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& ASSOCIATES


SHIRE OF IRWIN
DONGARA-PORT DENISON
A BRILLIANT BLEND

EXTENDED ENTRY STATEMENT MASTERPLAN

CONTENTS

CONTENTS	II
01 INTRODUCTION	1
02 ANALYSIS SUMMARY	2
03 DESIGN PRINCIPLES	3
04 MASTERPLAN	4
05 ENTRY	5
06 BP PULL-IN	7
07 OLD MILL	8
08 VERGES AND APPROACH	9
09 PLANT PALETTE	10
10 MANAGEMENT	13
11 MATERIAL PALETTE	14
12 OPINION OF PROBABLE COST	15

Document Status

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This document may only be used for the purpose for which it was commissioned in accordance with the Terms of Engagement.

01 INTRODUCTION

The aim of the Extended Entry Statement is to attract visitors into the town and improve the arrival experience.

This document summarises JBA's masterplan for the Dongara/Port Denison Extended Entry. The analysis involved a desktop review, GIS analysis, an initial site visit, community consultation, key stakeholder engagement. These methods were used collectively to develop a strategy that responds to the unique character of Dongara/ Port Denison and the needs of its community.

DESKTOP REVIEW OF KEY DOCUMENTS

The desktop review included the review of a number of key documents. These include:

- Shire of Irwin Strategic Community Plan 2017-2027
- Mid West Tourism Development Strategy 2014
- Shire of Irwin Tourism Development Plan 2013-2018
- Green Infrastructure Strategy 2015-2020

Key objectives from these reports have been incorporated into the masterplan. Relevant aims have been summarised below:

- Attract more visitors
- Improve the natural environment including weed management, habitat preservation
- Recognise places of cultural heritage value
- Become an RV friendly town (growing market), which has potential to increase visitation
- Market distinctive, 'iconic' activities
- Increase Aboriginal/cultural tourism

experiences

- Improve wayfinding, signage, smart devices, google maps, visitor amenities
- Reduce targeted weed species and revegetate
- Control stormwater run-off
- The River is vulnerable to flooding, minimise infrastructure investment in low lying areas
- Develop sensitively designed carparks, amenities
- Improve image, sense of place
- Engage community and provide volunteering opportunities

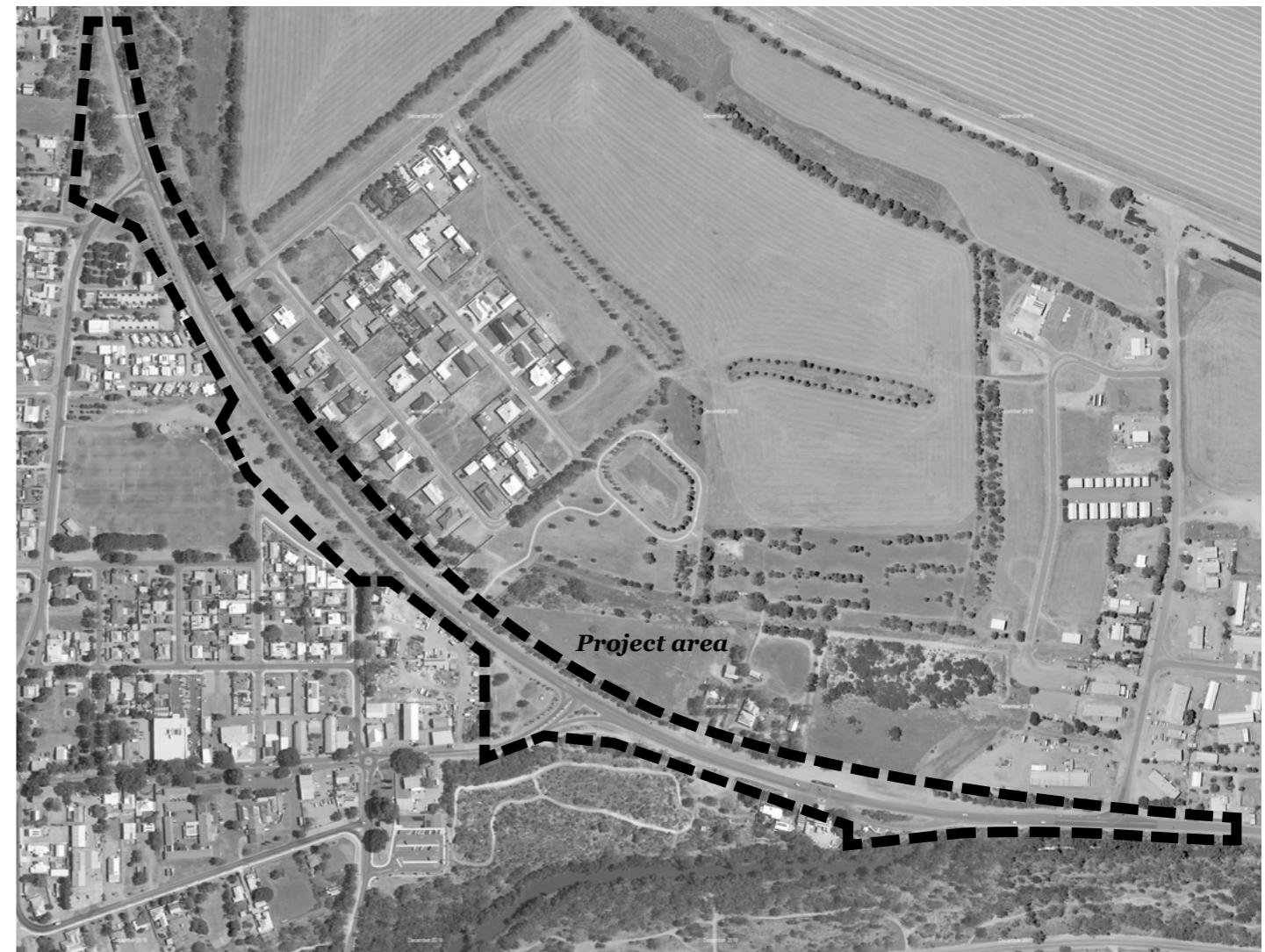
ANALYSIS

The five key analysis areas included Landscape, Environment, Heritage/Culture, Connection and Community. The analysis informed a strategy, that informed the masterplan.

CONSULTATION

Community consultation was undertaken by JBA on 4 March 2021. Feedback on the schematic masterplan has been incorporated into the masterplan. Key points include:

- Label plants and trees in entry statement
- Tree planting as community engagement
- RV and caravan parking at entry statement
- Support use of feature lighting to town signage and big lobster
- Signage on Brand Highway and directional signage to indicate caravan parking



02 ANALYSIS SUMMARY



LANDSCAPE

Vegetation

There are native vegetation communities within the site area. Much of the area has been cleared and is degraded, exotic species introduced, and weed species proliferate. Weeds limit views to the river, compete with native species for resources, and contribute to bushfire risk. Exotic species are incongruous with Shire branding associated with closeness to nature.

Geology and Soils

The soil systems include Quindalup Central (to south), Tamala South System (to north), Greenough Alluvium System (round River and to north). There are Acid Sulfate Soil risk areas in the low lying river valley.

Topography and Landscape Features

The land is relatively flat, so views into Dongara/Port Denison area limited. The Irwin River runs to the south, downslope of the Brand Highway before turning towards the coast, but views are limited by dense weeds and signage. There is a mix of industrial, agricultural and residential buildings along the approach into Dongara.

Land use

Areas within the study area are largely designated Reserve or Main Roads. Bordering areas are Freehold, which offers limited scope for change.

ENVIRONMENT

Climate

Dongara/Port Denison's climate is characterised by hot, dry summers, cool winters, and low rainfall. A strong southerly wind is typical. The road reserve often appears dry and dusty with limited shade. The perception of inviting shade and comfort is needed in stopping areas.

Water

The southern half of the site, closest to the river is in a flood risk area. Minimising infrastructure within these areas is recommended. Surface water is conveyed via overland flow to the river in the southern part. Some cyanobacterial bloom observed in the River.

Bushfire

Most of the site is within a bushfire risk area. Proliferation of weed species increases fire risk as does unbroken dense vegetation.



