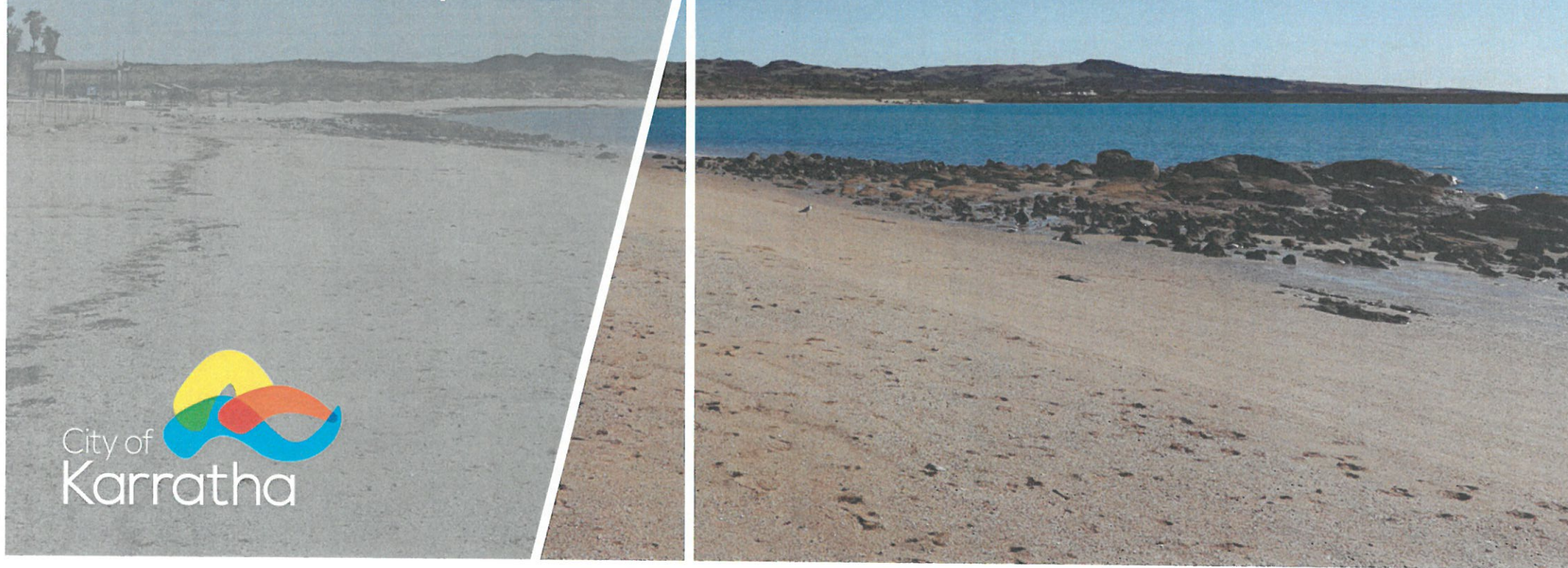


DAMPIER PALMS & HAMPTON OVAL REDEVELOPMENT

DESIGN REPORT
Prepared by Cardno for the City of Karratha





Cardno (WA) Pty Ltd
Trading as Cardno
ABN 77 009 119 000

11 Harvest Terrace, West Perth WA 6005

Telephone: 08 9273 3888

Facsimile: 08 9486 8664

International: +61 8 9273 3888

perth@cardno.com.au

Prepared for City of Karratha
Project Name Dampier Palms & Hamptons Redevelopment
Project Number CW987900
Document Title Design Report
Prepared by Cara Clifton - Lead Landscape Architect
Reviewed by Daniel Strickland - Senior Coastal Engineer
Rasheen Lee - Landscape Architect

Document Status Draft Rev F
Issued Date 26.05.2017



© Cardno 2012. 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.

Contents

1. Introduction	1	7. Opinion of Cost	26
2. Site Conditions	2	Option 1	26
Site Analysis	3	Option 2	30
Opportunities & Spatial Arrangement	4		
3. Community Workshop Summary	5		
4. Draft Master Plan	8		
Bulk Earthworks & Grading	9		
Cross Sections	10		
Cross Sections	11		
Cross Sections	12		
5. Design Considerations	13		
Traffic and Parking.....	13		
Pavilion.....	14		
Stormwater Management.....	15		
Recreational Amenity	16		
Coastal Hazard Risk Management	18		
Commercial Opportunities	19		
Playing Fields	20		
Pedestrian Access	21		
Trees and Planting.....	22		
6. Staging	23		
Option 1 - Overall Site.....	24		
Option 2 - North to South	25		

1. Introduction

The City of Karratha propose to redevelop The Palms precinct on the Dampier Foreshore, with the intention of providing an outstanding recreational facility for the Dampier and Karratha community.

The design philosophy for the foreshore redevelopment is to:

- optimise opportunities for wide range of foreshore activities;
- introduce activity nodes linking the water and foreshore activities,
- provide safe functional access to, from and throughout the site,
- separate movement of vehicles and pedestrians,
- improve stormwater drainage management/mitigation;
- address coastal vulnerability/storm surge management;
- build on the existing functional features;
- optimise the playing field area (Hampton Oval),
- develop links to adjoining areas (including Yacht Club),
- enhance the built form on the site,
- build on the "Palms" feature for the site, and
- build on the amenity of the site through the provision of shade, barbecue areas, lighting and showers.

Cardno have been engaged by the City of Karratha to develop a Master Plan that will guide the foreshore redevelopment via a staged process.

The Master Plan takes into account:

- the existing site conditions;
- issues pertaining to coastal vulnerability;
- parking and vehicular access;
- drainage and stormwater;
- recreational infrastructure;
- beach access;
- the existing playing fields;
- soft landscaping; and
- space requirements for commercial opportunities.

This report describes how each of the above elements has contributed to the development of the Master Plan.



2. Site Conditions

The site is located at the junction of The Esplanade and Church Road, in the southern end of the Dampier Foreshore. The site is bound by the coastline to the west, the Hampton Harbour Boat & Sailing Club to the north, The Esplanade to the east, and a substantial drainage swale to the south.

The coastline is relatively stable, and experiences minimal movement of the beach and vegetation. The protected coastline means that large offshore waves are unlikely to reach the shore, and the likely maximum wave height in a severe cyclone is 1.5m. Rock underlies the sandy beach, and the rock is visible along the foreshore.

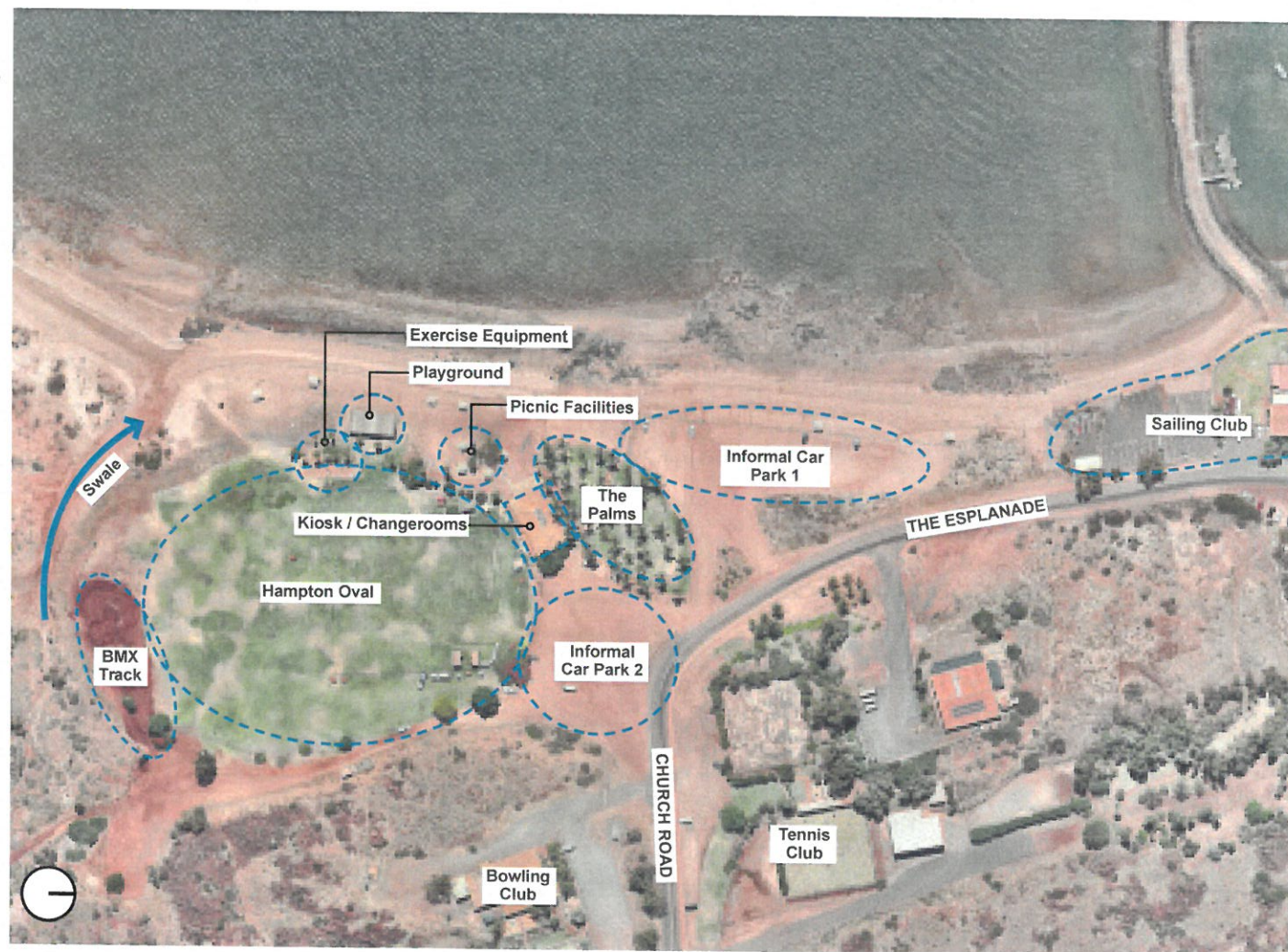
With the exception of a central area of palm trees – after which the site is named – and some trees surrounding a grassed oval (including *Delonix regia* and *Eucalyptus* species), there is minimal vegetation present on site.

The beach is a popular swimming beach, and the foreshore area provides primarily a sporting and recreational function for the Dampier and Karratha communities. Sporting infrastructure comprises soccer playing fields and a sports pavilion, both of which services local soccer clubs.

