Chelonia mydas*: Vulnerable), leatherback turtle (*Dermochelys coriacea*: Endangered), hawksbill turtle (*Eretmochelys imbricate*: Vulnerable), olive ridley turtle (*Lepidochelys olivacea*: Endangered) and flatback turtle (*Natator depressus*: Vulnerable).

The project area is not located within a known foraging area or important habitat area for turtles; however, it is possible that turtles may pass through the project area and associated underwater noise propagation zone during construction in a transitory capacity while traveling to foraging areas, therefore exposure would be short term.

The project area is not identified as being in proximity to a nesting beach; however, research suggests that sporadic loggerhead turtle nesting may occur. On this basis, there is a low possibility that nesting females and hatchlings may be present in the area during the nesting season (October to March).

Sea snakes in the region occupy three broad habitat types: shallow water coral reef and seagrass habitats, deep water soft bottom habitats away from reefs, and surface water pelagic habitats (Guinea, 2007). A number of sea snakes may occur in the project area. These are listed under the listed marine species in the EPBC protected matters database search. None of the five species that may occur in the project are listed as threatened or migratory species.

Sharks and Rays

There are seven species of shark and rays where species habitat may, is likely, or is known to occur in the project area. This includes four species listed as threatened: grey nurse sharks – east coast population (*Carcharias Taurus*: Critically Endangered), great white shark (*Carcharodon carcharias*: Vulnerable), green sawfish (*Pristis zijsron*: Vulnerable) and whale sharks (*Rhincodon typus*: Vulnerable). Three species of migratory species were also listed. There is a potential that great white sharks, grey nurse sharks, reef manta ray and giant manta ray may traverse through the proposal area and the associated underwater noise propagation construction zone; however any occurrences are likely to be short term in duration as the animal transits through the area.

Fish

The coastal waters within and adjacent to the proposal are used for fishing. The Scottish Prince Wreck provides the only stable habitat for fish feeding and resting. The EPBC database search identified one species of threatened fish as a species or species habitat that may occur within the proposal area: the black rock cod

(*Epinephelus daemeli*: Vulnerable). Due to the lack of suitable habitat it is unlikely that the species would occur in the proposal area.

5.3.3 Avifauna

Marine birds

Marine birds (seabirds and/or pelagics) are those birds which frequent the coastal waters and the open ocean. There are 80 species of threatened or migratory marine birds and/or their breeding/foraging habitat potentially occurring within the proposed area. Of these 80 species, 21 are listed as threatened under the EPBC Act. Casual observations during site inspection did not record any marine bird sightings.

Marine birds spend most of their lives at sea, ranging over large distances to forage over coastal waters and open-ocean with their preferred breeding habitat being offshore and nearshore islands.

Due to the pelagic nature of marine birds and their preference to breed on offshore/nearshore islands, it is unlikely that they would be recorded in the proposed area due to the lack of preferred habitat. The little tern (*Sterna albifrons*) is known to inhabit exposed ocean beaches and therefore there is a potential that it may be recorded on the beach adjacent to the proposed area.

Marine bird habitat within the proposed site includes the coastal waters and inlets to the north of the site. Scattered dunal areas found within the proposed area may accommodate breeding sites for the little tern.

Non-breeding migratory species of marine birds are often recorded in Australian waters foraging over the oceanic continental slopes. Some marine birds, such as the chatham albatross (*Thalassarche eremita*), may be found foraging close to commercial offshore fishing grounds.

Resident shorebirds

Resident shorebirds are those species that do not undertake international migration. Resident shorebirds use the same habitats identified for international migratory shorebirds; however, resident shorebirds will maintain these habitats year round (although they may undertake some migration throughout Australia). Resident shorebirds are listed under the Birds Australia shorebirds species list.

The painted snipe (*Rostratula benghalensis s. lat.*) was the only resident shorebird listed under the EPBC Act identified during the desktop review. No suitable habitat for this species occurs within the proposed site, and it is located outside of the known range for this species and it is considered unlikely that this species would occur.

As with the international migrants, available habitat in the vicinity of the proposed site includes the coastal intertidal zones and estuarine waterways found along the Broadwater and Moreton Bay shoreline.

Waterbirds

Bird species considered Waterbirds are those which are not listed on the Birds Australia shorebirds species list. Waterbird species may inhabit a variety of wetland ecosystems including terrestrial and coastal. Preferred habitats for waterbird species include, but are not limited to, river shallows, estuaries, tidal mudflats, freshwater wetlands and large dams. Available habitat within the vicinity of the proposed area includes natural and artificial wetlands, waterways and intertidal flats.

A number of migratory waterbird species occur within the area and predominantly use the more extensive wetland areas associated with the Broadwater and Moreton Bay, west and north of the proposal. However it is possible that roosts and/or breeding of some of the species may occur within the proposed site.

Raptors

Raptor bird species are those considered as 'birds of prey' in the Field Guide to Australian Birds (Morcombe, 2004). No raptor species were observed during site inspection; however two species are considered likely to occur in the area. The osprey (*Pandion haliaetus*) and white-bellied sea-eagle (*Haliaeetus leucogaster*) are wide ranging bird species which occupy marine and terrestrial habitats. Preferred habitat for the osprey includes

coasts, estuaries, bays and inlets. The white-bellied sea-eagle uses the same habitats as the osprey as well as large rivers and inland lakes. Both bird species nest in tall trees within 1 km of water.

Migratory species

Migratory shorebirds use a variety of habitat types including tidal mudflats and sandflats, inland lakes or waterways and estuaries. A number of internationally significant sites occur across Queensland. The nearest internationally recognised site (RAMSAR) is the Moreton Bay Marine Park, which is located approximately 3 km north of the proposal. There is further evidence of migratory birds inhabiting tidal sand flats in the southern Broadwater.

International migratory shorebirds are trans-equatorial migratory waders, which arrive in Australia each spring and disperse throughout the continent to feeding grounds amongst coastal and wetland habitats. Bird species considered International migratory shorebirds are those listed under the Birds Australia migratory shorebirds species list. These species are protected under the EPBC Act as well as the following International Agreements:

- Bonn convention
- China-Australia Migratory Bird Agreement (CAMBA)
- Japan-Australia Migratory Bird Agreement (JAMBA)
- Republic of Korea-Australia Migratory Bird Agreement (ROKAMBA).

5.4 Amenity

There are a number of potential emissions from the construction and operation of the OCST which may have an impact beyond the operational or construction boundaries of the site. These are considered in the following sections.

5.4.1 Visual amenity

The Spit is recognised as an area of natural and recreational significance to The City (City of the Gold Coast, 2015). It has a dominant naturalistic open space and coastal environmental character in proximity to the high density urban development spine of The City. Within the Gold Coast City Broadwater, The Spit is a low-lying coastal landform.

Approximately 25% (45 hectares) of the total area of The Spit is currently developed for tourist and leisure related waterfront activities. The remaining area consists of open space reserves, including the Federation Walk, and undeveloped / vacant State land. These large open space reserves are very close to the major population areas of the Gold Coast, and are enjoyed by locals, residents of the broader South East Queensland region and visitors alike.

Open space at the Spit, including the subject site, is used predominantly for passive and informal recreational activities, associated with both the ocean beaches and the Broadwater. These open space areas are maintained in varying states, from more formalised landscaped more coastal habitat areas with few built features. The more formalised landscaped areas are Philip Park (on both sides of the Sheraton Mirage hotel complex), Hollindale Park, Naval Reserve and Jack Gordon Park, with the more natural coastal areas towards the north and eastern sides of The Spit. These natural areas, while not of pristine quality, retain environmental and community significance.

The landscape importance of The Spit is high, particularly in terms of its role in framing views from the western shore of the Broadwater. Its essentially natural appearance and character is complemented by the high quality external appearance of tourist and visitor based development. The OCST project will encourage a high standard of urban design and suitable landscaping so as to ensure a visual integration of development with the natural character of The Spit.

5.4.2 Air Quality

Air quality of the project area and surrounding regional air shed is dependent on both the prevailing meteorological conditions and the air pollutants emitted in the air shed. There is limited existing air quality data in the region and no quantitative air quality monitoring data in the immediate project area.

For receptors in the vicinity of the project, vehicle emissions are likely to be the primary source of air pollutants. The air quality at locations separated from main roads is likely to be dominated by local and regional sources of air pollutants. Given the coastal location, it is considered that background concentrations would likely be below relevant standards and goals (with the exception of particulate matter resulting from sea spray).

5.4.3 Noise

Ambient noise environment around the project site comprises natural and anthropogenic sources, the make-up of which depends on the time of the day, day of the week, weather conditions and sea state conditions. Existing vibration sources may include large truck and low flying aircraft movements.

The nearest sensitive receptors to the project are likely to be residents and guests at nearby hotel complexes and multi-unit dwellings in Main Beach. These properties would be most sensitive to noise generated during the night time with road traffic, marine vessel traffic and aircraft noise being the likely main sources of noise. Separately, other key land use such as the Marina Mirage complex and Sea World amusement park would also contribute to day time background noise levels. However such destinations are either closed in the evening / night time or experience reduced levels of trade or activity. Therefore noise generation associated with such locations are reduced outside of normal business hours.

The underwater acoustic environment is expected to be dominated by wave activity. Existing vibration levels in this area are assumed to be minimal based on lack of nearby ground vibration sources.

5.5 Social and Economic Environment

5.5.1 Social

The Gold Coast region is well serviced by social infrastructure, including a wide variety of community services and facilities. The Spit extends to the Seaway and consists mostly of public parkland and coastal reserves which are popular for a diversity of recreational activities, including beach activities, fishing, surfing, boating and walking. The Spit includes a 3.5 km walking track, Federation Walk, which leads through a large coastal reserve which has been regenerated and stabilised by the community over several decades. There are several community groups that have facilities on, or a close affinity with, The Spit including Friends of Federation Walk, Queensland Surf Life Saving, and the Volunteer Marine Rescue.

Due to the close proximity of the Broadwater, the Spit is an area popular for recreational boating, with many small to medium sized vessels heading out to sea through the seaway. This is an important aspect of the region's coastal amenity.

The southern area of The Spit is occupied by tourist and marine oriented facilities including Fisherman's Wharf, Marina Mirage, Sea World, Sheraton, Palazzo Versace, the Naval Cadets and the Southport Yacht Club. The Spit and southern Broadwater is the Gold Coast's maritime gateway with the Seaway, Muriel Henchman Boat ramp and pontoon, wharf facilities and large marinas supporting a wide array of recreational and commercial boating/water-related activities.

The land east of Seaworld Drive consists of predominantly regenerated sand dunes and is often used by the public for walking and swimming. The northern end of The Spit is known as a 'place to get away' from the city and the crowds. The beach near Doug Jennings Park is one of the beaches on the Gold Coast allowing an off-leash dog area. Arts and cultural activities play a large part in shaping the identity of the Gold Coast. Known for its peaceful atmosphere, The Spit (including Doug Jennings Park and the Marine Stadium) has hosted major events including sporting tournaments and music festivals. The Spit is also used as a significant location for large scale film and television production.

Through consultation with stakeholders and the community, the above social amenities and uses of the immediate (and broader) study area have been considered to assess the potential social impacts, as discussed further below.

A high-level desktop review has been conducted to identify the potential social impacts. This has been supported by several workshops which were held with a stakeholder reference group to collaboratively consult on various critical decision points, including identifying the service needs, developing the options for a solution, identifying the risks and prioritising a proposed solution. The workshops were held at the initial of the project over September, October, November and December 2016. At the beginning of each workshop a 'Brainstorming Blitz' session was held to allow each individual to voice their opinions and insights, at a holistic level, of the proposed development.

Recognising that different stakeholders attended different workshops, this approach was considered to better capture a wide variety of perspectives as opposed to one specific workshop dedicated to drawing out the likely social impacts. This approach allows an iterative form of preliminary stakeholder consultation, as the proposed development continues to attract political and media attention over the course of the project. Another method of capturing the social impact perspectives was during market sounding activities and one-on-one stakeholder consultation meetings.

The following is a list of assumed drivers resulting from the assessment:

- Employment and business
- Public space and view sheds
- Safety associated with recreational use of the beach
- Safety associated with small water craft and vessel navigation
- Personal and cultural views of project impacts
- Physical changes to coastal processes.

Demographic Profile

The following provides a residential profile of the Main Beach Statistical Area Level 2 (SA2) in comparison to the broader Gold Coast Local Government Area (LGA). The data is based on information collected from the 2016 Australian Bureau of Statistics (ABS) Census of Population and Housing.

Residential Population

There were a total of 3,883 persons residing in the Main Beach SA2 area as at the 2016 ABS census date and the median age of persons within the Main Beach SA2 was 51. Children aged 0 - 14 years made up 7.4% of the population and people aged 65 years and over made up 27.0% of the population. A total of 555,721 persons resided within the broader Gold Coast LGA and the median age was 38. Children aged 0 - 14 years made up 18.1% of the population and people aged 65 years and over made up 16.4% of the population

Family Composition

The family composition of Main Beach SA2 and Gold Coast LGA as at the 2016 ABS census date is outlined within Table 4. Main Beach SA2 consisted of a total of 921 families and the Gold Coast LGA consisted of 145,416 families. Main Beach SA2 has a high proportion of couple families with no children (68%) compared to the Gold Coast LGA (39.5%).

