



*Calmy Planning & Design*



## **Shire of Christmas Island**

Vagabond Road Sports & Recreation Precinct Urban Design Master Plan

January 2012

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# 1. Introduction

## 1.1 Background

Christmas Island is an Australian Territory located in the Indian Ocean, approximately 2,300km north west of Perth and 300km south of Java. Approximately 63% of the Island is National Park comprised of dense rainforest and a range of unique flora and fauna species, including the internationally recognised red crabs. The current population is estimated at approximately 2,000 people, not including immigration detainees, with the majority of the Island's population concentrated in the north east corner of the Island. Overall responsibility for Christmas Island lies with the Commonwealth Department of Regional Australia, Regional Development and Local Government.



## 1.2 Project Outline

GHD have been engaged by the Shire of Christmas Island (SOCl) to produce an Urban Design Master Plan (UDMP) for the Vagabond Road Sports and Recreation Precinct. The project is an initiative of the Shire of Christmas Island in conjunction with the Indian Ocean Territories Christmas Island Economic Development Consultative Group, and proudly supported and funded by the Australian Government through the Department of Regional Australia, Regional Development and Local Government.

The aim of the UDMP is to provide an urban design framework that will facilitate and guide the revitalisation of this public space and to enhance its contribution to the social, cultural and economic life of the Island's community.

The project has included the analysis of existing conditions of the precinct, access and movement networks, ownership, management and environmental factors. This information was then translated into design concepts for each precinct.

On-Island stakeholder and community consultation was conducted, including a design workshop.

The UDMP will be a strategic document under the current Town Planning Scheme No. 1, however it should be noted that the Scheme is currently under review. The UDMP will provide guidance to potential investors, land owners and Council in relation to future land use opportunities, as well as concepts and potential costs for the upgrade of the public realm.



## 2. Literature Review

### 2.1 Town Planning Scheme

Land use of the Island is governed by Town Planning Scheme No.1 (TPS1). An extract of the scheme map that covers this precinct is shown in Figure 1.

The precinct contains a limited number of Reserves – Public Purposes, Mining and Unallocated Crown Land. There are no specific development conditions that apply to Scheme Reserves; any development is subject to the discretion of the Council. These Reserves do not fully and accurately reflect the current land uses on the ground.

#### 2.1.1 Draft Town Planning Scheme No. 2

TPS2 will encompass the strategies and recommendations of the Local Planning Strategy, so it can be expected that provisions will be made to address current zoning inconsistencies, as well as providing provision for additional urban development including residential, community, commercial and recreational uses.

## 2.2 Draft Local Planning Strategy



Figure 1: Current Vagabond Road Land Use Zoning

SOCI is currently undertaking a review of the Local Planning Strategy (LPS). The Draft LPS has been released for public comment. The essential objective of the LPS is to provide a strategic vision and land use plan to guide future development on Christmas Island. The LPS will attempt to balance the needs of the natural environment, economic development and community expectations to ensure the long term sustainable development of Christmas Island.

The Draft LPS considered a wider Phosphate Hill/Recreation Centre Precinct that encompasses the proposed study area. The LPS established the following overarching objective for the Phosphate Hill/Recreation Centre Precinct:

*"To provide for the long term expansion of the urban area of Christmas Island on Phosphate Hill, facilitate the creation of a 'Sports and Recreation Precinct' and consolidate waste management practices."*

The LPS identified that the precinct is

considered the most appropriate area to provide long term expansion of the urban area on Christmas Island. This area coincides with identified mineable phosphate deposits, that the LPS recommends should be extracted prior to any development that may sterilise them.

According to the Draft LPS, future development of the broader Phosphate Hill area will need to be subject to a Structure Planning exercise to determine appropriate land uses, subdivision layouts, road networks and community facilities for the area and integration into the existing community. In relation to the immediate area surrounding Vagabond Road, some of the key concepts identified in the LPS are:

- Recreation facilities – providing additional playing fields adjacent to the cricket oval to cater for other sports.



- Rubbish tip:
  - a Waste Management Strategy has been completed that indicated a series of recommendations that involved treatment of sludge currently dumped in landfill, establishment of a recovery centre for sorting and processing recyclables, organic waste treatment for food waste and composting plant for other organic waste. If these practices are introduced, the size of the tip can be substantially reduced; and
  - formalisation of land use tenure and arrangements for the rubbish tip.
- Constraints – consideration has to be given to the radio tower buffers, rubbish tip buffer, Australian Noise Exposure Forecast (ANEF) noise contours and Obstacle Limitation Surface (OLS) area of an extended runway, and the relocation of the immigration detention centre.





## 2.3 Christmas Island 2018 Plan

The *Our Future Christmas Island 2018 Plan* (the 2018 Plan) was prepared in 2011. The 2018 Plan is required to articulate shared community directions for the future of the Island. It includes a shared community vision, key actions, milestones and timelines for actions. A key aspect of the 2018 Plan is to ensure that strategies are community initiated and that these strategies assist in developing long-term economic diversity for the Island's economy.

A number of themes and actions were developed with the community that address the challenges facing the Island, whilst accomplishing and adhering to the community vision and Statement of Values and principles. Key themes relevant to the development of the UDMP:

Key Relevant Themes: Land Use Planning

- Determine the extent of land needed and optimal locations for retail and commercial uses, social and community uses.

- Develop master plans for community focal point such as the commercial area from the Barracks to the supermakert, the Cove, Poon Saan shops, Drumsite shopping area, the School and Community Precinct, Sports and Recreational area and the airport.
- Develop landscape beautification plans for all key commercial/retail hubs and community areas. Ensure entrance statements/treatments are a key component of the plans.

Key Relevant Themes: Infrastructure Planning

- Establish a priority infrastructure plan for implementing improvements to access around Christmas island, including the establishment of pathways and cycleways.
- Prepare a Waste Avoidance Strategy and a Waste Management Strategy for Christmas Island.
- Develop a significant meeting area/town centre on Christmas Island.

- Develop a multi-purpose, rectangular playing field and 400m athletics track on Phosphate Hill with lighting at both training and competition standard.

Key Relevant Themes: Community Capacity, Health and Wellbeing

- Develop and implement a sport and recreation development plan with an emphasis on ensuring the provision of a range of quality sport and recreation opportunities.
- Consolidate the administration of various sporting clubs on Christmas Island. Utilise the Recreation Centre as a one-stop shop for all sporting enquiries.