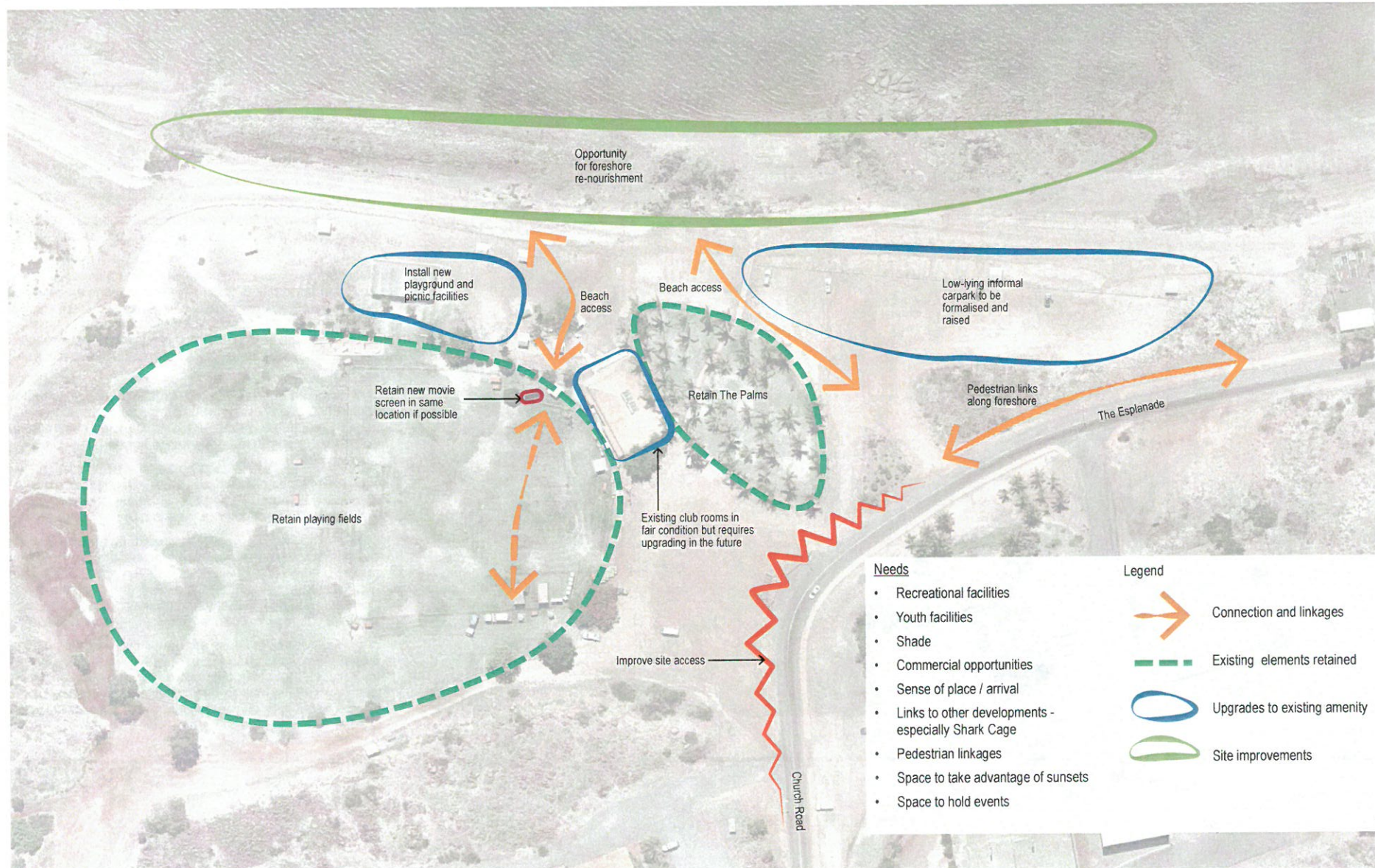
The recreational infrastructure within the site comprises picnic facilities, shade shelters, a playground and fitness equipment, a recently completed BMX track, and a recently completed outdoor movie screen. With the exception of the newer infrastructure such as the BMX track, playground and movie screen, much of the recreational infrastructure is reaching the end of its usable life.

The site is serviced by informal uncontrolled, unsealed car parking that is accessed via The Esplanade and Church Road.

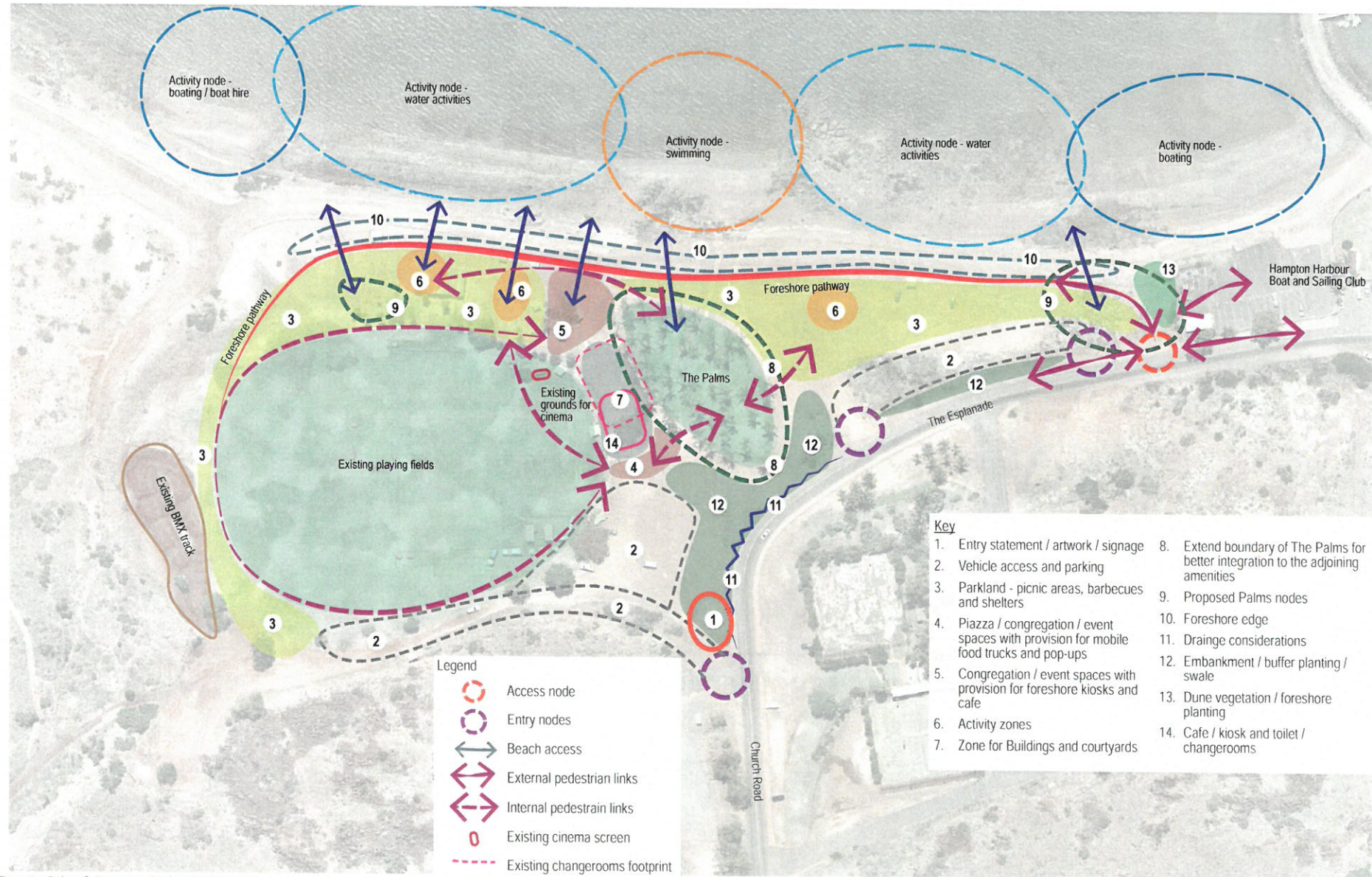
Other recent developments within the Dampier townsite includes the Dampier Community Hub, and the Shark Cage Beach Lookout Structure.



Site Analysis



Opportunities & Spatial Arrangement



3. Community Workshop Summary



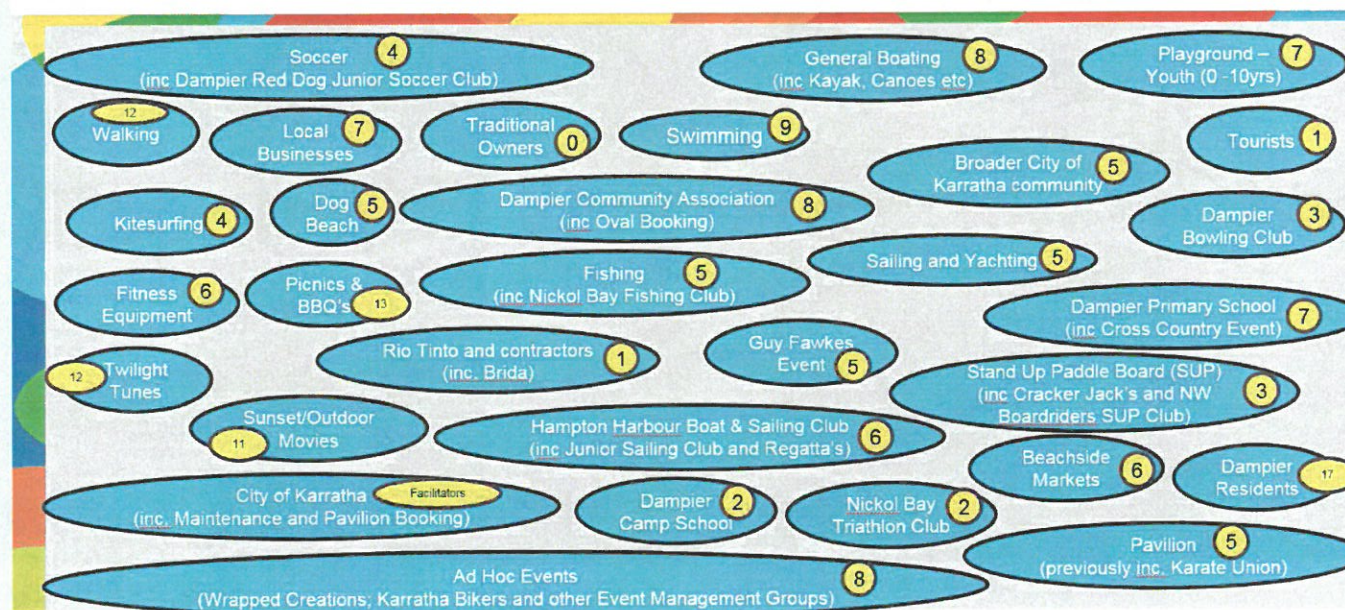
Dampier Palms and Hampton Oval Redevelopment Community Workshop

Date held: 8 March, 2017

Venue: Dampier Community Hall

Attendees: 36

Representation and activities attendees participate in (as selected):



Stakeholders – User Groups - Activities



The Workshop revolved around four main topic areas. Generally, there was consensus on changes marked above (see draft Masterplan). The City will continue to consider other feedback (detailed below) throughout the project development.

TOPIC - ENVIRONMENT AND LANDSCAPING

Over the last 70 years the coastline has remained relatively stable and experiences minimal movement of the beach and vegetation. However, the site is impacted by significant rainfall events when substantial volumes of storm water flow across the site from Church Rd and The Esplanade.

The footpath/retaining wall design level is based on modelling for a 1 in 10 year storm event in 2060 anticipating higher sea levels and with additional safety factor. The protected coastline means that large offshore waves are unlikely to reach the shoreline.

Drainage swales are proposed to provide limited collection of water from severe storm events and ensure controlled flow of stormwater across the site.

Landscaping options are to be suitable to the environment and low maintenance.

Shade options to be both trees and shade structures.

Land ownership will need to be considered as design development progresses.

COMMENTS:

- Generally, comments to support an approach that:
 - Does not erode/damage beach areas.
 - Does not erode/damage grassed areas and carparks.
 - Does not damage/flood any proposed activity or playground areas.
- There was support to replenish the beach.
- In regards to not blocking views – hand rails on the retaining wall would not be supported.
- Palms areas (x3) well received and supported.
- Support towards a mixture of native and exotic trees similar to what is already there.
- Signage: Particularly native vegetation and town information would be supported.
- Don't cut down the existing large iconic trees.
- Palms with no coconuts or ensure maintained so that there is no danger of falling coconuts.
- Lots of grass, Lipia. Cooler and Natives / Water Friendly plants / Sturt Desert Peas.

TOPIC - ACTIVATION

- "Activity Zones" - These are indicative at this stage and could be anything from playgrounds/ youth activity areas (for differing age groups), small enclosed multi sports area (Rage Cage), fitness equipment, beach volleyball or staging.
- Draft Masterplan accommodates current soccer field spaces (both #5 and #6). This does have some impact on space. Ongoing consultation with the specific Club/s will be required as to their future needs, and opportunities to consolidate this space alongside other community requirements/ requests.
- Purpose of an 'amenities strip' alongside the main footpath is to locate fixtures such as bins, drink fountains, lighting, seating, showers etc, in a neat manner (assists maintenance, functionality and avoids having these scattered through 'activity' spaces).