Table 4 Family composition of Main Beach SA2 and Gold Coast (C) LGA. Source: 2016 ABS Census of Population and Housing

| SA2 / LGA | Couple family with no children % | Couple family with children % | One-parent family % | Other family % |
|----------------|----------------------------------|-------------------------------|---------------------|----------------|
| Main Beach | 68 | 18.5 | 11.9 | 1.6 |
| Gold Coast (C) | 39.5 | 41.9 | 17.2 | 1.4 |
| SEQ | 38.3 | 43.7 | 16.3 | 1.7 |

| SA2 / LGA | Couple family with no children % | Couple family with children % | One-parent family % | Other family % |
|------------|----------------------------------|-------------------------------|---------------------|----------------|
| Queensland | 39.4 | 42.5 | 16.5 | 1.6 |

Dwellings by dwelling structure

Table 5 provides a summary of dwellings by dwelling structure for Main Beach SA2 and Gold Coast LGA as at the 2016 ABS census date. The majority of dwellings within the Main Beach SA2 were apartments (87.3%) with only 3% of the dwelling stock identified as separate houses.

Table 5 Dwellings by dwelling structure (occupied private dwellings). Source: 2016 ABS Census of Population and Housing

| SA2 / LGA % | Separate house % | Semi-detached % | Apartment % | Other % | Total number |
|----------------|------------------|-----------------|-------------|---------|--------------|
| Main Beach | 3.2 | 4.3 | 81.8 | 10.4 | 2,134 |
| Gold Coast (C) | 56.5 | 20.5 | 21.1 | 1.4 | 215,645 |
| SEQ | 72.1 | 12.3 | 14 | 1.1 | 1,250,166 |
| Queensland | 74.7 | 10.6 | 11.8 | 2.3 | 1,791,739 |

Dwellings by tenure type

Table 6 provides a summary of dwellings by tenure type for Main Beach SA2 and Gold Coast LGA as at the 2016 ABS census date. A higher proportion of dwellings (37%) were fully owned in Main Beach SA2 compared to the Gold Coast LGA (26.2%).

Table 6 Dwellings by tenure type (occupied private dwellings). Source: 2016 ABS Census of Population and Housing

| SA2 / LGA % | Fully owned % | Being purchased % | Rented % | Other % | Total Number |
|----------------|---------------|-------------------|----------|---------|--------------|
| Main Beach | 35.5 | 14.9 | 33.5 | 0.8 | 2,134 |
| Gold Coast (C) | 24.9 | 31.2 | 34.2 | 0.7 | 215,645 |
| SEQ | 26.3 | 33.0 | 32.4 | 0.9 | 1,250,166 |
| Queensland | 27.4 | 31.4 | 32.2 | 0.9 | 1,791,739 |

5.5.2 Accommodation and Housing

The broader Gold Coast urban area has a diverse range of accommodation and housing types to house the construction and operational workforces for the project in addition to the increased inflow of tourists expected as a result of the development of the OCST.

As at the 2016 Australian Census, the Gold Coast LGA had a total of 215,645 occupied private dwellings with a median weekly rent of \$390 compared to Queensland's median rent of \$330. Of occupied private dwellings in the Gold Coast LGA, 56.5% were separate houses, 20.5% were semi-detached, row or terrace houses, townhouses etc., 21.1% were flat or apartments and 1.4% were other dwellings.

The Australian Bureau of Statistics Tourist Accommodation Survey 2015 – 2016 (86350D001_201516) provides a summary of the hotels, motels and serviced apartments within the Gold Coast tourism region. As at the June quarter 2016 the Gold Coast tourism region had 156 hotels, motels and serviced apartment establishments that consisted of a total of 13,945 rooms and 42,695 bed spaces. The breakdown of establishment types was as follows:

- 32 hotels and resorts
- 29 motels, private hotels and guest houses
- 95 serviced apartments.

Table 7 summarises the quarterly room occupancy rates across the survey period.

Table 7 2015 - 2016 Quarterly room occupancy rate for hotels, motels and serviced apartments in the Gold Coast Tourism Region (Source: ABS Survey of Tourist Accommodation)

| Gold Coast Tourism Region | September Quarter 2015 % | December Quarter 2015 % | March Quarter 2016 % | June Quarter 2016 % |
|---|---------------------------------|--------------------------------|-----------------------------|----------------------------|
| Hotels and resorts | 76.0 | 78.8 | 79.7 | 67.1 |
| Motels, private hotels and guest houses | 58.5 | 68.8 | 63.5 | 54.6 |
| Serviced apartments | 71.2 | 73.8 | 73.5 | 64.8 |
| Hotels, motels and serviced apartments | 72.4 | 75.8 | 75.7 | 65.0 |

5.5.3 Cultural Heritage (Indigenous and non-Indigenous)

Indigenous

The Aboriginal parties for the site are Danggan Balun People and Gold Coast Native Title Group (Jabree Ltd).

Prior to European settlement, literature indicates the existence of thriving Aboriginal communities in the vicinity of the site that the region supported with rich food resources available year round (Jabree, 2013). The historical and archaeological record produced by the Department of Aboriginal and Torres Strait Islander Partnerships (DATSIP) indicates Indigenous heritage items at Southport and South Stradbroke Island.

Jabree Ltd is registered as the Aboriginal cultural heritage body for the project area for Aboriginal cultural heritage issues and represents the Yugembah Aboriginal Party.

There is potential for heritage items such as shell middens, artefact scatters and other significant places to be found onsite. Although it is noted that the position of the Spit and Nerang River entrance have shifted location extensively overtime and this may have impacted the presence of artefacts.

Non-Indigenous

Prior to the construction of the Gold Coast Seaway in the 1980s, the Nerang River entrance to the Pacific Ocean (locally known as the Southport Bar) had a history of instability. Predominant south-easterly winds, the significant northern drift of sand and wave climate combined to move an estimated 500,000m³ of sand along the south-east Queensland coast each year. Over time, the Nerang River mouth moved northward by up to 60m each year, causing land erosion and changing sandbanks at the bar and adjoining Broadwater. In the early 1800s, the Nerang River entered the Pacific Ocean where Jupiter's Casino is now located, and in 1930 the entrance was where Sea World stands today.

Historical aerials of The Spit, Main Beach and Southport taken in 1955 shows limited development. At this time, The Spit comprised a barrier dune system with some internal water, possibly perched waterholes, but most likely estuarine in nature, while mangroves grew further south on the Nerang River side. Land resumption in the late 1950s spurred development of The Spit. The Gold Coast Seaway engineering project, completed in 1987, consolidated The Spit as a permanent land form.

The DATSIP search identified a number of historic shipwrecks located in the Broadwater, Gold Coast Seaway and open coastal waters. In the vicinity of the project area, the Scottish Prince historic shipwreck is listed in the Australian National Shipwrecks Database (Shipwreck Id Number: 3107). This ship wreck is protected under the Commonwealth *Historic Shipwrecks Act 1976*; however does not lie within a protected or no-entry zone.

The Scottish Prince grounded on the Southport bar and gradually broke up in 1887. The wreck lies in 10m of water approximately 2 km south of the extremity of The Spit and 500m offshore. Generally the wreck is partially

visible from the sand depending on the shifting sands. The wreck provides habitat for soft corals and sponges, crayfish, rays, sharks and large bream.

Local heritage and State heritage items of significance are generally located where historical development occurred at the southern end of The Spit. Examples of heritage sites include Humphrey's Boat Shed and Slipway and the Main Beach Pavilion and Southport Surf Life Saving Club located at the southern end of the Spit.

5.6 Built Environment

5.6.1 Regional Context

The proposed OCST site is located within the designated urban area of The City Plan's strategic framework. It is recognised that the landside infrastructure requirements of the OCST sits within a broader context of an existing urban area and regional infrastructure networks. The Gold Coast is Australia's sixth largest city and largest non-capital city with a population of more than 555,000 (ABS 3218.0, 2016). The City forms part of the South East Queensland (SEQ) region which has a population of more than 3.2 million people. The population of the Gold Coast LGA is forecast to reach almost 800,000 by 2031, making it one of the fastest growing LGAs in Australia (Queensland Government population projections to 2031: local government areas, 2011). The Gold Coast is a major tourist destination, hosting more than 13 million visitors and holding more than 60 major events each year. The City hosted the Gold Coast 2018 Commonwealth Games™ in April.

Current and proposed projects

There are no other current declared coordinated projects in the Gold Coast region; however, there is a broad range of current and proposed tourist and cultural facilities in the general vicinity.

5.6.2 Local Context

Philip Park extends over two allotments for a total area of 19.98 hectares: Lot 318 on WD800475 - 14 hectares and the subject site at Lot 3 on SP104014 - 5.98 hectares.

The subject site includes a large existing cleared area, presently used as a public car park and amenities. The subject site foreshore is characterised by areas of coastal vegetation and dunes and a Lifeguard Tower / patrolled beach. There are a series of tracks and pathways, including the northern extent of the more formalised Oceanway, which transitions northwards into Federation Walk. The sensitivity of introducing new built form into the foreshore areas is recognised.

Landside infrastructure will be required within Philip Park to support the ongoing operation of the terminal and provide logistical support while a ship is berthed. Onshore infrastructure and service requirements will include a terminal building, road access, sewer, water, electrical, gas, fuel and communications infrastructure. For the home port option, there are a greater number of logistical support functions required reflecting the increased demand on the facility by the ship and passengers. Additional facilities include passenger check-in and luggage handling, passport and immigration control, back of house services in addition to logistical facilities for ship provisioning.

These activities are proposed to be located within existing cleared / disturbed areas of the subject site.

5.7 Traffic and Transport Analysis

As described previously the primary access to Philip Park is via Seaworld Drive, which is a part four-lane and part two-lane local road extending from the roundabout at the junction of Waterways Drive and MacArthur Parade. Seaworld Drive terminates at the northern end of The Spit and is effectively a 'no through road'. Access from the Gold Coast Highway is available via Waterways Drive and Macarthur Parade/Marine Parade.

The primary impact of additional vehicle movements will be upon Seaworld Drive and associated local roads / junctions with the Gold Coast Highway.

Analysis of traffic movements on Seaworld Drive has been undertaken based on traffic survey data.

5.7.1 Current Traffic Levels

The AM inbound peak is in the hour of 10-11am, which is later than a typical urban area peak hour, which reflects the nature of The Spit as a leisure / tourist destination. The PM outbound peak is in the hour of 4-5pm. Weekday peak traffic observes less than 800 vehicles per hour and weekend traffic peaks at less than 1,500 vehicles per hour, which is almost twice weekday traffic.

5.7.2 Trip Generation Assessment

The analysis has been used to identify potential development scenarios and estimate the additional trips that may be generated by the OCST. The following scenarios have been identified for analysis:

- Scenario A: Home Port – 4,000 passenger vessel
- Scenario B: Home Port – 2,500 passenger vessel
- Scenario C: Standalone Tourist Attraction (Non-ship days)

These scenarios have been selected to generate a reasonable range of traffic level impacts on the local area due to the introduction of the facility where Scenario A represents the 'high' level case, Scenario B represents an 'average' level case and Scenario C represents a 'low' level impact case, reflecting the visitor attraction potential of the OCST on non-ship days. The traffic analysis has adopted a 4,000 passenger vessel as the high case to develop a conservative estimate of the traffic impacts. Scenario A and B have also been selected on the basis that the OCST is a home port. Furthermore to determine trip generation rates a number of assumptions have been adopted which include:

- No public car parking is available for OCST passenger. An allocation of parking will be made for staff.
- Passengers depart over a three hour period (7am-10am) and then the next round of cruise ship passengers arrive over a 5-hour period 11am-4pm
- Boarding and disembarkation is staggered over a five hour period from 11am to 4pm
- Numbers of passengers per vehicle have been adopted as two per private vehicle, 25 passengers per public transport service and 30 passengers per dedicated coach transfer
- 50 heavy vehicles movements would be generated throughout the day for home port activities
- Operational staff would generate on average 50 vehicle movements per day.

Based on the trip generation assumptions and methodology, the graph below shows the amount of additional trips generated in each scenario for the AM (10am) and PM (4pm) peaks on a weekend.