## 2.4 Crown Land Management Plan

A *Crown Land Management Plan for the Indian Ocean Territories* (CLMP) was prepared by GHD for the Attorney-General's Department (AGD) over the course of 2008-2009. The purpose of this document was to assess Crown land on the Indian Ocean Territories to enable informed decisions to be made on its most suitable future uses which will lead to the overall better management of Crown land. Given that the majority of land on Christmas Island is owned or managed by the Commonwealth, the outcomes of the land suitability and capability assessment and subsequent recommendations from the CLMP are especially relevant to this project.

The Land Suitability assessment identified that the Phosphate Hill precinct is suited to the expansion of the urban/residential land uses for the Island. This development could facilitate the creation of a 'Sports and Recreation Precinct', expanding the existing oval and recreation facilities as required, which could occur prior to any relocation of the rubbish tip and detention

facilities.

A series of recommendations (34 in total) formed part of the CLMP in relation to governance, land use and economic development. More specifically, the following recommendations were provided:

- AGD consider, where appropriate, applications for the extraction of phosphate deposits in specific areas which may be used for future intensive development, such as residential or light industrial uses.
- AGD, the Shire and the Department of Immigration and Citizenship (DIAC) should reach an agreement to formulate an ODP that would lead in time to the creation of a new residential subdivision integrated with the existing recreation facilities on Phosphate Hill through appropriate connections with the Christmas Island District High School and Poon Saan.

## 2.5 Sport and Recreation Strategic Plan Christmas Island

- The Shire, in conjunction with AGD, to introduce a Waste Minimisation Strategy and Management Plan and investigate low carbon energy production, on-island waste recycling and off-island disposal.

The *Sport and Recreation Strategic Plan Christmas Island* (SRSP) was prepared by the WA Department of Sport and Recreation (DSR) in October 2009 with the objectives to encourage residents to be more physically active, strengthen the capacity of sport and recreation organisations and promote sound infrastructure planning and sustainable facilities.

A series of recommendations were made on human scale in regards to land tenure for facilities and developing the capacity of volunteers and technical skills required to run facilities and programs. Physical facilities were also assessed and a series of recommendations made, the most relevant of which are listed below:

### CI Recreation Centre:

- Consideration is given to develop other low cost sport and recreation amenities at CI Recreation Centre to increase utilisation of the centre i.e. bouldering wall, bocce pitches and mini putting course. Potential to attract more youth participation and engage the CI District High School in programs at the centre.

### Sports Ground/Cricket & Sporting Club:

- That the issue of management and tenure be addressed and responsibility for maintenance of the grounds be clearly documented. The capacity for undertaking maintenance of the sports grounds should sit with either the SOCI or the AGD.
- A precinct plan is prepared for the sports ground at Vagabond Road which would include consideration of a multi-functional, rectangular playing field that could accommodate senior Australian Rules football, soccer, rugby and a central cricket pitch between the oval and the soccer

pitch. The plan is to include investigation on the provision of change room amenities and include the footprint of a synthetic bowling rink.

- Develop, as part of the precinct plan, a lighting plan to provide lighting to both training and competition standard across the proposed multi-functional, rectangular playing field. Consideration will need to be given to the proximity of the airport in the lighting design.
- That DIAC be approached as a potential funding contributor for the development of the sports grounds based on the utilisation of the public amenities by their clients centre.





### 3. Precinct Analysis

## 3.1 Study Area

The Vagabond Road Sports and Recreation Precinct encompasses all of the current development on Phosphate Hill, as shown in Figure 2. It includes the entrance from Phosphate Hill Road, immigration detention facilities (including accommodation, kitchen and function facilities), the Island's recreation centre and sports oval and facilities. The land is relatively flat, sloping down predominately to the north and west.