COMMENTS:

- Don't block the view with tall structures – keep the central Activity Zone low.
- General consensus was a preference for natural materials to be used on playgrounds – NO bright coloured plastic.
- Low level playground for little ones – preferably within close proximity to the Palms (general consensus).
- Open up East Intercourse causeway – increase water flow / flush out the harbor and reinvigorate beach. If spending money on the foreshore, need a good sandy beach.
- Ensure the retaining wall does not block the view from the lawn areas.
- Ablutions – need the same amount if not more
- Ensure there are external showers / foot washing stations.
- Light the oval.
- Make allowances for the installation of a Trans Karratha bus stop.
- Exercise equipment – needs to be lit at night.
- Stage for performances / Twilight Tunes style event.
- Beach volleyball.
- Lit space for teenagers – interested in rage cage concept.
- Lit basketball/netball court.
- Pontoon – raised a few times. Acknowledged the issues with depth.
- Jetty for fishing – will get the kids off the floating jetty.
- Tidal pool or Sea pool (similar to Cairns) – raised a few times.
- Walking surface / smooth and safe / popular area for scooters, skateboards, etc.
- Splash pad - raised once. Water Play elements raised frequently.
- Flying fox - raised once.

TOPIC - FUNCTIONALITY

In creating "activity zones", the individual's purpose for visiting the foreshore will influence (for example):

- a. where you park;
- b. access point for foreshore area;
- c. use of amenities.

There is an opportunity to improve amenity provided by the Dampier Pavilion. In most recent times, the Pavilion's primary uses are:

- Kiosk – refreshments and fundraising for soccer activities (small kitchen facilities only required)
- Toilets and showers
- Change room facilities (minimally required – generally not required for junior soccer).

The draft Masterplan proposes changes to the current Pavilion (upgrade or rebuild), however this has not been formalised in any way. Will be subject to community feedback, overall cost and further discussion with stakeholders (including Rio Tinto and Council).

COMMENTS:

- Each club that uses the space has individual functionality comments. The City to continue to liaise with groups to ensure functionality of design throughout the project. Namely: Kitesurfers, Stand Up Paddleboarders, HHBSC, Soccer Club, DCA and event management companies.
- In regards to the draft Masterplan presented, there was overall support towards the pathways and promenade, greener and more usable spaces, natural shade, amphitheatre space/terrace, pop-up van concept and northern carpark area in general.
- Direct access from kiosk/pavilion space to beach would be good. Would also assist passive surveillance by parents/community.
- Appropriate lighting throughout. Encourage people to stay past sundown.
- Retain club use of a kiosk. Commercial kitchen could be considered.
- Central location of ablutions and amenities is good, but needs to be impressive.
- Space within the Development area to cater for functions.
- Seating under shade.
- Ensure emergency access however differing comments and opinions on general public access to the beach.

TOPIC - ACCESS

In creating effective and practical pathways of "access," that informs interaction with the site, road safety principles have been applied to reduce points of conflict (cars/cars; pedestrian/cars; cyclist/pedestrian etc).

The draft Masterplan presented a proposed 124 parking bays (not including other overflow areas). The numbers aim to support foreshore patronage for the majority of time noting:

- Will not suffice for large scale events where the surrounding pedestrian linkages become important.
- Do not want large bitumised areas on the foreshore that sit empty most of the time.
- Spread the carparking out across more areas (and back from the beachfront) to assist activation of spaces and access to the foreshore.

COMMENTS:

- Overall, generally positive feedback received on road access and carpark numbers ("pretty good").
- Redesign of The Esplanade and Church Road at the Palms to be considered.
- Shade and seating at the BMX site is needed now and should be accommodated over the road access.
- The calculated 120 informal bays (currently onsite) is incorrect and that the spaces currently allow higher number of vehicles to park there – raised once.
- Size of car bays to be further considered by City throughout design development to ensure adequate for large percentage of 4WD vehicles.
- Overwhelming support towards the principle of retaining green space towards the foreshore, with carparks to 'sit back'.
- Have "Statement Steps" – an area that clearly says 'enter foreshore here' instead of multiple, less significant entry points.
- Maintaining access onto the oval for markets/ events important. Design needs to continue to consider this as it develops.

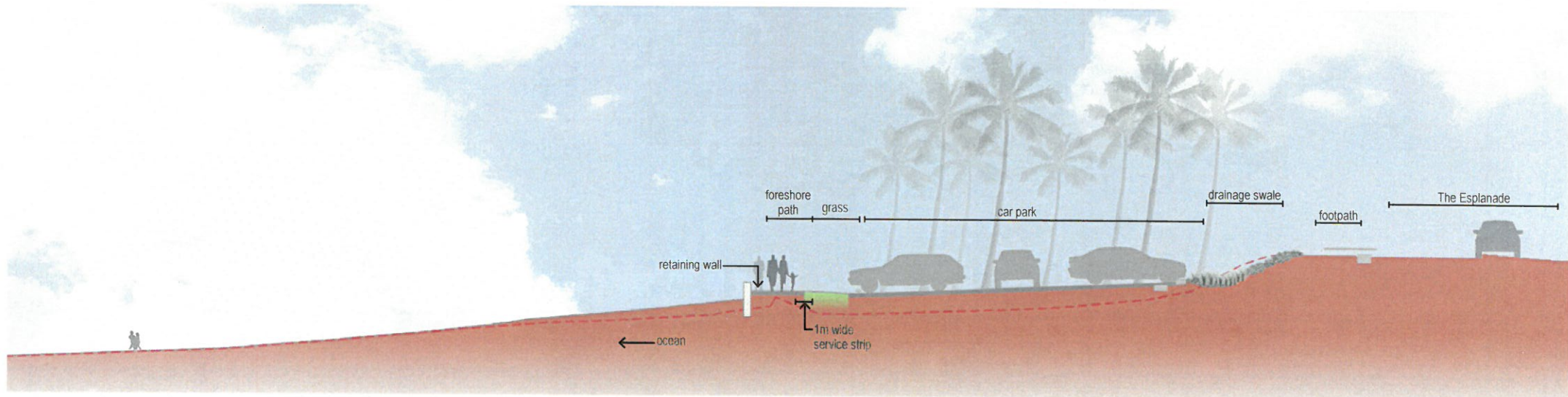
4. Draft Master Plan



Bulk Earthworks & Grading

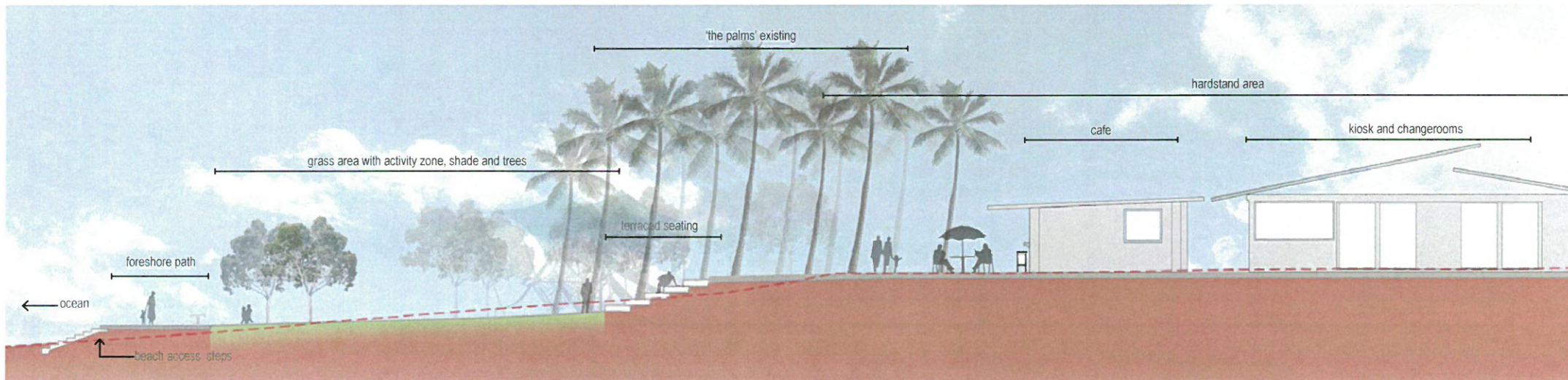


Cross Sections



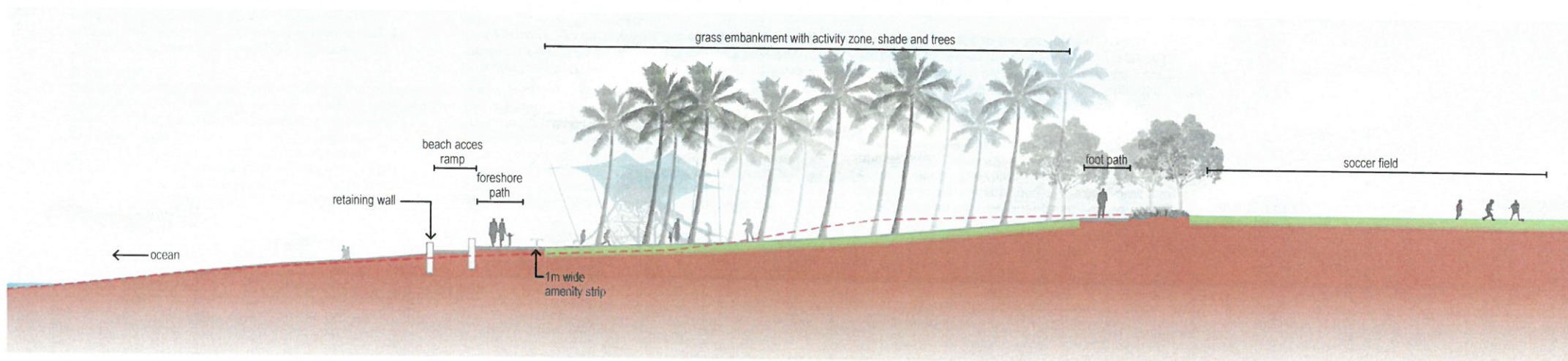
Section through northern car park and embankment

Cross Sections



Section through central activity area and terracing

Cross Sections



Section through southern car park and soccer field

5. Design Considerations

Traffic and Parking

There is currently no formal vehicle parking within the precinct, and parking/vehicle access is largely uncontrolled. One unsealed parking area is located towards the north of the site, directly adjacent the beach. This car park sits at an elevation of approximately 3m AHD and is subject to erosion and inundation from major storm events. A second unsealed car park is located behind the pavilion at approximately 6.5m AHD.

The proposed road and parking arrangements will significantly improve vehicle access into and around the precinct and vehicle access points have been configured to enhance safety for drivers entering and exiting the site. Due to the anticipated increase in visitation of the Dampier Foreshore following the redevelopment works, parking numbers shall be maintained and car parks will be formalised and sealed.

The locations of the proposed new car parks will provide easier access to the recreational amenity nodes and the beach. The car park in the northern portion of the site will be raised above the previously mentioned 3.2m AHD inundation zone. This 64 bay car park, comprises a one-way arrangement parallel with The Esplanade, with entry at the far south of the site, and exit further north where sight-lines are maximised.

A second car park with 50 bays is accessed from the western end of Church Road. This car park is within close proximity to the Pavilion, the existing Palms area and the existing movie screen.

A third car park with 28 bays is located at the south-eastern end of the site, adjacent the playing fields. This car park has been configured to provide a sufficient turn around space for cars with caravans.

Beach access for maintenance/service vehicles is provided at the northern end of the site, over a grassed embankment. The embankment is at a 10.5% gradient, and as such, grass reinforcement (surf as grass rings) may be required to be installed for stabilisation of the bank.

Unsealed overflow parking (including caravan parking) is provided along the eastern boundary of the playing fields. This informal parking will be valuable for occasions when there is an event and there is insufficient parking in the first three car parks.