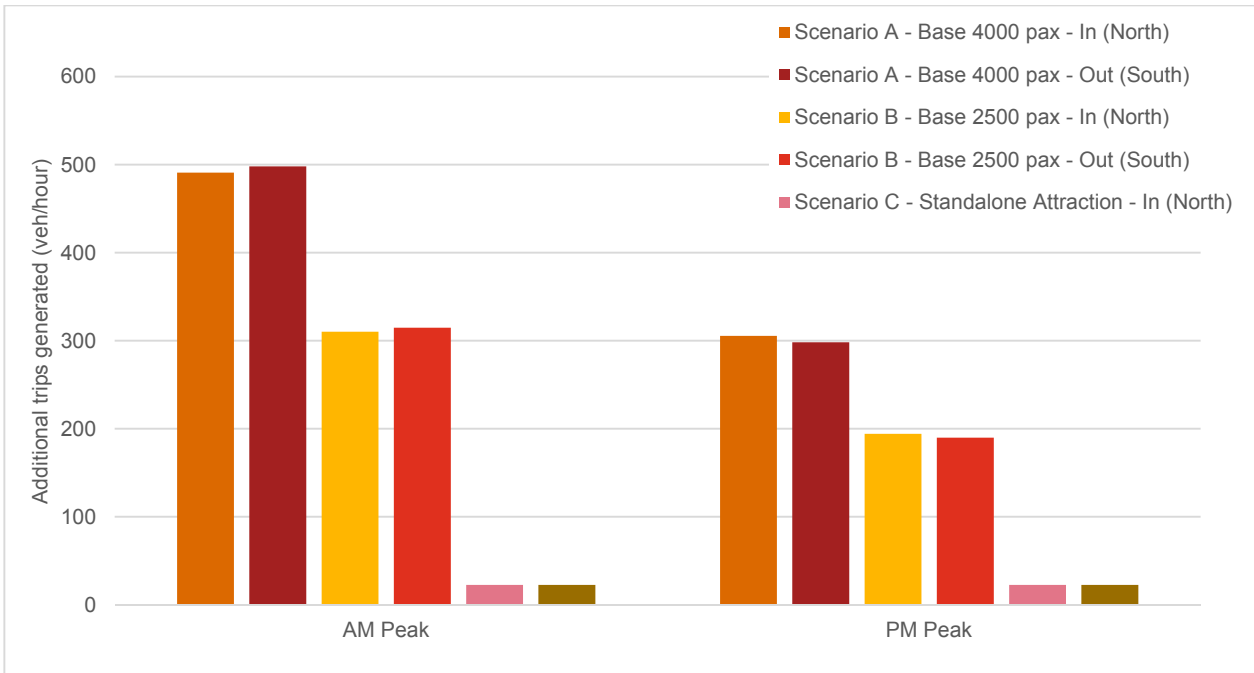


Figure 8: Additional trips generated in each scenario

The key intersections in the local area include the Gold Coast Highway / Waterways Drive, Waterways Drive / MacArthur Parade, and the Sea World Roundabout all operate at over capacity during peak times. The Gold Coast OCST will increase the traffic loading on The Spit and will increase the level of congestion at the key intersections particularly during peak times. The following is a tabulated summary of the potential impacts arising from the identified scenarios.

Table 8: Gold Coast GST Traffic Scenarios

| Scenario | Impacts |
|---|--|
| Scenario A – Home Port, 4,000 passengers | There is an increase of 491 vehicles per hour (in and out) from 7am-10am. A level of additional traffic is also assumed throughout the day as a ‘standalone attraction’ – refer to Scenario C. For a weekend, the daily maximum hourly traffic volume increases from 1,497 vehicles per hour to 1,807 vehicles per hour, approximately a 20% increase. |
| Scenario B – Home Port, 2,500 passengers | Morning peak traffic increases by 310 vehicles per hour (in and out) from 7am-10am. The daily maximum hourly traffic volume on a weekend increases to 1,626 vehicles per hour, an approximate 9% increase from the existing maximum. |
| Scenario C – Standalone tourist attraction (Non-cruise day) | As a standalone tourist attraction (i.e. on a day with no cruises departing), the total traffic estimated per day is an additional 247 trips (in and out). With demand distributed evenly between 7am to 6pm, this results in 23 vehicles per hour. This demand is not significant at approximately 2.4% additional traffic per day. |

5.8 Land Use

The OCST 5.98 hectare land parcel is formally identified as Lot 3 on SP104014 and is a Reserve for Park and Recreation.

5.8.1 Key Local and Regional Land Uses

The subject site is located within the Open Space Zone of The City Plan and is within the designated urban area of The City Plan’s strategic framework map. The subject site is currently being used as recreational parkland, including a public parking area for access to Philip Park, the Federation Walk Coastal Reserve and the beach. The site adjoins a 92.3 hectare site to the north which is within the Conservation Zone of The City Plan and the balance of Philip Park (Lot 318 on WD800475) to the south. Philip Park forms an important link in the Gold Coast’s pedestrian and cycle network.

The site is in close proximity to the Gold Coast CBD at Southport (Priority Development Area), the Surfers Paradise Specialist Centre and the Broadbeach Principal Centre. The Spit is identified as a key landscape character area in the context of the Gold Coast's greenspace network within The City Plan. The proposed OCST site is located in close proximity to the northern extent of the coastal tourism/urban strip which extends along the coastline from Main Beach to Coolangatta on the border with New South Wales.

Sea World is a regionally significant theme park and resort located adjacent to the proposed OCST site along Seaworld Drive. Other significant land uses in the vicinity of the site include the Southport Yacht Club, Sheraton Mirage Resort and Spa and the Palazzo Versace.

5.8.2 Key Local and Regional Land Tenures

The tenure of the landside component of the project area (Lot 3 on SP104014) is Reserve and the parcel is not subject to any easements. The site forms part of a larger area of adjoining Reserve land parcels that form part of the Federation Walk Coastal Reserve, Philip Park and Hollindale Park.

The underlying tenure of the Sea World Theme Park and Resort and Sheraton Mirage Resort and Spa is Lands Lease. The tenure of the site and surrounding area is shown in Figure 9.

5.9 Planning Instruments

The project area is subject to the provisions of Queensland's planning framework. On 3 July 2017, Queensland started operating under new planning legislation, the *Planning Act 2016*. Replacing the previous planning legislation—the *Sustainable Planning Act 2009*.

5.9.1 State Planning Instruments

The OCST development is subject to two State planning instruments being the State Planning Policy and the South East Queensland Regional Plan. State planning instruments set out the State and regional planning interests critical to responsible land-use planning and development across Queensland.

State Planning Policy

The SPP outlines 17 State interests that must be considered in every planning scheme across Queensland under five broad themes including:

- Liveable communities and housing
- Economic growth
- Environment and Heritage
- Safety and resilience to hazards
- Infrastructure.

The OCST site is subject to a range of State interest layers under the State Planning Policy including the following:

- Coastal management district
- Erosion prone area
- Medium and high storm tide inundation area.

A number of the State interests are directly applicable to the OCST development. Table 9 outlines the relevant State interests and how the OCST proposal aligns with the State interest policies.



AECOM
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Coordinate System: GDA 1994 MGA Zone 56
Projection: Transverse Mercator
0 95 190 380
Meters
1:23,905 (when printed at A4)

Data sources:
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Oceanside Cruise Ship Terminal
Initial Advice Statement

TENURE AND ZONING

PROJECT ID: 65517891
CREATED BY: XL
LAST MODIFIED: JR - 22/09/2017
VERSION: 3

Figure 5

Figure 9: Tenure and Zoning

Table 9: Applicability of State Interests to the OCST

| State Interest Statement | Alignment / Applicability of the OCST proposal |
|---|---|
| <p>Development and construction Employment needs, economic growth, and a strong development and construction sector are supported by facilitating a range of residential, commercial, retail, industrial and mixed use development opportunities.</p> | <ul style="list-style-type: none"> • The project will encourage capital investment to deliver infrastructure of strategic significance to the locality, region and the State. • The project will provide employment and economic development opportunities. |
| <p>Tourism Tourism planning and development opportunities that are appropriate and sustainable are supported, and the social, cultural and natural values underpinning tourism developments are protected.</p> | <ul style="list-style-type: none"> • The project has the potential to support both regional and local tourism and related service industries. • It will provide a new gateway for the expanding cruise ship market in Australia with access to the high quality and unique tourism and recreation experiences of the Gold Coast enhancing The City's reputation as a world class tourist and lifestyle destination. • The cruise shipping schedule may provide for up to 160 cruise ship visits in a year, involving a 24 hour berth for disembarking, resupply, refuelling and boarding (assuming a base port scenario). |
| <p>Coastal environment The coastal environment is protected and enhanced, while supporting opportunities for coastal-dependent development, compatible urban form, and maintaining appropriate public use of and access to, and along, State coastal land.</p> | <ul style="list-style-type: none"> • The coastal environment is representative of typical open beach, characteristic of the east coast of Australia. The continuation of long open coast beach offers public (community / tourist) attraction in terms of open space and amenity. • The project is located along a relatively high energy, dynamic coastline, subject to ocean swells from the Coral Sea, predominantly south-easterly and north-easterly, that show strong seasonal variability. • Coastal hazard maps published by the Department of Environment and Heritage Protection (2016) indicate a large proportion of the site is prone to erosion and inundation due to storm impact and long term trends including sediment supply deficit and channel migration. • Overall the coastal processes for the Gold Coast are well understood and the impact of the proposed works on the coast can be broadly predicted. |
| <p>Biodiversity Matters of environmental significance are valued and protected, and the health and resilience of biodiversity is maintained or enhanced to support ecological processes.</p> | <ul style="list-style-type: none"> • Site inspection records indicate the site supports primarily modified and regrowth vegetation with some patches of relatively intact vegetation concentrated on the coastal fore dunes. This area is dissected by several tracks used for beach access. • The proposed action is not expected to have a significant impact on any listed threatened species or ecological communities – where interactions with terrestrial, marine and migratory fauna have been identified, specific avoidance, mitigation and management measures have been identified so as not to have a significant impact on populations or habitat. |
| <p>Natural hazards, risk and resilience The risks associated with natural hazards, including the projected impacts of climate change, are avoided or mitigated to protect</p> | <ul style="list-style-type: none"> • The project is located within the coastal management district in an erosion prone area and a medium and high storm tide inundation area. • Tidal hydraulic and coastal processes that are important |

| | |
|--|---|
| <p>people and property and enhance the community's resilience to natural hazards.</p> | <p>to northerly migration of sand are expected to be impacted by the installation of the breakwater structure 1,200m offshore.</p> <ul style="list-style-type: none"> The EIS will assess, analyse and model as appropriate, potential impacts to coastal processes to minimise and appropriately manage long term change. |
| <p>Infrastructure integration The benefits of past and ongoing investment in infrastructure and facilities are maximised through integrated land use planning.</p> | <ul style="list-style-type: none"> The project will encourage capital investment to deliver infrastructure of strategic significance to the locality, region and the State. The proposed OCST site is located within the designated urban area of The City Plan's strategic framework. It is recognised that the landside infrastructure requirements of the OCST sits within a broader context of an existing urban area and regional infrastructure networks and will need to be appropriately integrated. |
| <p>Transport infrastructure The safe and efficient movement of people and goods is enabled, and land use patterns that encourage sustainable transport are supported.</p> | <ul style="list-style-type: none"> The preliminary traffic impact assessment shows that the OCST will generate a significant number of additional trips on Seaworld Drive and the local road network. The project may also have an influence over the State controlled transport network and this will be considered as part of the EIS. It is expected that the impacts on the local road network could be mitigated through measures such as scheduling the movements of passengers around the existing peak travel times to reduce the cumulative impact, and increasing the use of public transport or coaches to transport passengers to the terminal. The City is also investigating upgrades to the local network (Sundale Bridge) which could deliver a significant increase in capacity. The project site is located in close proximity to the Gold Coast light rail network. Main Beach is the closest station located 2.6 km from the project site. |

South East Queensland Regional Plan

The South East Queensland Regional Plan seeks to provide strategic direction to achieve regional outcomes that align with the State's interest in planning and development. The purpose of the regional plan is to identify regional outcomes to help achieve State interests. Regional policies are used to facilitate these outcomes by addressing existing or emerging regional issues.

The South East Queensland Regional Plan 2009 – 2031 is the current regional plan for South East Queensland. The Queensland Government is currently in the process of preparing a new South East Queensland Regional Plan (ShapingSEQ) which is due to be released in mid-2017.

The OCST land parcel is located within the Urban Footprint of the South East Queensland Regional Plan and draft ShapingSEQ. The City of Gold Coast is located within the southern sub-region and is in close proximity to the Southport-Broadbeach economic corridor of regional economic significance. The Southport-Broadbeach economic corridor employs more than 62,000 workers and supports priority sectors of cultural and creative, health and knowledge (including higher education), commercial, corporate services and tourism, and higher order consumer functions such as retail, as well as community, civic and cultural uses. The OCST project aligns with the ShapingSEQ 'prosper' outcomes for the southern sub-region:

“The regional intent to be a globally competitive region, and an attractive destination for investment and high-value economic activities will be accelerated by identifying, protecting and growing economic opportunities and synergies within and between areas of regional economic significance.”

The OCST project will further enhance The City of Gold Coast as SEQ’s premier domestic and international tourism destination and reinforce its role as the southern gateway, connecting SEQ to coastal cities and towns of the southern states and, increasingly, the world.

5.9.2 Local Planning Instruments

The OCST development is subject to two statutory planning instruments being the local government planning scheme (The City Plan) and the planning scheme policy. The City Plan is the Gold Coast LGA’s current local planning scheme and provides a framework for managing development. The Planning Scheme Zoning relevant to the study area is shown in Figure.

The OCST project aligns with the strategic intent of The City Plan to continue developing as a world-class city and globally competitive economy. The strategic intent of The City Plan specifically seeks to provide capacity for expansion and growth of business and economic development and investment in the city by:

“supporting increased business, new industries and tourism uses in appropriate places and keeping regulation in these places to a minimum”.

Gold Coast 2022 Vision Corporate Plan

Gold Coast 2022 (The City’s Corporate Plan) supports the delivery of The City Vision through three themes – Place, Prosperity and People.

Gold Coast 2022 describes the outcomes The City is working towards, the key plans and programs, how city strategies support the plan and the signature actions The City aims to deliver over the next few years. Table 10 demonstrates how the development of an OCST contributes to The City achieving its objectives and realising its vision.