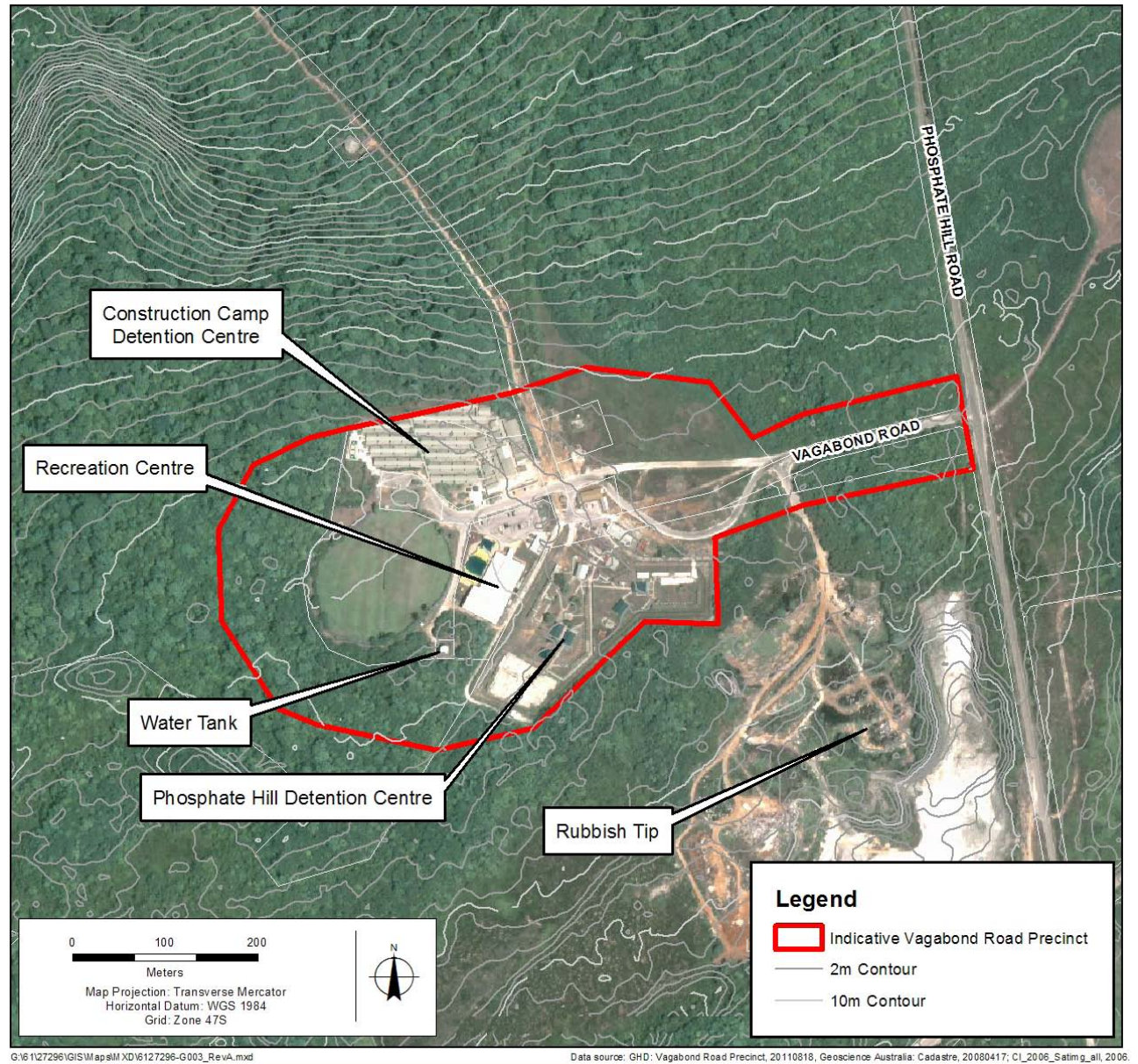


Figure 2: Vagabond Road Sports & Recreation Precinct Area



## 3.2 Land Tenure

The current land tenure of the precinct is illustrated in Figure 3. All of the land within and adjacent to the precinct is Crown land. Within this Crown Land, there is Unallocated Crown Land together with Crown Reserves that are used for water supply, recreation purposes, and immigration facilities.

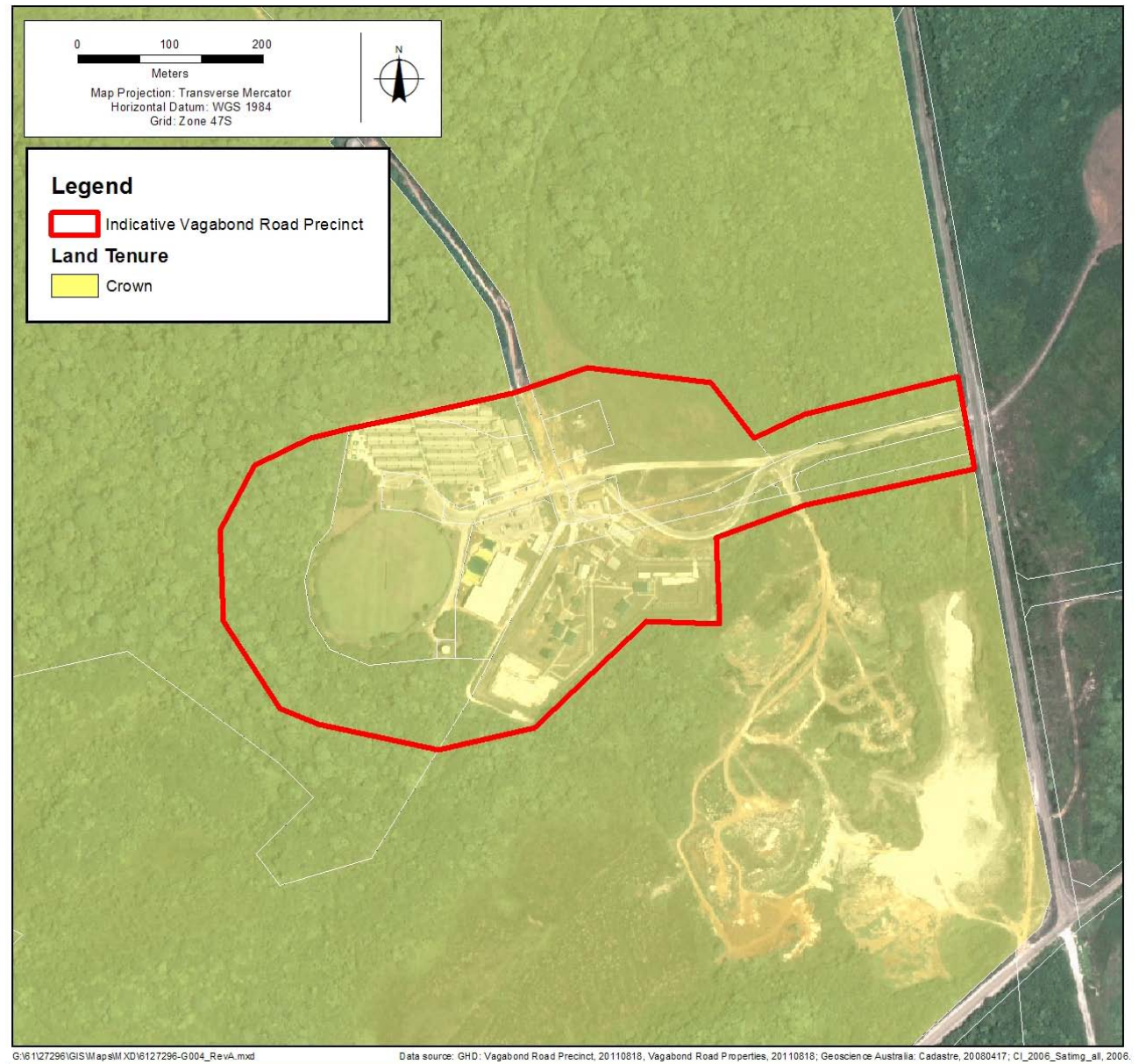


Figure 3: Vagabond Road Land Tenure



### 3.3 Land Uses/Facilities

The precinct is dominated by two main uses at present, these being recreation uses and DIAC facilities. The Island's rubbish tip and landfill is located adjacent to the precinct, south of Vagabond Road. There is a cleared area of land on the northern side of Vagabond Road which is currently vacant apart from a small Telstra structure. An elevated water tank is located behind the Recreation Centre building.

DIAC's immigration detention facilities are not envisaged to be relocated in the short term. One facility, the 'Construction Camp' is comprised of transportable buildings. Ideally both of these facilities would be relocated; however their long term future is uncertain. In the short to medium term, precinct improvements would be limited to their presentation and interaction with the adjoining streetscapes.

Recreation facilities are centred on the Recreation Centre building and adjacent oval. The Recreation Centre was constructed in 2003 and comprises

a 25m eight lane swimming pool, indoor basketball court (also used for other sports such as badminton), gym, change rooms, small café and other function rooms.

