

# CAIRNS SHIPPING DEVELOPMENT PROJECT

## Revised Draft Environmental Impact Statement

### APPENDIX AZ: Landscape and Visual Impact Assessment: Tingira Street DMPA Report (2017)





# Landscape and Visual Impact Assessment – Tingira Street DMPA

Cairns Shipping Development Project

WE16066

Prepared for  
Ports North

11 April 2017




## Contact Information


**Cardno (Qld) Pty Ltd**  
ABN 57 051 074 992

Level 11 Green Square North Tower  
515 St Paul's Terrace  
Locked Bag 4006  
Fortitude Valley Qld 4006

Telephone: 07 3369 9822  
Facsimile: 07 3369 9722  
International: +61 7 3369 9822

cardno@cardno.com.au  
www.cardno.com.au

Author(s):   
Tracey Hooper

Approved By:   
Alan Chenoweth

## Document Information

Prepared for	Ports North
Project Name	Cairns Shipping Development Project
File Reference	Tingira Street DMPA Visual Impact Assessment V1.docx
Job Reference	WE16066
Date	11 April 2017

Effective Date	11 April 2017
----------------	---------------

Date Approved:	11 April 2017
----------------	---------------

## Document History

Version	Effective Date	Description of Revision	Prepared by	Reviewed by
A	05/04/2017	Draft	TM/TH	AC
1	11/04/2017	Issue	TH	AC

© Cardno. Copyright in the whole and every part of this document belongs to Cardno and may not be used, sold, transferred, copied or reproduced in whole or in part in any manner or form or in or on any media to any person other than by agreement with Cardno.

This document is produced by Cardno solely for the benefit and use by the client in accordance with the terms of the engagement. Cardno does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by any third party on the content of this document.

## Table of Contents

<b>1</b>	<b>Introduction</b>	<b>1</b>
1.1	Background	1
1.2	Project Description	1
<b>2</b>	<b>Approach and Methodology</b>	<b>3</b>
2.1	Introduction	3
2.2	Viewshed Modelling and View Corridors	3
2.3	Visual Sensitivity	4
<b>3</b>	<b>Policy Context and Legislative Framework</b>	<b>5</b>
3.1	Great Barrier Reef	5
3.2	Ports North	6
3.3	Cairns Regional Council	8
<b>4</b>	<b>Existing Landscape and Visual Conditions</b>	<b>12</b>
4.1	Landscape Character and Values of Portsmith	12
4.2	Tingira Streetscape	13
4.3	Landscape Features and Regional Landscape Values - Trinity Inlet and Smiths Creek	13
4.4	World Heritage and National Heritage	14
<b>5</b>	<b>Visibility of the Tingira Street DMPAs</b>	<b>15</b>
5.1	Visibility Modelling	15
5.2	Summary of Visibility	18
5.3	Scenic and Aesthetic Values of the GBRWHA	18
<b>6</b>	<b>Landscape and Visual Impacts and Mitigation</b>	<b>21</b>
6.1	Landscape and Visual Impacts	21
6.2	Summary of Landscape and Visual Impacts	21
6.3	Mitigation Measures	22
<b>7</b>	<b>Conclusion</b>	<b>23</b>

## Appendices

### Appendix A ZVI and Viewshed Modelling

## Tables

Table 3-1	Great Barrier Reef Related Policy	5
Table 3-3	CairnsPlan 2016	8
Table 5-1	GBRWHA Aesthetic Attributes represented near Tingira Street	20

## Figures

- Figure 1-1 Tingira Street DMPA Site Layout
- Figure 1-2 Tingira Street DMPA Locality
- Figure 2-1 LiDAR Excerpt
- Figure 4-1 Aerial view of Portsmith - including Admiralty Island to Bayview Heights in the Background  
(*Source: Peter John Tate 2011 *Panoramio**)
- Figure 4-2 View of Tingira Street DMPA (November 2016)
- Figure 4-3 Moored boats in Smiths Creek (November 2016)
- Figure 5-1 ZVI of Tingira Street DMPA
- Figure 5-2 Viewshed from Smiths Creek

# 1 Introduction

## 1.1 Background

This study forms part of a suite of documents in support of the Revised Draft EIS with respect to the 'Existing Situation' of the Cairns Shipping Development Project (CSDP) for Far North Queensland Ports Corporation Limited (Ports North). Originally conceived to upgrade the infrastructure for the Port of Cairns to accommodate larger cruise ships and future expansions of HMAS Navy base operations, a Draft EIS was referred to the Queensland Government in support of this (2014).

The revised EIS refers to assessment of the recalibrated project based on s.1.4 of the EIS Overview which proposes land based placement options for dredge spoil, including stiff clay, in addition to redefining the extent of channel dredging and dredge volumes.

This report assesses the proposal to place dredge material comprising stiff clay on strategic port land at a location in Tingira Street, Cairns, referred to as the Dredge Material Placement Area (DMPA). The assessment of the existing visual environment of the Tingira Street location builds on the Draft EIS chapter B12 Landscape and Visual assessment undertaken for Ports North, and assesses the recalibrated project in response to the relevant Terms of Reference (ToR) section 5.2.2 Scenic amenity and lighting.

Preliminary viewshed mapping has been undertaken to determine landscape sensitivity and risk assessment associated with the Tingira Street site and will inform the next stage of the Revised Draft EIS study and the assessment of cumulative impacts of the proposed shipping development project.

## 1.2 Project Description

The original CSDP (2012-2014) was recalibrated in 2015 to redefine the extent of channel dredging by considering changes to target cruise ships and assessing the impact on channel design to reduce dredge volumes and costs. A dredge material placement options study was undertaken to expand the land base placement options assessed in the draft EIS, and recommended nominal sites within two placement precincts, including the Northern Sands site and another at East Trinity. The proposed East Trinity location has been replaced by the Tingira Street DMPA location as the preferred placement area for stiff clays. The Northern Sands remains the preferred location for the DMPA for soft clays. Assessment of the Northern Sands site has been undertaken separately and is not included within this report.

The CSDP will require the land based placement of approximately 710,000m<sup>3</sup> soft clays and up to 80,000m<sup>3</sup> stiff clay material at the two separate DMPA's. The stiff clay material will be shipped by barge to the Tingira Street DMPA and will be transferred to shore in split hopper barges via a temporarily moored barge mounted excavator, loading heavy haulage vehicles at the two barge ramps along Smiths Creek. This potentially requires some minor earthworks, including temporary piles at the ramps to facilitate unloading.

The Tingira Street DMPA comprises three lots, Lot 27 SP218291, Lot 774 SP218291 and Lot 775 SP218291 with an area of 26.93ha. Within the DMPA there are two proposed placement sites; a 1.3 hectare area, and a 4ha adjoining the future barge ramp facility (Figure 1-1). The proposal is to stockpile the stiff clay spoil to a nominal height of approximately 1.5m, compacted and shaped with a free-draining crest. The placed material is to be used as preload to accelerate settlement and thereby facilitate the use of the land as part of planned industrial park. This future use has not been considered as part of this assessment.

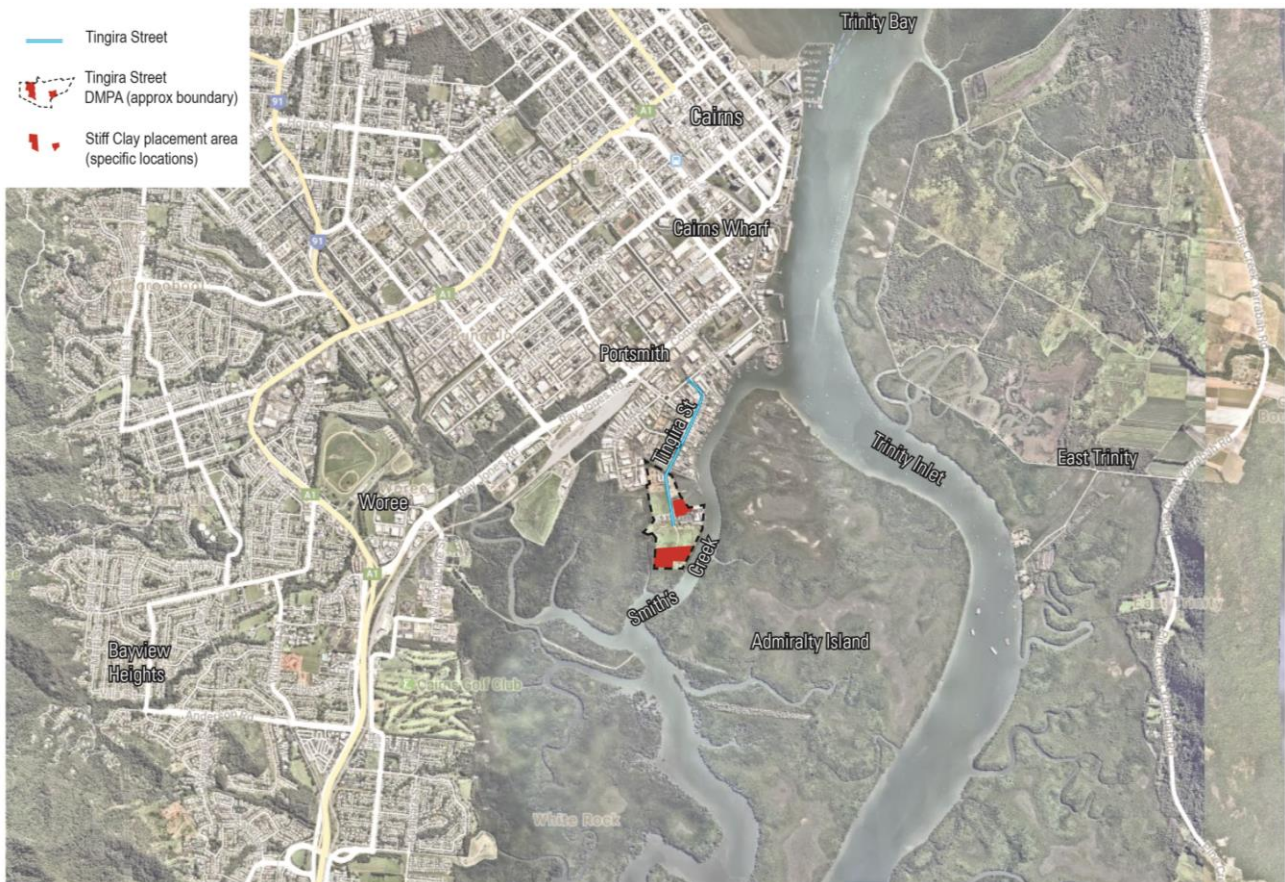
The Tingira Street DMPA is located in an industrial estate of Portsmith, a suburb of Cairns, with frontage to Smiths Creek, a tributary of Trinity Inlet (Figure 1-2). It is currently used for a number of purposes including port facilities, marine training, car parking and Queensland Transport (Marine Division).