Existing Car Parks: 120 bays



Proposed Car Park: 124 vehicle bays + 8 caravan bays

Pavilion

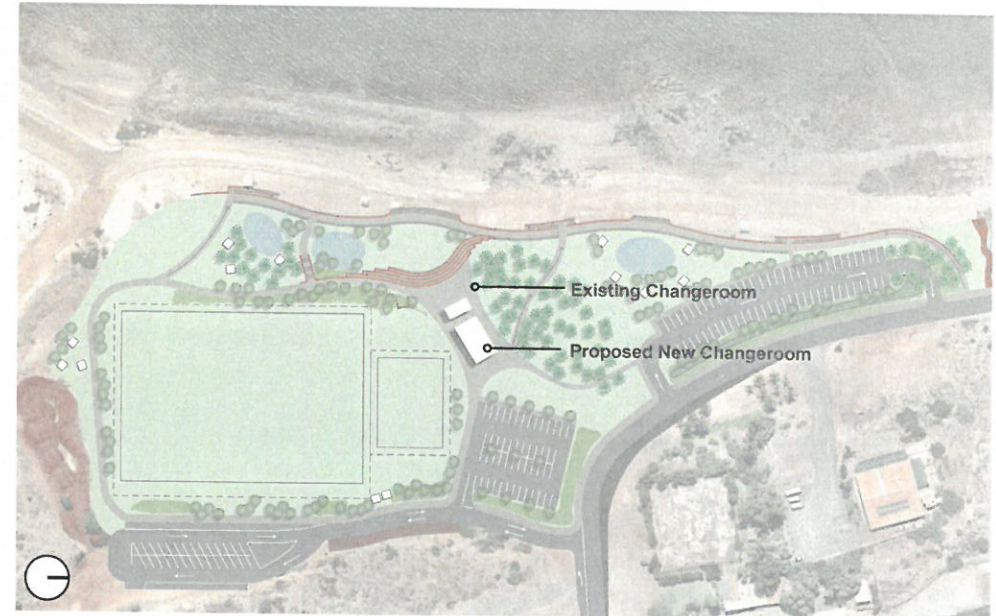
The existing Pavilion comprises ablution facilities, changerooms, an activity room, a kiosk/kitchen and storage areas. The building is functional and appears to be in fair condition, however it operates at an annual cost of \$25,000 - \$30,000. The facility is primarily used by the local soccer club, although some other community groups use pavilion from time to time. It is still anticipated that the Dampier Community Hub to remain the primary centre for community events and activities.

The existing change room building is in a fairly good condition and the Master Plan indicates for the building to be refurbished in the short term. The Pavilion will only be replaced with a new facility, to be implemented in the long term, when the building has reached the end of its functional life, and following completion of landscape and civil works along the foreshore.

It is proposed the new facility would comprise public toilets, male and female changerooms, and a kiosk/kitchen. Storage for signage, bins, sporting equipment etc. may be integrated with the new building, or provided as a separate, smaller facility. The new building would not require an activity room as it is proposed that the current community users, other than soccer, be relocated to the nearby, newly completed Dampier Hub.

The current pavilion takes up an internal floor space of 337sqm, whilst the proposed new pavilion could be substantially reduced in size (the Master Plan indicates an internal area of 200sqm). Replacement of the Pavilion provides an opportunity for a new architecturally designed building that better responds to the local environment and becomes a statement structure on the proposed foreshore redevelopment.

Whilst the current Pavilion presents a one-sided/single frontage to the soccer fields, the future building façade should address the entire surrounding landscape, including the foreshore, the palms, the soccer fields and car park.



Pavilion Location

Pavilion Examples



Leighton Beach, WA



Leighton Beach, WA



Tamarama, NSW



Esperance, WA

Stormwater Management

Actively managing stormwater drainage is critical to the success of the Foreshore Redevelopment. Stormwater is currently uncontrolled through most of the site and regular drainage maintenance is required following high rainfall events.

It is proposed that The Esplanade be re-graded, so storm water is directed towards an inlet at the northern end of the site (adjacent the Sailing Club). Water from the car park and the hardstand area behind the Pavilion will be directed to the existing drainage channel within the Palms. This water is also proposed to outlet onto the beach through the beach access points and through gaps in the wall at footpath level.

A vegetated swale is proposed along the back of the kerb at The Esplanade to further capture any overland flows.

Analysis of the overland flow paths will be required to accurately determine the size of the swales and other drainage infrastructure, this will be carried out during the Detailed Design phase of this project.

An existing swale is located at the southern boundary of the site (adjacent the BMX track). The redevelopment works will have minimal impact on the form and function of this swale.



Swale Locations & Direction of Stormwater Run-off

Existing Stormwater Treatment



Erosion to the western end of the car park



Existing swale and foot path through the Palms

Precedent Images, Vegetated Swales



Recreational Amenity

A broad range of recreational amenity has been incorporated into the Foreshore Master Plan, to cater to a wide range of user groups.

Picnic facilities, including picnic tables, litter bins and barbecues have been placed throughout the Redevelopment Area; primarily overlooking the beach. Additional shade as provided by new trees and shade structures will also be provided around all new picnic facilities, and wherever people are likely to gather on site.

The recently installed movie screen, as used by the Dampier Community Association for screening sunset movies will be retained. The screen is optimally located in the central activity area, close to the Pavilion and car parking.

The BMX track, also recently installed, will be retained although it will be integrated with the Redevelopment, through the inclusion of a pathway to the track, new shade structures, trees and lawn up to the boundary of the track.

The current playground equipment is proposed to be removed and refurbished in the early stages of the

redevelopment to facilitate the installation of a new coastal promenade and retaining wall; both of which will be located at a higher elevation than the existing playground so as to protect the new infrastructure from storm surges. The refurbished playground equipment along with new equipment will be located along the foreshore area, possibly within one of three new Activity Zones.

Three new, distinct Activity Zones will expand the recreational amenity throughout the full extent of the Foreshore. The primary Activity Zone would be located centrally within the Redevelopment Area, near the proposed terraced seating area. Smaller, low key play spaces are proposed for the northern and southern areas of the foreshore.

The Activity Zones may comprise of playground equipment that caters to children of all ages and abilities as well as informal sporting facilities and fitness equipment.

These new recreational facilities will complement existing water activities such as kayaking, kite surfing and paddle boarding.



Recreational Facility Locations

Existing Amenity



Movie screen to be retained



Playground to be relocated



BMX track to be retained



Picnic facilities to be replaced

Recreational Amenity Examples



Picnic shelters overlooking the coast



Ferature palm trees in the Darling Quarter playground, Sydney NSW



Themed playground with bespoke play equipment design and shade structure at Esperance Foreshore, WA



All ages electronic play equipment, Geraldton Foreshore, WA



Multi-purpose activity youth playspace, Geraldton Foreshore, WA



Climbing structure, Geraldton Foreshore, WA



Table games, Geraldton Foreshore, WA



Opportunities for paddle boarding activity on the beach front

Coastal Hazard Risk Management

The Master Plan has been developed with the objective of managing the risks to the new recreational infrastructure from coastal hazards. These hazards comprise erosion vulnerability as a result of sea level rise, and inundation (flooding) from storm surges.

Erosion Vulnerability

The extent of potential coastal erosion for the years 2025, 2040 and 2065 was developed in a previous study: A Coastal Assessment for the Dampier Foreshore Enhancement Project (MP Rogers Coastal Engineers).

The majority of the new infrastructure proposed in the Master Plan is located seaward of the erosion hazard lines. It is predicted that, in future, the shoreline will shift eastwards towards the redevelopment area due to the rise in mean sea level.

To mitigate the effects of coastal erosion and minimise the effect on built infrastructure sand renourishment of the beach is desirable. Sand renourishment will act as a sacrificial buffer against erosion and storm surges while enhancing the visual amenity of the beach. Implementation of the sand renourishment on the Dampier foreshore area of the Master Plan will be subject to further studies and investigations, including an assessment of the risks associated with foreshore stability.

The City of Karratha's approach to managing foreshore infrastructure affected by coastal erosion is to undertake Managed Retreat, which involves removing and/or relocating infrastructure that will be subject to irreparable damage from erosion. With regard to the Palms and Hampton Oval Redevelopment, this would involve monitoring the shoreline throughout the design life of the redevelopment, developing

triggers to initiate management actions and relocating infrastructure away from the coastal hazard zone should these triggers be reached.

Substantial space is available at the south-eastern end of the development area (comprising the playing fields) that could be utilised for relocation, should the Managed Retreat option be implemented in the future.

Storm Surge

Storm surge scenarios for 2, 10, 100, 200 and 500 year average recurrence interval (ARI) inundation events for the Dampier Foreshore, for the 2010, 2060 and 2110 climate change scenarios were developed in a previous study by Global Environmental Modelling Systems (GEMS): Dampier Coastal Vulnerability Study (March 2012).

These storm surge scenarios have been used to develop the minimum finished floor level for new infrastructure as part of the Palms and Hampton Oval Redevelopment. Some level of storm surge inundation (flooding) to the proposed redevelopment works will be unavoidable due to its proximity to the coast. It is suggested that it would be acceptable for the site to be subject to inundation during the 10 year ARI inundation event.

GEMS ascertained that 2.7m AHD was the inundation level for the 10 year ARI storm during 2010. They predicted that 3.2 m AHD would be the inundation level for the 10 year ARI storm under a 2060 climate change scenario, and 3.8m for the 2110 scenario.

The proposed minimum ground levels new infrastructure in the Palms and Hampton Oval Redevelopment is proposed to be based upon the 2060 climate change scenario of 3.2m AHD as it is assumed this is the upper limited of the development design life.

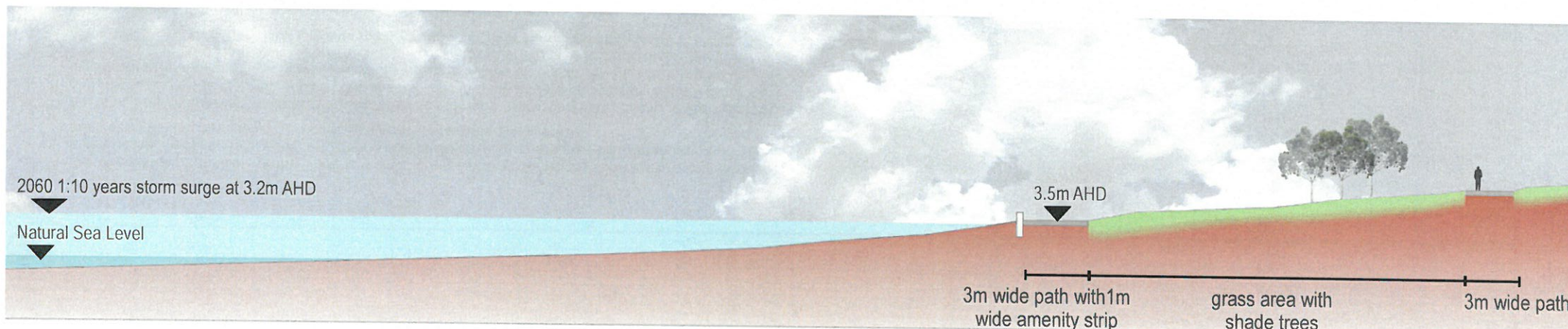
The minimum finished floor level in the Master Plan for all new infrastructure (excluding beach access paths) is proposed to be situated at or above 3.5 m AHD; which has a 300mm contingency above the 3.2 m AHD level indicated for the 10 year ARI storm at 2060 in the Storm Surge Scenarios. Effectively this means that infrastructure situated at 3.2m AHD would be expected to be flooded once every 10 years, under the 2060 sea level rise scenario, from coastal storm surge.

Based on the Storm Surge Scenarios, significant assets would not be at risk from the 10 year event. Robust, low cost assets such as concrete pathways, car parks, fixed furniture, lawn and garden beds would recover from temporary coastal flooding. This infrastructure would receive some protection from a new retaining wall that will run along the eastern edge of the Redevelopment area.

More costly infrastructure that would also be sensitive to the effects of storm surges such as the playground equipment and the new kiosk/changerooms are proposed to be located at a higher elevation to provide further protection from storm surges.

Regardless of the finished floor levels of the new infrastructure, consideration would also need to be given to ensuring the new infrastructure would not be undermined as a result of erosion associated with coastal storm surge. The retaining wall design, with particular regard for the footing construction and depth, would need to be developed as part of the detailed design process.

This is in keeping with City of Karratha's approach to foreshore infrastructure at risk from coastal inundation, by employing Accommodation or Adaptation measures to reduce the risk associated with coastal storm surge.



Commercial Opportunities

Commercial opportunities for the Dampier Foreshore may be limited in the short term, however over busy holiday / weekends periods, and during community events, there may be demand for food and drink vendors, to complement other food and beverage outlets at Dampier.