HERITAGE/CULTURE

Identity/Character

There are currently limited elements on the Brand Highway to reference the character of Dongara/Port Denison. However, there are a number of natural and heritage features in close proximity.

Indigenous Heritage

The Irwin River is of mythological significance to Indigenous people, there is also a listed artefact site in the vicinity. The local Indigenous group are the Wattandee tribe. This area was referred to as *Thungarra* by the local Indigenous people, meaning place of seals.

Historic Buildings

There are municipal and state listed heritage properties nearby. The prominence and stature of the Royal Steam Roller Flour Mill on Brand Highway makes it a landmark when approaching Dongara from the North. It is on the State Register of Heritage Places. It also potentially enables a second entrance if the first turn-off is missed. There is significant heritage in Dongara, but awareness of the historic town is limited and poorly referenced from the Highway.



CONNECTIONS AND COMMUNITY

Connections

There is a lack of visual connection to the river, and limited signage/interpretation. There is limited wider pedestrian connections into town or from stopping areas to town. There are traffic issues with cars stopping and pulling out from BP and the entrance statement.

There are particular issues with RV and caravan parking, and perception of Dongara not providing parking and/or directional signage to the parking.

03 DESIGN PRINCIPLES



SHOWCASE LANDSCAPE QUALITIES

- Clear weed species and exotics and revegetate verges and stopping areas with local native species to enhance ecology, views and bushfire management.
- Use a native species palette to showcase Dongara's natural environment - incorporate botanic interpretation.
- ASS areas must be carefully managed. Further information will be need if proposals are likely to disturb ASS risk areas.
- Enhance views to key focus points including the River, the entrance statement, and the Mill
- Focus development in areas of Reserve and work with Main Roads to develop areas within their control.
- Provide screening to residential development near Town Oval and industrial area near the big lobster.



RESPONSIVE DESIGN

- Create comfortable rest-stops with amenities and shade (water fountains, shade structures, seating). Key locations identified - big lobster, Mill stop.
- Minimise infrastructure on lower ground.
- Direct surface stormwater runoff into vegetated swales and infiltration basins.
- Develop a drought tolerant native species palette.
- Clear weeds to mitigate fire risk and improve views.
- Create sustainable, robust infrastructure. Explore potential for PV lighting.



PUBLICISE HISTORIC ASSETS

- Reinforce Dongara's sense of place by highlighting existing natural, cultural and built features through enhanced vistas, signage, interpretation and public art opportunities.
- Try to mitigate visually detracting areas such as the industrial area behind the big lobster.
- Engage with Wattandee to input into landscape design and public art. Increase visibility and appreciation of Indigenous cultural heritage through interpretative signage, landscape treatment and public art. Consider Ethnobotanic interpretation.
- Increase access to Royal Steam Roller Flour Mill by gaining ownership, zoning or a collaborative relationships. Improve the landscape setting of the building (remove exotic vegetation on verge and revegetate).
- Improve signage to reference historic buildings and the historic town of Dongara, incorporate interpretation.



CONNECTED AND CO-DESIGNED

- Enhance footpaths into town from entrance statement
- Create visual connection to river
- Improve traffic movement at big lobster, BP stopping area, and formalise parking in stopping areas.
- Place signs well in advance of turn-off to warn of approach. Include signage to show caravan/RV parking catered for.
- Create attractive stopping places with signage, lighting and interpretation to encourage visitors into Dongara.
- Continue to consult with the community to incorporate design ideas that are important to them.
- Develop a taskforce of interested community members to help with weed control and revegetation.

Royal Steam Roller Flour Mill Image: Aussie Towns

04 MASTERPLAN



05 ENTRY

The main entry to Dongara from Brand Highway includes a pull-in and the Big Lobster sculpture, which is a feature where people stop to take 'selfies'. Key considerations include:

- The topiaried exotics do not support the Shire's theme for Dongara/Port Denison as 'connected to nature'. They are visually detracting and undermine local biodiversity.
- Drivers stopping to photograph the Big Lobster create a traffic hazard.
- The informal rest stop doesn't offer amenities or an attractive setting.
- Lack of pedestrian links to Dongara.

The aim is to improve the safety and setting of the Big Lobster and entrance to Dongara to create an attractive rest stop and encourage visitors into the town. Key strategies include:

- Improve amenities and comfort (shade, seating, water).
- Clear weed species and exotics.
- Use feature lighting and new signage to highlight the town entrance.
- Direct surface stormwater runoff into vegetated swales and infiltration basins.
- Formalise parking for caravans, campers and cars with easy, clear exit for larger vehicles.
- Create universal access to Big Lobster.
- Create walking trails through landscape.
- Enhance landscape setting with native trees, wildflowers, and Fig trees to create a lush shaded environment and links to the character of Dongara.
- Incorporate interpretive signage describing Dongara/Port Denison's heritage, botanical information, Indigenous history/themes.

EXISTING PHOTOS



Industrial Site adjacent to Big Lobster



Existing Entry (from south)



Turn-off into Dongara



Approach to Moreton Terrace

MAIN ENTRY CONCEPT PLAN



PRECEDENTS



Picnic Shelter Img: Lizard Log Simon Whitbread



Illuminated Town Signage Img: RSM Design



Picnic lawn Img: McGregor Coxall



Mulched area with logs and rocks Img: JBA

06 BP PULL-IN

The BP pull-in is a first potential pull-in point prior to the entry to Dongara from the south. Key considerations include:

- The River Irwin is in close proximity to the Brand Highway at this location.
- Lack of visibility of the River by weeds, undergrowth and signage.
- Unattractive and uninformative signage.
- Lack of road/parking markings make vehicle movements unclear.

The aim is to improve the look and feel of this key stopping point before the Dongara turn-off to promote key values of the towns of Dongara and Port Denison. Key strategies include:

- Remove existing advertising and replace with sympathetic and discrete information signage. Re-use limestone in low wall.
- Clear weed species and selective native species (*Acacia*) to improve views to the River.
- Plant native species on island and surrounding pull-in as feature planting. Feature trees and low feature planting to maintain views to the River.
- Create low key trail to River.
- Formalise parking/traffic movement with road markings.
- Formalised truck parking and plant new trees to the north for shade and low feature planting on the Roadside to screen the large area of gravel.
- Introduce public art elements linked to River, Ocean, Jetty, Limestone Cliffs, Historic buildings, Shipwrecks, local Flora/Fauna, Wattandee totem or language.