The study area for this visual and landscape impact assessment also includes parts of the Cairns urban footprint, the Port of Cairns and surrounding tributaries, including the low lying areas of Admiralty Island and East Trinity.





**Figure 1-1 Tingira Street DMPA Site Layout**



**Figure 1-2 Tingira Street DMPA Locality**



## 2 Approach and Methodology

### 2.1 Introduction

As required by the ToR, this study describes and identifies the existing landscape and visual character of the landscape and the general impression that would be obtained while travelling through and around it in terms of existing landscape features, panoramas and views that have, or could be expected to have, value to the community. Through reference to maps and photographs, this study addresses major views, viewsheds, outlooks and features and focal points, landmarks, waterways and other features contributing to the visual quality and character of the setting contributing to the amenity of the area, scenic integrity and landscape character values, as well as the aesthetic values of the GBRWHA.

This study forms an additional part of the technical studies undertaken as part of the Existing Situation of the DMPA options, and considers the resources, values, threats, opportunities and constraints in terms of the existing visual environment of the proposed Tingira Street location. This visual impact assessment relates to the operational activities and material placement, not future land use per se, although some recommendations for mitigation may still manage post-operational impacts.

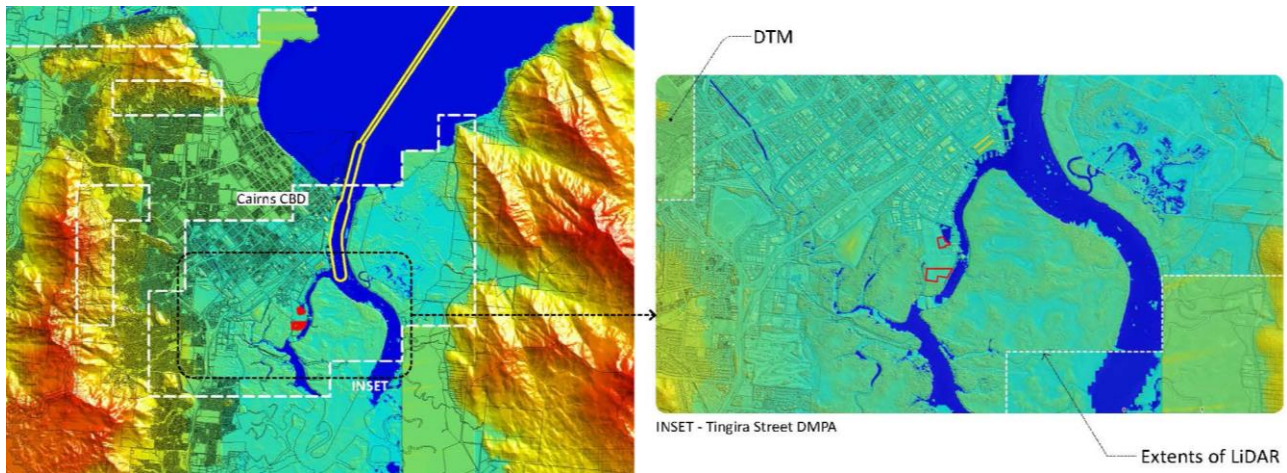
The visual environment is considered in a local, district and regional context, including scenic values, landscape character, views and view corridors, which are analysed to identify the landscape sensitivity of the proposed Tingira Street DMPA and enables an assessment of potential landscape and visual impacts from the use of this site to be undertaken. This assessment is based on a combination of desktop review of air photos, topographic data and information from previous studies undertaken in the region, and from a site visit undertaken by Cardno in association with the preparation of the Landscape and Visual Existing Environment report prepared for this project in October 2016. Documents reviewed in the preparation of this report incorporate:

- > CSDP Landscape and Visual Assessment – Existing Environment (Cardno, 2016);
- > CSDP Project Draft EIS (Ports North, 2014);
- > Cairns Regional Council *CairnsPlan* 2016 Version 1.0 (Cairns Regional Council, 2016);
- > Cairns Region Scenic Amenity Study (Cardno Chenoweth, 2012);
- > Operational Guidelines for the Implementation of the World Heritage Convention (UNESCO, 2015);
- > Defining the Aesthetic Values of the Great Barrier Reef: Final Report for SEWPaC (Context, 2013);
- > Reef 2050 Long-Term Sustainability Plan (Commonwealth of Australia, 2015);
- > Great Barrier Reef Region Strategic Assessment: Strategic assessment report (Great Barrier Reef Marine Park Authority (GBRMPA), 2014);
- > State of Queensland 2013, Great Barrier Reef Coastal Zone Strategic Assessment: strategic assessment report (State of Queensland, 2013); and
- > Great Barrier Reef Coastal Zone Strategic Assessment 2014: supplementary strategic assessment report (State of Queensland 2014).

### 2.2 Viewshed Modelling and View Corridors

The approach undertaken for the assessment of this DMPA relies on preliminary desktop analysis in identifying the visibility and visual sensitivity of the project site and likely receptors. However, the availability of Light Detection And Ranging (LiDAR) data for this study enables mapping of areas within view of the DMPA, and specifically areas within important view corridors, through digital contour information to prepare a Digital Surface Model (DSM) of the project site. A DSM uses a combination of LiDAR, Digital Elevation Models (DEM) and Digital Terrain Models (DTM) derived from 10m and 5m contours.

The DSM includes both terrain plus heights of vegetation and buildings (Figure 2-1 and Appendix A) and provides a more accurate model for viewshed and other mapping than the Draft EIS assessment with respect to landscape and visual amenity considerations.



**Figure 2-1 LiDAR Excerpt**

To determine the visibility of the DMPA, a number of visibility points were located on the two material placement areas (Figure 5-1 and Appendix A). A hypothetical viewshed was then run which models the Zone of Visual Influence (ZVI) and shows places within view of these points. This ZVI was then checked by desktop survey and analysis of archived photos taken from previous studies, and a number of representative view corridors were selected for detailed assessment. These were:

1. Views from Tingira Street;
2. Views from hillside suburbs such as Bayview Heights;
3. Cairns City;
4. Ships berthed at the Port of Cairns; and
5. Offshore views from Smiths Creek and Trinity Bay, Admiralty Island, and offshore waters of the Great Barrier Reef World Heritage Area (GBRWHA).

Significant viewpoints such as scenic routes, lookouts and important view corridors were also considered (notwithstanding that the ZVI indicates they will not be within view) to assess locations such as the Bruce Highway, Ray Jones Drive and popular walking trails, at a finer grain.

Although the ToR (s.5.2.2) requires assessment from private residences, preliminary modelling indicates that buildings within view are commercial and industrial sheds, and not public places or areas of sensitivity. While there are potentially houses with views to the site from long distance views (between 5km in the west and 7km north-west of the site), these residences were not individually inspected given that distance reduces receptor sensitivity. Notwithstanding this, views from nearby roads were selected and subject to desktop analysis by way of determining sensitivity of a house.

## 2.3 Visual Sensitivity

The landscape sensitivity of a site can constrain any proposed use, with the site sensitivity analysis helping guide recommendations including to modify design or mitigate impacts in subsequent stages of assessment.

In order to test the sensitivity of material placement of stiff clays for the Tingira Street site, the study area was modelled together with the ZVI, at an approximate 1.5m material height. This identified the visibility of the site, including from sensitive viewpoints or significant view corridors, such as from GBRWHA, indicating the level of sensitivity the location has as part of its existing situation, without mitigation.

### 3 Policy Context and Legislative Framework

The policy and legislative context in which the project is located was included in Section B12.1.2 of the CSDP Draft EIS. The following section provides an overview of legislation and policy that has been introduced or changed following the preparation of that document.

#### 3.1 Great Barrier Reef

The aesthetics of the Great Barrier Reef are addressed to varying degrees in a number of government documents (Table 3-1). Each of these make reference to the Outstanding Universal Values of the GBRWHA, in particular Criterion (vii) which relates to aesthetic quality as described in Section 5.3.

**Table 3-1 Great Barrier Reef Related Policy**

Document	Applicability to Project and Values Present
Reef 2050 Long-Term Sustainability Plan (2015)	<p>The Reef 2050 Long-Term Sustainability Plan provides an overarching strategy for management of the Great Barrier Reef and was prepared in response to the 2011 World Heritage Committee request for a coordinated and comprehensive long-term plan for the Great Barrier Reef.</p> <p>The plan is an overarching strategy for the management of the Great Barrier Reef with funding for its implementation provided by the Australian and Queensland governments. One of the principles of decision making is <i>Maintaining and enhancing outstanding universal value in every action</i>, incorporating:</p> <ul style="list-style-type: none"> <li>&gt; <i>Protecting the outstanding universal value of the World Heritage Area is the prime consideration when planning development and management decisions are made;</i></li> <li><i>and</i></li> <li>&gt; <i>Economic growth is sustainable and consistent with protecting outstanding universal value.</i></li> </ul>
Great Barrier Reef Region Strategic Assessment – Strategic Assessment Report (2014)	<p>This Strategic Assessment Report has been prepared in conjunction with the State Coastal Zone Strategic Assessment to improve <i>effectiveness in managing existing and emerging risks to the Great Barrier Reef</i>.</p> <p>This report addresses aesthetics of the marine component of the Great Barrier Reef linking it with community benefits of the environment.</p> <p>Port activities are identified as activities adjacent to the region with the report identify potential impacts to the marine environment from port and associated activities include <i>diminished aesthetic values for users and nearby communities</i>.</p> <p>Impacts on the values of the region are addressed more fully in Section 6 of the report and in particular for aesthetics, Section 6.7 Impacts on community benefits of the environment. These include:</p> <p><i>The benefits derived by people understanding, appreciating, enjoying and admiring the Region’s environment are most affected by those impacts that significantly affect key values - in particular... the land and seascapes ...</i></p> <p><i>The aesthetic values of the Region may be diminished by development activities. For example the building of structures, industrial and port developments, and coastal reclamation could affect the natural scenic values of the coastal areas. Marine debris, along with oil and chemical spills, also affects the aesthetic value of seascapes and islands. Coastal reclamation may affect aesthetic qualities of the landscape and seascape. Increased turbidity diminishes the Region’s underwater aesthetic values. Artificial light and noise pollution associated with coastal development and increased shipping activities and anchorage areas may diminish aesthetic attributes such as tranquillity, solitude and remoteness.</i></p> <p>Table 7.8 addresses current condition and trend of community benefits of the environment and identifies aesthetics as being good which represents that there is a <i>valuable contribution to the wellbeing of local communities and the nation. The Region contributes to regional and national economies, and is valued, understood and enjoyed by catchment residents, the nation and the world community.</i></p>

Document	Applicability to Project and Values Present
Great Barrier Reef Coastal Zone Strategic Assessment – Strategic Assessment Report (2013)	This report along with the Great Barrier Reef Region Strategic Assessment, together informed the Reef 2050 Long-Term Sustainability Plan and <i>is a broad systems and landscape scale assessment of Queensland Government’s policies, plans or programs that relate to the management and protection of matters of national environmental significance.</i>

### 3.2 Ports North

#### 3.2.1 Land Use Plan


Ports North (previously the Cairns Port Authority) has prepared a Land Use Plan for all strategic port land under its control. All development applications within strategic port land are assessed against the Land Use Plan for either its Seaport or Cityport port precincts. As indicated below, the proposed Tingira Street DMPA site is designated strategic port land, part of two planning areas, the Waterfront Industry Planning Area and the Industrial Planning Area of the Seaport Local Area Plan (2006).