As such, the Master Plan includes a dedicated space for temporary food vans, between the Pavilion and the car park; this will help support business activity into the foreshore precinct, without requiring significant new infrastructure. Power and water will be provided to this area, which is currently available at the adjacent Kiosk / Changeroom building. Considerations have been made for universal access throughout the site with the provisions of stairs, ramps and handrails.

In the medium to long term, there may be sufficient visitation to the area to warrant the construction of a café. It is proposed the café be located adjacent the Pavilion and centrally within the site, where there is already a source of power and water, to take advantage of the coastal views, and overlook the wider precinct.

The anticipated increase in visitation following the completion of the Redevelopment may also encourage business associated with water activities, such as canoe and stand-up hire.

In the short to medium term it is important to avoid drawing customers away from other existing food outlets in Dampier and any new business opportunities into the Foreshore Precinct should be supported by a robust business case.

In consideration of effective economic planning, the City will be considering an EOI process to assess the level of interest in commercial developments at the foreshore. It is anticipated that this process will include the involvement of other local businesses and the local community for ideas and requirements.



Locations for Commercial Opportunities

Commercial Opportunity Examples



Reg Bartley Oval Kiosk, NSW



Geraldton Jaffle Shack, WA



*Cockburn Central
Temporary Food Outlet, WA*



Canoe Hire

Playing Fields

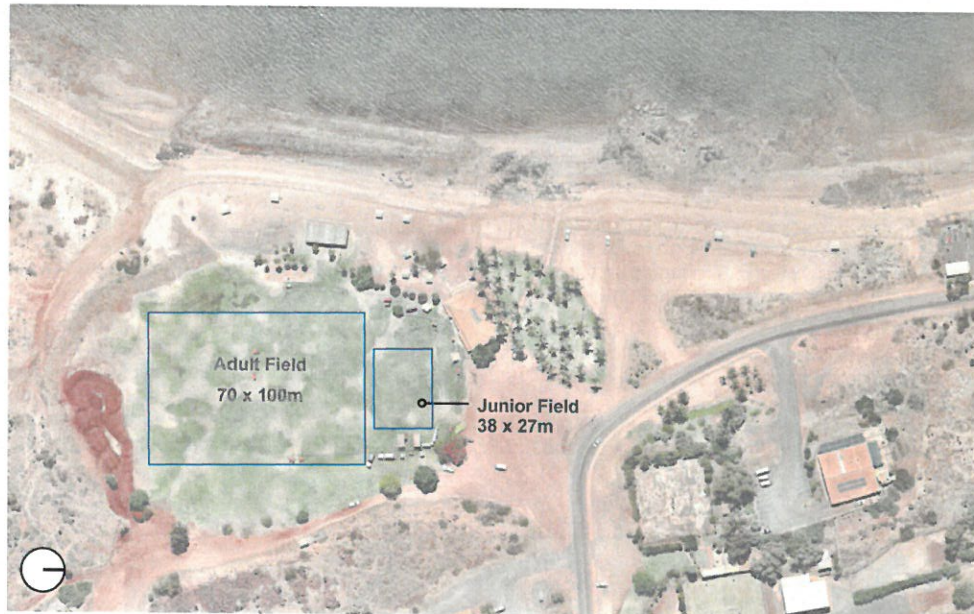
The existing soccer playing fields are proposed to be retained in generally the same location and size - 70x100m for adult players, and 38x27m for junior players. The playing fields will remain on the north-south alignment. The fields are currently regularly used for recreation activities such as soccer training and fixtures. There is a need for them to remain accessible and available for use.

A buffer area around each field has also been allowed for as per the Department of Sport and Recreation requirements.

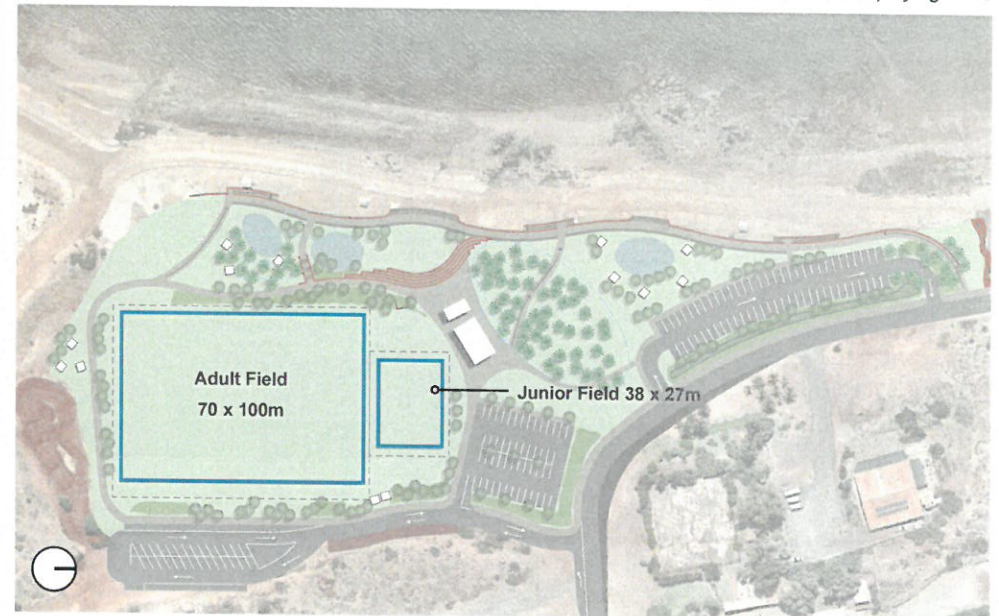
Although the playing fields will remain at their existing size, the overall size of the Hampton Oval will be rationalised in order to provide room for the new recreational infrastructure and car parking.



Facing south, across the playing fields



Existing Playing Fields



Proposed Playing Fields

Pedestrian Access

The path network has been designed to ensure that people of all abilities have equitable and safe access throughout the foreshore and to the beach. The site comprises some steep embankments, and as such, a combination of stairs and ramps with handrails are included in the design to provide access from The Esplanade to the beach. Where practical, suitable grade access ramps are used over stairs to ensure people with a disability and parents using prams may easily access all areas of the foreshore.

The development's primary footpath is a wide promenade that runs along the full extent of the Hampton Foreshore; beach access points in the form of stairs and ramps are provided at key locations along the promenade. A new footpath is also proposed to run along the back of The Esplanade and Church Road, and this links with the beach-side promenade in order to create a full pedestrian circuit.

During the detailed design phase, all pathways, stairs and ramps shall also be designed in accordance with AS1428 Access for All.



Pedestrian Movement

Footpath, Ramp and Stair Examples



Access ramp at Shark Cage Beach, Dampier



Beach access point at Leighton Beach



Coastal Promenade at Busselton Foreshore



Access stairs at Leighton Beach

Trees and Planting

All existing trees on site will be retained, including all of the palms to the centre of this site, and the Poinciana and Eucalyptus trees to the perimeter of the oval. These existing trees will be augmented by new tree plantings that will provide shade to the picnic areas, activity areas, car parks and pathways. Additional shade trees are also proposed to the perimeter of the playing fields, to provide shade for spectators during soccer games.

To expand upon the palms theme, new groupings of palm trees will be installed to the northern and southern ends of the site.

Coastal vegetation will be installed throughout the Foreshore area, and this will break up the expansive areas of lawn, provide colour and texture, and showcase the region's unique vegetation.

It is recommended that all soft landscaping be irrigated. It is assumed that the water source used to irrigate the oval would be suitable for irrigating additional lawn and garden areas although some water saving measures may also need to be implemented as part of an irrigation upgrade.



Tree, Palm and Planting Locations

Vegetation



Sturt Desert Pea - notable local plant



Existing Palms - to be retained



Existing Poinciana trees to be retained



Example of new coastal planting

6. Staging

In consideration of budgetary requirements, Cardno worked closely with the City to fine tune the staging options for the development of the Master Plan in conjunction with the provision of the cost estimate. The preferred two options are described in this report.

Both Options comprise of 4 stages. The stages are based on a timed implementation of short, medium and long term respectively. Stage 4 is common to both Options as it involves building of a new pavilion and possibly a café at the end-of-life of the existing building.

Option 1

The components forming the stages for Option 1 is amenity based:

- Stage 1 – Northern carpark and general parklands;
- Stage 2 – Activity zones;
- Stage 3 – Central and southern carparks; and
- Stage 4 - Pavilion

It will be the City's preference to implement the staging of works as described in Option 1 as this allows for the majority of the site to be redeveloped and open to the public within the Stage 1 works. This addresses the overall challenges of the site namely, formal parking, beach access, drainage, and the provision of passive recreation and parklands.

Additions to smaller portions of work – Stages 2 to 4 - can be undertaken in time, when the funds become available, to complete the Master Plan development works.

Access to the refurbished foreshore and playing fields will be serviced via the northern carpark until completion of the central and southern carparks in Stage 3 works.

Option 1 allows for most of the site and foreshore to be available for use by members of the local community and general visitors in the short term period.

Option 2

The components forming the stages for Option 2 is area/zone based:

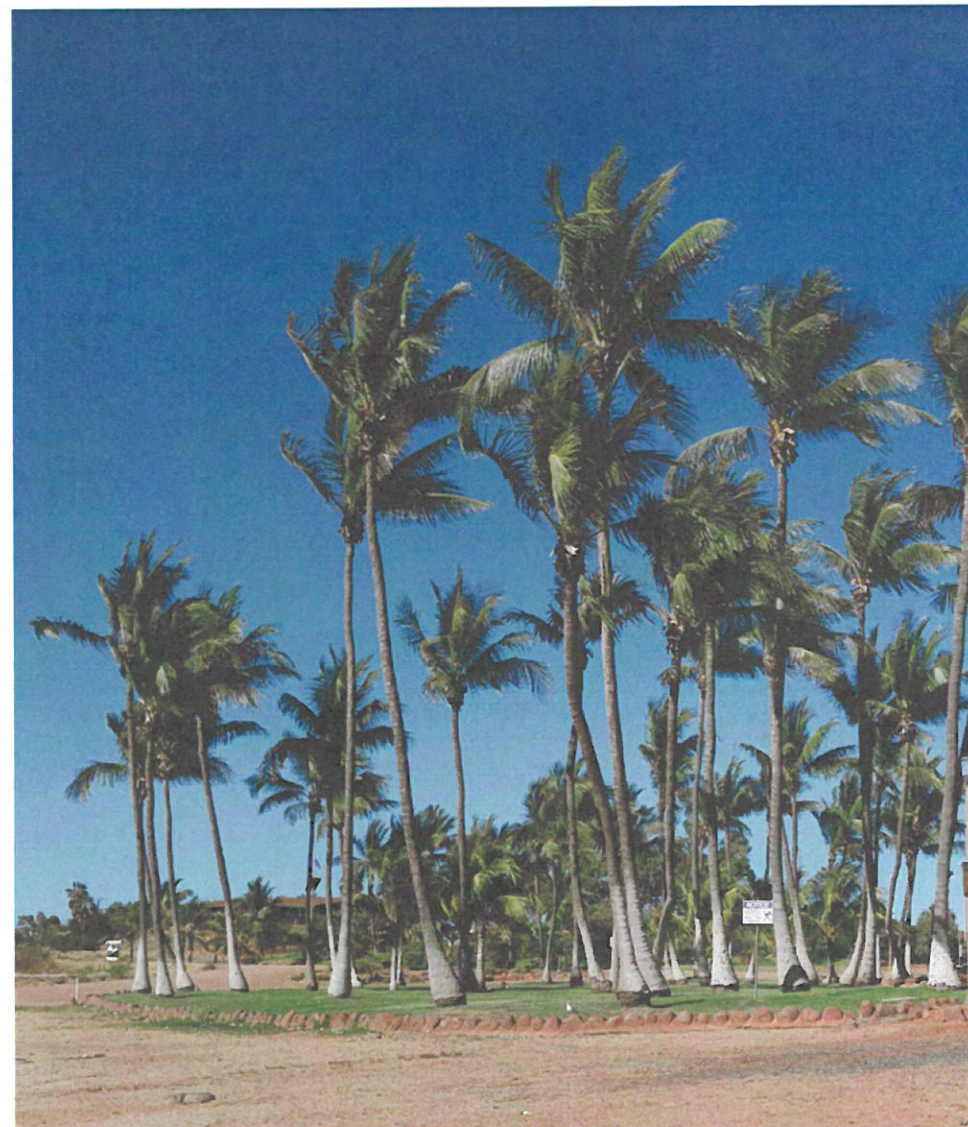
- Stage 1 – Northern carpark, the Palms North and adjoining parklands;
- Stage 2 – The Palms and central foreshore;
- Stage 3 – The Palms South, playing fields, parklands, and central and southern carparks; and
- Stage 4 - Pavilion

This option identifies and addresses the priority areas for development in the event that a smaller budget sum is available in the short term in order to progress the development of the Master Plan.