Immediately to the west of the recreation centre is the main Australian Rules Football (AFL) and cricket oval. The cricket pitch is in the middle of the oval and is artificial turf, which impacts on the utilisation of the oval for other sports. The oval has limited flood lighting which does not enable night time use of the oval for any sport on a large scale. Viewing areas around the oval are limited to directly in front of the Christmas Island Cricket and Sporting Club (CICSC) building due to the close proximity of vegetation around the majority of the oval boundary. There is also limited visual and pedestrian connectivity between the recreation centre and the oval because of vegetation and an access road that leads to the water tank.

The CICSC is located on the northern



Cleared area north of Vagabond Road



Swimming pool and café

edge of the oval, together with a children's playground. The CICSC facility has kitchen and bar facilities with a small function area as well. There are public toilets behind the building in a separate structure.

There is a tennis court behind the CICSC, within the DIAC Construction Camp facility which is not available for public use.



View of the oval and Cricket and Sporting Club from the Recreation Centre, with the 'Construction Camp' in the background



Current lighting at the oval



CICSC facility with recreation centre in the background



## 3.4 Environment & Heritage

### 3.4.1 Environment

The developed area of the precinct has been previously cleared to allow construction of buildings and roads. There is a large cleared parcel of land to the east of the DIAC Construction Camp that is yet to be developed.

The precinct is surrounded by significant established forest vegetation. The majority of this is identified as natural or planted revegetation. There are identified areas of Priority 1 and 2 vegetation to the north and west of the precinct (ranging from approximately 100 - 200m away), although information from Parks Australia indicates that all the surrounding forest has been cleared at some point in the past.

It is possible that tall trees in this area are used for nesting sites; however Parks Australia have advised that their presence is still not considered a high probability in this part of the Island. If any vegetation clearing is proposed, a detailed environmental survey will need to be undertaken to establish the condition

of the vegetation and presence of any nesting sites, and potential impacts of the clearing.

### 3.4.2 Heritage

There are no sites listed on the Commonwealth Heritage List (CHL) within the study area, nor are the any locally identified heritage areas within the precinct.



Vegetation adjacent to the oval



Regrowth on the cleared area of land



## 3.5 Visual Amenity/Public Spaces

Visual amenity within the precinct suffers due to the lack of precinct identity and conflicting land uses. The precinct is the main recreation area on the Island, dedicated to public use and facilities, it is also the location of the rubbish tip, again a public facility. Alternatively, the DIAC facilities on both sides of Vagabond Road are self-contained, secure facilities. This conflict makes it difficult to promote the area as a public precinct with attractive, well connected public spaces.

As previously mentioned, the physical and visual connectivity and interaction between the Recreation Centre and oval/CICSC building is restricted due to an access road, vegetation and screening of the pool fencing. These two facilities directly complement each other and greater interaction and connection between them should be promoted, especially if the facilities are expanded.

Hard landscaping features dominate the precinct and as a result there is a lack of attractive, functional public spaces

within the precinct to complement the concentration of active recreation uses. A small community garden area has been established adjacent to the access road to the rubbish tip. The garden is in its infancy, however there is a lack of shade, seating and rest areas as well as physical definition of the garden boundary.

There is a need for a co-ordinated approach to the visual amenity and public spaces of the precinct to create an attractive, unified precinct



Car park and entry to the Recreation Centre



Presentation of the pool and segregation of the oval



Waste and storage in immediate view

## 3.6 Streetscape

The road network within the precinct is essentially limited to Vagabond Road, which connects to Phosphate Hill Road and provides access to the whole precinct. As such, it is an important element in the visual presentation of the precinct. The current streetscape within the precinct suffers for the same reason as the general public realm outlined in Section 3.5, in that the current land uses have stifled investment and development in the appearance of the precinct.

The entrance to the precinct is bordered by dense forest and grassed shoulder areas, and presents an attractive green interface which continues along Vagabond Road for 100m until it opens out into cleared and developed areas.

From this point on there is a lack of shade within the precinct and Vagabond Road presents as very bare and harsh, with no soft landscaping features or lighting. A new chain link fence has been erected along the southern edge of the road to control access into the DIAC facility. At

the end of Vagabond Road at the CICSC there is a lack of line marking and road delineation, which results in ad hoc parking arrangements and redundant road surface area.





Entrance into the precinct from Phosphate Hill Road



Approach along Vagabond Road



Drainage sump adjacent to Recreation Centre entrance



## 4. Opportunities & Constraints

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As a result of the site analysis of the precinct, numerous opportunities and constraints have been identified that require consideration in developing the overall master plan.

## 4.1 Playing Fields

The existing playing fields are used by the community as well as the asylum seekers residing in the adjacent immigration facilities. As a result the oval is currently operating at capacity and is in poor condition with little maintenance other than mowing being undertaken. To increase the duration of time that the oval can be used, lighting should be considered to enable night time use. This would also allow activity to take place in cooler temperatures in the evening.

Any expansion of the oval should provide for additional rectangular oval space and relocation of the cricket pitch to an area in between playing fields. Expanding the playing fields to the west would take advantage of relatively flat land and would be further away from the airport than land to the south, reducing the potential for any conflicts.

Expanded playing fields will involve the clearing of vegetation, which will be subject to the required environmental approval process.

## 4.2 Public Realm

There is a significant opportunity to greatly enhance the public realm, visual amenity, pedestrian connection and the orderly integration between existing and future recreation facilities. The enhancement of visual and physical connections between the oval and the Recreation Facility should also be promoted to enable greater interaction and additional viewing areas.

The provision of soft landscaping areas should be considered to provide additional public areas to complement the concentration of active recreation uses within the precinct. These areas could also be used for large outdoor events as the precinct is not in close proximity to residential areas.

Opportunities for enhancing the entry into the precinct and harsh streetscape should also be explored to improve the visual amenity of the precinct and provide a softer and more welcoming environment.

## 4.3 Buffer Restrictions

Any future development of permanent residential uses, or to a lesser extent commercial and short term accommodation uses, will need to give consideration to buffer restrictions associated with radio tower buffers to the south west, the proximity of the rubbish tip, as well as height restrictions and noise effects associated with the runway.

## 4.4 Immigration Facilities

Whilst the future of the immigration facilities may be difficult to gauge, the temporary character of the Construction Camp implies that long term options involving closure, restructure or relocation to a more suitable area may be explored. Neither the Christmas Island 2018 Plan, CLMP nor the Draft LPS envisage the long term retention of immigration related uses at Phosphate Hill.

In the short term, efforts should be made to provide additional screening and landscaping enhancements to provide a suitable interface with the public nature of the precinct and its facilities.