The Seaport Local Area Plan identifies important view lines in its View Corridors (Plan 2) while the Road Network (Plan 3) also identifies Tingira Street as both a collector road and an access street within the vicinity of the DMPA. The applicable provisions of the Seaport LAP are addressed in Table 3-2.

**Table 3-2 Seaport Local Area Plan**

Seaport LAP	Applicability to Project and Values Present
<b>Strategic Framework</b>	
Strategic Vision	<p><b>Provisions</b></p> <p>The Strategic Vision for Seaport is consistent with Ports North’s Mission and will</p> <ul style="list-style-type: none"> <li>&gt; <i>enhance and maintain the operation and commercial viability of the port;</i></li> <li>&gt; <i>ensure the efficient utilisation of land to cater for the anticipated growth in seaport customers;</i></li> <li>&gt; <i>facilitate the development of port-related industries and activities in appropriate locations within the port area;</i></li> <li>&gt; <i>encourage the clustering of like and interrelated industries and support facilities within particular locations to buffer key facilities from potentially incompatible land uses;</i></li> <li>&gt; <i>promote logistical benefits from other infrastructure including road and rail;</i></li> <li>&gt; <i>incorporate landscaping and other treatments to enhance the amenity of the Port area;</i></li> <li>&gt; <i>incorporate best-practice environmental management into all aspects of port planning, development and operations; and</i></li> <li>&gt; <i>Ensure Trinity Inlet is maintained as an ecologically viable and sustainable estuarine system.</i></li> </ul> <p>The Vision contributes to the desired environment outcomes of the Seaport LAP and ensuring that development in Seaport is high quality which contributes to continuing economic development as well as enhancing the amenity of the area.</p>



Seaport LAP	Applicability to Project and Values Present
<b>Planning Areas</b>	
<p>Waterfront Industry Planning Area</p>	<p><b>Intent</b></p> <p>This Planning Area will incorporate a diverse range of marine oriented industrial uses including low-impact industrial and port activities, including shipyards, ship maintenance, fishing bases, commercial fishing operations and marinas, barge ramps, vessel storage and harbour operational and port service activities.</p> <p>Existing shipyards, dry dock/ship repair operations, general cargo and the commercial fishermen’s base are located within the waterfront area of this planning area. The continued operation and expansion of these marine orientated industries and activities is encouraged. Recreational uses such as boat clubs are also envisaged in this area. Port support and operational uses such as emergency services and port service activities may also be appropriate.</p> <p>Future development within this area should not compromise the operation of the port or the environmental qualities of Trinity Inlet and Smiths Creek.</p> <p><b>Plan 1 – Seaport LAP Planning Areas</b></p> 
<p>Industrial Planning Area</p>	<p><b>Intent</b></p> <p>This planning area is intended to provide for a range of activities that support the primary activities and operation of the port. Such activities include general industries, low-impact industries, storage premises, and warehouse and distribution uses. Commercial and office support activities may also be appropriate depending on their scale and location.</p> <p>This planning area adjoins a substantial conservation area to the south and any future development should be designed to minimise any potential impact on this area.</p>



### 3.3 Cairns Regional Council

#### 3.3.1 CairnsPlan 2016

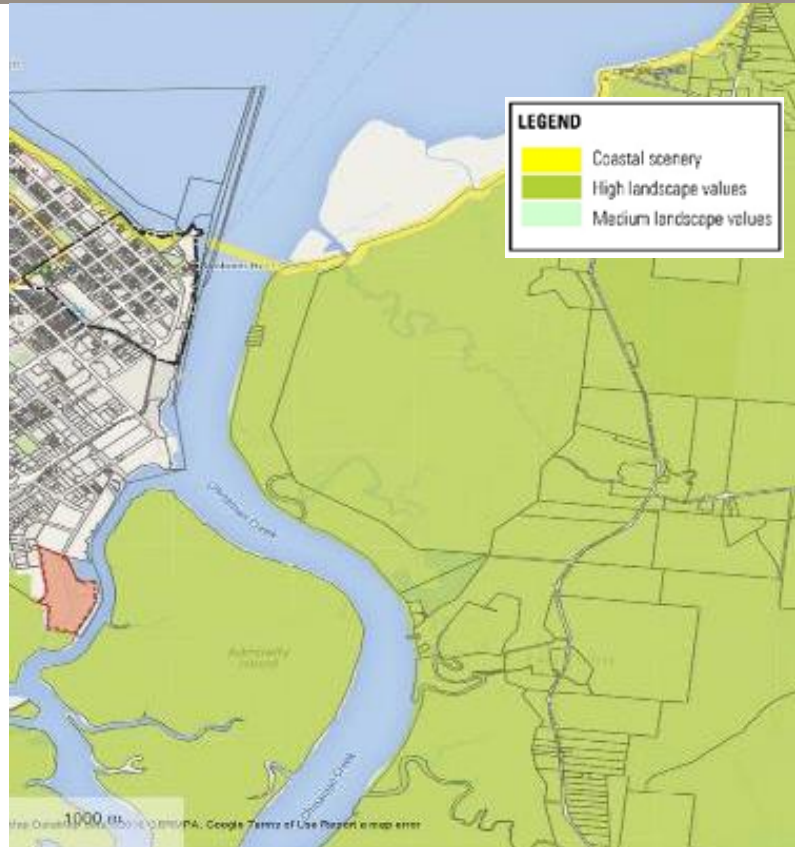
For this project CairnsPlan 2016 does not relate specifically to the proposed material placement area due to its designation as strategic port land (refer CairnsPlan Map No OP-001), however, the strategic framework and landscape provisions of this Plan are still of interest to the project, as contained in Table 3-3.

**Table 3-3 CairnsPlan 2016**

Planning Scheme		Applicability to Project and Values Present
<b>Strategic Framework</b>		
Strategic intent		<p><b>Provisions</b></p> <p>The Strategic Intent, Section 3.2, envisages that in 2031 <i>‘the Cairns region is internationally renowned for its natural beauty...’</i></p> <p>This is reflected in the strategic outcomes of the settlement pattern theme which identifies that the region grows and evolves in a way that <i>‘(m) maintains and enhances the scenic amenity, tropical character and identity of the region’</i></p>
Settlement pattern theme	Element – Industry areas and activities	<p><b>Provisions</b></p> <p>For Industrial areas the specific outcomes include ‘Uses that are sensitive to the impacts of industry activities do not establish within industry areas’ and that ‘Waterfront and marine industry areas are predominantly used for waterfront and marine industry and associated uses for which a location adjoining or near the waterfront is essential’</p>
Natural areas and features theme	Strategic Outcomes	<p><b>Provisions</b></p> <p>Under the strategic outcomes of the natural areas and features theme:</p> <p>(2) <i>The region’s internationally renowned tropical landscapes incorporating the hillslopes and foothills, marine and freshwater wetlands, beaches, headlands, streams and rivers, rural lands and open spaces are valued economically, aesthetically, culturally and socially and are protected from development that diminishes their ecological, social and economic value.</i></p> <p>(3) <i>Development avoids areas of environmental significance. Where avoidance is not possible, development is designed, sited, operated and managed to mitigate adverse impacts on areas of environmental significance.</i></p> <p>(5) <i>Development within the region’s World Heritage Areas is sustainable and planned to conserve the ecological and scenic values of the area.</i></p>
	Element – Waterways, wetlands and water catchments	<p><b>Provisions</b></p> <p>The Strategic Framework contains an element relating specifically to waterways (Section 3.4.3.1). The specific outcomes are:</p> <p>(1) <i>The environmental values of waterways, wetlands and water catchments are protected.</i></p> <p>(2) <i>Water quality of waterways, wetlands and water catchments is maintained and, where possible, enhanced.</i></p> <p>(3) <i>Waterway and wetland health and aquatic biodiversity is conserved and downstream adverse impacts on the Great Barrier Reef do not occur.</i></p> <p>(4) <i>The quality of riparian areas around waterways and wetlands are maintained or rehabilitated to a high standard for their ecology.</i></p> <p>(7) <i>Development is planned, designed, constructed and operated to conserve water quality, in-stream and riparian waterway values, and recreational use of natural and modified waterways and wetlands and their catchments across the region.</i></p>

Planning Scheme		Applicability to Project and Values Present
	Element - Landscapes	<p><b>Provisions</b></p> <p>The Strategic Framework contains an element relating specifically to landscapes (Section 3.4.4.1). The specific outcomes are:</p> <ol style="list-style-type: none"> <li>(1) <i>Development protects, maintains and enhances the region's landscape values.</i></li> <li>(3) <i>Major scenic routes and scenic outlooks are protected from both the detrimental visual impacts of development and inappropriate vegetation clearing that may detract from the scenic qualities of the scenic route or outlook.</i></li> <li>(4) <i>The hillslopes are retained as the scenic backdrop to the region and the ecological values and landscape character of the hillslopes are protected from inappropriate development.</i></li> </ol>
Economy theme	Strategic Outcomes	<p><b>Provisions</b></p> <p><i>The strategic outcomes of this theme include:</i></p> <ol style="list-style-type: none"> <li>(1) <i>The region is recognised as Far North Queensland's key economic centre providing major industrial, agricultural, maritime, aviation, defence, health, education, and commercial, retail, recreational and entertainment facilities and opportunities.</i></li> <li>(3) <i>Economic benefits and opportunities are maximised through the promotion of appropriate land uses, minimisation of land use conflicts and the protection of significant infrastructure.</i></li> </ol>
	Element – ports, aviation and defence	<p><b>Provisions</b></p> <p><i>The specific outcomes for this element are:</i></p> <ol style="list-style-type: none"> <li>(1) <i>Development does not compromise the ongoing operations of the Cairns Airport, Port of Cairns and Australian Defence Force bases within the region.</i></li> <li>(2) <i>Development that is directly associated with or supports the operations of the Cairns Airport, Port of Cairns and Australian Defence Force bases is facilitated.</i></li> </ol>
Landscape Values Overlay		
Application		<p>This code applies to assessing development within the Landscape values overlay.</p> <p>The Tingira Street subject site (shown pink below) is not designated as a valued landscape under the Planning Scheme, although it is surrounded by high landscape value areas of Admiralty Island, East Trinity and the extensive mangroves ecosystems in the area</p>

**Planning Scheme**      **Applicability to Project and Values Present**



**Purpose**

**Provisions**

*The purpose of the Landscape values overlay code is to ensure that development protects, maintains and enhances the landscape values within the Cairns region.*

Planning Scheme	Applicability to Project and Values Present
<b>Planning scheme policy – Landscape values</b>	
Purpose	The purpose of policy is to provide guidance about the assessment required to satisfy the planning scheme requirements relating to properties affected by the Landscape values overlay code.