EXISTING PHOTOS



PRECEDENTS



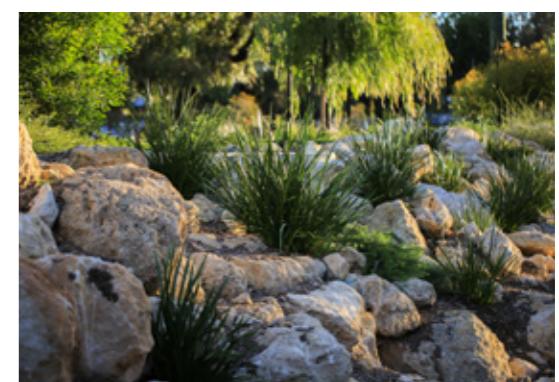
New Norcia Design/Image: Axiom



Commonground design & images

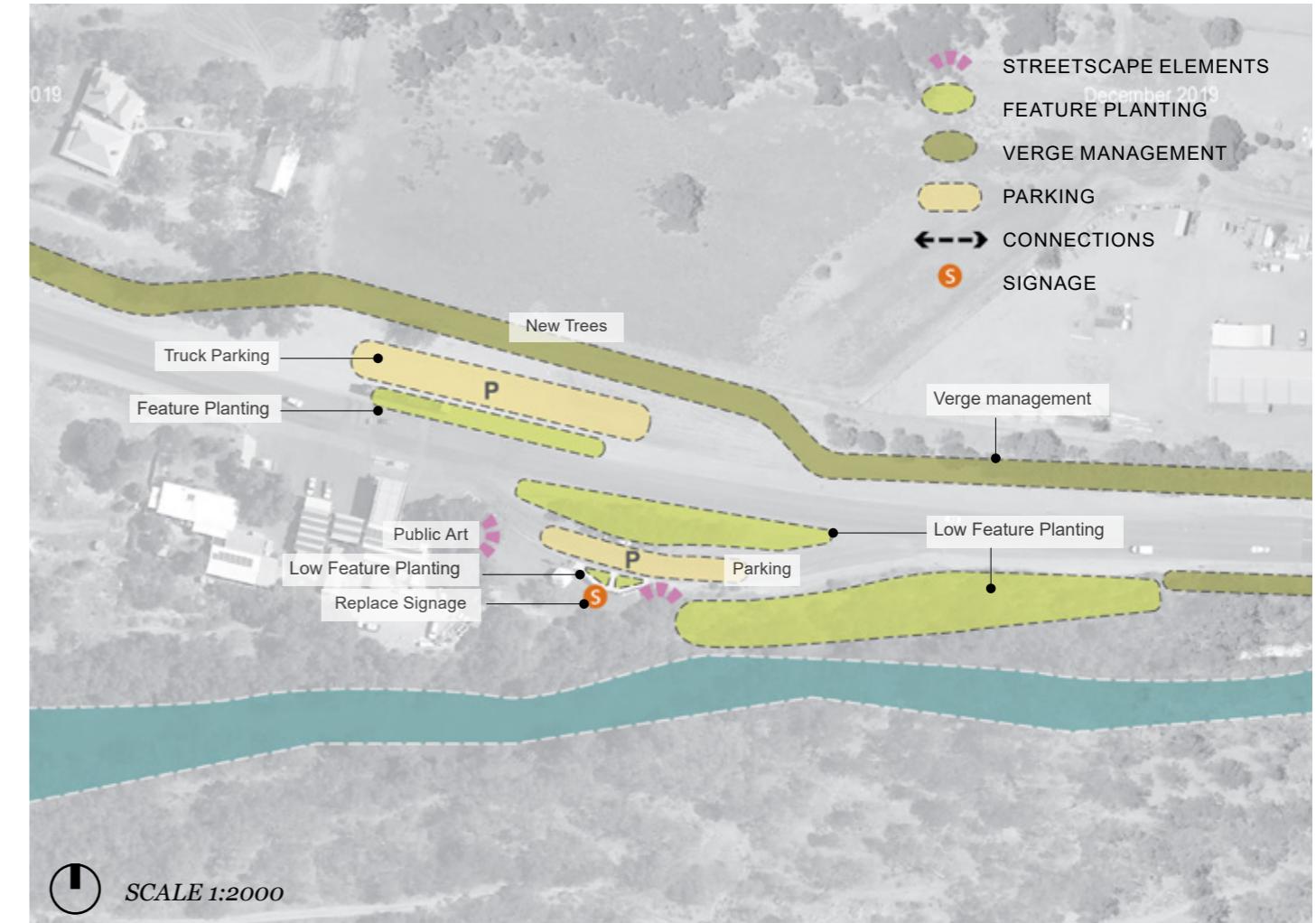


The Australian Garden Img: TCL



WGV native planting Img: JBA

BP PULL-IN MASTERPLAN



07 OLD MILL

The Old Mill is a key feature of the approach to Dongara from the north. It acts as a landmark to the northern turn-off to Dongara, but its value is not yet fully realised. Key considerations include:

- The Mill is under private ownership and public access is currently limited.
- The adjacent planting is unplanned and ill-considered.
- Verges are inundated with weeds and exotic species.
- There is no interpretive signage to describe the Mill History despite it being a significant state registered heritage place .
- There is an informal parking space to the north of the mill.
- To the south is a residential subdivision with a fence of low aesthetic value.
- Visual connection to Mill must be maintained.

The aim is to improve the setting and interpretation of the Mill and this northern entry. Key strategies include:

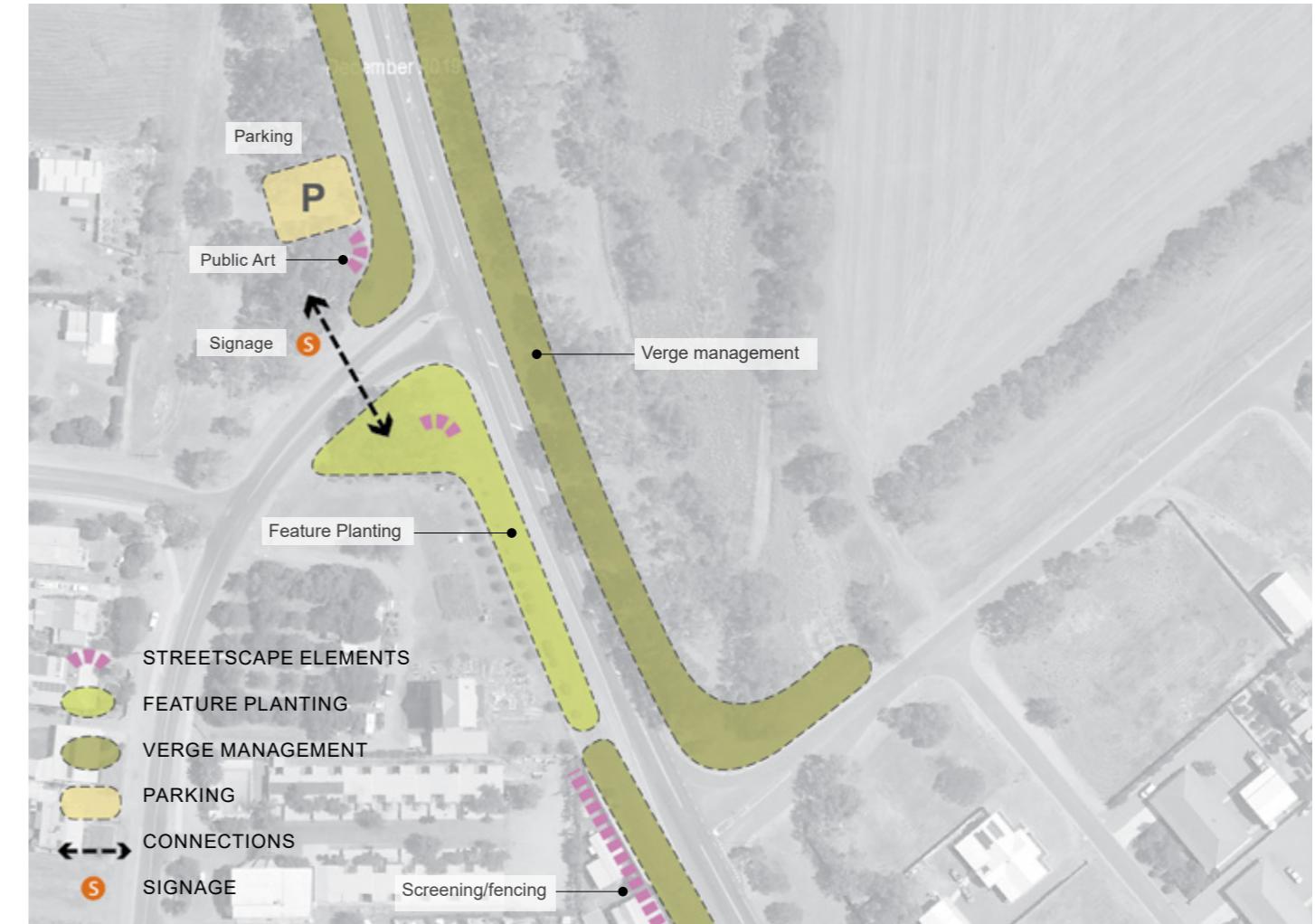
- Create parking area/pull-in to north including for caravans and larger vehicles.
- Interpretive signage for Mill, and Dongara history, local flora and fauna.
- Improve landscape setting with feature native planting. Include several feature trees and low feature planting to retain visual connection to Mill. Crushed limestone pathways.
- Negotiate with owner to give public access to Mill or create public access use (gallery, cafe) to activate the Mill and Brand Highway.
- Incorporate public art that references the mill history and related agricultural history.
- Replace fence/create public art screen to residential

EXISTING PHOTOS



Royal Steam Roller Flour Mill Image: Aussie Towns

OLD MILL MASTERPLAN



PRECEDENTS



Interpretative signage Design/Img: Multistory



Native Feature Planting Paul Thomson/TCL Img: Paul Thompson



Timber screening/planting Img: Clare Cousins

08 VERGES AND APPROACH

The entrance sequence to Dongara extends 3-5km to the north and south of the Town Entry. These areas must also be addressed in the design to increase the potential of visitors entering Dongara. Key considerations include:

- Signage to describe the features in Dongara/ Port Denison in the lead up to the town entry is limited.
- Verges are inundated with weeds and exotic species.
- Limited design of verge planting.
- Limited expression of points of interest and natural features.