## 4.5 Alternative Access

The provision of alternative access (including vehicular, pedestrian and bicycle) to the precinct should be considered in the long term to provide more direct connections to the precinct from Poon Saan and Drumsite. Facilitating alternative access to the precinct from the school and main residential areas will provide enhanced opportunities for the utilisation of the facilities provided within the precinct.

It is understood that a project is underway to design and construct a dual use pathway connecting Drumsite, Poon Saan and Silver City. This project is not at a stage where final plans can be incorporated into this UDMP. Given that this project is not finalised, there may be an opportunity to include additional connections from Vagabond Road to Drumsite and Poon Saan.

## 4.6 Phosphate Resources and Future Mining Leases

There are identified phosphate resources adjacent to the precinct on the northern slopes of Phosphate Hill that have been subject to past mining lease applications. Future development within this area should not sterilise economically viable deposits of phosphate, or future mining lease application. Any potential development in the northern portion of the precinct and beyond should be staged in such a way that the phosphate can be extracted prior to development.

## 4.7 Waste Management Strategy

SOCI has recently completed the preparation of a Waste Management Strategy that examined the streamlining of waste management practices at the rubbish tip. Initial findings of the work indicated that the rationalisation of land required for the rubbish tip can be achieved, as well as the introduction of greater recycling and composting of organic waste.

If these recommendations are implemented, then the potential buffer restrictions and associated odour impacts on the rest of the precinct would be reduced significantly. It would also allow the remediation of a portion of the rubbish tip, potentially for re-use for other land uses.

## 4.8 Land Management

The current cadastral definition and land management practices do not reflect the reality of what is on the ground within the precinct. The current Vagabond Road alignment is not within a road reserve and there is no defined area of management/lease for the rubbish tip, to highlight two examples.

This process provides an opportunity to address such issues by identifying future land requirements, and providing an indication of required land boundaries and management requirements.



# 5. Consultation Outcomes

An Urban Design workshop was held in September 2011 with the community and other key stakeholders on-Island to facilitate direct participation in the design process. A brief presentation was given outlining the project and some initial observations of the precinct by the project team. Participants were then given an opportunity to provide comments, ideas, concerns and visions for the precinct on separate tables.

A summary of the outcomes of the process is outlined below:

**Table 1:**

- Squash courts and golf course should be considered.
- Provision of mountain bike trials from the school and Poon Saan (using existing alignment).
- The dual use path will come from the main entrance to the precinct.
- Electricity supply is at capacity, and new development/infrastructure would require

electricity upgrade.			
<ul style="list-style-type: none"> <li>Perceived management issue associated with any future liquor licences as they may not seen as desirable for some portions of the community.</li> <li>Lighting of ovals for night use.</li> <li>The school requires use of the complex during the day, and has a requirement for 4-5 tennis courts.</li> <li>Provision of a multiple purpose area that has tennis, volleyball and netball on a hockey pitch.</li> <li>Solid roofing for shade for school use, as opposed to sails.</li> <li>Provision of a school camp that can be used for visiting sporting teams (with change rooms).</li> <li>Possibility for an amphitheatre.</li> <li>Dual use path needs to connect to Settlement/Kampong.</li> <li>Convert the construction camp into a cabin park.</li> </ul>	<b>Table 2:</b> <ul style="list-style-type: none"> <li>Create walking trails using the recreation centre as a base, consider a marathon track as well (re-use old tracks).</li> <li>Cross terrain bike trails.</li> <li>Is the recreation centre a cyclone shelter and is it big enough?</li> <li>Consider facilities for beach volleyball, golf, local Malay game (sepak takraw), climbing wall, squash courts, mini-golf, go kart track, olympic size pool.</li> <li>Put in stadium seating, bleachers, stands for school carnivals etc.</li> <li>Shade cloth around pool fence is for privacy and also wind protection.</li> <li>Performance area – perhaps a stage and amphitheatre for bands?</li> <li>Lawn bowls should not be near bars for cultural reasons.</li> <li>Vegetation in the general area is heavily disturbed. However, nesting sites may be found further down the hill.</li> </ul>	<ul style="list-style-type: none"> <li>Crabs migrate generally down the hill to the west from the precinct.</li> <li>Detention/Immigration could move to community living model again – re-use facilities for office, commercial, food outlets.</li> <li>Medium density housing ok – multi-levels, access to breezes on the hill means cooler living than down the hill.</li> <li>Opportunity for using accommodation buildings for scouts, universities, retreats, conference centres, summer camp opportunities, sepak takraw international competition, Cocos (Keeling) Islands visitor accommodation, billeting.</li> <li>Dormitory style, backpackers, range of accommodation types to address short term needs.</li> <li>South East Asian Games venue?</li> <li>Opportunities for solar and wind capture – individual or small grouped facilities, recreation centre definitely should have solar on roof, create a power generating precinct for solar and wind.</li> </ul>	<ul style="list-style-type: none"> <li>Vegetation required around fields for shade.</li> <li>Emergency services use the existing water tower for training – abseil training, and other practice.</li> <li>Possibility for additional community garden near existing sump area or integrate gardens as part of public spaces – the existing community garden is for DRA and the community.</li> </ul> <p>The study team returned to the Island in November 2011 to consult further on the draft concept plans, which included the presentation of the draft plans at the Indian Ocean Territories Economic Development Summit, as well as multiple community information sessions for comments and feedback prior to the finalisation of the plans.</p> <p>It should be noted that as well as being invited to the Workshop, comment was sought from DIAC and the Christmas Island Airport on the Draft UDMP, however no comments were received.</p>

# 6. Urban Design Master Plan

## 6.1 Precinct Vision

*To provide enhanced facilities and amenity to address the diverse sporting and recreation needs of the Christmas Island community in creating a 'Sports and Recreation Precinct', whilst also providing new long term development opportunities to support the precinct, and the wider community.*



## 6.2 Key Elements

Immediate enhancements (within 2 years) to the precinct can be achieved within the existing fabric, whilst also identifying a long term vision (10 years) for the precinct's future. The ultimate staging of development within the precinct will rely on the future of the DIAC facilities, as well as potential mining prospects around the precinct.

### 6.2.1 2 Year Development

The 2 year development plan is illustrated in Figure 4. The first stage of development is concentrated on providing enhanced sporting facilities as well as general landscaping and public realm upgrades. The key features are identified in Figure 4.