### 3.3.2 Cairns Scenic Amenity Study

The Cairns Region Scenic Amenity Study (Cardno Chenoweth 2012) mapped and assessed the landscape attributes of the Cairns Regional Council area (excluding Yarrabah), and identified places and features of regional significance in terms of their contribution to either scenic amenity or their contribution to the character and identity of the region. This study formed the basis of the landscape values provisions included within CairnsPlan 2016, as addressed above.

The study identified a number of Landscape Character Types (LCTs):

- > Forested mountains - which forms the backdrop to Cairns, also from offshore views;
- > Grassy hillsides;
- > Lowland areas - coastal and river plains and valley floors which are not used for sugar cane;
- > Canefields - lowlands used for the production of sugar cane;
- > Coast including beaches, bays, mangroves and inshore ocean. Some of the beaches have an 'iconic' combination of white sand, fringing vegetation, and long views over the Coral Sea;
- > Inland watercourses (including the Barron, Russell, Mulgrave, Mowbray and Daintree Rivers, plus Trinity Inlet and the many tributary creeks and associated gorges and waterfalls); and
- > Urban areas - including Cairns and its outer suburbs as well as Mossman, Gordonvale, Port Douglas and smaller towns.

This Study also identified the regional significance of canefields, rivers or coastlines with forested hills in the background including features which show or help define these elements and their edges. Gateways, lookouts and view corridors are significant contributors to scenic amenity and character, and deserve consideration in planning and development.

The study identifies significant landscape features such as Trinity Inlet, which is identified as *Scenic Places - Watercourses, waterfalls and wetlands*, and is relevant to the proposed material placement area of Tingira Street. The DMPA is included in the 'Urban' LCT although it adjoins the 'Inland Creeks and Watercourses' of Smiths Creek and the surrounding low-lying lands and 'coastal' zone of the Inlet and Admiralty Island. The area is also identified as an 'attractive/characteristic landscape feature' as part of a locally significant view corridor from lookouts near Lake Morris.

In terms of scenic amenity (SA) rating (a combination of visual exposure and scenic preference) the site is assessed and mapped as low scenic amenity (rating 2) and low scenic preference (rating 2-3), notwithstanding that the area was modelled as having very high visual exposure. However, the 2012 visual exposure modelling was based on topography alone (excluding vegetation), and conservatively modelled the low-lying areas as highly visible. The nearby areas of Trinity Inlet and Admiralty Island are comparatively high scenic amenity, with ratings of 9 - 10.

The subject site itself is not mapped as high or medium 'Landscape Values' (although it adjoins areas of High Landscape Value) and is therefore not regionally significant in terms of its scenic amenity and landscape character.



## 4 Existing Landscape and Visual Conditions

### 4.1 Landscape Character and Values of Portsmith

Portsmith is an industrial suburb of Cairns, which extends along the eastern edge of the CBD at the interface with Trinity Inlet and its tributary creeks such as Smiths Creek and Chinaman's Creek. The suburb features a mix of old and new industrial development as well as Strategic Port Land designations, and includes the historic Cairns Port wharves as well as the recent construction of large new warehouses in Redden and Walter Streets, and parts of Tingira Street. The industrial areas outside of the Strategic Port Land are zoned Industry where under the Cairns Plan 2016, and are characterised by mixed maritime industries such as boat building and fisheries, seafood distribution and cargo. Admiralty Island is also part of the Portsmith postcode.

Portsmith, while largely industrial and port focused in nature, also includes important natural landscape features of local and regional significance including the diverse mangrove ecosystems of Admiralty Island and the many tributaries of Trinity Inlet, including Smiths Creek and Chinaman's Creek (Figure 4-1).

The broad, flat expanse of the Inlet and suburb of Portsmith is low-lying and subject to periodic flooding. Although the mangroves on the eastern side of Smiths Creek (abutting Admiralty Island) are largely intact, there are only patches of non-mangrove riparian vegetation along the western edge of Trinity Inlet and Smiths Creek. This land/water interface is generally characterised by industrial built forms including wharves, carparks and other hardstand areas.



**Figure 4-1 Aerial view of Portsmith - including Admiralty Island to Bayview Heights in the Background** (Source: Peter John Tate 2011 *Panoramio*)



## 4.2 Tingira Streetscape

Tingira Street is a no-through road located on the low flat western banks of Smiths Creek, in the suburb of Portsmith, approximately 3 km southeast of the Cairns CBD. Tingira Street is physically and visually separated from surrounding residential suburbs of Cairns, and tourist accommodation, by the Portsmith-Woree industrial precinct, and by the major Bruce Highway/Ray Jones Drive and North Coast Rail line.

The street is the main access road which services the many maritime industries along the creek, ranging from sailing clubs, marine freight, brokers, yacht squadrons and boating associations as well as the Royal Australian Navy, Maritime offices and strategic port land. There are numerous pontoons, moored vessels and wharves servicing commercial and government fleet along this stretch of the creek.

The streetscape is predominantly industrial in character, with tracts of cleared, vacant land interspersed with large steel sheds and little or no planting to 'soften' the streetscape. From the road, there is little evidence of being so close to the creek, apart from the occasional boat mast and mangroves visible as glimpses above or through buildings and structures. At the end of the street, views across the DMPA are framed by the backdrop of the Malbon Thomson Range (Figure 4-2).

The undeveloped portion of the DMPA site was cleared of mangroves and initially filled in the 1980s using materials dredged from Smiths Creek and the Commercial Fishing Base 2 harbour. During these dredging operations, bunds were located around the boundary of the site to confine the dredge materials. During the 1990s additional filling (including demolition waste materials) was placed on the DMPA.



**Figure 4-2 View of Tingira Street DMPA** (November 2016)

## 4.3 Landscape Features and Regional Landscape Values - Trinity Inlet and Smiths Creek

The Portsmith – Woree area is the main industrial arm of the City. The port and major rail and road freight terminals are important elements of the district. The port was officially opened in the inlet in 1876 and enjoyed strong growth as an export of goods and services, including sugar. During World War II, the Allied Forces used Cairns as a staging base for operations in the Pacific, with a major military seaplane base in Trinity Inlet, and US Navy and Royal Australian Navy bases near the current wharf.

Although not currently enjoying the same level of activity, the area still functions as a popular marine base and the Cairns Wharf Complex is listed on the Queensland Heritage Register. Presently, large cruise liners form a common sight docked at the wharves. The Port of Cairns continues to provide a range of berths, wharves and moorings for general cargo, dry bulk, cruise vessels and visiting naval vessels, as well as overflow for tourist and commercial fishing vessels. There are also two barge ramps located in Smiths Creek including a large barge loading facility located in the Duck Pond in Smiths Creek for loading construction materials.

Trinity Inlet and Smiths Creek are a popular passageway for recreational fishing boats, as well as offering a range of wharves and moorings as overflow for tourist and commercial fishing vessels. Pile moorings are also available for yachts and small craft along Smiths Creek, in the fringing mangroves of Admiralty Island (Figure 4-3).



**Figure 4-3 Moored boats in Smiths Creek** (November 2016)

The area also includes significant mangrove/wetland areas associated with the Trinity Inlet ecosystem. The diversity of natural areas including the mangroves, mountains and tributaries around Trinity Inlet and Admiralty Island contributes to the high scenic quality and rich tapestry of landscape features that are highly valued in the region. This vista is appreciable at ground level, or as part of the boating experience. Views from aircraft also take in an expansive panorama overlooking the waterways and the fringing mangroves, with the mountains of Yarrabah behind, while moored boats contribute to an idyllic landscape character with high scenic appeal.

#### **4.4 World Heritage and National Heritage**

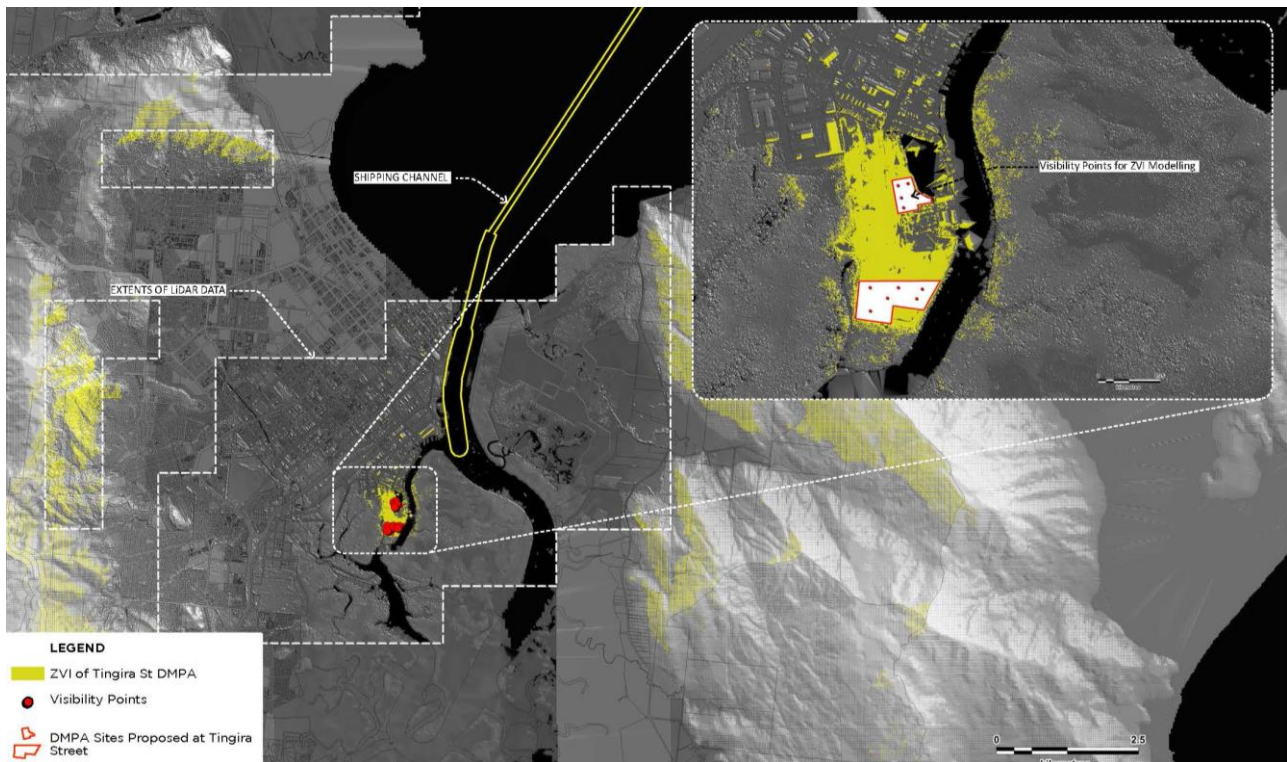
In relation to National and World Heritage Values, the Cairns region includes the GBRWHA and the Wet Tropics World Heritage Area - both of which are listed on Australia's National Heritage List and the World Heritage List. The subject land is located on Smiths Creek, which, as part of Trinity Inlet, adjoins, at the low water mark, the inshore waters of the GBRWHA.