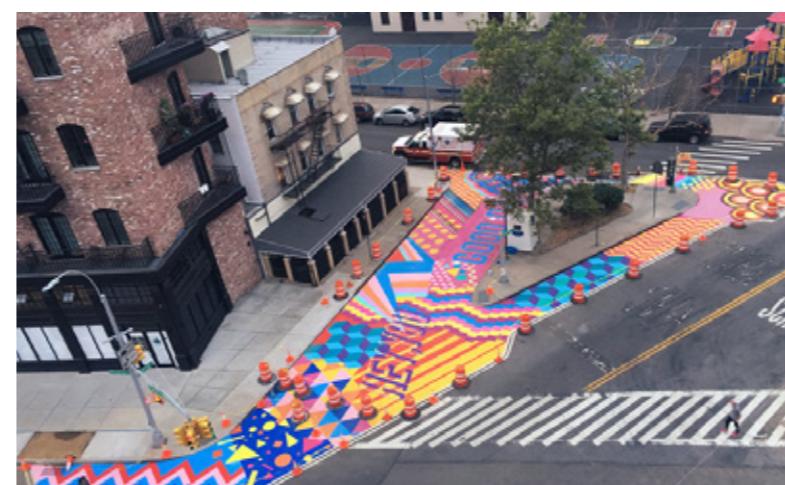
The aim is to improve the look and feel of the verges leading up to the town entry to promote key features and themes of the towns of Dongara and Port Denison. Key strategies include:

- Weed removal
- Signage 3km before turn-off to describe historical/environmental features of Dongara/ Port Denison (see example right).
- Incorporate public art thematically linked to River, Ocean, Jetty, Limestone Cliffs, Historic buildings, Shipwrecks, local Flora/Fauna, Wattandee totem or language.
- Consider how the road itself or industrial buildings could be 'activated' with public art (see examples right).
- Direct surface stormwater runoff into vegetated swales and infiltration basins.
- Use native planting palette to create visual interest and diversity at low level adjacent to the road.
- Planted or landscape elements as screening to industrial development to improve approach.

PRECEDENTS



Tourist Attractions Signage Img: Ozroads



Ashphalt activation Img Super Fresh Design



Backyard Botanicals Img: D.Blumer



Lanna Landcraft Img: G.Carr



Australian Memorial Img: Mike Rolf



Img Charles Rose Architects



Edge of the Trees Img: Sydney Living Museum



Silo Art Artist Rone Img: Robin Dunk Annette Gree



Boodja Bidi Youth Art Img: Louise Coghill

09 PLANT PALETTE

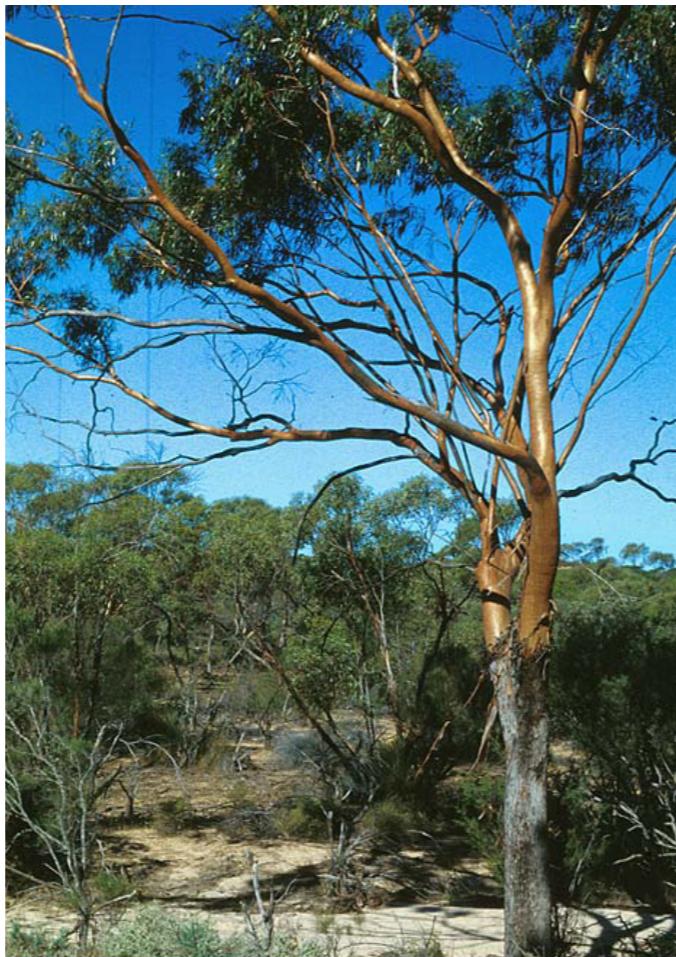
The plant palette selection recommends native plants to reflect Dongara's natural setting. It is recommended that where exotic species have historical significance, for example Moreton Bay Fig and Port Jackson Fig, they be preserved. Selective additional planting of Ficus species is considered appropriate in the Main Entry only. Further study is required to understand the historical significance of the exotic planting adjacent to the Mill and any historical buildings on the approach to the town. Where Australian native trees (but not local) are planted (i.e Tuarts) it is recommended to retain them as they have landscape value.

GIS mapping, the Dongara to Cape Burney Coastal Vegetation Survey (2010), and the Irwin River Estuary Weed Management Plan (2013) have been used to identify native vegetation units for the area that form the basis of the planting palette. Vegetation units include:

- *Acacia rostellifera* tall open scrub
- *Casuarina obesa* open forest
- *Eucalyptus camaldulensis* open forest
- *Melaleuca huegelii* open scrub
- Beard's 1976 Map identifies Units 352 (York Gum woodland) and 433 (Acacia rostellifera, *Meleuca cardiophylla* thicket/sparse low woodland; *Eucalyptus erythrocorys* (Illyarrie).

The planting strategy is to use local species to revegetate in degraded areas and new feature planting/WSUD. Limited clearing of shrubs and dead wood should be considered as fire mitigation and to open up views. Planting of new trees can only be considered where they won't interfere with visibility.

EUCALYPTUS LOXOPHLEBA (YORK GUM)



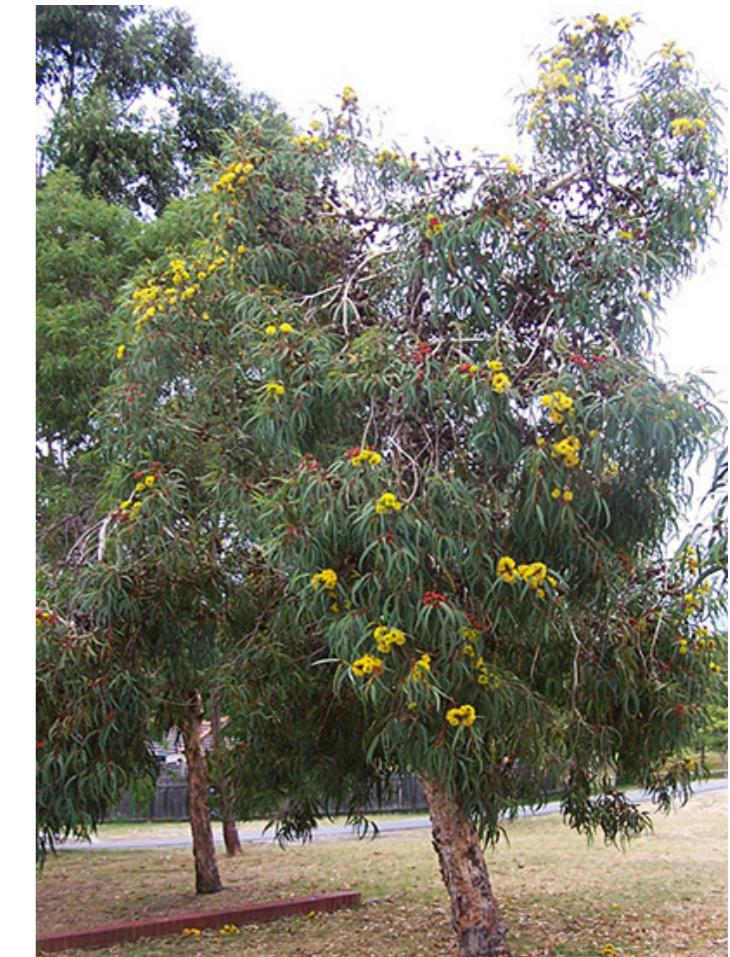
York Gum Image Florabase Img: B.R Maslin S.J Patrick