An enhanced 'themed' entry statement to the precinct is proposed to assist in creating a unified identity for the precinct as well as creating a focal point. The provision of some soft landscaping features along Vagabond Road will continue the entry statement into the precinct once visitors emerge from the

dense vegetation. Shade trees lining the road and screening vegetation in front of the DIAC facility will maintain visitors' attention along Vagabond Road and towards the heart of the precinct in front of the Recreation Centre.

Resurfacing and differential paving treatment of the parking area and entrance into the Recreation Centre will identify this area as the 'destination' and provide a transition into the grassed and other landscaped areas. Introduction of screening vegetation in front of the 'Construction Camp' DIAC facility will assist in identifying the playing fields and Recreation Centre as the focal point of the precinct.

An expansion of the playing fields and other recreation facilities, together with appropriate lighting, will create additional opportunities for the Christmas Island community to engage with and utilise the precinct. The additional facilities will also encompass the needs of the whole community by providing a range of

sporting opportunities, building on what is already available. A detailed environmental survey should be undertaken as a priority to facilitate the clearing of the area required for the expansion of the playing fields.

Lighting of the sports fields will be subject to input from the Civil Aviation and Safety Authority (CASA) as the light poles will project into the OLS area. The existing water tank is approximately 10-12 metres in height and any light poles would need to be no taller than the tallest existing structure. If the light poles are taller, then they become a 'critical obstacle' and will need formal CASA approval.

In relation to lighting glare and reflection and the impact on airport operations, the CASA Manual of Standards Part 139 outlines the requirement for lighting within a 6 kilometre radius of an airport. Within this area there exists a primary area which is divided into four zones which have associated maximum levels of intensity of light sources. These zones relate to

an area directly under the approaches to either end of the runway, to a maximum width of 750 metres from the midline of the runway. The eastern edge of the sporting fields is approximately 800 metres from the midline of the runway.

Consultation with CASA and the Christmas Island Airport will still be required during detailed design of the lighting.

The relocation of the cricket pitch will allow AFL to be played on the current oval without concerns over damaging the pitch or player safety. Expanding the playing fields to the west allows enough room for the provision of full size soccer and hockey pitches. These areas can also be utilised for volleyball and netball as required. Additional synthetic tennis courts are also identified. There is space for additional basketball courts in this area as well. South of the Recreation Centre, a bowls green has been identified, together with a relocated skate park (from Gaze Road). There is also space for additional car parking.



Figure 4: 2 Year Development Plan





Figure 5: Perspective of 2 Year Development from Recreation Centre

To open up the southern edge of the Recreation Centre, a new access road is proposed, in between the Recreation Centre and DIAC facility.

This road would be located within an existing cleared corridor between the two facilities. This connection will provide access to the proposed parking, bowls green and skate park. It will also provide a legal access to the water tank, which is currently lacking, as well as potential for access around the expanded playing fields if required.

Interaction between the Recreation Centre and the playing fields should be enhanced which will be facilitated by the removal of the current access road to the water tank. With this road removed, together with the low vegetation adjacent to the oval, greater physical and visual connectivity

can be achieved. The provision of additional grassed and other soft landscaping features will provide areas for the community to gather and watch the sporting activities. A small tiered seating structure for 120-140 people is proposed for the western edge of the sporting fields as an additional elevated viewing area, close to the rectangular fields, as well as the cricket oval.

An extension to the Recreation Centre is also envisaged to enhance the interaction with the playing fields, as well as providing an elevated viewing area. The extension proposed would be over two storeys, with a café/restaurant with views over the playing fields, swimming pool, skate park and bowls green on the top level, with additional change room and sporting facilities on the ground level.



Current corridor between the Recreation Centre (right) and DIAC facility (left)



Any extension to the Recreation Centre building will need to take into account the findings and recommendations of previous condition and maintenance reports completed by GHD in 2009 and 2011 for the Commonwealth Government. These reports have identified defects in various building services as well as roof leaks, amongst other issues.

A construction camp for Commonwealth housing being constructed in Drumsite has been identified, however this is a temporary camp that will be removed once construction of the housing has been completed. Any future short term accommodation facilities which may be proposed in a temporary form should be considered for re-use as short term accommodation for visiting sporting teams, in addition to further, more permanent opportunities in the adjacent cleared area.

### 6.2.2 10 Year Development

The implementation of the vision illustrated in the 10 year development plan is reliant upon the removal of the DIAC Construction Camp facility and the implementation of recommended improved waste management practices as well as further clarity on the future of phosphate mining prospects in the area immediately adjacent to the precinct.

The main element of the plan is the creation of a 'main street' and public square along the northern edge of the playing fields. This 'main street' would become the main link through the precinct, with opportunities for supporting commercial and residential development, with strong linkages to the recreation facilities. A reconfigured intersection and entrance forecourt into the Recreation Centre is also proposed, adjacent to a reconfigured car parking area.

Development opportunities on the northern side of the 'main street' and beyond are envisaged, as the precursor

to the expansion of long term urban land uses to Phosphate Hill. This precinct will become the focal point of new urban development and as such, opportunities for retail and commercial development will be required to support the local population. Development within the precinct will also need to integrate with future development within the wider area. Residential development has been identified around the playing fields illustrating these opportunities.

The north east corner of the reconfigured intersection will also become a key strategic site, in line with the entrance to the Recreation Centre, as well as the northwest corner as the entrance to the 'main street'.

Expansion of the playing fields is identified in the 2 year development plan, so no major changes are proposed within the 10 year plan. There is an opportunity to realign the AFL oval however once the CICSC building is relocated. The CICSC facilities could move to the

expanded Recreation Centre, or could be incorporated into new development immediately adjacent to the 'main street'.

As the Island is made up of a variety of different cultures with different beliefs, with members partaking in different sports, new facilities will need to be designed in such a way as to respect cultural sensitivities where required. This will ensure all members of the community are welcome and feel comfortable in the precinct.

It is envisaged that although the Construction Camp facility would be relocated, the DIAC Phosphate Hill facility would remain in the long term as a more permanent facility. If this facility was relocated, this land is adjacent to the rubbish tip and wouldn't be suitable for further development until waste management practices are rationalised.



Figure 6: 10 Year Development Plan





Figure 7: Perspective of 10 Year Development from Recreation Centre



## 7. Urban Design Framework

## 7.1 Built Form

The urban design framework identified below will be relevant to the future improvement and enhancements of the precincts. The framework outlines improvements to the visual amenity of the precinct, guidelines for future built form, improved community facilities and sustainability measures that aims to articulate the UDMP.