## 5 Visibility of the Tingira Street DMPAs

### 5.1 Visibility Modelling

The visibility of the two material placement areas within the Tingira Street DMPA to external viewers is modelled as the ZVI in the DTM. This is based on LiDAR data (including vegetation and buildings) for parts of the Cairns CBD area and surrounding suburbs, including Portsmith and Woree, parts of Bayview Heights, and across Smiths Creek, Admiralty Island and Trinity Inlet to East Trinity. The ZVI for the Tingira Street DMPA is shown on Figure 5-1 with the full size version attached in Appendix A.

To model the ZVI for the two areas on the subject land, 11 visibility points have been located within the DMPA at 1.5m heights above existing ground level, to represent the approximate height of the stiff clay mounds (Figure 5-1 and Appendix A). These material placement works will be used as pre-load for future redevelopment of the site.



**Figure 5-1 ZVI of Tingira Street DMPA**

#### 5.1.2 Views from Portsmith

The ZVI indicates that the two placement sites within the Tingira Street DMPA are likely to be seen from relatively limited areas, extending only approximately 500m. Figure 5-1 and Appendix A indicates that there will be some street level views from Tingira Street and from some surrounding businesses and carparks, including the neighbouring Queensland Government Maritime Safety site, the Great Barrier Reef International Marine College and (north) to industrial and maritime shipyards, docks and large sheds for boat fabrication and maintenance. Parts of the large sheds on Walter Street are also within view of the Tingira Street DMPA, including a commercial mix of food distribution and steel fabrication operations. The Cairns Cruising Yacht restaurant north of the site is one of only a couple of two storey buildings in the area, open to the public.

Although Figure 5-1 indicates, at a finer grain, that some buildings in the Portsmith area will have views to the site, many of these are industrial scale buildings, typically single level albeit constructed with high roofs (8.5m +) to accommodate activities such as boat building, or steel fabrication. The form and function of these building would limit viewing opportunities of the Tingira Street DMPA.



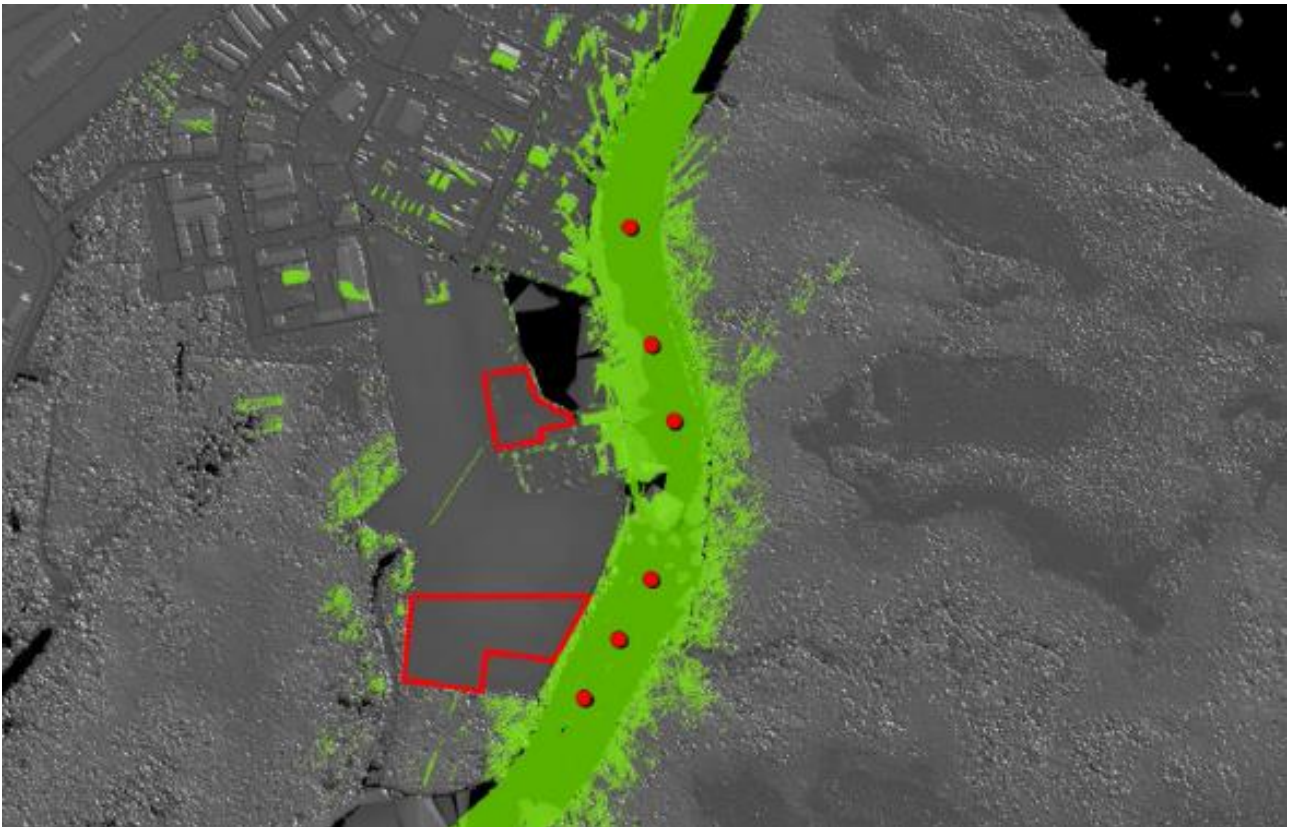
The DMPA will be visible from vehicles or pedestrians travelling directly past the site, however, as Tingira Street is a no through road, with the road ending at the Maritime Safety office, there is no passing traffic. In addition, Tingira Street only passes the smaller of the sites within the DMPA with the larger placement area, on the southern part of the DMPA, is only viewed when looking across vacant land from the end of Tingira Street. This site is set back a minimum of 150m from the end of Tingira Street.

### 5.1.3 Views from Smiths Creek

The viewshed modelling shown in Figure 5-2 and contained within Appendix A indicates that the Tingira Street DMPA may be visible from Smiths Creek through narrow gaps in the mangroves, particularly near the Maritime Safety boat ramp at the bend in the creek. This modelling was based on the placement of six viewing points located along Smiths Creek, approximating the height of a boat (3.5m AHD).

This mapping confirms that, although boats, including commercial tour companies, travelling along Smiths Creek have some views to the mainland and buildings of the Portsmouth industrial area, the Tingira Street DMPA, incorporating piles of material of 1.5m in height, will not be visible from Smiths Creek. The existing mangroves which currently fringe both sides of the Creek provide effective screening and result in there being no open views into the Tingira Street DMPA or of the proposed stiff clay fill areas.

However, during dredging operations, the movement of material to the DMPA via barge will be visible from the creek, particularly near the entry to the ‘Duck Pond’ where the barge will be seen to enter, and depart the site.



**Figure 5-2 Viewshed from Smiths Creek**

### 5.1.4 Views from Cairns CBD

Cairns CBD is approximately 3kms north-east of the proposed Tingira Street DMPA and offers some expansive views across Trinity Bay, Trinity Inlet and Admiralty Island. From elevated viewpoints, the stretch of mangroves of East Trinity and Smiths Creek is visible as part of a scene including the wharves, the convention centre, and other buildings in the foreground, and the ranges of Yarrabah in the background. The ZVI (Figure 5-1 and Figure 2 in Appendix A) indicates, at a finer grain, that there may be isolated buildings along Wharf Street with views to the site, including from the upper levels of the DNRM building

(Hartley Street) and the high rise apartment blocks of Piermonde Apartments and Park Regis on Lake and Wharf Streets.

However, despite the ZVI (Fig 5-1) indicating that there may be limited views from high rise buildings in Cairns, there are no public places with views to the DMPA. Most are from private apartments oriented towards the offshore waters of the Great Barrier Reef, or the mangrove ecosystems of Admiralty Island and East Trinity. These views would also encompass the Malbon Thomson Ranges in the background and the occasional cruise liner moored in the foreground. View corridors further south take in the industrial areas of Portsmith, and include a less scenic mosaic of industry, natural and urban features as part of an expansive field of view that is less favoured in terms of tourist expectations and scenic preferences.

However, during dredging operations, the movement of material to the DMPA via barge will be visible from public foreshore areas. This will occur over a period of several months.

#### **5.1.5 Scenic Routes**

The ZVI analysis (Appendix A) indicates that there will be no views to the Tingira Street DMPA from the Bruce Highway or Ray Jones Drive, including from the elevated height of the Mulgrave Road overpass.

#### **5.1.6 Offshore Views**

Views from offshore include the ferry routes which depart from the marina, heading to Green Island and Fitzroy Island, which take in the mouth of Trinity Inlet. The meandering waterways coupled with the density of fringing mangroves restricts views further downstream to Smiths Creek.

During dredging operations there will be views of the barge as it moves the stiff clay material to the DMPA. This will occur over a period of several months following which there will be no ongoing activities at the DMPA associated with this project.

#### **5.1.7 Views from Cruise Liners**

Cruise liners and other large-scale tourist boats moored in the Cairns port shipping channel will potentially have views to the Tingira Street DMPA. Their visibility of the site will depend on the vessel height with the largest ships, being greater than 60m above sea level providing the most extensive views to the DMPA. However, possible views will be from a distance (approximately 3km) and from oblique angles, and will be seen as part of a larger mosaic of urban sprawl, maritime industrial areas, and natural landscapes.

However, during dredging operations, the movement of material to the DMPA via barge will be visible from cruise liners and other large-scale tourist boats. This will occur over a period of several months.

#### **5.1.8 Hillside Views**

The mountain ranges that frame Cairns and Yarrabah also provide opportunities for views towards the Tingira Street DMPA. The ZVI (Fig 5-1 and Appendix A) shows that the site is potentially within view from hillside suburbs, including Bayview Heights and Kanimbla (in the foothills of Lamb Range), Edge Hill (the southern hillside suburb of Mt Whitfield), as well as the (largely undeveloped) forested western slopes of Yarrabah. However, most of the areas indicated in the ZVI are treetops, not houses or public places.

At a finer grain, there may be some houses or roads of the upper parts of Bayview Heights (such as from Oceanview Place) with views to the Tingira Street DMPA, although the considerable distance (5km) and relative low elevation, combined with intervening buildings and tropical gardens reduce the likely visibility and sensitivity of these long range receptors.