In the short term, works including the widening of The Esplanade and Church Road, and the construction of the northern carpark, The Palms North and recreation parklands will be undertaken as Stage 1. The works include resolution of the drainage from the roads and throughout the site, provision of formal access and parking to the foreshore, access to the beach, an activity zone and parklands adjoining The Palms.

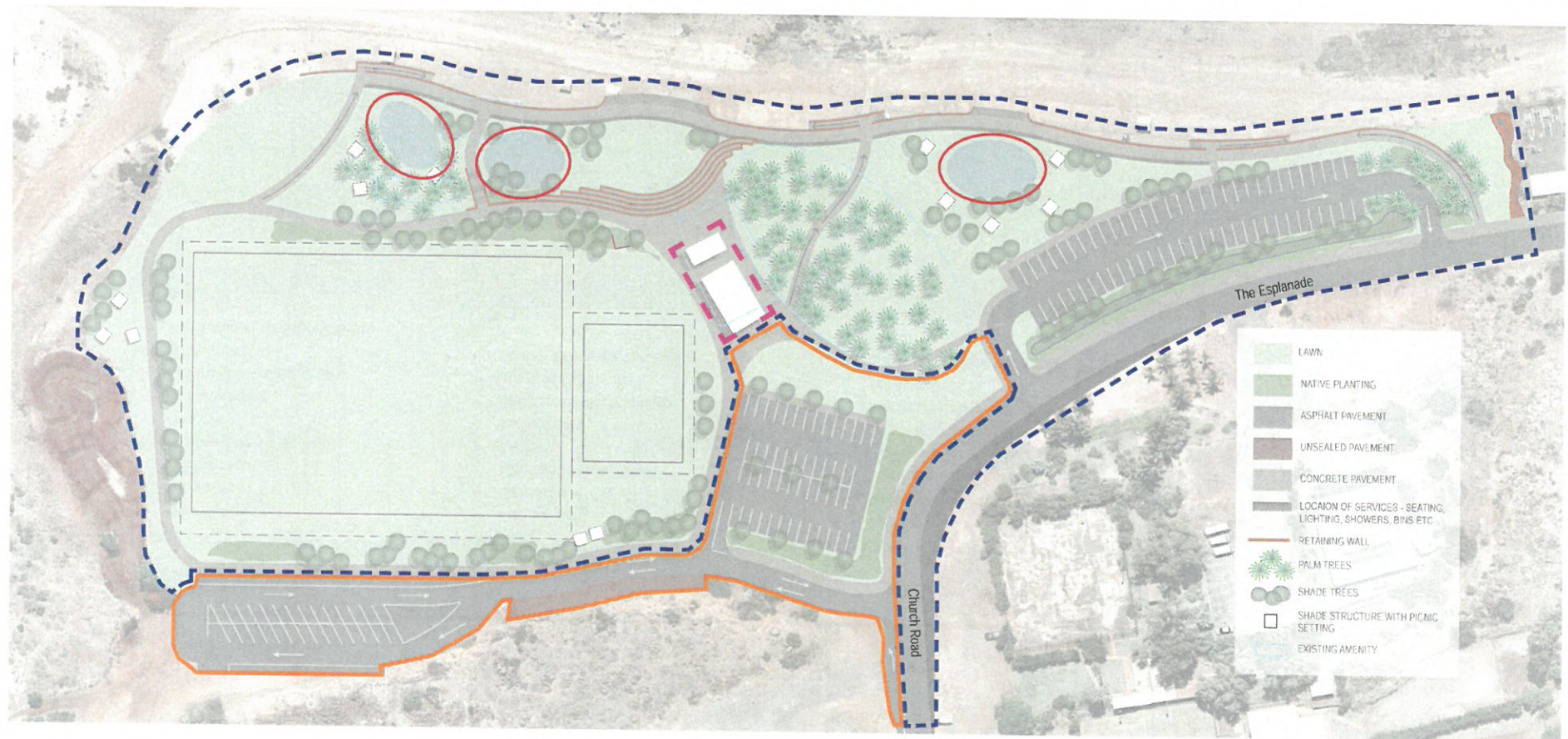
Stage 2 will be developed in the short to medium term and involve the implementation of a forecourt to the existing building, seating steps, integration of The Palms and provisions to tie-in with the existing building. This will extend accessibility to the beach on the western and southern side of The Palms. Additional amenities will include a second activity zone, parklands, seating steps and a forecourt to the Pavilion.

Stage 3 involves about half of the site's surface area incorporating the playing fields, central and southern carparks, Palms South and recreational parklands adjoining the existing BMX track. This will provide new car parking facilities adjoining the playing fields and BMX track at the completion of the refurbishment works.



Option 1 - Overall Site

- | | |
|--|--|
| <p>--- STAGE 1</p> <ul style="list-style-type: none"> • Retaining walls • Grassed areas • Drainage swales • New shade trees and palms • Footpaths • Northern car park • Beach access ramps and steps • Shade structures and park furniture | <p>— STAGE 2</p> <ul style="list-style-type: none"> • Activity zones <p>— STAGE 3</p> <ul style="list-style-type: none"> • Central and southern car parks + access roads • Shade trees <p>— STAGE 4</p> <ul style="list-style-type: none"> • New pavilion (following further investigation) • Possible new cafe |
|--|--|



Option 2 - North to South

- | | | | |
|--|--|--|---|
| <p>STAGE 1</p> <ul style="list-style-type: none"> • Retaining walls • Grassed areas • Drainage swales • New shade trees and palms • Footpaths • Northern car park • Beach access ramps and steps • Activity zone 1 • Shade structures and park furniture | <p>STAGE 2</p> <ul style="list-style-type: none"> • Retaining walls • Grassed areas • New shade trees and palms • Footpaths • Terraced steps • Beach access ramps and steps • Activity zone 2 • Shade structures and park furniture | <p>STAGE 3</p> <ul style="list-style-type: none"> • Retaining walls • Grassed areas • New shade trees and palms • Footpaths • Central and southern car park + access roads • Beach access ramps and steps • Activity zone 3 • Shade structures and park furniture | <p>STAGE 4</p> <ul style="list-style-type: none"> • New pavilion (following further investigation) • Possible new cafe |
|--|--|--|---|



7. Opinion of Cost

Option 1

Opinion of Cost - Option 1

Project: Dampier Palms & Hampton Oval

Project #: CW987900

Date: 12/05/2017

Version: 11

Stage 1 Works

OPTION 1		
Description		Amount
Stage 1		
Stage 1 works as shown in Staging Plan Option 1 - Main works		\$6,855,961.25
Stage 2		
Stage 2 works as shown in Staging Plan Option 1 - Activity Zones x 3		\$1,428,875.00
Stage 3		
Stage 3 works as shown in Staging Plan Option 1 - Central and southern Carpark		\$1,376,158.75
Stage 4		
Stage 4 works as shown in Staging Plan Option 1 - New Pavilion		\$1,458,412.50
Subtotal Exc GST		\$11,119,407.50
GST	10%	\$1,111,940.75
Total Incl. GST		\$12,231,348.25

STAGE 1					
Description	Unit	Qty	Rate	Amount	
Landscape Works					
Earthworks					
Detailed earthworks to suit final levels	m2	8857	\$1.00	\$8,857.00	
Sand renourishment to beach	PS	1	\$200,000.00	\$200,000.00	
Paving					
Construct new trafficable paving area in exposed aggregate finish	m2	1034	\$150.00	\$155,100.00	
Construct new paving area in exposed aggregate finish - footpath incl ramps to beach	m2	3210	\$120.00	\$385,200.00	
Construct new paving area in exposed aggregate finish - amenity strip	m2	231	\$129.00	\$29,799.00	
Construct new paving area in concrete brushed finish (along The Esplanade)	m2	394	\$92.00	\$36,248.00	
Edging					
Construct new concrete mowing strip	m	435	\$50.00	\$21,750.00	
Steps & Terracing					
Construct reinforced concrete in-situ terraced seating	m2	318	\$1,680.00	\$534,240.00	
Construct exposed aggregate concrete steps to beach and within parkland	m2	212	\$600.00	\$127,200.00	
Retaining Walls					
Construct concrete block (reconstituted limestone) retaining wall to beachfront - 6 blocks high & 3 blocks wide at base	m	434	\$1,350.00	\$585,900.00	
Construct concrete block retaining wall to parklands	m	45	\$800.00	\$36,000.00	
Note: No rock protection required.					
Planting					
Supply and Install plants in 140mm pots, 4 plants per m ² , including fertiliser, topsoil and mulch (To all swales and native planting areas)	m2	2388	\$145.00	\$346,260.00	
Supply and install roll-on turf (including topsoil)	m2	6469	\$31.00	\$200,539.00	
Supply and install trees (45Ltr) (Includes palms and other species)	ea	123	\$270.00	\$33,210.00	
Transplant trees (Local Palms sourced from Karratha)	ea	27	\$10,000.00	\$270,000.00	

STAGE 1				
Description	Unit	Qty	Rate	Amount
Furniture				
Supply and Install Picnic shelter	ea	13	\$15,000.00	\$195,000.00
Supply and Install Double electric BBQ	ea	8	\$13,000.00	\$104,000.00
Allow for windbreaks for barbecues	ea	8	\$2,000.00	\$16,000.00
Supply and Install Picnic settings	ea	13	\$4,000.00	\$52,000.00
Supply and Install Park Seats	ea	13	\$2,500.00	\$32,500.00
Supply and Install Drinks Fountains	ea	10	\$5,100.00	\$51,000.00
Supply and Install Litter Bin enclosure, refuse and recycling	ea	20	\$2,650.00	\$53,000.00
Supply and Install Beach Showers with drain	ea	5	\$6,500.00	\$32,500.00
Handrails to steps	lm	52	\$341.00	\$17,732.00
Handrail to north end walkway	lm	100	\$341.00	\$34,100.00
Interpretive Elements				
Wayfinding/Interpretive signage	PS	1	\$25,000.00	\$25,000.00
Fencing / Barriers				
Steel Bollards - oval and other areas adjacent to roads/carparks (150mm dia x 1200mm unit)	ea	225	\$420.00	\$94,500.00
Final Clean-up				
Final clean-up	item	1	\$5,500.00	\$5,500.00
Maintenance				
Establishment period (excludes playing fields)	week	12	\$500.00	\$6,000.00
Maintenance period (excludes playing fields)	week	40	\$500.00	\$20,000.00
Civil Works				
Demolition				
Removal, relocate and refurbish existing shade structures	m2	180	\$300.00	\$54,000.00
Removal and disposal of existing fencing around oval and north beach	m	506	\$5.00	\$2,530.00
Removal and disposal of existing vegetation and shrubs only - no trees to be removed	m2	2665	\$10.00	\$26,650.00
Removal and disposal of existing concrete paths	m2	130	\$12.00	\$1,560.00
Site Clearance	item	1	\$26,000.00	\$26,000.00
Removal and disposal of existing road/place signage	No	2	\$80.00	\$160.00
Removal and disposal of existing exercise equipment	m2	371	\$40.00	\$14,840.00
Refurbish & relocate existing playground including shade structure, fence and equipment	PS	1	\$20,000.00	\$20,000.00