New buildings within the precinct will generally be limited to 1-2 storeys, in line with the current Recreation Centre. The intrusion of the precinct's landform within the OLS of the airport can provide limitations on future development. The OLS exists to ensure adequate obstacle clearance for aircraft approaching and leaving the airport. Intrusions by structures into the OLS are not permitted unless approved by the Civil Aviation safety Authority (CASA). However as the landform itself, let alone the existing structures, intrudes into the OLS area and the precinct is not in the direct flight path of the airport, then approval of additional structures should be achievable.

Development further to the north will be less problematic as the land slopes away and height restrictions associated with the OLS are reduced.

Whilst large scale residential development adjacent to the precinct will need to be subject to further Structure Planning, new built form within and adjacent to the precinct will need to take advantage of the cooler temperatures and stronger breezes on top of the hill in their design and efficiency. Breezeways, such as those found on the lower terraces won't be required on top of the hill, so buildings should be oriented to take advantage of cross breezes through the buildings for natural ventilation.

Commercial buildings on the northern edge of the playing fields should be designed in such a way so they have frontages that address both the 'main street' and the playing fields. Buildings located on the north western and north eastern corner of the central intersection should be iconic buildings, possibly higher

at 3 storeys with appropriate pedestrian forecourt areas to frame the intersection and Recreation Centre entrance way.

The proposed extension to the Recreation Centre should allow panoramic views across the playing fields and swimming pool from the second storey through either an open deck area, or large windows. The ground floor should provide additional change room facilities, accessible from both inside and outside the building.

Building materials should reflect existing Island forms and styles where appropriate and be designed for a tropical climate. There are opportunities, however, to introduce new styles into the precinct. The other urban areas on the Island have their own distinct style and appearance in relation to built form, and the development of this precinct could achieve a similar outcome.

Any future transportable dwellings within the precinct should be designed in such a way as to integrate with the rest of the precinct, and not operate as

a stand alone community. Appropriate in situ landscaping that addresses the presentation to, and encourages interaction with, the public realm should be incorporated in any site design, together with pedestrian linkages to the rest of the precinct.

## 7.2 Pedestrian Amenity

Enhancing and creating attractive and functional public spaces is a key component of the UDMP. The creation of appropriate vistas and visual corridors will improve the appearance on the precinct and encourage more activity within the public realm to complement the active sporting and recreation uses.

General improvements through dedicated pathways and improved soft landscaping areas, including shade trees, should be introduced to encourage greater interaction in the public realm. Currently the precinct is dominated by hard landscaping, fencing and unwelcoming facades that discourage any interaction within the public realm, which is not desirable in a sporting and recreation precinct with a focus on outdoor activity.

The creation of an entry corridor into the Recreation Centre will provide a visual corridor from the main intersection in the precinct to the main building in the precinct. In the short term this will be limited to paving and vehicle movement

improvements, however in the long term there is an opportunity to reconfigure the entry with a pedestrian forecourt area providing a direct connection with the centre of the precinct. Alternative paving treatments, provision of shading and benches will facilitate a gathering area in the heart of the precinct, with views to the playing fields also.

Improvements to the pedestrian amenity within the precinct should also extend to the creation of visual and physical linkages to the playing fields. Opening up the vista between the recreation centre and car park will provide the visual link, whilst the provision of pathways, furniture, interpretative and directional signage can all assist in providing a physical linkage.



**Current entry into the Recreation Centre**





Example of pedestrian forecourt entry to major building



Provision of physical and visual linkage to a recreation area together with pedestrian features

## 7.3 Streetscapes

Streetscapes should include more soft landscaping features such as shade trees and landscaped shoulders. The upgrading of Vagabond Road into a grand avenue into the precinct should be a priority, providing a link to the Recreation Centre and playing fields. The upgrade should serve a dual purpose of enhancing the streetscape as well as screening existing DIAC facilities from the main entrance road. This will provide greater security for the facilities, as well as assisting to promote the dominant function of the precinct as a sporting precinct.

In the long term, the development of the 'main street' environment and public square will further enhance the presentation of the precinct, as well as its functionality as a predominately public space. The provision of a landscaped median and alternative paving treatments will delineate the road from the rest of the precinct, providing a focus on the area and identifying it as a pedestrian friendly area.

A dedicated network of dual use pathways should be developed throughout the precinct to facilitate greater pedestrian activity and to provide for ease of access within the precinct to the different facilities. These pathways should also provide connections outside of the precinct to other walking and biking trails as they are developed. Pathways should be complimented with directional signage and other amenities such as seating, shade areas and water fountains.

The development of the intersection of Vagabond Road with the entrance of the Recreation Centre, and the proposed 'main street' in the long term, will be an important statement within the precinct. As the key strategic intersection of the precinct, the treatment and presentation of the intersection should complement the entry and provide a continuum of the precinct's identity and theme. A signature piece of art or structure, with a focus on sports and activity may be suitable to provide a focal point within the precinct.

Permeable paving is recommended to be used throughout the precinct to maintain a green appearance and reduce the extent of hard landscaping and road surfaces. It is proposed primarily for the additional car parking area to the rear of the Recreation Centre and could be used in the main car park to further enhance the visual presentation of the building entrance. Permeable paving would also reduce the amount of runoff from road surfaces and potentially leaching of contaminants.

There also should be opportunities for interactive public art that encapsulates the local Christmas Island environment and culture, as well as precinct way finding signage to encourage people to explore and interact with the precinct.





Well landscaped median strips and verges create a welcoming pedestrian environment



Permeable paving will provide an additional green space as well as reducing stormwater runoff from road surfaces



## 7.4 Entry Statement

The presentation of the entry into the precinct is important in identifying the precinct and for providing a sense of arrival to a destination. In the short term the only entrance will be from Phosphate Hill Road. The provision of sculptures or signage, as well as the preservation of the existing vegetation will contribute to providing a strong entry statement.

In the long term, with the provision of additional entry points into the precinct as the area is developed for urban uses, a co-ordinated approach to entry signage and statement themes is required to maintain continuity.

## 7.5 Sustainable Development

There are opportunities to incorporate sustainable development outcomes within the precinct on an individual building basis. Utilising solar energy on the roof of the Recreation Centre and other sporting club facilities to heat the pool as well as provide power is one such concept that should be considered. Solar lighting could also be considered for pathways and pedestrian areas. New commercial and residential development should also incorporate solar and wind energy where possible on an individual basis.