#### **5.1.9 Night Time Views**

The need for lighting around the material placement areas (in an area adjoining bushland) will potentially increase the visibility of the site at night more so than during the day. Night time operations will also require vehicle lighting, including barge and heavy vehicle lighting, and safety beacons.

The nightscape is punctuated by clusters of lights from security lighting in the industrial areas and freight corridors such as road and rail lines, and urban conurbations such as Woree and Bayview Heights which is mainly appreciated from elevated views from Cairns. The waters of Trinity Inlet and Smiths Creek are generally dark, with little lighting visible at night apart from boat craft and beacons in the Inlet.



Lighting at the proposed Tingira Street DMPA site will not make a significant contribution to light glare or intrusion, but will be seen to encroach into a natural and otherwise unlit area. However, it will be temporary as the placement of material occurs, and, from most viewpoints, will form part of the existing cluster of lighting associated with security lighting, nocturnal shift work and industrial Port and maritime activities.

## 5.2 Summary of Visibility

Based on the combination of ZVI and viewshed analyses the visibility and sensitivity (and potential for visual impacts) are summarised as follows:

- > The ZVI indicates that the material placement in the Tingira Street DMPA will have a limited visual catchment, and will not increase the visibility of the site. The site in its existing form is largely cleared with some sparse regrowth and is not overly visible from sensitive receptors (its location already mitigates most visual impacts), and the proposed DMPA is not a significant change.
- > Most of the visible action activities and potential for visual impacts will be during construction as the end-use will be seen in the short term as a low profile raised pad. The placed material is to be used as preload to accelerate settlement and thereby facilitate the use of the land as part of planned industrial park.
- > All activities associated with the placement of material at the Tingira Street DMPA are short term in nature. Any visibility of the operation will therefore also be temporary lasting for a period of several months only.
- > Most of the visibility points of the ZVI represent the highest parts of a building or structure, such as the rooftops of large industrial sheds in Portsmith, or the tops of trees in the suburban areas of Cairns, rather than habitable parts of residences or other buildings per se.
- > The lack of existing street trees and landscaping around the proposed Tingira Street DMPA increases the sensitivity of the subject site, especially from ground level and pedestrian-scale views from the local road network. Although the ZVI is limited, it does indicate that there will be short range views to the site from adjacent Tingira Street. However, as Tingira Street is a no-through road, there is very little traffic other than that associated with existing land uses, and no connecting traffic.
- > Most of the views from the Smiths Creek to the DMPA will be screened by existing mangroves (to be retained) and other intervening vegetation, although during dredging operations barge movements to and from the site will be visible from boats along the Creek and vessels using Trinity Inlet. These operations however are short term in nature.
- > The ZVI indicates variable visibility from long range views including the surrounding hillslopes, such as Bayview Heights, Edge Hill and Yarrabah. Although most of the long range ZVI is forested tree tops, or roof tops, some houses will potentially be within view of the Tingira Street DMPA. Viewing distances between from possible hillside houses and to the site vary but are a minimum of approximately 5kms.
- > Parts of the site DMPA may be visible from CBD buildings (mainly resort high rise apartment buildings) located at higher elevations (at least 30m AHD in height). However, in reality, most views are oriented offshore or towards the main wharf, and away from the industrial areas of the Port, including (Portsmith-Woree, with only incidental views towards the site. Viewshed analysis indicates most some of these views are blocked by intervening buildings, such as the Convention Centre.

## 5.3 Scenic and Aesthetic Values of the GBRWHA

The tributaries of Trinity Inlet and Smiths Creek and Admiralty Island is part of the GBRWHA waters and can be seen by GBRWHA visitors, hence the aesthetic attributes which form part of the OUV of the Great Barrier Reef are relevant considerations. The UNESCO Guidelines define the concept of OUV as “*cultural and/or natural significance, which is so exceptional as to transcend national boundaries and to be of common importance for present and future generations of all humanity.*” The Great Barrier Reef has OUV and has been World Heritage-listed because it meets all four of the natural environment criteria, including the aesthetic criterion (vii) “*containing superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance*”.

The seven Criterion (vii) attributes recorded in the World Heritage citation of the Great Barrier Reef (GBRMPA, 2011) are that:

*“The Great Barrier Reef provides some of the most spectacular scenery on earth and is of exceptional natural beauty. The World Heritage values include:*

1. *The vast extent of the reef and Island systems which produces an unparalleled aerial vista:*  
*The vast mosaic patterns of reefs, islands and coral cays produce an unparalleled aerial panorama of seascapes comprising diverse shapes and sizes. It is one of a few living structures visible from space, appearing as a complex string of reefal structures along Australia's northeast coast;*
2. *Islands ranging from towering forested continental Islands complete with freshwater streams, to small coral cays with rainforest and unvegetated sand cays:*  
*The rugged vegetated mountains and lush rainforest gullies that are periodically cloud-covered on Hinchinbrook Island;*
3. *Coastal and adjacent Islands with mangrove systems of exceptional beauty:*  
*The vast mangrove forests in Hinchinbrook Channel;*
4. *The rich variety of landscapes and seascapes including rugged mountains with dense and diverse vegetation and adjacent fringing reefs:*  
*The Whitsunday Islands provide a magnificent vista of green vegetated islands and spectacular sandy beaches spread over azure waters;*
5. *The abundance and diversity of shape, size and colour of marine fauna and flora in the coral reefs:*  
*Superlative natural beauty above and below the water. Beneath the ocean surface, there is an abundance and diversity of shapes, sizes and colours; for example, spectacular coral assemblages of hard and soft corals, and thousands of species of reef fish provide a myriad of brilliant colours, shapes and sizes. Other superlative natural phenomena include the annual coral spawning. The internationally renowned Cod Hole near Lizard Island is one of many significant tourist attractions;*
6. *Spectacular breeding colonies of seabirds and great aggregations of over-wintering butterflies:*  
*On some continental islands, large aggregations of over-wintering butterflies periodically occur;*
7. *Migrating whales, dolphins, dugong, whale sharks, sea turtles, seabirds and concentrations of large fish:*  
*Other superlative natural phenomena include the migrating whales, nesting turtles, and significant spawning aggregations of many fish species. On many of the cays there are spectacular and globally important breeding colonies of seabirds and marine turtles, and Raine Island is the world's largest green turtle breeding area."*

In the Cairns region, the iconic coral reefs and marine life of the Great Barrier Reef are experienced by (and presented to) tourists and World Heritage visitors mainly at offshore facilities such as Green Island, at several reef lagoons and on boats. To the extent that the mainland is part of a World Heritage visitor experience, it is seen from the ferry routes to these island tourist attractions, looking back towards Cairns and the background mountains. In this context, the Cairns Region coastline is part of the mainland which visitors use as a base, and 'leave behind' in order to visit a distant Great Barrier Reef island, where they will experience the GBRWHA. The urban area of Cairns makes little contribution to the World Heritage experience.

In this context, the Tingira Street DMPA, although abutting the inshore waters of the Great Barrier Reef, is unlikely to be considered as part of the World Heritage experience for GBRWHA visitors or tourists as it is a site that is currently cleared and sits within an established industrial area. As boats head further upstream of the Tingira Street area the urban fabric of Cairns is left behind and the World Heritage experience commences.

The seven aesthetic attributes and their presence or representation near Tingira Street DMPA and Smiths Creek, relative to places within the GBRWHA (where these attributes are distinctively present), are addressed in Table 5-1.

**Table 5-1 GBRWHA Aesthetic Attributes represented near Tingira Street**

GBRWHA Aesthetic Attributes	Representation near Smiths Creek
<p>1. <i>The vast extent of the reef and Island systems which produces an unparalleled aerial vista:</i></p>	<p>There are no aerial vistas of reef and lagoon systems offshore from Tingira Street DMPA, including Smiths Creek, Trinity Inlet, and Trinity Bay. The closest reefs which form the distinctive Great Barrier Reef patterns of reefs, lagoons and passages occur 25 - 30 km offshore, extending from Green Island northwards to Batt Reef.</p>
<p>2. <i>Islands ranging from towering forested continental Islands complete with freshwater streams, to small coral cays with rainforest and unvegetated sand cays:</i></p>	<p>There are no islands immediately offshore, and the closest island is Fitzroy Island (approximately 9km over the Yarrabah Range) and Green Island (25km offshore). These two islands are visited by tourists and others for appreciation of GBRWHA scenery and underwater experiences of coral cays on offer.</p>
<p>3. <i>Coastal and adjacent Islands with mangrove systems of exceptional beauty:</i></p>	<p>The project site includes regenerating and established mangroves along Smiths Creek, which are part of a more extensive conservation reserve and Estuarine Protection Zone of the Great Barrier Reef Coast Marine Park including Admiralty Island and East Trinity. However, given the level of disturbance on the site and Portsmouth generally, the mangrove system on the western side of Smiths Creek (as far south as the subject site) is discontinuous and not representative of Attribute 3.</p>
<p>4. <i>The rich variety of landscapes and seascapes including rugged mountains with dense and diverse vegetation and adjacent fringing reefs:</i></p>	<p>The vegetated mountains of the Malbon Thompson Range (although outside the GBRWHA) offers dense and diverse vegetation, combined with a variety of fringing mangroves and the waters of the Inlet and the Creek. However, there are no adjacent fringing reefs or 'rugged' mountains <i>per se</i> which represent the '<i>rich variety of landscapes and seascapes</i>' of Attribute 4.</p>
<p>5. <i>The abundance and diversity of shape, size and colour of marine fauna and flora in the coral reefs:</i></p>	<p>The marine flora and fauna in Smiths Creek do not generally exhibit "<i>.. abundance and diversity of shape, size and colour ..</i>" as are often seen associated with coral reefs. In fact, the near-shore waters of Smiths Creek is often turbid due to tidal movement, marine activity and adjacent land uses and is not generally associated with expectations of the Great Barrier Reef.</p>
<p>6. <i>Spectacular breeding colonies of seabirds and great aggregations of over-wintering butterflies:</i></p>	<p>There are no known breeding colonies of seabirds or known aggregations of butterflies recorded on or near the Tingira Street DMPA. Trinity Inlet however does provide habitat for seabirds and butterflies.</p> <p>The proposed DMPA is a cleared site and the proposed works will not impact on these wider ecological values.</p>
<p>7. <i>Migrating whales, dolphins, dugong, whale sharks, sea turtles, seabirds and concentrations of large fish</i></p>	<p>Marine megafauna and large fish are most likely present in Trinity Bay and Trinity Inlet and offshore from this location, and it is possible that marine fauna will be present in Smiths Creek.</p>

## 6 Landscape and Visual Impacts and Mitigation

### 6.1 Landscape and Visual Impacts

#### 6.1.1 Construction Phase

The visual impacts associated with the construction phase and the use of Tingira Street DMPA are generally associated with the dredging of material from the shipping channel, and its transit by barge downstream Trinity Inlet and Smiths Creek to the Tingira Street DMPA. The main impact will be the visual exposure of the material shipment being transferred by barge to the land-based DMPA, and the heavy machinery required to haul it.