STAGE 1				
Description	Unit	Qty	Rate	Amount
Bulk Earthworks				
Imported fill	m3	22114	\$15.00	\$331,710.00
Roadworks				
Construct Car parks and internal access roads - Northern carpark only in stage 1	m2	2111	\$100.00	\$211,100.00
Construct External Roads (Esplanade & Church Rd) Passing lanes	m2	2221	\$120.00	\$266,520.00
Provide Kerbing to car park areas and roads Northern Carpark in stage 1	m	692	\$78.00	\$53,976.00
Line marking to new roads and car parks Northern Carpark in stage 1	m	436	\$2.50	\$1,090.00
Provide precast concrete wheel stops to parking bays Northern Carpark in stage 1	ea	64	\$70.00	\$4,480.00
UnderGround Services				
Construct Drainage Swales adj Northern carpark for runoff from The Esplanade and Church Road	m2	920	\$70.00	\$64,400.00
Supply and Install potable water pipes and fittings - including trenching	m	1000	\$55.00	\$55,000.00
Refurbish revetment wall and installation of drainage swale adjoining boat club	PS	1	\$15,000.00	\$15,000.00
Irrigation extension				
New lawns	m2	6469	\$12.00	\$77,628.00
Planting	m2	2388	\$15.00	\$35,820.00
Bubblers to trees	ea	150	\$100.00	\$15,000.00
Electrical				
Supply and install of car park solar light poles	ea	12	\$12,865.00	\$154,380.00
Supply and install of park solar lights and feature lighting - footpath, shelters & other areas	ea	32	\$10,307.50	\$329,840.00
Supply aSupply and installation of Freestanding Events Power Outlet Panel completed with 1x32A three phase WP and 1x15A single phase WP (SSO).	ea	2	\$6,975.00	\$13,950.00
Subtotal Exc GST				\$5,484,769.00
Preliminaries				
	item	10%		\$548,476.90
Contingency				
	item	15%		\$822,715.35
Total Exc GST				\$6,855,961.25

STAGE 2					
Description	Unit	Qty	Rate	Amount	
Landscape Works					
Playground					
Supply and Installation of Playground equipment - 2 activity areas	PS	2	\$300,000.00	\$600,000.00	
Install refurbished existing playground including shade structure, fence and equipment	PS	1	\$15,000.00	\$15,000.00	
Supply and Installation of sand softfall - 2 activity areas	m2	550	\$40.00	\$22,000.00	
Supply and Installation of rubber softfall - 1 activity areas	m2	275	\$240.00	\$66,000.00	
Supply and install shade structure - fixed	ea	2	\$124,000.00	\$248,000.00	
Supply and install enclosed steel fencing - 1400mm high	m	130	\$1,395.00	\$181,350.00	
Concrete edging	m	195	\$50.00	\$9,750.00	
Final Clean-up					
Final clean-up	item	1	\$1,000.00	\$1,000.00	
Subtotal Exc GST				\$1,143,100.00	
Preliminaries	item	10%		\$114,310.00	
Contingency	item	15%		\$171,465.00	
Total Exc GST				\$1,428,875.00	

STAGE 3					
Description	Unit	Qty	Rate	Amount	
Landscape Works					
Earthworks					
Detailed earthworks to suit final levels	m2	1566	\$1.00	\$1,566.00	
Paving					
Construct new trafficable paving area in exposed aggregate finish	m2	156	\$150.00	\$23,400.00	
Construct new paving area in exposed aggregate finish - footpath incl ramps to beach	m2	111	\$120.00	\$13,320.00	
Construct new paving area in concrete brushed finish (along The Esplanade)	m2	332	\$92.00	\$30,544.00	
Planting					
Supply and Install plants in 140mm pots, 4 plants per m ² , including fertiliser, topsoil and mulch (To all swales and native planting areas)	m2	531	\$145.00	\$76,995.00	
Supply and install roll-on turf (including topsoil)	m2	1035	\$31.00	\$32,085.00	
Supply and install trees (45Ltr) (Includes palms and other species)	ea	12	\$270.00	\$3,240.00	
Interpretive Elements					
Entry statement/signage	PS	1	\$50,000.00	\$50,000.00	
Wayfinding/Interpretive signage	PS	1	\$25,000.00	\$25,000.00	
Fencing / Barriers					
Steel Bollards - oval and other areas adjacent to roads/carparks (150mm dia x 1200mm unit)	ea	110	\$420.00	\$46,200.00	
Final Clean-up					
Final clean-up	item	1	\$2,500.00	\$2,500.00	
Maintenance					
Establishment period (excludes playing fields)	week	12	\$150.00	\$1,800.00	
Maintenance period (excludes playing fields)	week	40	\$150.00	\$6,000.00	

STAGE 3					
Description	Unit	Qty	Rate	Amount	
Civil Works					
Demolition					
Site Clearance	item	1		\$13,000.00	\$13,000.00
Roadworks					
Construct Car parks and internal access roads - sealed Central & southern carparks	m2	4299		\$100.00	\$429,900.00
Construct External Roads (Esplanade & Church Rd re-grading) Slip lane	m2	153		\$120.00	\$18,360.00
Construct Car parks - unsealed (175mm thick laterite) Southern carpark - overflow parking area	m2	142		\$30.00	\$4,260.00
Provide Kerbing to car park areas and roads	m	454		\$78.00	\$35,412.00
Line marking to new roads and car parks	m	706		\$2.50	\$1,765.00
Provide precast concrete wheel stops to parking bays	ea	89		\$70.00	\$6,230.00
Irrigation extension					
New lawns	m2	1035		\$12.00	\$12,420.00
Planting	m2	531		\$15.00	\$7,965.00
Bubblers to trees	ea	12		\$100.00	\$1,200.00
Electrical					
Supply and install of car park solar light poles	ea	12		\$12,865.00	\$154,380.00
Supply and install of park solar lights and feature lighting - footpath, shelters & other areas	ea	8		\$10,307.50	\$82,460.00
Supply aSupply and installation of Freestanding Events Power Outlet Panel completed with 1x32A three phase WP and 1x15A single phase WP (SSO).	ea	3		\$6,975.00	\$20,925.00
Subtotal Exc GST					\$1,100,927.00
Preliminaries	item	10%			\$110,092.70
Contingency	item	15%			\$165,139.05
Total Exc GST					\$1,376,158.75

STAGE 4					
Description	Unit	Qty	Rate	Amount	
Landscape Works					
Final Clean-up					
Final clean-up	item	1		\$1,500.00	\$1,500.00
Building Works					
Construct new trafficable paving area in exposed aggregate finish	m2	364		\$170.00	\$61,880.00
New Amenities Building inc toilets, changerooms & kiosk	m2	170		\$4,500.00	\$765,000.00
New café	m2	50		\$6,000.00	\$300,000.00
Civil Works					
Demolition					
Removal and disposal of existing pavilion	m2	590		\$65.00	\$38,350.00
Subtotal Exc GST				\$1,166,730.00	
Preliminaries	item	10%			\$116,673.00
Contingency	item	15%			\$175,009.50
Total Exc GST				\$1,458,412.50	

Option 2

Opinion of Cost - Option 2

Project: Dampier Palms & Hampton Oval

Project #: CW987900

Date: 12/05/2017

Version: 11

Stage 2 Works

OPTION 2	
Description	Amount
Stage 1	
Stage 1 works as shown in Staging Plan - Northern carpark	\$4,228,582.50
Stage 2	
Stage 2 works as shown in Staging Plan - The Palms and terraced seating	\$1,877,346.25
Stage 3	
Stage 3 works as shown in Staging Plan - Central and southern carpark, and playing fields	\$3,542,066.25
Stage 4	
Stage 4 works as shown in Staging Plan - New Pavilion	\$1,458,412.50
Subtotal Exc GST	\$11,106,407.50
GST	10% \$1,110,640.75
Total Incl. GST	\$12,217,048.25

STAGE 1				
Description	Unit	Qty	Rate	Amount
Landscape Works				
Earthworks				
Detailed earthworks to suit final levels	m2	3709	\$1.00	\$3,709.00
Sand renourishment to beach	PS	1	\$200,000.00	\$200,000.00
Paving				
Construct new paving area in exposed aggregate finish - footpath incl ramps to beach	m2	1181	\$120.00	\$141,720.00
Construct new paving area in exposed aggregate finish - amenity strip	m2	80	\$129.00	\$10,320.00
Construct new paving area in concrete brushed finish (along The Esplanade)	m2	265	\$92.00	\$24,380.00
Edging				
Construct new concrete mowing strip	m	49	\$50.00	\$2,450.00
Steps & Terracing				
Construct exposed aggregate concrete steps to beach	m2	63	\$600.00	\$37,800.00
Retaining Walls				
Construct concrete block (reconstituted limestone) retaining wall to beachfront - 6 blocks high & 3 blocks wide at base	m	290	\$1,350.00	\$391,500.00
Playground				
Supply and Installation of Playground equipment	PS	1	\$300,000.00	\$300,000.00
Supply and Installation of sand softfall	m2	275	\$40.00	\$11,000.00
Supply and install shade structure - fixed	ea	1	\$124,000.00	\$124,000.00
Supply and install enclosed steel fencing - 1400mm high	m	65	\$1,395.00	\$90,675.00
Concrete edging	m	65	\$50.00	\$3,250.00
Planting				
Supply and install plants in 140mm pots, 4 plants per m ² , including fertiliser, topsoil and mulch (To all swales and native planting areas)	m2	1179	\$145.00	\$170,955.00
Supply and install roll-on turf (including topsoil)	m2	2530	\$31.00	\$78,430.00
Supply and install trees (45Ltr) (Includes palms and other species)	ea	33	\$270.00	\$8,910.00
Transplant trees (Local Palms sourced from Karratha)	ea	14	\$10,000.00	\$140,000.00

STAGE 1				
Description	Unit	Qty	Rate	Amount
Furniture				
Supply and Install Picnic shelter	ea	5	\$15,000.00	\$75,000.00
Supply and Install Double electric BBQ	ea	4	\$13,000.00	\$52,000.00
Allow for windbreaks for barbecues	ea	4	\$2,000.00	\$8,000.00
Supply and Install Picnic settings	ea	5	\$4,000.00	\$20,000.00
Supply and Install Park Seats	ea	4	\$2,500.00	\$10,000.00
Supply and Install Drinks Fountains	ea	3	\$5,100.00	\$15,300.00
Supply and Install Litter Bin enclosure, refuse and recycling	ea	6	\$2,650.00	\$15,900.00
Supply and Install Beach Showers with drain	ea	2	\$6,500.00	\$13,000.00
Handrails to steps	lm	16	\$341.00	\$5,456.00
Handrail to north end walkway	lm	100	\$341.00	\$34,100.00
Interpretive Elements				
Wayfinding/Interpretive signage	PS	1	\$15,000.00	\$15,000.00
Fencing / Barriers				
Steel Bollards - oval and other areas adjacent to roads/carparks (150mm dia x 1200mm unit)	ea	95	\$420.00	\$39,900.00
Final Clean-up				
Final clean-up	item	1	\$3,000.00	\$3,000.00
Maintenance				
Establishment period (excludes playing fields)	week	12	\$150.00	\$1,800.00
Maintenance period (excludes playing fields)	week	40	\$150.00	\$6,000.00
Civil Works				
Demolition				
Removal, relocate and refurbish existing shade structures	m2	40	\$300.00	\$12,000.00
Removal and disposal of existing fencing around oval and north beach	m	132	\$5.00	\$660.00
Removal and disposal of existing vegetation and shrubs only - no trees to be removed	m2	2288	\$10.00	\$22,880.00
Site Clearance	item	1	\$16,000.00	\$16,000.00
Removal and disposal of existing road/place signage	No	1	\$80.00	\$80.00
Bulk Earthworks				
Imported fill	m3	22114	\$15.00	\$331,710.00