FICUS MACROPHYLLA



Ficus Macrophylla (Moreton Bay Fig) Img:JBA

EUCALYPTUS ERYTHROCORYS (ILLYARRIE)



Eucalyptus Erythrocorys Img: Jim Barrow.jpg

ACACIA ROSTELLIFERA TALL OPEN SCRUB

Acacia rostelliflora



Image Credit: John Baas

Acanthocarpus preissii



Image Credit: nativ.com.au

Alyogyne huegelii



Image Credit: nativ.com.au

Alyxia buxifolia



Image Credit: northqueenslandplants.com.

Amyema miraculosa subsp. *miraculosa*



Image Credit: northqueenslandplants.com.

Anthocercis intricata



Image Credit: Gary Thompson

Austrostipa elegantissima



Image Credit: Cottesloeocoastcare.org

Callitris arenaria-



Image Credit: Rick Fencel

Carpobrotus virescens-



Image Credit: Lullfitz.com.au

Cassytha racemosa-



Image Credit: Cottesloeocoastcare.org

Clematis linearifolia



Image Credit: northqueenslandplants.com.

Convolvulus remotus



Image Credit: Melissa Doherty

Dianella revoluta



Image Credit: Melissa Doherty

Enchytraea tomentosa var. *tomentosa*



Image Credit: Arthur Chapman

Exocarpos sparteus



Image Credit: William Archer

Hibbertia subvaginata-



Image Credit: Ellenbrook bushland

Lepidosperma gladiatum-



Image Credit: Lullfitz.com.au

Maireana brevifolia



Image Credit: Don Wood

Melaleuca Carcardiophylla-



Image Credit: Geoff Derrin

Melaleuca huegelii



Image Credit: Brian Freeman

Melaleuca lanceolata



Image Credit: nativeshop.com.au

Myoporum montanum



Image Credit: diversitynativeseeds.com

Myoporum tetrandrum



Image Credit: M. Kealley

Pittosporum ligustrifolium

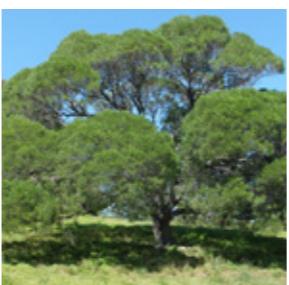


Image Credit: Robert Powell

Rhagodia baccata subsp. *baccata*



Image Credit: Cottesloeocoastcare.org

Rhagodia preissii



Image Credit: Westgrow.com.au

Salsola australis-



Image Credit: Anne Hoggett

Santalum acuminatum-



Image Credit: wtlandcare.org

Scaevola crassifolia -



Image Credit: R. Clark

Scaevola thesioides



Image Credit: Porteuspark.org.au

Spyridium globulosum



Image Credit: Cambridgecoastcare.com.au

Suaeda australis



Image Credit: friendsofwilliamstown

Templetonia retusa



Image Credit: nativ.com.au

Threlkeldia diffusa



Image Credit: senaturesearch.com.au

Tricoryne elatior



Image Credit: Frasercoastplants

EUCALYPTUS CAMALDULENSIS OPEN FOREST

Acacia rostelliflora



Image Credit: John Baas

Acacia saligna subsp. lindleyi



Image Credit:
Katanninglandcare.org.au

Alyogyne huegelii



Image Credit: Brian Freeman

Atriplex cinerea



Image Credit: plantthis.com.au

Austrostipa elegantissima



Image Credit: vhd.heritage.cottesloecoastcare.org

Casuarina obesa



Image Credit: vhd.heritage.vic.gov.au

Cyperus gymnocaulos



Image Credit: urbraewetlandc.org

Enchytraea tomentosa var.



Image Credit: Arthur Chapman

Eucalyptus Camaldulensis



Image Credit: Katanninglandcare.org.au

Maireana brevifolia-



Image Credit: Don Wood

Pimelea microcephala subsp.



Image Credit: SA Seed
conservation

Tecticornia halocnemoides



Image Credit: Colin Meurk

Typha domingensis



Image Credit: wtlandcare.org

MELALEUCA HUEGELII TALL OPEN SCRUB

Acanthocarpus preissii



Image Credit: nativ.com.au

Carpobrotus virescens



Image Credit: Lullfitz.com.au

Cassytha racemosa



Image Credit:
Cottesloecoastcare.org

Dianella revoluta



Image Credit:
Simontheplantman.com

Enchytraea tomentosa var.



Image Credit: Arthur Chapman

Eremophila glabra subsp.



Image Credit William Archer

Melaleuca huegelii



Image Credit: Brian Freeman

Myoporum montanum-



Image Credit:
diversitynativeseeds.com

Olearia axillaris



Image Credit:
Cottesloecoastcare.org

Ptilotus divaricatus



Image Credit:
Timothy Hammer

Rhagodia baccata subsp.

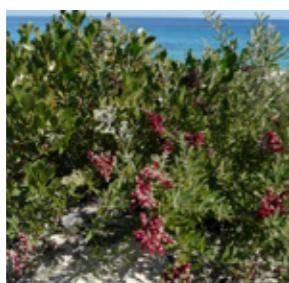


Image Credit:
Cottesloecoastcare.org

Salsola australis



Image Credit: Anne Hoggett

Santalum acuminatum



Image Credit: Anne Hoggett

Scaevola crassifolia



Image Credit: R. Clark

Tecticornia halocnemoides



Image Credit: Colin Meurk

Templetonia retusa



Image Credit: nativ.com.au

Threlkeldia diffusa



Image Credit:
scnaturesearch.com.au

10 MANAGEMENT

WEEDS

The project area is typically in a semi-degraded condition and impacted by weed infestation. Environmental weeds identified during site visits are listed opposite and supplemented with weeds identified in the 2013 Irwin Estuary Weed Management Plan, and the 2010 Dongara to Cape Burney Coastal Vegetation Survey, which are both reports commissioned by NACC on sites immediately adjacent to the project areas. The table opposite summarises weeds identified, order of priority, and management. Further details can be found in the reports referenced. The ranking indicates the priority for weed eradication.

Areas of particular weed management focus should be the entry statement to Dongara and catchment areas where weed seeds could be washed by surface water drainage into the river.

There is a clear role for community volunteers including monitoring and hand removal of selected weed species, photo monitoring, and establishment of regional herbarium. Volunteer weed management is best suited to tackling smaller areas of highly visible weeds removed manually and ongoing monitoring. It is recommended that the Shire collaborate with NACC, MEEDAC, and community groups for ongoing weed management and revegetation.

Revegetation could also be tackled by community volunteers. Tree planting on the Entry site by high school students has historically occurred, and this could be attempted again.

Weed control is important to improve the visual landscape value, for bushfire mitigation, and to maintain the ecological and biodiversity value of the vegetation communities and anything downstream of the project area where weed seeds could be transported by the Irwin River.