Table 10: Alignment with Gold Coast 2022

| Theme | Objective | How the OCST contributes |
|-------------------|---|--|
| Place | Our modern centres create vibrant communities | Integrate OCST into vibrant waterfront facilities, growing the sense of community around The Spit region. |
| | Everyone can enjoy a beach experience | Addresses the proven cause and effect of Gold Coast’s changing tourism dynamic by providing infrastructure which facilitates extra tourism products for an enjoyable beach experience for all kinds of tourists. |
| Prosperity | Our city’s economy is diverse and innovative | A conservative estimate from MacroPlan Dimasi suggests that an OCST could create over \$60 million in additional expenditure on the Gold Coast. |
| | We have infrastructure that supports productivity and growth | A new OCST will support the growing cruise ship market demand and facilitate tourism growth on the Gold Coast. |
| | We are a city with a strong and globally competitive business environment | A new OCST keeps Gold Coast competitive, providing world-class amenities, facilitating competitive business activity across the region. |
| | We are a globally recognised tourism destination | Gold Coast is already a globally recognised tourism destination and a new OCST ensures the maintenance of this reputation. |
| People | Our city provides a wide range of job opportunities | A new OCST is expected to create significant new jobs in the region, providing the community with the opportunity to upskill in new industries (e.g. cruise ship lines, maritime customs and biosecurity). |
| | We are proud of our city | A new OCST provides improved amenities, potentially |

| Theme | Objective | How the OCST contributes |
|-------|-----------|---|
| | | serving as an iconic structural landmark of which the community can be proud. |

6. Potential Project Impacts

This section outlines the key potential environmental impacts during construction, operation and decommissioning of the project. The project is currently in concept design stage, and has not yet been subject to rigorous impact assessments.

The following section presents an initial assessment of potential impacts based on information drawn from previous assessments and publically available information associated with the project area and surrounds. The potential impacts associated with this project are those that may result from construction and operation of the project.

A number of studies are needed before the extent of some impacts can be determined. These studies are anticipated to form part of the EIS process.

6.1 Natural Environment

6.1.1 Land

The project has potential to result in localised impacts due to land disturbance and vegetation clearing activities. Such potential impacts may include for example disturbance to topographic features (e.g. sand dune ridge) and associated surface flows, potential soil erosion and sedimentation.

Landside development will be planned to avoid unnecessary disturbance or clearance of vegetated sand dunes above the high tide mark. The project will adopt sensitive design principles and selective construction methods to minimise potential environmental impacts on terrestrial and marine environments. Allowance will be made for staging of the works to accommodate seasonal conditions (e.g. periods of high rainfall and/or wind) to further minimise incidental damage to the dune environment.

Development of landside facilities, including access, parking, terminal and logistics buildings will occur within the areas of Philip Park that have previously been disturbed and modified/cleared for the existing lawns, car parking and amenities. Mobilisation of construction equipment and labour will use the previously disturbed (cleared and modified) areas of Philip Park for site offices, laydown and parking. Vehicle movements will be restricted to stable land areas, clearly demarcated during site establishment. Standard soil, acid sulfate soil and land management and mitigation measures such as erosion and sediment control as well as specialised site-specific management measures for dune management will be applied to ensure adverse impacts are avoided to the greatest extent possible.

The jetty will likely be constructed from Philip Park moving seaward using an 'over the top' type of construction method to minimise impacts to land. Access to the jetty construction front will extend via a cleared corridor over the dunes, with the intent to minimise human interference with the sensitive sand dune ridge. Sand dune protection will be installed to minimise erosion during the period of disturbance, prior to reinstatement of the dune environment. Jetty construction methods will be further resolved as the design is confirmed and refined by the construction contractor to minimise environmental impacts and capital costs.

The open ocean and smooth bathymetry indicate mobile, soft-sediment and unvegetated seabed. The seafloor over most of the project area is flat and relatively featureless sandy substrates. Further site-specific assessments will be undertaken as part of the detailed environmental assessment of the proposal.

The only substantial seabed features in the vicinity of the proposal area is a wreck, the Scottish Prince (1887); a 64 m iron barque ship located approximately 800m from the shore and approximately 90m to the north of the jetty alignment, in approximately 10m of water. This wreck provides hard substrate habitat which supports abundant epifauna and fish assemblages with local biodiversity values.

6.1.2 Water

It is not anticipated that the project will significantly impact on surface water hydrology or quality. The coastal nature of the site (coastal zone, sandy soil) means the site is subject to storm surges and erosion, but overland stormwater flow is minimal. Allowance will be made for staging of the works to accommodate seasonal conditions (e.g. periods of high rainfall and/or wind) to further minimise incidental damage to the marine environment.

Tidal hydraulic and coastal processes that are important to northerly migration of sand are expected to be impacted by the installation of the breakwater structure 1,200m offshore. The EIS will assess, analyse and model as appropriate, potential impacts to coastal processes to minimise and appropriately manage long term change.

On the seaward side of the breakwater the water surface has a more extreme excitation (wave heights appear larger than 2.5 m). This is the result of waves reflecting off the breakwater. The use of a caisson breakwater will result in a vertical face into the waves with nearly 100% reflection. Even during normal conditions the conditions in front of the breakwater will be significantly more severe than surrounding areas.

Landside development on low lying coastal land and associated changes to topographic features (e.g. sand dune ridge) may change overland surface water flows, storm tide and flood plain storage characteristics. The EIS will assess, analyse and model as appropriate, potential surface water impacts and will include an appropriate site based stormwater management response.

Standard soil and land management and mitigation measures such as erosion and sediment control as well as specialised site-specific and acid sulphate soil management measures for dune management will be applied to ensure adverse impacts are avoided to the greatest extent possible.

Refuelling at the OCST or transport via or near to Moreton Bay Marine Park and Ramsar wetland presents a risk that a plume resulting from a loss of containment may impact on the adjacent coast or sensitive areas. The likelihood and magnitude of a spill event is controlled by the emergency and spill response capabilities of the OCST and visiting vessels. The OCST will be set up with modern equipment suited to a coastal environment. All visiting vessels will be fitted with mandatory emergency response equipment and procedures consistent with international ship pollution regulations. This will be considered further as part of the EIS.

6.2 Coastal Processes

Offshore structures, such as breakwaters, impact the wave climate reaching the coast and sand will tend to accumulate in the lee of the structure. Over time the beach and near shore areas will find a new dynamic equilibrium. The size (breadth and depth) of the sand accumulation (salient) caused by a breakwater is dependent on the length of the breakwater, the proximity to the shore, and the wave climate. Longer breakwaters, closer to shore with a narrow range of wave attack result in greater impacts.

Analyses of potential salient formations were undertaken utilising a range of empirical models to forecast the ultimate size of the beach response. The exact size of the salient formation is impacted by the range of wave directions impacting the site. This has resulted in various interpretations (formulae) to describe the size and shape of salient formations.

United Kingdom Environmental Agency guidelines for detached near shore breakwaters have been used to provide an indicative estimate of salient formation. The results demonstrate that a 780m long breakwater located 1,200m offshore will likely produce a salient that is 120m wide and extends several hundred meters north and south along the beach.

An upper limit salient is also presented based on an analysis of the range of results calculated, indicating the salient could be as large as 300m across with impacts on the beach that extend more than a kilometre to the north and south. A visual representation of this is provided as Figure 10.

Similar to a groyne, the sand accumulating behind a breakwater represents an interruption to the longshore transport mechanism until a new equilibrium is reached. The accumulation of sand behind the breakwater has

the potential to cause erosion on adjacent beaches, primarily to the north of the project. Initially the interruption will be greatest, but over time as the beach profile changes the rate of bypassing will increase. Once a stable beach profile has been achieved full bypassing will occur.

To manage the salient formation and beach erosion impacts there are a number of options available. These include:

- Do nothing and let a part of The Spit beach experience a period of beach erosion
- Manage beach conditions by monitoring the beach and altering sand bypassing rates at the Seaway
- Nourish the beach as part of the construction program to accelerate the development of a stable profile
- Implement a system to on-move sand behind the breakwater (e.g. a slurry pumping system or dredging of deposited material).

If the beach salient is allowed to develop naturally the upper beach and near shore areas will respond most quickly, with the salient expected to form and achieve its final extent within a few years, depending on the exact size of the salient that forms and the amount of wave energy. Impacts in deeper waters will be slower and driven by large marine events. As seen with the Seaway project these areas could take decades to achieve a stable profile.

Offshore the salient will initially steepen the seabed profile but over time the salient will lead to a shoaling in the lee of the breakwater. This shoaling in deeper water will be driven by storm events and may eventually require dredging to maintain navigable conditions. If required the rate and frequency of dredging would be considered minor, though ongoing monitoring (surveying) would be required to ensure safe navigation conditions are being maintained.

Beyond the impact on the waves and the development of a salient on the beach with associated impact on sediment budgets the construction of a jetty and breakwater would have little impact on other coastal processes.

The following metocean impacts are expected.

- The currents travel largely shore parallel (typically to the south) so the shore parallel breakwater will have minimal impact on currents
- There will be no impact on tides
- There will be a small wind shadow on the lee side of the structure but this will be localised
- On the beach the wave climate will be reduced and the waves will approach from different directions compared with the beaches further north and south.

Compared with the gently sloping beach profile, the breakwater will present a reflective face to the incoming waves. As a result some wave energy will reflect off the breakwater and be directed back out to sea, interacting with the incoming waves. This interaction will make the sea conditions offshore from the breakwater rougher than existing conditions. These increased conditions would make navigation in small vessels less comfortable and possibly less safe.

The reflectivity of the breakwater is related to the ability of the structure to absorb and dissipate the incident waves. A vertical face is very reflective, while porous faces are far less reflective. In the design phase attention is required to ensure the adopted facing of the breakwater has a reflectivity that is acceptably low to minimise impacts on recreational boating.

The City has a long established partnership the Griffith Centre for Coastal Management. This partnership is focused on the long term sustainability of our City's beaches. This commitment will continue into the future and may include areas of research and monitoring associated with the project.

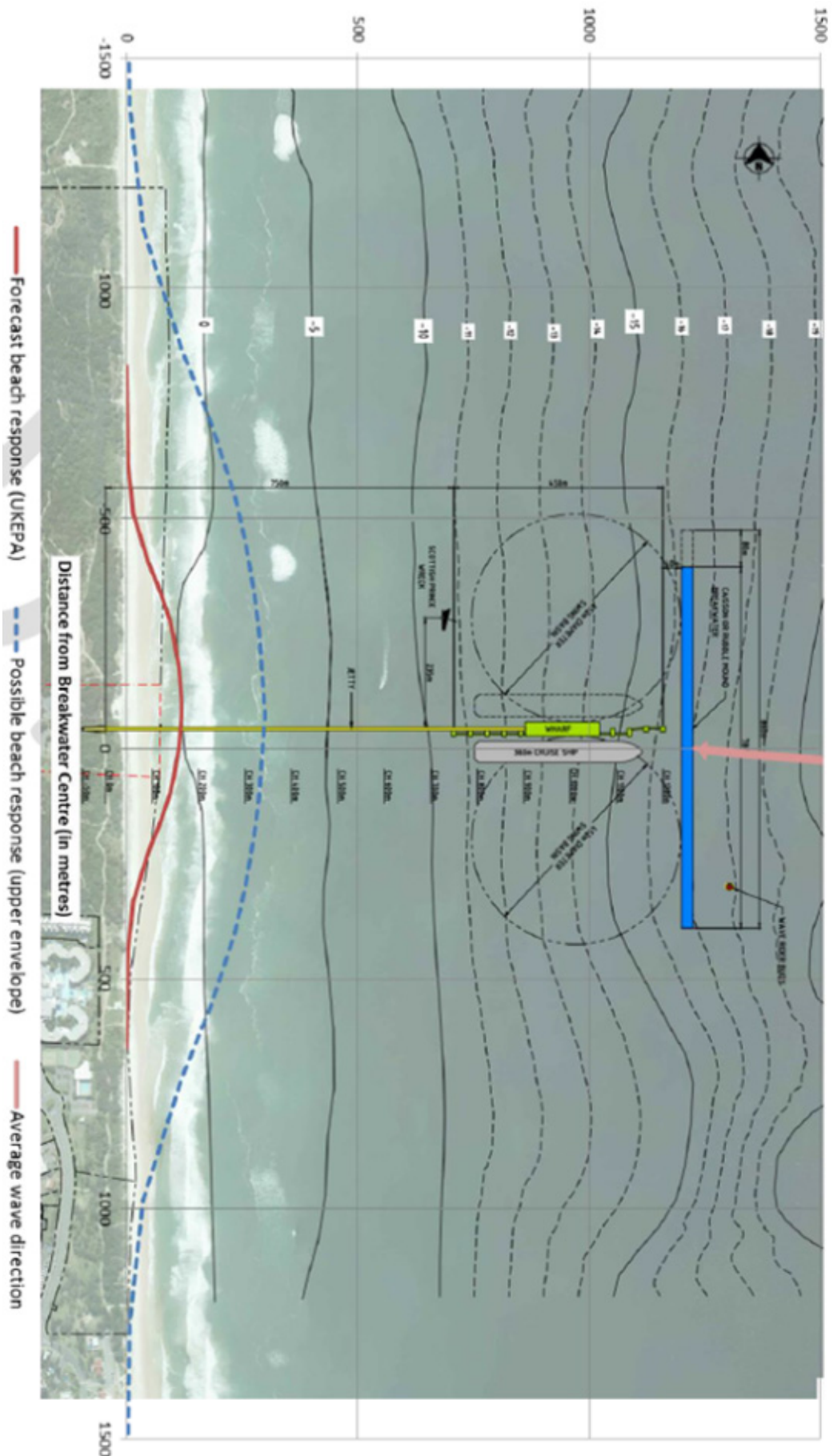


Figure 10: Preliminary sand accumulation and estimated impact on beach profile

6.3 Ecology

6.3.1 Flora

The proposal will result in minor loss of already degraded native vegetation on the coastal fringe of Philip Park to accommodate the jetty landing, vehicle and passenger access, terminal building, logistics and laydown areas.