These impacts will, however, only be prominent as experienced from the site itself, localised parts of Tingira Street, or from aerial views, and will not be inconsistent with other activities in the area, and the construction of new industrial subdivisions occurring in the estate. From most other locations and views, these works will be seen as minor distant features. The increased vessel movements associated with the barge coming and going from the DMPA will be experienced by other vessels using the immediate waters and as seen from elevated points in the Cairns CBD, during both day and night. This activity is of a temporary nature, occurring over several months, and given the nature of maritime vessels already using these waters is unlikely to impact on the visual amenity of people on other vessels. Dredging of Trinity Inlet and Smiths Creek is a regular occurrence and the equipment to be used is similar to that already familiar to those with any length of association with the Port of Cairns.

#### 6.1.2 Operational Phase

The impacts associated with increasing the elevation of the existing land by an additional 1.5m is negligible in terms of visual amenity and landscape character following the completion of the dredging and placement operations. The placed material is to be used as preload to accelerate settlement and thereby facilitate the use of the land as part of planned industrial park consistent with the existing planning framework for the site.

As discussed above, the increase in land height, where shown to be visible, will not be a significant visual impact in that it is not obvious or perceptible, particularly from sensitive receptors such as lookouts or scenic routes.

### 6.2 Summary of Landscape and Visual Impacts

#### 6.2.1 Impacts on Viewers

In general, the visual impacts of the proposed Tingira Street DMPA on most viewpoints are already mitigated through site selection: the location has relatively low visual exposure along a no-through road, and is located in an industrial area, with an existing band of mangroves screening views from the Creek. The future industrial use of the sites post-filling has already been determined and in essence, the placement exercise is an interim activity that will facilitate this planned use. Maintaining the health of the mangroves will be critical in managing visual impacts from the creek. Although not considered a sensitive viewing location, buffer planting along Tingira Street frontage could help screen street level views into the DMPA.

Although the ZVI indicates that specific residences could have views of the DMPA (such as in hillslope suburbs), the separation distance is such that no specific residences could be identified given the topography and intervening vegetation. In the event that there are houses that have viewing opportunities of the DMPA, the considerable distance (approximately 5km) and the nature of the change will not dominate or adversely affect the scenic quality or landscape character of existing viewsheds.

#### 6.2.2 Lighting

The lighting associated with the DMPA will contribute to the existing cluster of night time lighting in the area, but will be muted than the neighbouring Port security lighting (and not flashing like some beacons). It will not significantly increase the night time glow of this area.

### **6.2.3 Impacts on Landscape Character**

As discussed above, Tingira Street is part of the Portsmouth-Woree industrial estate and is defined by a mix of industrial and maritime related activities, manufacturing and port related land uses. Industrial landscapes are generally have minimal sensitivity to change or development. The Tingira Street DMPA is part of an ad hoc mix of industrial activity, and, while visible at street level, will not adversely affect the character of the Portsmouth area. Again, the use of the site for material placement is consistent with the process of urban development and the existing mosaic and changing patterns of the Portsmouth industrial area.

### **6.2.4 Impacts on World Heritage Values**

While the project site and Smiths Creek is part of GBRWHA waters, it will not be visible from offshore nor by most GBRWHA visitors, including tourists on ferry routes, although it will potentially be visible from large cruise ships docked at the Cairns Wharf and smaller tourist boats visiting the Trinity Inlet wetlands.

As indicated in Table 5-1, there are no aesthetic OUV attributes of the GBRWHA which are present on the project site or will be directly affected by activities undertaken on the Tingira Street DMPA. Although reliance on barges may result in localised turbidity around the unloading area this is not considered likely to impact on the landscape or visual amenity due to the short term nature of the activity and the nature of the current use of the waterway. Accordingly, it is considered that neither the aesthetic attributes of the GBRWHA, nor its integrity, will be affected by the proposed DMPA, and that the OUV of this unique World Heritage property will not be affected.

## **6.3 Mitigation Measures**

In general, the location, surrounding vegetation and topography of the Tingira Street DMPA mitigates most landscape and visual character impacts.

Where additional mitigation is warranted, particularly at street level from Tingira Street during the construction phase, there are ample opportunities to further screen views into the site by planting fast growing trees and shrubs along the property boundary and/or planting along Tingira Street. This could be undertaken upon approval, and prior to works commencing, to ensure a suitable buffer height and density by the time operations commence on the DMPA.

The post-operational end use will result in a 1.5m high filled area in two confined areas on the Tingira Street DMPA, which will be used for future development in accordance with the provisions of the Seaport Local Area Plan.



## 7 Conclusion

In general, the existing environment of the Tingira Street DMPA mitigates most impacts with respect to visual amenity and landscape character considerations. As detailed in this report, the DMPA has low visual exposure and is located in an industrial area, with low sensitivity to change which increases the capacity of the site to accommodate the change associated with the proposed placement of dredge material.

The future industrial use of the sites post-filling has already been determined and in essence, the placement exercise is an interim activity that will facilitate this planned use.

The proposed DMPA at the Tingira Street location will represent an insignificant change in the scale and character of the Portsmouth area, and will be visible from a limited and predominately localised viewshed, with no sensitive receptors or scenic routes affected, no obstruction of important views and no impacts on GBRWHA values or aesthetic attributes.