SPECIES	PRIORITY	MANAGMENT
<i>African Boxthorn</i>	Very High	Remove (hand, cut and paint, spray) and monitor
<i>Geraldton Carnation Weed</i>	Very High	Community monitor and hand remove twice a year
<i>Japanese Pepper</i>	Very High	Hand remove seedlings, stem inject/cut and paint trees
<i>African Lovegrass</i>	Very High	Herbicide , Community monitor and hand remove
<i>Couch and Kikuyu Grass</i>	Very High	Experienced contractor to remove
<i>Crownbeard</i>	Very High	Community hand remove or spray
<i>Fountain grass</i>	Very High	Herbicide, Community monitor and hand remove
<i>Ice Plant</i>	Very High	Remove germinants and monitor
<i>Lantana</i>	Very High	Remove all plants and do not spread fruit
<i>Pypegrass</i>	Very High	Eradicate
<i>Tambookie Grass</i>	Very High	Community monitor and hand remove
<i>Whiteflower Fumitory</i>	Very High	Hand remove and spray with glyphosate larger areas
<i>Wild Oats</i>	Very High	Grass selective herbicide
<i>Wild Turnip</i>	Very High	Community monitor and hand remove
<i>Great Brome</i>	High	
<i>Annual Beardgrass</i>	Medium	
<i>Barley Grass</i>	Medium	
<i>Red Brome</i>	Medium	
<i>Canary island date palms</i>	Medium	Hand remove, cut and paint trees
<i>Cape Weed</i>	Medium	
<i>Castor Oil</i>	Medium	Community monitor and hand remove seedlings, cut and paint trees
<i>False Bamboo</i>	Medium	Cut and paint, spray herbicide
<i>False Hawkbit</i>	Medium	
<i>Fescue (Squirrels Tail, Vulpia, Rat's Tail)</i>	Medium	
<i>Hop Clover</i>	Medium	
<i>Hottentot Fig, Pigface</i>	Medium	
<i>Olive</i>	Medium	Hand remove seedlings, cut and paint trees
<i>Onion weed</i>	Medium	Hand remove near Bridge
<i>Lupin</i>	Medium	
<i>Nettleleaf Goosefoot or Green Fat Hen</i>	Medium	
<i>Pepper tree</i>	Medium	Hand remove seedlings, stem inject/cut and paint trees
<i>Pimpernel</i>	Medium	
<i>Smooth Cat's Ear, Flat Weed</i>	Medium	
<i>Soursob</i>	Medium	Remove
<i>Saffron Thistle and Common Sowthistle</i>	Medium	
<i>Tamarisk</i>	Medium	Stem inject glyphosate, remove specimen near boardwalk and adjacent to Point Leander Drive
<i>Velvet Pink</i>	Medium	
<i>Agave Americana</i>	Low	Hand remove small plants, chemical control large plants
<i>French Catchfly</i>	Low	
<i>Norfolk Island Hibiscus, Tree Tobacco</i>	Low	Hand remove seedlings and stem inject mature
<i>Rye Grass</i>	Low-Medium	
<i>Veldt Grass</i>	Low-High	

BUSHFIRE

Fuel reduction/management

Fuel load risk should be mitigated by clearing weeds. In areas in close proximity to infrastructure maintain combustible dead vegetation levels as set out in SPP 3.7. Selective clearing could occur at the BP pull-in where it would also create visual connection to the River and a crushed limestone path could create a buffer. Another clearing could occur to the east where the River Reserve is still under Shire Control. Weed removal could be focussed in these areas and there could be selective clearing of existing native shrubs and trees in poor condition. In these areas shrubs and trees should not form a continuous canopy and existing tree canopies could be raised (branches removed below 2m).

Infrastructure siting

Infrastructure is located in lower risk areas that are already substantially cleared or less dense. In the entry, an Asset Protection Zone should be created around new and existing infrastructure as set out in SPP 3.7.

Planting design

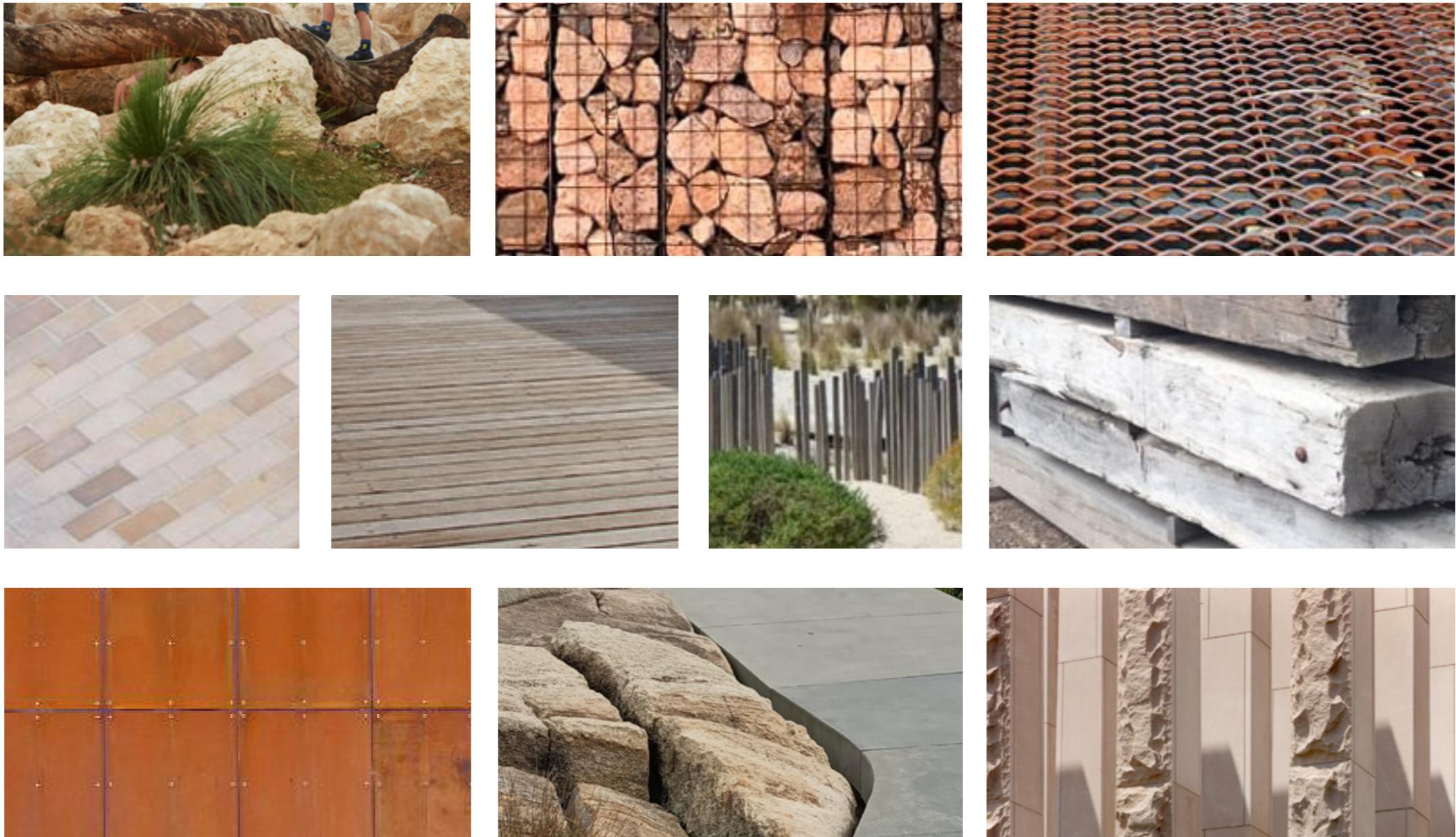
In this 'natural' context it is considered to maintain the native planting palette rather than specify exotics that might be lower fire risk. However, reducing planting density for new planting (to reduce fuel load) and non-flammable rock mulches should be considered at the Entry, BP pull-in, and Mill. Non-flammable stone walls can be incorporated as 'shield' walls (from wind, radiant heat, embers). Areas of low combustible planting/non-flammable mulches will be interspersed between trees, and shrubs will be clumped and separated from trees to break up fuel continuity.

11 MATERIAL PALETTE

The material palette reflects key themes identified as appropriate to Dongara/Port Denisons character. These include thematic links to maritime history, coastal geology, the natural Riparian environment, and agricultural history.