The loss of vegetation is not considered detrimental to the overall ecological values of the area, given similar and higher quality vegetation and habitats are available immediately to the north, south and west of the proposed site. Supplementary planting and revegetation as part of final landscaping of the site will enhance native species populations and reduce weed infestation in the vicinity of the proposal.

The coastal vegetation and its habitat value are susceptible to introduction and spread of weeds. A Weed Management Plan and weed hygiene procedures will be developed and implemented to ensure weeds are not introduced to the site or spread to the surrounding area during clearing and construction activities. Cleared vegetation management and vehicle wash down procedures will be central to any weed management strategy.

6.3.2 Fauna

The proposal will not directly impact on any environmentally significant areas; however there may be indirect impacts due to marine vessel traffic associated with equipment and materials transport during the construction phase and fuel transport during the operations phase.

The vegetation in this area represents a very narrow band and contains weeds; however, it is recognised as habitat that has the potential to provide connectivity along the eastern coast to The Spit, and potential roosting and foraging habitat to grey-headed flying-fox, New Holland mouse and birds, including resident and migratory shorebirds, wetland birds and raptors. Prior to and during clearing, a qualified fauna spotter-catcher will inspect the vegetation to detect presence of fauna. Any fauna present will be translocated to a suitable nearby habitat (not long distances).

Given the highly modified nature of the site (mainly used for car parking), vicinity to large built establishments (Sheraton, Sea World, etc.) and exposed coastal location, the site is considered unlikely to provide core habitat for any of the threatened or migratory species. Removal of mature vegetation may reduce perching opportunities for birds, as well as foraging and nesting resources for terrestrial mammal species.

Layout of landside development will retain existing native vegetation as much as possible to minimise the permanent loss of native vegetation and disruption to habitat connectivity. The proposal will retain and reinstate these habitat values to encourage local wildlife in the final landscaping of the site.

Availability of similar habitat values immediately adjacent to Philip Park and in the surrounding area indicates that the proposed vegetation clearing and temporary disturbance of habitats during construction will not have a significant impact on populations or availability of habitat for birds or terrestrial mammal species during construction.

6.3.3 Fauna Strike

Increased marine traffic and ocean-based activities may result in vessel strike, when vessels are transiting to and from the works area during construction or cruise ship or ancillary vessel traffic during operation. The risk of vessel strike while transiting to site would be managed through the implementation of vessel speed restrictions. During construction, all vehicles and equipment will keep to designated traffic routes and observe traffic controls (e.g. speed limits) to minimise risk of fauna strike. This measure is also a requirement of the project being declared a non-controlled action under the EPBC act. This is described in full within section 6.8

6.3.4 Underwater Noise

Construction of the jetty, wharf and mooring / berthing dolphins will involve installation of a number of raked piles – concept design indicates three to four piles per bent, up to 220 piles in total.

Piling is known to generate underwater noise that has the potential for direct impacts to species; these may be physiological or behavioural effects on cetaceans, marine reptiles and fish. Piling methods will be designed to minimise unnecessary noise and procedures such as slow-start will be employed to reduce the risk of impacts due to sudden changes in noise and vibration levels.

Physiological effects of underwater noise relate to effects on the auditory system; exposure to high level sound for a specific duration can damage animals hearing and result in either temporary threshold shift (TTS) or permanent threshold shift (PTS), which corresponds to either temporary or permanent damage to the animals hearing.

Marine mammal behavioural responses to noise include changes in vocalisation, resting, diving and breathing patterns, changes in mother-infant spatial relationships and avoidance of the noise source (National Research Council, 2005). Masking of biologically important sounds may interfere with communication and social interaction, and cause changes in behaviour as well.

Baleen whales are classified as low-frequency cetaceans. There are known criteria for behavioural and physiological impacts on cetaceans from impact piling published by National Oceanic and Atmosphere Administration (NOAA) (NOAA, 2011). Further assessment of underwater piling noise propagation will determine zones of impact and appropriate management response.

Zones of impact can be applied to define the likely environmental footprint of a noise source and indicate how far away a noise source is likely to have an impact on marine mammal species. These zones of impact have been defined by Richardson, Greene, Malme, & Thomson (1995) as:

- Zone of audibility – extent to which an animal may hear the noise source but not show any behavioural response
- Zone of responsiveness – area within which the animal might react behaviourally to the noise source
- Zone of hearing injury – area closest to the noise source that may cause TTS or PTS.

These zones can vary depending on ambient noise. As part of the detailed environmental assessment for the proposal, an investigation will be conducted by a specialist underwater acoustics consultant to identify the site-specific underwater noise propagation zone for piling in an open ocean environment.

To maximise safety and effectiveness of the monitoring zone, piling will not occur at night. It is unlikely to be feasible to install piles outside of the six months period of the humpback whale migration (May to November), which will result in the possibility of mother and calves being present in the works area. Observations with safety zones (based on the zones of impact) will be used to identify approaching marine mammals to minimise impacts and operational procedures will be implemented to minimise the risk of impacts upon them.

6.3.5 Lighting

Anthropogenic lighting can attract and disorientate turtle hatchlings and can result in hatchlings pooling under artificial lights; this can increase the likelihood of predation and interfering with hatchlings natural nearshore orientation and swimming movements. Lighting can also deter female turtles from nesting in an area.

Sporadic nesting of loggerhead turtles has been recorded along the coast where the proposal is located. Therefore, there is a potential that nesting female turtles may be recorded in the proposed area. If turtle nests are recorded than appropriate lighting management and mitigation measures, such as low sodium lights, light shades and directing lights away from the beach may need to be implemented. It is suggested that the beach adjacent to the proposed area is scanned for any nesting activity daily (by the Marine Fauna Observer), between October and March. Both construction and operational lighting will be implemented in accordance with light and environmental management plan developed for the project.

6.3.6 Pest and feral animals

It is unlikely that the proposed works will result in further introductions of feral vertebrate species. Furthermore the proposal is not considered likely to exacerbate current populations of pest animals given they are already established in the region.

The introduction of exotic ant fauna is a risk to the proposal. Yellow crazy ants (*Anoplolepis gracilipes*) and fire ants (*Solenopsis invicta*) are exotic ants that have the potential to seriously impact native flora, fauna and ecological communities. They are capable of being transported from infested sites to new construction sites on equipment or within materials. Whilst many colonies of both species have been eradicated, spreading ants to new areas is a potential issue and needs to be managed during construction.

As with any form of travel to an international destination there is risk that foreign pests maybe brought into the Country via passenger luggage, soil or plant matter attached to clothing or via souvenirs made of organic material that might contain potential pests. As with all international visitors, the cruise ship and passengers will be subject to biosecurity measures as implemented by the Australian Government. This would apply to any potential source of risk from other items which might be discharge from the ship, such as waste, rubbish or other such bulk items.

6.4 Amenity

6.4.1 Visual Amenity

While the project area is of an open space / open ocean character, the broader visual context is one of an ever changing and heavily modified urban beachfront environment.

The project is located toward the southern end of The Spit and positioned close to the existing tourist facilities of Sheraton Mirage Hotel, Sea World (entrance and car park), Versace Hotel and Marina Mirage Shopping Centre. The Gold Coast coastline has been subject to decades of extensive modification including an intensively managed beach / urban environment interface and the distinctive city skyline of today. Notable modifications to the coastline include:

- The Seaway (including Doug Jennings Park, Wave Break Island and the Sand Bypass System and jetty structure)
- A – line rock armoured seawall that extends along much of the urban coastline
- Rock groyne and artificial reef structures
- Ongoing sand management initiatives including dredging, sand placement and beach grooming
- Numerous towers and large scale resort developments in close proximity to the beachfront and Broadwater (including the Gold Coast CBD).

The future skyline of The City is likely to change dramatically, including several development approvals throughout the coastal strip that now exceeding the scale and height of the Q1 and Soul towers

The project is positioned within a precinct of compatible and complementary land uses and is expected to generate significant public interest in the periodic berthing of cruise ships. The project is anticipated to result in significant visual change to the Gold Coast coastline given the visibility of the structure from both existing nearby facilities, the entire open beach / coastline, and more distant elevated locations.

However, the project also provides a potential opportunity for new public and visitor perspectives of the Gold Coast and the ocean environment via the jetty walkway.

6.4.2 Air Quality

The existing environment (soil types) and small area of land disturbance and land-based earthworks proposed as part of the project are not anticipated to generate excessive dust; any dust impacts are expected to be temporary and localised.

Other sources of atmospheric emissions are expected to include exhaust from cruise ships, construction equipment and traffic. Atmospheric emissions associated with the development may include:

- Carbon dioxide (CO₂)
- Carbon monoxide (CO)
- Nitrogen oxides (NO_x)
- Sulphur dioxide (SO₂)
- Volatile organic compounds (VOCs)
- Particulates and dust.

Operational measures for energy efficiency and emissions reduction will be introduced to minimise fuel use during a ship call to the port area.

Potential air quality impacts associated with the project will be assessed as part of the EIS and management measures developed to mitigate potential impacts. The project will be required to meet air quality standards for occupational health and safety, and the *Environmental Protection Act 1994* (EP Act) (Qld) and the *Environmental Protection (Air) Policy 2008* (EPP Air) (Qld).

The potential air quality impacts and associated regulations or management strategies will be assessed as part of the EIS. This will include consideration of emissions from the vessels and increased traffic in the context of general regional population and growth of the area.

6.4.3 Noise

Noise can occur as a result of construction and operation activities and emissions from both stationary and transitory sources. The nature of noise emitted varies depending upon the source. The impact these emissions will have on nearby sensitive receptors (such as residential dwellings) will depend upon the extent to which these emissions exceed background noise levels, which vary with the time of day.

Noise and vibration impacts are relative to the distance to surrounding sensitive receptors, the level and duration of disturbance and the hours of disturbance. Identification of sensitive locations will occur as part of the EIS.

Construction

The EP Act and the *Environmental Protection (Noise) Policy 2008* (EPP Noise) provides for the management and regulation of commercial and industrial noise that could adversely impact on noise sensitive areas. Under the EP Act, noise is considered a contaminant and noise nuisance is considered environmental harm.

The generation of noise will occur from a variety of sources during construction, including road and marine vessel traffic, vegetation clearing activities, earthworks and building as well as piling activities. Increased traffic and noisy activities during landside construction has the potential to cause a temporary disturbance to the ambient acoustic environments and local habitats; however the impact is expected to be of low severity and short duration.

Construction and minor levelling at the site will potentially cause a temporary disturbance to all groups of fauna, especially birds. This will most likely result in temporary avoidance of the area for the duration of these activities. As alternative habitats are available in close proximity, an overall loss of diversity as a result of construction is considered unlikely. Upon the cessation of peak noise levels and construction activity, many, if not all species are likely to resume activities around the facility. Long-term impacts are not anticipated. Construction will be managed to minimise the extent and duration of noise-generating construction activities (e.g. marine traffic, piling) such that these activities are considered unlikely to have a significant impact on marine species habitat or feeding behaviour.

Effective consultation will be undertaken to identify any potential impacts before they occur and management controls adopted to minimise such impacts.

Operation

Operation of the project will generate noise from such sources as cruise ships and road traffic.

The EP Act identifies exclusions relating to environmental nuisance or environmental harm for noise from operating a ship, including noise from shore and ship based port operations for loading or unloading items other than bulk goods (in this case, the loading and unloading of passengers, luggage and supplies is exempt). As part of the EIS, a detailed assessment of noise sources and noise levels will be assessed against criteria derived from the existing noise environment (e.g. current background levels) at different times of day (e.g. likely to cause sleep disturbance).

The Queensland environmental noise guideline relating to industrial noise is the Planning for Noise Control Guideline (PNCG), which is used to set planning limits for noise emission from plant and equipment on the subject site. The PNCG provides planning limits to allow the environmental goals of the EPP Noise to be achieved in the long term.

6.5 Social and Economic Impacts

The project is of a scale that will have significant social and economic impacts that have influence across the region. It is also recognised that some of these impacts, both positive and negative, cannot necessarily be quantified or measured.

For example, The Spit provides residents and tourists alike with access to parkland and beach front without the associated crowds of most other Gold Coast areas. The beach near Doug Jennings Park is one of the beaches on the Gold Coast allowing an off-leash dog area. Arts and cultural activities play a large part in shaping the identity of the Gold Coast. Known for its peaceful atmosphere, The Spit hosts several events during the year, including polo tournaments and music festivals.

The following is a summary of the positive and negative impacts that have been attributed to the project and potential mitigation measures.