STAGE 1				
Description	Unit	Qty	Rate	Amount
Roadworks				
Construct Car parks and internal access roads	m2	2111	\$100.00	\$211,100.00
Construct External Roads (Esplanade & Church Rd re-grading)	m2	2221	\$120.00	\$266,520.00
Provide Kerbing to car park areas and roads	m	692	\$78.00	\$53,976.00
Line marking to new roads and car parks	m	422	\$2.50	\$1,055.00
Provide precast concrete wheel stops to parking bays	ea	64	\$70.00	\$4,480.00
UnderGround Services				
Construct Drainage Swales adj Northern carpark for runoff from The Esplanade and Church Road	m2	920	\$70.00	\$64,400.00
Supply and Install potable water pipes and fittings - including trenching	m	350	\$55.00	\$19,250.00
Refurbish revetment wall and installation of drainage swale adjoining boat club	PS	1	\$15,000.00	\$15,000.00
Irrigation extension				
New lawns	m2	2530	\$12.00	\$30,360.00
Planting	m2	1179	\$15.00	\$17,685.00
Bubblers to trees	ea	47	\$100.00	\$4,700.00
Electrical				
Supply and install of car park solar light poles	ea	12	\$12,865.00	\$154,380.00
Supply and install of park solar lights and feature lighting - footpath, shelters & other areas	ea	10	\$10,307.50	\$103,075.00
Subtotal Exc GST				\$3,382,866.00
Preliminaries				
	item	10%		\$338,286.60
Contingency				
	item	15%		\$507,429.90
Total Exc GST				\$4,228,582.50

STAGE 2					
Description	Unit	Qty	Rate	Amount	
Landscape Works					
Earthworks					
Detailed earthworks to suit final levels	m2	1119	\$1.00	\$1,119.00	
Paving					
Construct new trafficable paving area in exposed aggregate finish	m2	981	\$150.00	\$147,150.00	
Construct new paving area in exposed aggregate finish - footpath incl ramps to beach	m2	889	\$120.00	\$106,680.00	
Construct new paving area in exposed aggregate finish - amenity strip	m2	108	\$129.00	\$13,932.00	
Edging					
Construct new concrete mowing strip	m	16	\$50.00	\$800.00	
Steps & Terracing					
Construct reinforced concrete in-situ terraced seating	m2	318	\$1,680.00	\$534,240.00	
Construct exposed aggregate concrete steps to beach	m2	124	\$600.00	\$74,400.00	
Retaining Walls					
Construct concrete block (reconstituted limestone) retaining wall to beachfront - 6 blocks high & 3 blocks wide at base	m	93	\$1,350.00	\$125,550.00	
Construct concrete block retaining wall to parklands	m	27	\$800.00	\$21,600.00	
Playground					
Install refurbished existing playground including shade structure, fence and equipment	PS	1	\$15,000.00	\$15,000.00	
Supply and Installation of rubber softfall	m2	275	\$240.00	\$66,000.00	
Concrete edging	m	65	\$50.00	\$3,250.00	
Planting					
Supply and Install plants in 140mm pots, 4 plants per m², including fertiliser, topsoil and mulch (To all swales and native planting areas)	m2	97	\$145.00	\$14,065.00	
Supply and install roll-on turf (including topsoil)	m2	1022	\$31.00	\$31,682.00	
Supply and install trees (45Ltr) (Includes palms and other species)	ea	23	\$270.00	\$6,210.00	

STAGE 2					
Description	Unit	Qty	Rate	Amount	
Furniture					
Supply and Install Double electric BBQ	ea	1	\$13,000.00	\$13,000.00	
Allow for windbreaks for barbecues	ea	1	\$2,000.00	\$2,000.00	
Supply and Install Park Seats	ea	4	\$2,500.00	\$10,000.00	
Supply and Install Drinks Fountains	ea	5	\$5,100.00	\$25,500.00	
Supply and Install Litter Bin enclosure, refuse and recycling	ea	9	\$2,650.00	\$23,850.00	
Supply and Install Beach Showers with drain	ea	2	\$6,500.00	\$13,000.00	
Handrails to steps	lm	25	\$341.00	\$8,525.00	
Interpretive Elements					
Wayfinding/Interpretive signage	PS	1	\$20,000.00	\$20,000.00	
Final Clean-up					
Final clean-up	item	1	\$2,500.00	\$2,500.00	
Maintenance					
Establishment period (excludes playing fields)	week	12	\$150.00	\$1,800.00	
Maintenance period (excludes playing fields)	week	40	\$150.00	\$6,000.00	
Civil Works					
Demolition					
Removal, relocate and refurbish existing shade structures	m2	60	\$300.00	\$18,000.00	
Removal and disposal of existing concrete paths	m2	130	\$12.00	\$1,560.00	
Site Clearance	item	1	\$10,000.00	\$10,000.00	
Removal and disposal of existing road/place signage	No	1	\$80.00	\$80.00	
Removal and disposal of existing exercise equipment	m2	371	\$40.00	\$14,840.00	
Refurbish & relocate existing playground including shade structure, fence and equipment	PS	1	\$20,000.00	\$20,000.00	
UnderGround Services					
Supply and Install potable water pipes and fittings - including trenching	m	300	\$55.00	\$16,500.00	
Irrigation extension					
New lawns	m2	1022	\$12.00	\$12,264.00	
Planting	m2	97	\$15.00	\$1,455.00	
Bubblers to trees	ea	23	\$100.00	\$2,300.00	

STAGE 2				
Description	Unit	Qty	Rate	Amount
Electrical				
Supply and install of park solar lights and feature lighting - footpath, shelters & other areas	ea	10	\$10,307.50	\$103,075.00
Supply and installation of Freestanding Events Power Outlet Panel completed with 1x32A three phase WP and 1x15A single phase WP (SSO).	ea	2	\$6,975.00	\$13,950.00
Subtotal Exc GST				\$1,501,877.00
Preliminaries	item	10%		\$150,187.70
Contingency	item	15%		\$225,281.55
Total Exc GST				\$1,877,346.25

STAGE 3				
Description	Unit	Qty	Rate	Amount
Landscape Works				
Earthworks				
Detailed earthworks to suit final levels	m2	5595	\$1.00	\$5,595.00
Paving				
Construct new trafficable paving area in exposed aggregate finish	m2	209	\$150.00	\$31,350.00
Construct new paving area in exposed aggregate finish - footpath incl ramps to beach	m2	1251	\$120.00	\$150,120.00
Construct new paving area in exposed aggregate finish - amenity strip	m2	43	\$129.00	\$5,547.00
Construct new paving area in concrete brushed finish (along The Esplanade)	m2	461	\$92.00	\$42,412.00
Edging				
Construct new concrete mowing strip	m	370	\$50.00	\$18,500.00
Steps & Terracing				
Construct exposed aggregate concrete steps to beach	m2	25	\$600.00	\$15,000.00
Retaining Walls				
Construct concrete block (reconstituted limestone) retaining wall to beachfront - 6 blocks high & 3 blocks wide at base	m	51	\$1,350.00	\$68,850.00
Construct concrete block retaining wall to parklands	m	18	\$800.00	\$14,400.00
Playground				
Supply and Installation of Playground equipment	PS	1	\$300,000.00	\$300,000.00
Supply and Installation of sand softfall	m2	275	\$40.00	\$11,000.00
Supply and install shade structure - fixed	ea	1	\$124,000.00	\$124,000.00
Supply and install enclosed steel fencing - 1400mm high	m	65	\$1,395.00	\$90,675.00
Concrete edging	m	65	\$50.00	\$3,250.00
Planting				
Supply and Install plants in 140mm pots, 4 plants per m ² , including fertiliser, topsoil and mulch (To all swales and native planting areas)	m2	1643	\$145.00	\$238,235.00
Supply and install roll-on turf (including topsoil)	m2	3952	\$31.00	\$122,512.00
Supply and install trees (45Ltr) (Includes palms and other species)	ea	79	\$270.00	\$21,330.00
Transplant trees (Local Palms sourced from Karratha)	ea	13	\$10,000.00	\$130,000.00

STAGE 3				
Description	Unit	Qty	Rate	Amount
Furniture				
Supply and Install Picnic shelter	ea	8	\$15,000.00	\$120,000.00
Supply and Install Double electric BBQ	ea	3	\$13,000.00	\$39,000.00
Allow for windbreaks for barbecues	ea	3	\$2,000.00	\$6,000.00
Supply and Install Picnic settings	ea	8	\$4,000.00	\$32,000.00
Supply and Install Park Seats	ea	5	\$2,500.00	\$12,500.00
Supply and Install Drinks Fountains	ea	2	\$5,100.00	\$10,200.00
Supply and Install Litter Bin enclosure, refuse and recycling	ea	5	\$2,650.00	\$13,250.00
Supply and Install Beach Showers with drain	ea	1	\$6,500.00	\$6,500.00
Handrails to steps	lm	11	\$341.00	\$3,751.00
Interpretive Elements				
Entry statement/signage	PS	1	\$50,000.00	\$50,000.00
Wayfinding/Interpretive signage	PS	1	\$15,000.00	\$15,000.00
Fencing / Barriers				
Steel Bollards - oval and other areas adjacent to roads/carparks (150mm dia x 1200mm unit)	ea	240	\$420.00	\$100,800.00
Final Clean-up				
Final clean-up	item	1	\$3,500.00	\$3,500.00
Maintenance				
Establishment period (excludes playing fields)	week	12	\$150.00	\$1,800.00
Maintenance period (excludes playing fields)	week	40	\$150.00	\$6,000.00
Civil Works				
Demolition				
Removal, relocate and refurbish existing shade structures	m2	80	\$300.00	\$24,000.00
Removal and disposal of existing fencing around oval and north beach	m	374	\$5.00	\$1,870.00
Removal and disposal of existing vegetation and shrubs only - no trees to be removed	m2	377	\$10.00	\$3,770.00
Site Clearance	item	1	\$13,000.00	\$13,000.00

STAGE 3				
Description	Unit	Qty	Rate	Amount
Roadworks				
Construct Car parks and internal access roads	m2	4299	\$100.00	\$429,900.00
Construct External Roads (Esplanade & Church Rd re-grading)	m2	153	\$120.00	\$18,360.00
Construct Car parks - unsealed (175mm thick laterite)	m2	142	\$30.00	\$4,260.00
Provide Kerbing to car park areas and roads	m	454	\$78.00	\$35,412.00
Line marking to new roads and car parks	m	720	\$2.50	\$1,800.00
Provide precast concrete wheel stops to parking bays	ea	89	\$70.00	\$6,230.00
UnderGround Services				
Supply and Install potable water pipes and fittings - including trenching	m	350	\$55.00	\$19,250.00
Irrigation extension				
New lawns	m2	3952	\$12.00	\$47,424.00
Planting	m2	1643	\$15.00	\$24,645.00
Bubblers to trees	ea	92	\$100.00	\$9,200.00
Electrical				
Supply and install of car park solar light poles	ea	12	\$12,865.00	\$154,380.00
Supply and install of park solar lights and feature lighting - footpath, shelters & other areas	ea	20	\$10,307.50	\$206,150.00
Supply and installation of Freestanding Events Power Outlet Panel completed with 1x32A three phase WP and 1x15A single phase WP (SSO).	ea	3	\$6,975.00	\$20,925.00
Subtotal Exc GST				\$2,833,653.00
Preliminaries	item	10%		\$283,365.30
Contingency	item	15%		\$425,047.95
Total Exc GST				\$3,542,066.25

STAGE 4					
Description	Unit	Qty	Rate	Amount	
Landscape Works					
Final Clean-up					
Final clean-up	item	1		\$1,500.00	\$1,500.00
Building Works					
Construct new trafficable paving area in exposed aggregate finish	m2	364		\$170.00	\$61,880.00
New Amenities Building inc toilets, changerooms & kiosk	m2	170		\$4,500.00	\$765,000.00
New café	m2	50		\$6,000.00	\$300,000.00
Civil Works					
Demolition					
Removal and disposal of existing pavilion	m2	590		\$65.00	\$38,350.00
Subtotal Exc GST					\$1,166,730.00
Preliminaries					
	item	10%			\$116,673.00
Contingency					
	item	15%			\$175,009.50
Total Exc GST					\$1,458,412.50



Perth

11 Harvest Terrace
West Perth WA 6005

T 08 9273 3888

F 08 9388 3831

PO Box 447,
West Perth WA 6872

E landscape@cardno.com.au

W www.cardno.com.au/landscape

 **Cardno**
Shaping the Future