The material strategy reflects and supports this:

- Create low-key crushed rock trails with informal edges
- Develop bespoke shade structures, furniture or select furniture products that have colours and textures that are appropriate to the natural setting. These including timber, weathering steel, darker coloured painted steel, tinted concrete
- Create appropriate walls and footpaths using local limestone or coloured/textured concrete that reflects the local limestone geology
- Use natural curves and shapes found in nature
- Allow materials to form a natural patina rather than using stains and varnishes.
- Use reclaimed materials such as recycled jarrah that already have a patina and blend with the natural environment and link to maritime history themes
- Avoid formal edges and large areas of hardstanding in contrasting colours. Carparks to be crushed gravel with timber or steel edging



12 OPINION OF PROBABLE COST

ENTRY

ITEM	DESCRIPTION	QTY	UNIT	RATE	TOTAL PRICE
1.00 PRELIMINARIES, SITE WORKS AND DEMOLITIONS					
1.01	Site Mobilisation	1	item	\$15,000.00	\$15,000.00
1.02	Traffic Control	1	item	\$6,000.00	\$6,000.00
1.03	Demolition and disposal (<i>existing paving in Median</i>)	110	m2	\$30.00	\$3,300.00
1.04	Bulk Earthworks - Import of soil (<i>feature mounds and levelling parking area</i>)	400	m3	\$14.00	\$5,600.00
1.05	Bulk Earthworks - Spreading of soil	400	m3	\$8.00	\$3,200.00
1.06	Site Preparation - Excavation and fine grading	4,070	m2	\$2.50	\$10,175.00
1.07	Final trim for soft landscape	1,830	m2	\$1.50	\$2,745.00
PRELIMINARIES, SITE WORKS AND DEMOLITIONS					\$46,020.00
2.00 HARDWORKS - SURFACE TREATMENTS					
2.01	P01 - Paving Type 1 - Exposed Aggregate Paving - 100mm thick 0.5mm exposed 14mm quartz aggregate on compacted sub grade (<i>path and Lobster hardstand</i>)	220	m2	\$140.00	\$30,800.00
2.02	P02 - Paving Type 2 - Compacted crushed gravel - 75mm (<i>walk trail</i>)	90	m2	\$30.00	\$2,700.00
2.03	P03 - Paving Type 3 - Ferricrete/gravel (<i>Car parking area and road edging</i>)	1480	m2	\$30.00	\$44,400.00
2.04	E01 - Edging Type 1 - Concrete garden edging, 200 x 300mm (<i>turf edging</i>)	80	lin m	\$70.00	\$5,600.00
2.05	E03 - Edging Type 3 - Kerbing - Semi-mountable (<i>to driveway and roundabout</i>)	255	lin m	\$70.00	\$17,850.00
2.06	E04 - Rock Pitching - Mortared laterite stone pitching, nom 400 x 400mm (<i>path ramp to Lobster - retaining</i>)	25	m2	\$145.00	\$3,625.00
2.07	Pram Ramp	1	item	\$1,200.00	\$1,200.00
HARDWORKS - SURFACE TREATMENTS					\$106,175.00
3.00 HARDWORKS - INFRASTRUCTURE					
3.01	Picnic Setting Type 1 - table with bench seats (potential artist item)	2	item	\$6,000.00	\$12,000.00
3.02	Shade Structure - 4 x 4m, steel HDG frame, powdercoated finish, inground fixing	1	each	\$15,000.00	\$15,000.00
3.03	Arrival Sequence Public Art	2	item	\$15,000.00	\$30,000.00
3.04	Signage - in park interpretive signage	4	item	\$3,000.00	\$12,000.00
3.05	Concrete Seating wall - with recessed corten 'Dongara' signage	37	lin m	\$1,200.00	\$44,400.00
3.06	Vertical sleepers - variable 1.8 - 3m high (<i>screening to concrete works</i>)	15	each	\$250.00	\$3,750.00
3.07	Log steppers (<i>to Lobster</i>)	5	each	\$450.00	\$2,250.00
3.08	Large climbing log - smoothed off	2	each	\$3,000.00	\$6,000.00
3.09	Local rock boulders - nom 600 x 600 x 800mm	10	each	\$120.00	\$1,200.00
HARDWORKS - INFRASTRUCTURE					\$126,600.00
4.00 SOFTWORKS					
4.01	Turf	570	m2	\$15.00	\$8,550.00
4.02	Planting Type 1 - 140mm - Planting Mix - Feature Landscape 3 x \$8 per m2	805	m2	\$24.00	\$19,320.00
4.03	Planting Type 2 - 140mm - Planting Mix - General Landscape 2 x \$8 per m2	2,113	m2	\$16.00	\$33,808.00
4.04	Planting Type 3 - Tubestock - Planting - General Landscape 4 x \$3 per m2	1,244	m2	\$12.00	\$14,928.00
4.05	Planting Type 4 - Cells - 6 per m2 (<i>Swales</i>)	550	m2	\$12.00	\$6,600.00
4.06	Soil Conditioner - 25mm thick (<i>garden beds and turf incl reveg areas</i>)	5,282	m2	\$7.00	\$36,974.00
4.07	Mulch Type 1 - Native Organic mulch - 75mm thick (<i>Garden beds and swale</i>)	4,712	m2	\$6.00	\$28,272.00
4.08	Trees - 45L with staking - including 750g of Terracottem per tree and slow release tree pills as per manufacturers standards	28	item	\$200.00	\$5,600.00
SOFTWORKS					\$154,052.00
5.00 ELECTRICAL					
5.01	Electrical cabinet	1	each	\$6,000.00	\$6,000.00
5.02	Feature lighting - Lobster	2	each	\$6,000.00	\$12,000.00
5.03	Feature lighting - Arrival sequence	16	each	\$4,000.00	\$64,000.00
ELECTRICAL					\$82,000.00
6.00 IRRIGATION					
6.01	Drip Irrigation to garden beds and sprays to turf	2,945	m2	\$20.00	\$58,900.00
IRRIGATION					\$58,900.00
SUB TOTAL Contingency Sub total Exc GST GST TOTAL inc GST					
			30%		\$573,747.00
					\$172,124.10
					\$745,871.10
					\$74,587.11
					\$820,458.21

BP PULL-IN

ITEM	DESCRIPTION	QTY	UNIT	RATE	TOTAL
1.00 PRELIMINARY, SITE WORKS & DEMOLITIONS					
1.01	Site mobilisation	1	item	\$10,000.00	\$10,000.00
1.02	Fine grading	1	item	\$10,000.00	\$10,000.00
1.03	Arborist Tree Pruning	1	item	\$5,000.00	\$5,000.00
1.04	Weed Eradication	2,000	m2	\$0.80	\$1,600.00
1.05	Minor Earthworks and fine grading	100	m2	\$1.00	\$100.00
1.06	Removal and disposal of existing signage (reclaim limestone)	10	m3	\$30.00	\$300.00
PRELIMINARY, SITE WORKS & DEMOLITIONS TOTAL					
2.00 HARDWORKS - SURFACE TREATMENTS					
2.01	Paving - New crushed limestone trail to River	80	m2	\$65.00	\$5,200.00
2.02	Parking Line marking	1	allowance	\$4,000.00	\$4,000.00
2.03	Rock pitching to swales	80	m2	\$145.00	\$11,600.00
2.04	Concrete pads to seating and bin areas	2	m2	\$80.00	\$160.00
HARDWORKS - SURFACE TREATMENTS TOTAL					
3.00 HARDWORKS - INFRASTRUCTURE					
3.01	Edging - Flush kerb to island	100	m2	\$45.00	\$4,500.00
3.01	Benches	1	item	\$1,500.00	\$1,500.00
3.01	Picnic tables	1	each	\$5,000.00	\$5,000.00
3.01	Bin enclosures	1	each	\$7,000.00	\$7,000.00
3.01	Signage - Information and Interpretive	1	allowance	\$6,000.00	\$6,000.00
HARDWORKS - INFRASTRUCTURE TOTAL					
4.00 SOFTWORKS					
4.01	Planting (Feature and Swale) - 140mm pot including soil wetting agent and slow release fertiliser as per manufacturers standards (3 /m2)	1,200	m2	\$24.00	\$28,800.00
4.03	Trees - 45L - incl. Tree Stakes & Soil conditioner	20	item	\$160.00	\$3,200.00
4.03	Soil conditioner for garden bed areas - 25mm thick	1,200	m2	\$12.00	\$14,400.00
4.03	Mulch Type 2 - Rock mulch - 75mm thick	1,200	m2	\$30.00	\$36,000.00
SOFTWORKS TOTAL					
5.00 SERVICING AND PUBLIC ART					
5.01	Lighting, conduits, cabling etc,	1	allowance	\$4,000.00	\$4,000.00
5.02	Irrigation	400	m2	\$20.00	\$8,000.00
5.03	Conduits, trenching, cabling, cabinets and switchboards, etc	1	item	\$20,000.00	\$20,000.00
5.04	Public Art	1	allowance	\$10,000.00	\$10,000.00
SERVICING AND PUBLIC ART TOTAL					
Sub Total Construction Contingency Sub total Exc GST GST TOTAL inc GST					
			30%		\$196,360.00
					\$58,908.00
					\$255,268.00
					\$25,526.80
					\$280,794.80