Table 11: Summary of social and economic impacts

| Social Impact | Description | Mitigation |
|---|---|---|
| Positive Impacts | | |
| Increased skilled employment for Gold Coast Residents | The project will generate both direct and indirect employment demand for skilled worker throughout the construction and operation of the OCST. | Establishment of working partnership arrangements with cruise line companies which allow opportunity for Gold Coast residents to be employed by cruise line companies under Australian standard employment regulations. |
| Increased employment | Through the life of the project, there is expected increased demand for additional direct and indirect employment opportunities. | Establish a framework that prioritises local participation in the marine and cruise ship industry. |
| Attraction of additional tourists | This will increase both visitation and tourism spend for the Gold Coast creating both direct and indirect economic benefits. | Incorporation of the CST in the Gold Coast and Queensland's marketing strategy to the global tourism market. |
| New business opportunities | The establishment of the cruise ship industry on the coast, particular for home port services, will likely generate a demand for additional services related to both the tourist and maritime sector. | DestinationQ and The City to work together and support the development of new industries in the Project area to act as facilitators between the cruise ship operators and the local businesses, where required. |

| Social Impact | Description | Mitigation |
|--|--|---|
| New public Amenity | The Jetty and wharf have the potential to be iconic coastal features. With the inclusion of public access it would be an additional recreational destination for the coast. | Development of a communication strategy to inform local residents and tourists of the alternative uses and offerings on the site. |
| Improve use of The Spit | The project has the potential to establish a shared vision and future for The Spit that would allow continued and targeted investment to ensure the publically accessible recreational values of the area are maintained. | Development of a communication strategy to inform local residents and tourists of the alternative uses and offerings on the site. |
| Improve water access and amenity | The OCST includes opportunity to provide dive infrastructure and would also result in a more sheltered waters along the effected section of the beach. This would provide addition facilities for water based activities. | Development of a communication strategy to inform local residents and tourists of the alternative uses and offerings on the site. |
| Negative Impacts | | |
| Reduced level of beach and foreshore access during construction and operation. | Maintaining public and maritime safety will be a prime consideration during both the operation and construction of the OCST. Scheduling of any restricted access will be carefully managed and communicated. During the operation of the OCST it is not expected that any closure of the beach or foreshore would occur. | Development and implementation of a Communications plan to actively disclose dates and times of the cruise ships and any machinery that will be in the area. Maintain access during construction in accordance with industry practice. |
| Increased potential for navigational issues for smaller or recreational vessels. | As the OCST is located outside of the Broadwater and within open water the potential to impact on smaller vessels is reduced. However, it is expected that some restrictions will be in place for the operation of vessel within an exclusion zone around the OCST. | Implementing an educational program or collateral to inform small vessel owners and others navigating the surrounding areas of the OCST. |
| Impact upon social and cultural values. | It is recognised that access to water and the beach is a part of the Gold Coast lifestyle. Any project which may be perceived to impact upon this would be seen as challenging community values. | Developing a broad-reaching community engagement plan, in partnership with project developers or owners and contractors, The City and the State. The plan could include establishment of an SIA engagement group and public communication of project information and project briefings. |

In all instances, appropriate construction, operational and risk management plans would be prepared and implemented to address these social impacts. Further consultation and understanding of the social impacts will be undertaken as part of the EIS process.

6.6 Built Environment

Landside infrastructure and buildings will be required within Philip Park in Main Beach to support the ongoing operation of the terminal and provide logistical support while a ship is berthed. Philip Park under its current use, as a public car park, will be removed by the project. The project will interface with both the beach area and foreshore walking tracks, including the Federation Walk. This impact would be minimised with the community still able to pass under the jetty structure as it traverses the foreshore and beach area.

6.7 Traffic and Transport

Key intersections in the area around The Spit, including the Gold Coast Highway / Waterways Drive, Waterways Drive / MacArthur Parade, and the Sea World Roundabout all operate at over capacity during peak times. The Gold Coast OCST will increase the traffic loading on The Spit and will increase the level of congestion at the key intersections particularly during peak times. This is estimated to be a 20% increase for a home port options with a 4000 passenger vessel in port and a 9% increase for a home port option with a 2500 passenger vessel in port.

Localised and targeted intersection upgrades will be required. This includes modification to the existing access to Philip Park. In addition, upgrades may also be required to intersections with the Gold Coast Highway to improve the free and safe movement of vehicles upon the local road network. As an overarching strategy use of private vehicles to access the OCST will be discouraged with preference for coach or group transfers to local hotel accommodation of designated pick up locations.

The City is currently investigating upgrades to the Sundale Bridge and associated intersection works. These upgrades are expected to address existing peak egress congestion issues on The Spit as well as providing capacity for future growth in trip demands. Preliminary assessments indicate that the additional capacity would be sufficient to cater for OCST operations at peak times in addition to other demand growth at The Spit as contemplated under The City Plan.

6.8 MNES under the EPBC Act

The project was referred to the Department of the Environment in March 2017 (2017/7899). A Referral Decision was issued in May 2017 identifying the project to be 'not a controlled action if undertaken in a particular manner'. A range of requirements have been conditioned with this approval relevant to the construction, in relation to noise from piling activities and vessel strike.

Based on the conservative description of the proposal and associated construction and operation activities, the following potential impacts were identified and considered to have potential impacts on Matters of National Environmental Significance (MNES) protected under the EPBC Act:

- Increased marine vessel traffic with potential to increase interactions with marine fauna and risk of fauna strike causing stress, injury or fatality in proposal area and on associated cruise ship and supply vessel routes through Moreton Bay Marine Park or Commonwealth marine areas.
- Marine transport of fuel and refuelling activities, and potential risk that a plume resulting from a loss of containment may impact on the adjacent coast or sensitive areas.
- Construction activities, particularly piling, generating a noise propagation zone underwater that introduces short term temporary risks for marine species.
- Construction activities, particularly dredging, in the marine environment are expected to generate sediment plumes that have the potential to impact on water quality.
- Anthropogenic lighting during construction and operation of the OCST.
- Increased traffic and noisy activities during landside construction has the potential to cause a temporary disturbance to the ambient acoustic and air environments and local habitats.
- Minor loss of already degraded native vegetation on the coastal fringe of Philip Park and temporary disturbance of coastal habitats.
- Introduction of weed and pest species.

Where a MNES has been identified as having potential to occur in the vicinity of the proposal, potential impacts of the proposal were identified and assessed to evaluate and effectively mitigate the risk that the proposal will have, or is likely to have, a significant impact on MNES. Specific avoidance, mitigation and management measures have been nominated to address the identified potential impacts.

This assessment concludes that the proposed action is not considered to trigger related controlling provisions under the EPBC Act and the proposed action is not a controlled action based on the following:

- The proposed site has been substantially modified by development and ongoing beach nourishment programs; permanent loss of coastal vegetation and fore dune habitats will be minimised.
- The proposed action is not within a Commonwealth marine area or reserve, and potential facilitated impacts of increased traffic on marine fauna will be managed in:
 - Regard to conditions under general approval for commercial vessel transit (shortest direct route) and regulatory requirements for interactions between vessels and cetaceans (EPBC Regulations 2000 – Part 8 Division 8.1 (Regulation 8.04 – Interacting with cetaceans) including:
 - Vessels will not travel at greater than 6 knots within 300m of a cetacean (caution zone) and minimise noise.
 - Vessels will not approach closer than 50m for a dolphin and/or 100m for a whale (with the exception of animals bow riding).
- Proposed action is not within proximity of any World Heritage or National Heritage, and is therefore not expected to impact on such values. Historic ‘Scottish Prince’ ship wreck will be clearly demarcated within an exclusion zone to avoid interference so as not be impacted by the proposal.
- The proposed action is not expected to have a significant impact on a wetland of international importance or migratory species – potential for indirect impacts as a result of pollution (loss of containment) or increased traffic on Ramsar wetland or associated migratory species in Moreton Bay will be managed so as not to impact on such values, in accordance with:
 - Regard to designated shipping routes and vessel speed restrictions specified in the Moreton Bay Marine Park User Guide (2015).
 - Further detailed assessment of worst case loss of containment event and potential plume trajectory in local conditions as part of future environmental impact assessment process.
 - Maintain comprehensive emergency response systems and loss of containment controls, including state of the art equipment and trained personnel.
- The proposed action is not expected to have a significant impact on any listed threatened species or ecological communities – where interactions with terrestrial, marine and migratory fauna have been identified, specific avoidance, mitigation and management measures have been identified so as not to have a significant impact on populations or habitats, including:
 - Minimise disturbance of existing vegetation and habitats, and implement rehabilitation strategy prioritising revegetation with local native species.
 - Implementation of traffic controls such as designated routes and speed limits for terrestrial and marine vehicle movements.
 - Adopt sensitive design principles and selective construction methods to minimise potential environmental impacts (sediment and turbidity, noise, etc.) on terrestrial and marine environments and fauna.
 - Further detailed environmental assessment of the proposal will involve an investigation conducted by a specialist underwater acoustics consultant to identify the site-specific underwater noise propagation zones for piling in an open ocean environment.
 - Monitor safety zones to identify approaching marine mammals and implement operational procedures to minimise the risk of impacts upon them.
- Further site-specific environmental assessments will be undertaken as part of a State assessment process for project approval.

7. Environmental Management and Mitigation Measures

This section describes the key environmental management and mitigations measures during the relevant stages of the project. These mitigation measures will be fully considered in the EIS process. The City is committed to ensuring this development is delivered in an environmentally responsible manner, and intends to put in place practical approvals, people/contractors, systems and processes to implement best practice environmental management.

Project environmental management will apply throughout the life of the project from design through to planning approval, construction and operation stages. This will be achieved by requiring environmental, social and economic issues to be addressed systematically via an accepted environmental management system.

During construction, measures to minimise environmental risks will be included in a fit for purpose Construction Environmental Management Plan to align with regulatory requirements, approvals and relevant national, State and local guidance. Construction equipment, materials and practice will be in accordance with relevant Australian and/or international standards, and effectively maintained to minimise noise and air quality.

The City will require a comprehensive environmental monitoring program to measure and record project-specific environmental performance and compliance with conditions of approval. Regular audits of environmental, safety and community performance will be undertaken by the proponent.

Table 12 outlines the detailed impact assessments that will be completed during the EIS process, and mitigation measures that will be employed to avoid or reduce impacts of the project.

Table 12: Landside and marine impact assessments, management plans and recommended mitigation measures

| Aspect | Detailed Impact Assessments | Management Plans | Mitigation / Further Study |
|-----------------------------|---|---|---|
| Landside | | | |
| Natural Environment | <ul style="list-style-type: none"> Geotechnical. Surface water. | <ul style="list-style-type: none"> Construction and Operational Environmental Management Plans, including PASS management. | <ul style="list-style-type: none"> Sensitive design principles. Management of works to accommodate season conditions. Standard soil and land management and mitigation measures such as erosion and sediment control. Specialised site-specific management measures for dune management. |
| Terrestrial Ecology | <ul style="list-style-type: none"> Terrestrial ecology. | <ul style="list-style-type: none"> Construction and Operational Environmental Management Plans. | <ul style="list-style-type: none"> Retention of native vegetation through design planning and construction phases where possible. Pre-works survey and relocation of fauna if required. Supplementary planting and revegetation. |
| Amenity | <ul style="list-style-type: none"> Air quality, noise, visual amenity and recreational values. | <ul style="list-style-type: none"> Construction and Operational Environmental Management Plans. | <ul style="list-style-type: none"> Opportunities for enhancement of the public space around the project area will be explored to increase recreational opportunities where possible. |
| Social and Economics | <ul style="list-style-type: none"> Social impact assessment in line with relevant guidelines. | <ul style="list-style-type: none"> Community Consultation Program. | <ul style="list-style-type: none"> Development and implementation of a community engagement plan Implementation of an educational program or collateral to inform small vessel owners and others navigating the surrounding project area. Establishment of working partnership arrangements with cruise line companies for local employment opportunities. |

| Aspect | Detailed Impact Assessments | Management Plans | Mitigation / Further Study |
|------------------------------|---|---|---|
| | | | <ul style="list-style-type: none"> • Collaboration with tourism bodies to support the development of new industries in the project area. • Provide unrestricted access along the beach and allow the public to pass under the jetty structure. |
| Cultural Heritage | <ul style="list-style-type: none"> • Cultural heritage | <ul style="list-style-type: none"> • A cultural heritage management plan will be developed for the project. | <ul style="list-style-type: none"> • Direct negotiations with traditional owners and the State. • An unexpected finds protocol will be implemented during construction. |
| Built Environment | <ul style="list-style-type: none"> • Assessments of required infrastructure and consultation with relevant providers. | <ul style="list-style-type: none"> • Development of infrastructure in line with relevant Australian Standards and requirements. | <ul style="list-style-type: none"> • Implementation of best practice design and construction management. • Maintain access to beach and Federation Walk. |
| Traffic and Transport | <ul style="list-style-type: none"> • Traffic modelling and impact assessment. | <ul style="list-style-type: none"> • Traffic Management Plan for both construction and operation. | <ul style="list-style-type: none"> • Where possible, schedule the movements of passengers around the existing traffic peaks for The Spit area. • Provide car parking for passengers and integrated coach transport to the project. • Upgrading key intersections and road infrastructure to increase capacity and to accommodate better traffic movements. |
| Waste management | <ul style="list-style-type: none"> • Waste management requirements for construction and operation. | <ul style="list-style-type: none"> • Development of Waste Management Plan for both construction and operation. | <ul style="list-style-type: none"> • Implementation of waste management hierarchy set out in the Queensland Environmental Protection (Waste Management) Policy and Regulation 2000. • Enforcement of MARPOL requirements for operation of the OCST. |
| Hazard and Risk | <ul style="list-style-type: none"> • Hazard and risk for the construction and operation of the project. | | <ul style="list-style-type: none"> • Implement mitigation through design. |
| Marine | | | |
| Coastal Processes | <ul style="list-style-type: none"> • Coastal process modelling and assessment. • Investigation of mitigation to manage salient formation and beach erosion impacts. | | <ul style="list-style-type: none"> • Coastal process model and impact assessment to determine require mitigation factors • Implement mitigation through design. . |
| Ecology | <ul style="list-style-type: none"> • Marine ecology assessment. • Assessment of underwater piling noise propagation to determine zones of | <ul style="list-style-type: none"> • Maritime Construction and Operations Management Plan. • Environmental Management Plan. | <ul style="list-style-type: none"> • Implementation of vessel speed and navigations restrictions to reduce risk of vessel strike. • Implement noise management strategy for piling and construction activities. • Pre-works survey targeted at risk species and use of marine fauna spotter / observer. |

| Aspect | Detailed Impact Assessments | Management Plans | Mitigation / Further Study |
|--------------|--|---|---|
| | impact. | | |
| Water | <ul style="list-style-type: none"> Marine water quality assessment. | <ul style="list-style-type: none"> Maritime Construction and Operations Management Plan. | <ul style="list-style-type: none"> Implementation of spill management plan |

8. Approvals Required for the Project

The project will be developed in accordance with Commonwealth, State and local government requirements. Potential approvals are detailed in Table 13.