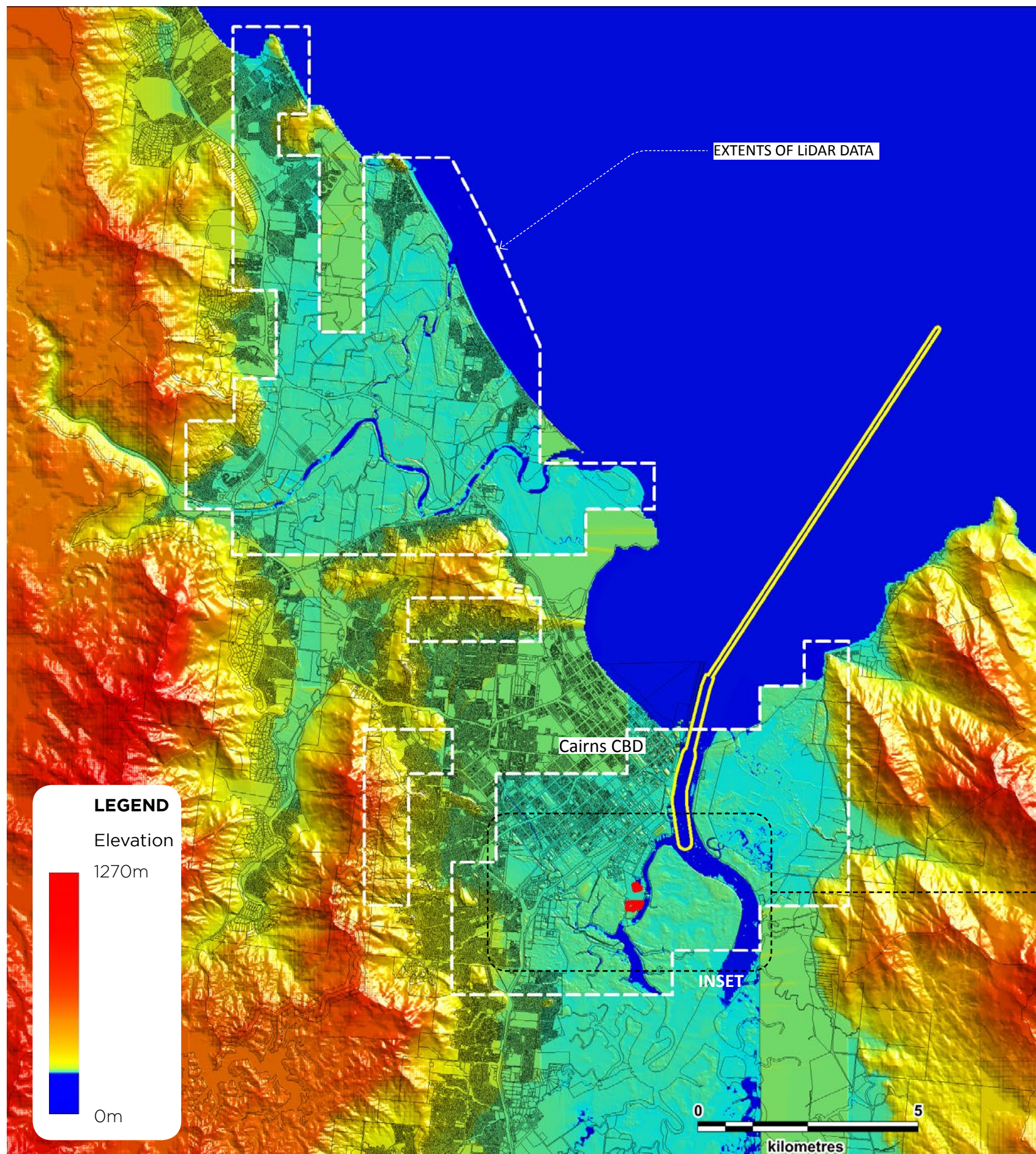
# Cairns Shipping Development Project

## APPENDIX

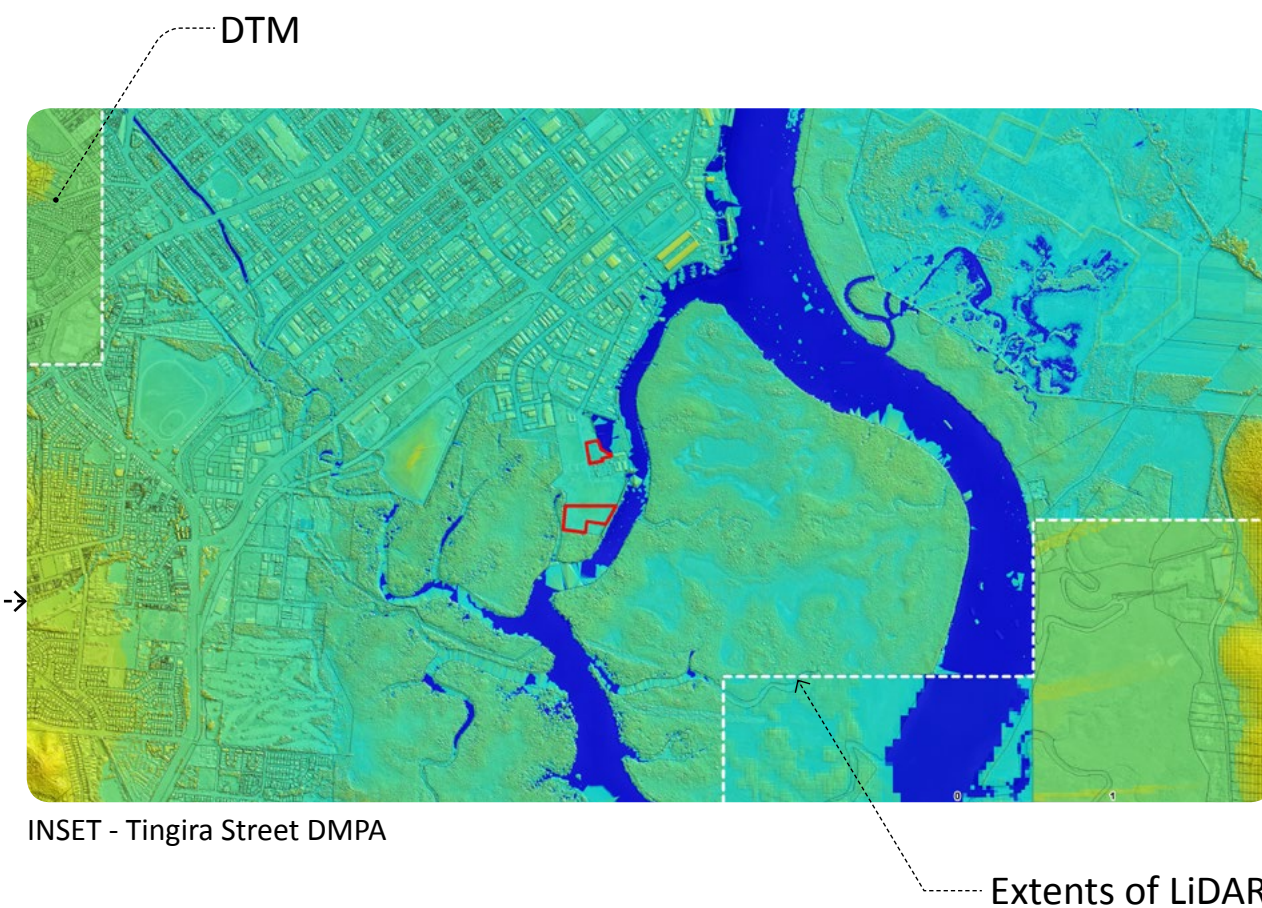
# A

## ZVI AND VIEWSHED MODELLING





\*Elevation model is created by combination of LiDAR, DEMs and DTM derived from 10m & 5m Contours.



INSET - Tingira Street DMPA

Extents of LiDAR

Digital Surface Model (DSM) | Figure 1

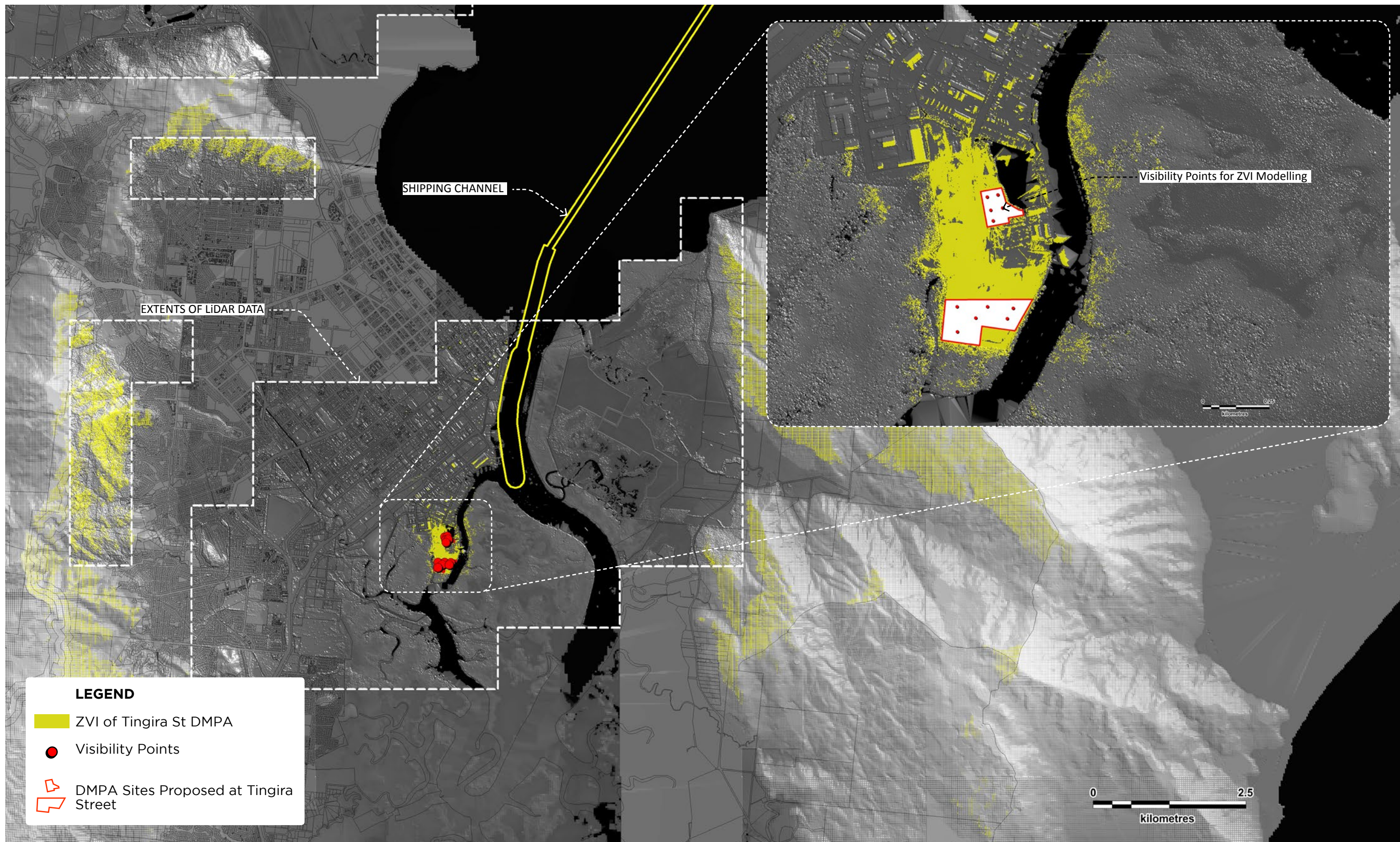
Date: 20/03/2017 | Issue: A

Level 11 Green Square North Tower, 515 St Pauls Terrace, Fortitude Valley QLD 4006 Australia

CAIRNS PORT SHIPPING EIS







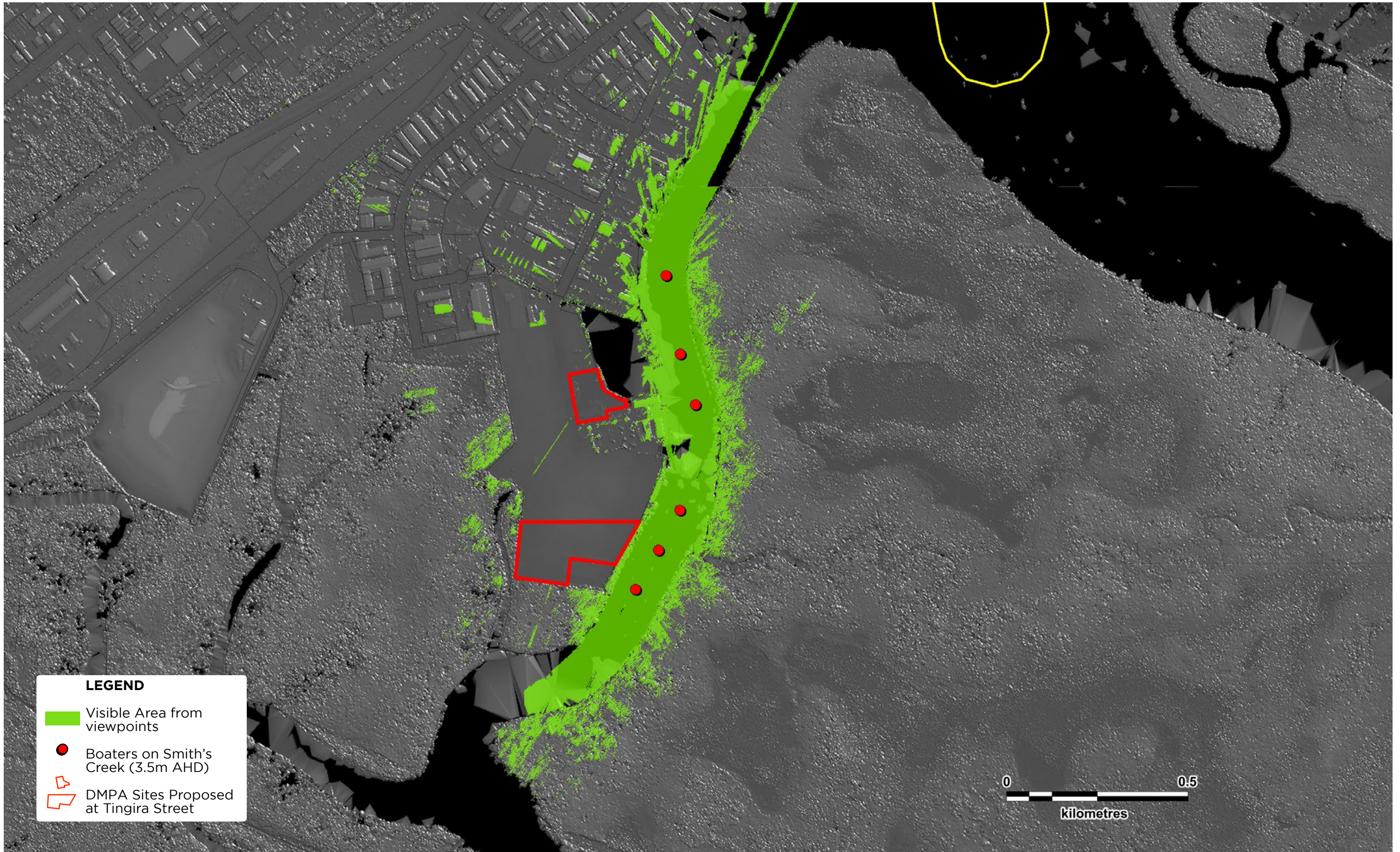
Zone Of Visual Influence - Proposed Fill Placement on Tingira Street DMPA | **Figure 2**

Date: 20/03/2017 | Issue: A

Level 11 Green Square North Tower, 515 St Pauls Terrace, Fortitude Valley QLD 4006 Australia







Viewshed Analysis from Boats on Smith's Creek | **Figure 3**

Date: 20/03/2017 | Issue: A

Level 11 Green Square North Tower, 515 St Pauls Terrace, Fortitude Valley QLD 4006 Australia

CAIRNS PORT SHIPPING EIS