OLD MILL

ITEM	DESCRIPTION	QTY	UNIT	RATE	TOTAL
1.00 PRELIMINARY, SITE WORKS & DEMOLITIONS					
1.01	Site mobilisation	1	item	\$10,000.00	\$10,000.00
1.02	Fine grading	1	item	\$10,000.00	\$10,000.00
1.03	Arborist Tree Pruning	1	item	\$5,000.00	\$5,000.00
1.04	Weed Eradication	1,000	m2	\$0.80	\$800.00
1.05	Minor Earthworks and fine grading	100	m2	\$1.00	\$100.00
PRELIMINARY, SITE WORKS & DEMOLITIONS TOTAL					\$25,900.00
2.00 HARDWORKS - SURFACE TREATMENTS					
2.01	Paving - crushed limestone	340	m2	\$80.00	\$27,200.00
2.02	Parking (gravel)	800	m2	\$65.00	\$52,000.00
2.03	Concrete pads to seating and bin areas	5	m2	\$80.00	\$400.00
HARDWORKS - SURFACE TREATMENTS TOTAL					\$79,600.00
3.00 HARDWORKS - INFRASTRUCTURE					
3.01	Pedestrian crossing/drop kerbs	1	allowance	\$2,000.00	\$2,000.00
3.02	Edging Type 1 - Concrete kerb	100	m2	\$45.00	\$4,500.00
3.03	Benches	2	item	\$1,500.00	\$3,000.00
3.04	Bin enclosures	1	each	\$7,000.00	\$7,000.00
3.05	Signage	1	allowance	\$4,000.00	\$4,000.00
HARDWORKS - INFRASTRUCTURE TOTAL					\$20,500.00
4.00 SOFTWORKS					
4.01	Planting - 140mm pot including soil wetting agent and slow release fertiliser as per manufacturers standards (3 /m2)	1,500	m2	\$24.00	\$36,000.00
4.02	Trees - 45L - incl. Tree Stakes & Soil conditioner	10	item	\$160.00	\$1,600.00
4.03	Soil conditioner for garden bed areas - 25mm thick	1,500	m2	\$12.00	\$18,000.00
4.04	Mulch Type 2 - Rock mulch - 75mm thick	1,500	m2	\$30.00	\$45,000.00
SOFTWORKS TOTAL					\$100,600.00
5.00 LIGHTING AND PUBLIC ART					
5.01	Lighting and electrical	1	item	\$5,000.00	\$5,000.00
5.02	Conduits, trenching, cabling, cabinets and switchboards, etc	1	item	\$50,000.00	\$50,000.00
5.03	Public Art	1	allowance	\$15,000.00	\$15,000.00
LIGHTING AND PUBLIC ART TOTAL					\$70,000.00
Sub Total Construction Contingency Sub total Exc GST GST TOTAL inc GST					
\$296,600.00 \$88,980.00 \$385,580.00 \$38,558.00 \$424,138.00					

VERGES AND APPROACH

ITEM	DESCRIPTION	QTY	UNIT	RATE	TOTAL
1.00 PRELIMINARY, SITE WORKS & DEMOLITIONS					
1.01	Site mobilisation	1	item	\$10,000.00	\$10,000.00
1.02	Weed Eradication	100,000	m2	\$0.80	\$80,000.00
1.03	Litter Removal	1	allowance	\$10,000.00	\$10,000.00
PRELIMINARY, SITE WORKS & DEMOLITIONS TOTAL					\$100,000.00
2.00 HARDWORKS - SURFACE TREATMENTS					
2.01	Rock pitching to WSUD swales	100	m2	\$145.00	\$14,500.00
HARDWORKS - SURFACE TREATMENTS TOTAL					\$14,500.00
3.00 HARDWORKS - INFRASTRUCTURE					
3.01	Signage	1	allowance	\$5,000.00	\$5,000.00
HARDWORKS - INFRASTRUCTURE TOTAL					\$5,000.00
4.00 SOFTWORKS					
4.01	Reveg Planting - Tube stock including soil wetting agent and slow release fertiliser as per manufacturers standards (4 tubes /m2)	5,000	m2	\$12.00	\$60,000.00
4.02	Trees - 200L - incl. Tree Stakes & Soil conditioner	20	item	\$430.00	\$8,600.00
SOFTWORKS TOTAL					\$68,600.00
5.00 LIGHTING AND PUBLIC ART					
5.01	Lighting and electrical (including lighting public art)	1	allowance	\$5,000.00	\$5,000.00
5.03	Public Art	1	allowance	\$20,000.00	\$20,000.00
LIGHTING AND PUBLIC ART TOTAL					\$25,000.00
Sub Total Construction Contingency Sub total Exc GST GST TOTAL inc GST					
\$213,100.00 30% \$63,930.00 \$277,030.00 10% \$27,703.00 \$304,733.00					

SUMMARY

ITEM	DESCRIPTION	TOTAL
1.00	Entry	
1.01	PRELIMINARY, SITE WORKS & DEMOLITIONS	\$46,020.00
1.02	HARDWORKS - SURFACE TREATMENTS	\$106,175.00
1.03	HARDWORKS - INFRASTRUCTURE	\$126,600.00
1.04	SOFTWORKS	\$154,052.00
1.05	ELECTRICAL	\$82,000.00
1.06	IRRIGATION	\$58,900.00
		Entry \$573,747.00
2.00	BP Pull-in	
2.01	PRELIMINARY, SITE WORKS & DEMOLITIONS	\$27,000.00
2.02	HARDWORKS - SURFACE TREATMENTS	\$20,960.00
2.03	HARDWORKS - INFRASTRUCTURE	\$24,000.00
2.04	SOFTWORKS	\$82,400.00
2.05	LIGHTING AND PUBLIC ART	\$42,000.00
		BP Pull-in \$196,360.00
3.00	Old Mill	
3.01	PRELIMINARY, SITE WORKS & DEMOLITIONS	\$25,900.00
3.02	HARDWORKS - SURFACE TREATMENTS	\$79,600.00
3.03	HARDWORKS - INFRASTRUCTURE	\$20,500.00
3.04	SOFTWORKS	\$100,600.00
3.05	LIGHTING AND PUBLIC ART	\$70,000.00
		Old Mill \$296,600.00
2.00	Verges and Approach	
2.01	PRELIMINARY, SITE WORKS & DEMOLITIONS	\$100,000.00
2.02	HARDWORKS - SURFACE TREATMENTS	\$14,500.00
2.03	HARDWORKS - INFRASTRUCTURE	\$5,000.00
2.04	SOFTWORKS	\$68,600.00
2.05	LIGHTING AND PUBLIC ART	\$25,000.00
		Verges and Approach \$213,100.00
	Sub Total Construction	\$1,279,807.00
	Contingency 30%	\$383,942.10
	Sub total Exc GST	\$1,663,749.10
	GST 10%	\$166,374.91
	TOTAL inc GST	\$1,830,124.01



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