A proponent must apply to have a project declared as a coordinated project under section 26(1) of the SDPWO Act. If the project is declared to be a 'coordinated project' an EIS is likely to be required under the SDPWO Act Part 4 of the Act sets out the requirement for the environmental assessment and public review of an EIS associated with a coordinated project.

The declaration for the project lapses if, within 18 months of the terms of reference being finalised, the Coordinator-General has not, under section 34A(1)(b), accepted a draft EIS for the project as the final EIS, unless a later period is granted by the Coordinator General under section 27A(3) of the SDPWO Act.

8.1 Approvals

The following Table 13 identifies potential Commonwealth, State and Local government approvals for the project. The coordinated project process through the office of the Coordinator General seeks approval associated with the Planning Act and the Environmental Protection Act. The Proponent is also seeking assistance from the Office of the Coordinator General to facilitate other project approvals that are not under the SDPWO Act as outlined in Section 8.2.

Table 13: Legislation relevant to the project

| Legislation | Administering Authority | Approval | Trigger | Relevance. |
|--|--|---|--|---|
| Commonwealth | | | | |
| <i>Environment Protection and Biodiversity Conservation Act 1999</i> | Department of Environment and Energy | Referral | Impact on Matter of National Environmental Significance | The project was referred to the Department of the Environment in March 2017. A Referral Decision was issued in May 2017 identifying the project to be 'not a controlled action if undertaken in a particular manner'. The particular manner includes a range of requirements in relation to managing the potential impacts of the project on marine mammals (e.g. from construction noise and vessel strike). |
| <i>Environmental Protection (Sea Dumping) Act 1981</i> | Department of Environment and Energy | Sea Dumping Permit | Disposal of material at sea. | A Sea Dumping Permit is required under the Act for dumping dredged material at sea. The project does not require disposal of dredged material. |
| <i>Sea Installation Act 1987</i> | Department of Environment and Energy | Sea Installation Permit | Installation of a built structure that can be used for an environment related activity. | The Sea Installations Act applies from the 3 nautical mile State limit to the outermost limits of Australian waters. For external Territories, it applies from the coast outwards. |
| <i>Historic Shipwrecks Act 1976</i> | Department of Environment and Energy | Permit | Works within a Protected Zone and / or Presence of shipwreck on Australian National Shipwreck Database. | The Scottish Prince historic shipwreck is listed in the Australian National Shipwrecks Database (Shipwreck Id Number: 3107). The wreck does not lie within a protected or no-entry zone. |
| State | | | | |
| <i>Planning Act 2016, Environment Protection Act 1994</i> | Department of Infrastructure, Local Government and Planning, Department of Environment and Heritage Protection | Development Permit - Material Change of Use for Environmentally Relevant Activity (ERA) 16 Extractive and | Dredging a total of 1,000t or more of material from the bed of naturally occurring surface waters in a year. | Maintenance dredging if required for the project. |

| | | | | |
|--|---|---|--|---|
| | | screening activities | | |
| <i>Planning Act 2016, Environment Protection Act 1994</i> | Department of Infrastructure, Local Government and Planning, Department of Environment and Heritage Protection | Development Permit - Material Change of Use for Environmentally Relevant Activity (ERA) 56 Regulated waste storage | Regulated waste storage consisting of operating a facility for receiving and storing regulated waste for more than 24 hours under the <i>Environmental Protection Act 1994</i> . | Receiving and storing of regulated waste from vessels |
| <i>Planning Act 2016, Environment Protection Act 1994</i> | Department of Infrastructure, Local Government and Planning, Department of Environment and Heritage Protection | Development Permit - Material Change of Use for Environmentally Relevant Activity (ERA) 8 Chemical Storage | Threshold for chemical storage under the <i>Environmental Protection Act 1994</i> . | Chemical storage of shipping fuel if undertaken. |
| <i>Planning Act 2016, Vegetation Management Act 1999</i> | Department of Infrastructure, Local Government and Planning, Department of Environment and Heritage Protection | Development Permit - Operational Works for the clearing of native vegetation | Assessable Development under the Planning Regulation 2017. | The project may trigger the need for a Development Permit for clearing native vegetation to facilitate the construction of the terminal. |
| <i>Planning Act 2016, Coastal Protection and Management Act 1995</i> | Department of Infrastructure, Local Government and Planning, Department of Environment and Heritage Protection, | Development Permit – Operational Works for Prescribed Tidal Works and | Assessable Development under the Planning Regulation 2017. | Tidal works is work that is undertaken on land that is in, on, or above, land under tidal water (MHWS), or land that will, or may be, under tidal water because of development on or near the land. |

| | | | | |
|--|--|---|---|---|
| | City of Gold Coast | interfering with quarry materials within the Coastal Management District | | |
| <i>Planning Act 2016, Fisheries Act 1994</i> | Department of Infrastructure, Local Government and Planning, Department of Agriculture and Fisheries | Development Permit – Operational Works for the removal, destruction or damage of marine plants) | Assessable Development under the Planning Regulation 2017. | Marine plants grow on or adjacent to tidal lands. They include mangroves, seagrass, saltcouch, algae, samphire (succulent) vegetation and adjacent plants, such as melaleuca (paper barks) and casuarina (coastal she-oaks). Anything that grows below the highest astronomical tide (HAT) line is considered a marine plant (i.e. if you have melaleucas growing below HAT they become a marine plant as they form part of the overall fish resource). If a marine plant is situated above the HAT it is still considered a marine plant and requires approval to be removed (i.e. if saltmarsh is growing above HAT it is still a marine plant). |
| <i>Aboriginal Cultural Heritage Act 2003</i> | Relevant Aboriginal Party and Department of Aboriginal and Torres Strait Islander Partnerships | Compliance with <i>Aboriginal Cultural Heritage Act 2003</i> Duty of Care Guideline | Works that have the potential to interfere with places, artefacts and landscapes of Aboriginal heritage or spiritual culture. | Applicable to vegetation clearance and earthworks associated with the project |
| <i>Land Act 1994</i> | Department of Natural Resources and Mining | Allocation of land tenure | Request for tenure over State land. | As the land is currently a reserve held in trust by Council, appropriate tenure will have to be established. This will include seabed leases as required by the project for ocean side infrastructure. |
| Local | | | | |

| | | | | |
|---------------------------------------|---|--|--|---|
| <i>Planning Act 2016</i> | Department of Infrastructure, Local Government and Planning, City of Gold Coast | Development Permit – Material Change of Use | Assessable Development under the Gold Coast Planning Scheme. | The project will likely trigger a Development Permit for a material change of use for the new landside terminal facility under the Gold Coast Planning Scheme. |
| <i>Planning Act 2016</i> | Department of Infrastructure, Local Government and Planning, City of Gold Coast | Development Permit – Operational works for earthworks, stormwater, roadworks, erosion and sediment control | Assessable Development under the Gold Coast Planning Scheme. | Project construction work will likely trigger the need for a Development Permit for operational works under the Gold Coast Planning Scheme (earthworks, stormwater, roadworks, erosion and sediment control). |
| <i>Building Act 1975</i> | City of Gold Coast | Development Permit – Building works | Assessable Development under the Gold Coast Planning Scheme. | Building permits will be required prior to the construction of project infrastructure |
| <i>Local Government Act 2009</i> | City of Gold Coast | Road Excavation Permit | <i>Council of the City of Gold Coast, Subordinate Local Law No. 11.1 (Interference with a Road) 2008</i> | A local road excavation permit may potentially be required for excavation work associated with the project in Seaworld Drive. |
| <i>Local Government Act 2009</i> | City of Gold Coast | Road Closure Permit | <i>Council of the City of Gold Coast, Subordinate Local Law No. 11.1 (Interference with a Road) 2008, Part 2 Interference with a road, 5 Application for a permit Section 96 of the Transport Operations (Road Use Management) Act</i> | A local road closure permit may potentially be required for the temporary closure of Seaworld Drive associated with project construction work, |
| <i>Plumbing and Drainage Act 2002</i> | City of Gold Coast | Compliance assessment of plumbing works | Compliance assessable plumbing work | Prior to the commencement of compliance assessable plumbing work, a submission to The City of Gold Coast for approval will be required |

8.2 Other State legislation considerations

The following project approvals require a collaborative government approach, specifically the declaration of a port in the State of Queensland. The proponent is seeking the Office of the Coordinator General to facilitate and assist in the approvals process for the following legislation and project outcomes.

Aboriginal Cultural Heritage Act 2003

A Cultural Heritage Management Plan may be required under the Queensland *Aboriginal Cultural Heritage Act 2003* for a project that requires an EIS.

Transport Infrastructure Act 1994

The *Transport Infrastructure Act 1994* is associated with declaration of a port in the State of Queensland. A separate Ministerial process is required to declare a port.

Queensland Heritage Act 1992

The *Queensland Heritage Act 1992* protects non-indigenous cultural heritage by listing heritage places on the Queensland Heritage Register and requiring separate approvals for development on places listed on the Register.

Environmental Protection Act 1994 (Qld)

Sections 36 and 37 of the *Environmental Protection Act 1994* (EP Act), notes that all persons have a duty of care to the environment. Therefore, it is not permissible to cause environmental harm (as defined in the Act) while undertaking any activity unless all reasonable and practical means are taken to minimise that harm.

9. Costs and Benefits Summary

This section outlines the cost and benefits associated with the project, highlighting the economic and employment opportunity the project represents as a key piece of tourism infrastructure.

9.1 Local, State and National Economies

The investment, construction and operation of the OCST represents a significant economic contribution to the region. It will contribute an increased demand for goods and services across a broad range of services, with the additional benefit of a cruise ship service industry being established to support home port activities and logistics.

The development of the OCST has the potential to contribute a significant economic return to the Gold Coast, and more broadly, Queensland. The benefits are derived from three main sources:

- **Port charges revenue:** this includes all port charges and docking fees for visiting cruise ships.
- **Passenger and crew expenditure:** this includes expenditure by passengers and crew at shore while disembarked (i.e. during 'days at port'). Note: this does not include induced visitation expenditure outlined below. This amounts to approximately \$27 million in the first year of operations. This represents the most conservative of three potential scenarios considered (Scenario 1).
- **Induced visitor expenditure:** this includes tourism expenditure (including accommodation, dining, entertainment, shopping) for passengers that stay overnight on the Gold Coast before and/or after a cruise. This amounts to approximately \$20 million in the first year of operations. This represents the most conservative of three potential scenarios considered (Scenario 1).

Additionally, there is a supplementary benefit predicted from commercial rent income from the OCST. On a net present value basis, these benefits equate to \$1.37 billion over the life of the project. With an estimated capital cost of \$463 million (\$450 million in NPV terms), this indicates a benefit cost ratio (BCR) of 3.3. Scenario analysis within the business case has shown that the BCR is expected to range between 3.0 and 3.9.

In addition to these benefits, the OCST will have a positive economic impact for The City and Queensland through increased visitation and output. It is estimated that the economic impact on the Gold Coast from the OCST will include:

- Estimated annual passenger and crew expenditure of \$27million in the opening year, increased to \$97 million when at full operational capacity An expected 673 full-time equivalent (FTE) jobs during the construction phase and between 1,600 and 2,000 FTE jobs during the operations phase (based on average job level creation estimates)

An OCST would generate a significant economic return for the region and would generate new industries and job opportunities for local residents. The scale of the economic benefits makes this a worthwhile investment for The City to pursue its growth and liveability.

9.2 Natural and Social Environments

The OCST is a regionally significant tourism infrastructure proposal offering the following benefits:

- generation of new long term direct and indirect employment opportunities for the local community across a broad range of employment sectors
- Potential to create a globally iconic and recognisable marine structure that acts as a unique visitor experience for cruise ships visiting the Gold Coast
- A new publically accessible visitor destination that would allow unique views of the Gold Coast foreshore and ocean environment
- Compared to other previous CST proposals, the ocean-side location of the project would minimise impact upon the Broadwater including environmental habitat, community use and conflict with other water users.

Potential impacts upon existing coastal processes and sand movement may alter the existing beach profile, location and frequency of key surf breaks or the physical land form of The Spit. The project will have a direct

impact upon the foreshore environment along The Spit and there will be some localised removal of existing vegetation. However the landside project area is already substantially cleared and existing vegetation is largely domestic or park style landscaping rather than natural habitat. The project will interface with both the beach area and foreshore walking tracks, including Federation Walk. This impact would be minimised with the community still able to pass under the jetty structure as it traverses the foreshore and beach area.

The broader social and environmental impacts associated with the project will be considered as part of the assessment process and will be addressed through appropriate mitigation measures and design development.

10. Community and Stakeholder Consultation

The development of a CST on the Gold Coast has been a concept since 2001. Since this time, there have been several iterations and proposals for a CST, a number of which have been the subject of extensive community consultation. As a result, the Gold Coast community is highly aware of the concept of a CST and the importance of the project to the region.

Gold Coast Broadwater Community Consultation

Consultation activities over the past 10 years have provided numerous opportunities for the community to provide feedback on the various projects across the Broadwater and have generated considerable background information and evidence of community opinion. These views and opinions have informed, and will continue to guide, the process of The City and State in establishing the long-term future for The Spit.

Public and private proposals, both stand-alone and as part of integrated developments, have been investigated. Locations have varied widely from within the Gold Coast Broadwater, near Southport, to offshore on the southern end of the Gold Coast, near Tugun. Community awareness about proposals for a Gold Coast CST is high. Extensive community and stakeholder engagement has been undertaken for the Notional Seaway project [Environmental Impact Statement](#), including [Social Impact Assessment in 2005 / 2006](#).

To ensure that the State is aware of public sentiment and opinion regarding the future for the Gold Coast Broadwater and Spit, further market research and community engagement has been undertaken. This has included specific consultation on the future of parks and open space on The Spit including Doug Jennings Park and Philip Park (proposed location of the OCST):

- 2016 - Gold Coast Broadwater, Spit and Surrounds, [Market Research](#)
- 2017 – Gold Coast Integrated Resort Development and Spit Parklands – Community Consultation, [Consultation Report](#)

OCST Community Consultation

Acknowledging the level of community interest in development of a CST, The City has provided extensive on-line resources to enable easy access to information about past, current and prospective OCST proposals. The community has been provided access to information regarding project progress, key reports and background information which has been hosted on dedicated [OCST](#) web page.

In addition, Council decisions related to the current OCST, and previous OCST proposals, have also been broadly circulated to local media, with media releases posted and retained on Council's [website](#).

A formal consultation period was held in March 2017 as part of the referral process to the Department of the Environment and Energy under the EPBC Act. This included:

- Public advertising of the Federal Government's Environment Protection and Biodiversity Conservation (EPBC) Referral (2017/7899).

Project feasibility work undertaken to inform the business case included targeted stakeholder engagement. Four project workshops were held over a three-month period, between September and November 2016 to explore options through investment logic, risk and multi-criteria analysis. Participants included Gold Coast based industry, business and research leaders, coastal specialists and consultant technical advisers.

The feasibility phase also included significant market sounding, shaped specifically for the level of detail required for each milestone. Market sounding with the cruise ship industry has highlighted a compelling need for additional infrastructure to continue the strong growth in the segment and was used to refine the technical design of the proposal.

Outcomes of previous community consultations, along with stakeholder engagement, have informed this IAS document and will provide a baseline for future consultation. Detailed, OCST-specific community consultation and stakeholder engagement will be undertaken as part of the EIS which will include detailed assessment of the

potential impacts of the project upon the physical, social and economic environments present within the study area.

Proposed EPBC and EIS public notification periods are described in the following flowchart. This includes the steps at which The City will seek endorsement to proceed at key milestone within the assessment process:

Project Development Phase EPBC, EIS and Council process

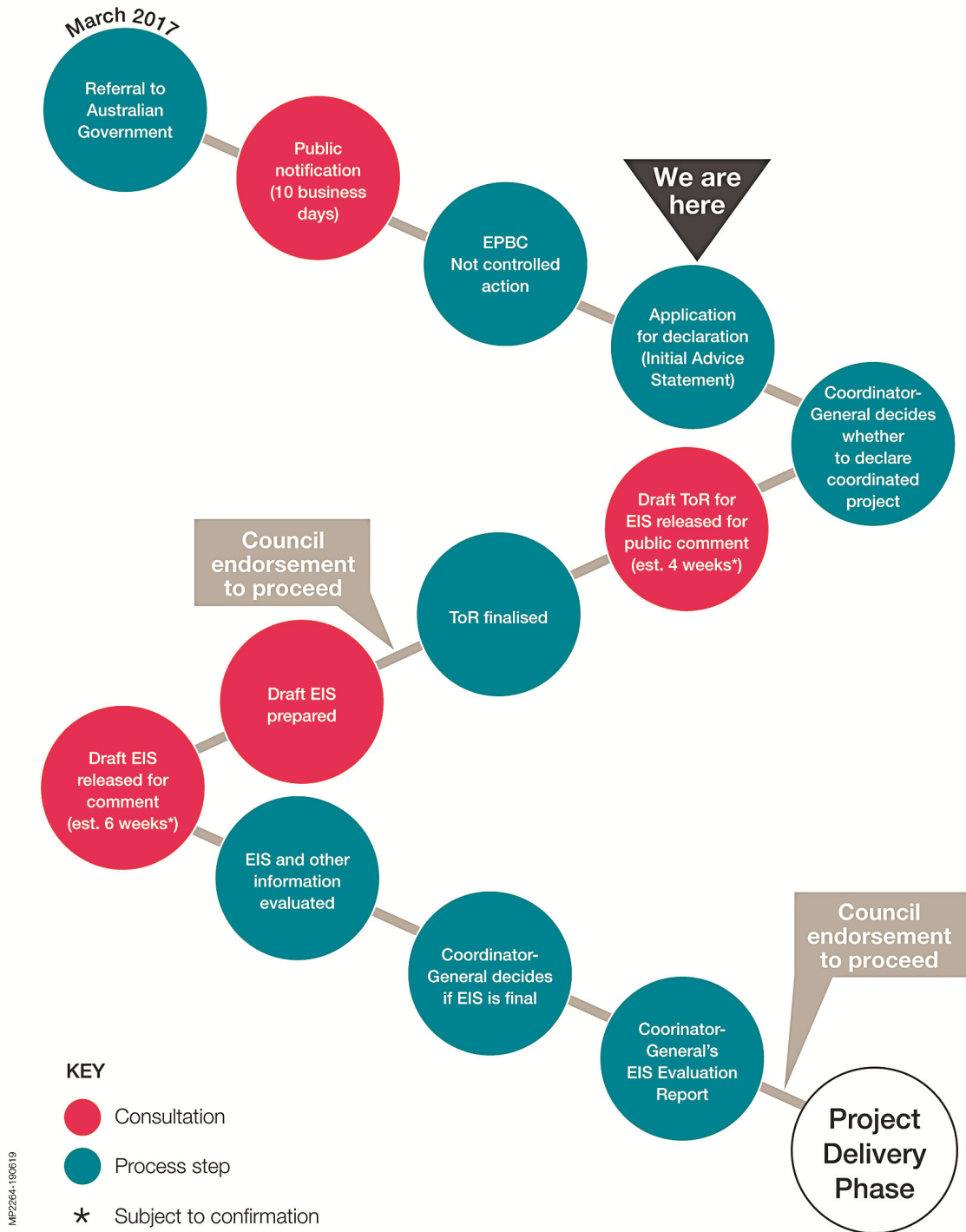


Figure 11: Project Assessment Timetable

11. References

- ABS 3218.0. (2016). *Regional Population Growth, Australia, and Queensland Treasury estimates*. Retrieved July 2017, from Queensland Treasury: <http://www.qgso.qld.gov.au/products/tables/erp-lga-qld/index.php>
- AECOM. (2016). *Ocean-side Cruise Ship Terminal - Matters of National Environmental Significance*. Brisbane: AECOM Australia Pty Ltd (AECOM), for City of Gold Coast.
- Australian Cruise Association (ACA). (2016). *Economic Impact Assessment of the Cruise Industry in Australia, 2015-16*.
- Biodiversity Assessment and Management Pty Ltd (BAAM). (2017). *Terrestrial Ecology Assessment, Gold Coast Cruise Ship Terminal Main Beach*.
- BMT WBM. (2017). *Marine Benthic Habitat Mapping – Proposed Cruise Ship Terminal*.
- City of the Gold Coast. (2014a). *Gold Coast Destination Tourism Management Plan 2014-2020*.
- City of the Gold Coast. (2014b). *Gold Coast Tourism Industry Report*.
- City of the Gold Coast. (2015). *Gold Coast City Plan*.
- Cruise Line International Association Australasia. (2015). *Cruise Industry Source Market Report*. Ocean Cruise Passengers Australia.
- Cruise Lines International Association. (2016). Retrieved July 2017, from http://www.cruising.org/docs/default-source/research/2016_clia_sotci.pdf?sfvrsn=4
- Department of Science, Information Technology and Innovation. (2017). *Gold Coast wave monitoring*. Retrieved from <https://www.qld.gov.au/environment/coasts-waterways/beach/waves-sites/gold-coast>
- Guinea, M. (2007). *Marine snakes: species profile for the north-western planning area*. Northern Territory: Department of the Environment, Water, Heritage and the Arts.
- Jabree. (2013). *Desktop Cultural Heritage Assessment for Gold Coast Cultural Precinct*. Gold Coast City Council.
- Jones, A., Gladstone, W., & Hacking, N. (2004). Sandy-Beach Ecosystems and Climate Change: Potential Ecological Consequences and Management Implications. *The Second Decade – Coastal Planning and Management in Australia towards 2014 Proceedings of Coast to Coast 2004, Australia's 6th National Coastal Management Conference*.
- Maritime Safety Queensland. (2017). *Tidal planes*. Retrieved July 2017, from <https://www.msq.qld.gov.au/Tides/Tidal-planes.aspx>
- McLauchlan, A., & Brown, A. (2006). The ecology of sandy shores. Burlington. *Acadamy Press*.
- Morcombe, M. (2004). *Field Guide to Australian Birds*. Steve Parish Publishing.

National Oceanic and Atmospheric Administration (NOAA). (2011). *Interim Sound Threshold Guidance for Marine Mammals*. <http://www.nwr.noaa.gov/Marine-Mammals/MM-sound-thrshld.cfm>.

National Research Council. (2005). *Marine Mammal Populations and Ocean Noise – Determining When Noise Causes Biologically Significant Effects*.

PWC. (2017). *Ocean-side Cruise Ship Terminal: Preliminary Business Case (DRAFT)*. PricewaterhouseCoopers Australia (PwC) for Council of the City of Gold Coast.

(2011). *Queensland Government population projections to 2031: local government areas*. Queensland Treasury.

Richardson, J., Greene, C., Malme, C., & Thomson, D. (1995). *Marine Mammals and Noise*. Elsevier.

Sobtzick, S., Hagihara, R., Grech, A., Jones, R., Pollock, K., & Marsh, H. (2015). *Improving the time series of estimates of dugong abundance and distribution by incorporating revised availability bias corrections*. Final report to the Australian Marine Mammal Centre.

12. Acronyms and Abbreviations

| | |
|----------------------|--|
| ABS | Australian Bureau of Statistics |
| ACA | Australian Cruise Association |
| AECOM | AECOM Australia Pty |
| BCR | Benefit Cost Ratio |
| CBD | Central Business District |
| CST | Cruise Ship Terminal |
| DATSIP | Department of Aboriginal and Torres Strait Islander Partnerships |
| DEHP | Department of Environment and Heritage Protection |
| EIS | Environmental Impact Statement |
| EP Act | <i>Environmental Protection Act 1994</i> |
| EPBC Act | <i>Environment Protection and Biodiversity Act 1999</i> |
| EPP Air | <i>Environmental Protection (Air) Policy 2008</i> |
| EPP Noise | <i>Environmental Protection (Noise) Policy 2008</i> |
| IAR | Impact Assessment Report |
| IAS | Initial Advice Statement |
| LGA | Local Government Area |
| MNES | Matters of National Environmental Significance |
| NC ACT | <i>Nature Conservation Act 1992</i> |
| NOAA | National Oceanic and Atmosphere Administration |
| NPV | Net Present Value |
| OCST | Port of Gold Coast - Ocean-side Cruise Ship Terminal |
| PNCG | Planning for Noise Control Guideline |
| PTS | Permanent Threshold Shift |
| PWC | PricewaterhouseCoopers Australia |
| SA2 | Statistical Area Level 2 |
| SDPWO Act | <i>State Development and Public Works Organisation Act 1971</i> |
| SEQ | South East Queensland |
| ShapingSEQ | South East Queensland Regional Plan |
| The City | The City of Gold Coast |
| The City Plan | Gold Coast City Plan 2015 |
| TOR | Terms Of Reference |
| TOS | The Other Side |
| TRA | Tourism Research Australia |
| TTS | Temporary Threshold Shift |
| WONS | Weed of National Significance |

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