## 8. Probable Order of Cost

A Probable Order of Cost (POC) has been developed based on the UDMP and Urban Design Framework for the Vagabond Road precinct. The POC is a high level assessment of the plans, developed to a +/-20% level of accuracy, based on square metre rates of the different elements of the plans.

A summary of the POC for the 2 year development plan and 10 year development plan is outlined below, and a more detailed breakdown of estimated costs for each element is attached at Appendix A. Elements of these costs are interchangeable, depending on the final priorities between the 2 and 10 year development plans, for example the Recreation Centre extension (currently 10 year) and installation of grandstand seating (currently 2 year).

**Table 1: 2 Year Development Plan Probable Order of Cost**

Item	Amount
Demolition/Earthworks/Civil	\$ 1,715,190
Hard Landscape	\$ 1,511,300
Electrical/Lighting	\$ 551,000
Soft Landscape	\$1,494,280
<b>Total</b>	<b>\$ 5,271,770</b>

It should be noted that lighting that minimises and shields upward glare has been used in the costings as best practice, although not strictly required. The additional cost for these best practice specifications is negligible compared to the cost of the lighting itself.

**Table 2: 10 Year Development Plan Probable Order of Cost**

Item	Amount
Demolition/Earthworks/Civil	\$4,910,371
Hard Landscape	\$1,268,850
Building Works	\$3,302,000
Electrical/Lighting	\$753,750
Soft Landscape	\$731,310
<b>Total</b>	<b>\$10,966,281</b>

This figure includes the provision of services in adjacent road reserves for the proposed residential lots surrounding the sporting fields.



# 9. Implementation Framework

## 9.1 Land Tenure & Management

The expansion of facilities and general upgrades to the precinct proposed provide an opportunity to recast and formalise land tenure and management issues that currently exist within the precinct. Cadastral discrepancies, resultant land uses outside of permissible zones under the TPS, and buildings without dedicated cadastral boundaries all raise questions in terms of public liability, apportionment of maintenance responsibilities, general safety and the enforcement of land management procedures. Provision of dedicated cadastral and land tenure boundaries will address these issues, by providing definition for appropriate land use zoning and defining boundaries for management and liability purposes.

Figure 8 illustrates proposed cadastral adjustments, as well as the creation of new cadastre based on the UDMP to enable formal management and tenure agreements to be put into place in line with proposed improvements. This will provide defined areas of responsibility for operational and maintenance

responsibilities, which is currently lacking.

Further adjustments will be required as elements of the 10 year plan are implemented, including new road reserves, commercial and residential lots and rationalisation of immigration facilities and the rubbish tip.

The CICSC currently has no formal tenure or lease agreement for the land the club rooms occupy, and as such they are tenants at will. In addition, the responsibility for maintenance is not clearly defined and club volunteers currently prepare the sports ground for activities, as well as perform low level maintenance activities. As a result, there is an inability for the CICSC to focus on major works, and restriction on its ability to obtain funding without a legal long term commitment to the site.

Establishing a formal lease for the club rooms should be a priority to provide security of tenure for the club, as well as defining required maintenance requirements. This security could enable

investment in improved and expanded facilities for members.

Establishing tenure around the expanded sporting fields will also provide definition for maintenance and operational requirements. It will also define the area of requirements if DRA delegate the management of the fields to the Shire, as has been done with the Recreation Centre. The establishment of external boundaries for the sporting fields will be required when additional road reserves and residential lots are created in the long term under the 10 year development plan.

The formalisation of tenure boundaries around the DIAC immigration facilities is also desirable to provide certainty regarding DIAC's area of responsibility within the precinct. It will also ensure that any future developments related to these functions can occur in line with the UDMF and not compromise any elements of the plan.

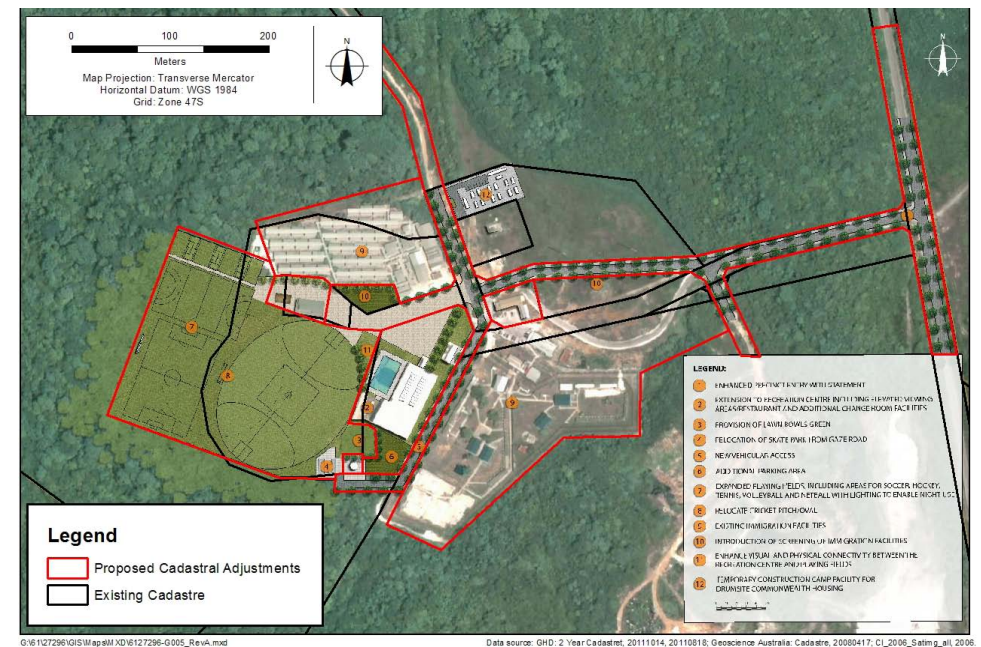


Figure 8: Proposed Cadastral Adjustments

## 9.2 Funding

### 9.1.1 Vagabond Road Taskforce

A dedicated Vagabond Road Taskforce (VRT) should be created to oversee funding applications for elements in the plan, as well as identifying and agreeing appropriate management responsibilities and land tenure boundaries for the precinct. The intent of the VRT would be to foster improved communications between the key stakeholders in the precinct. This will enable a unified direction to be promoted for the improvement of the precinct to provide benefits for the Christmas Island community.

The VRT should consist of, as a minimum:

- DRA;
- DIAC;
- Parks Australia;
- Shire of Christmas Island;
- Christmas Island District High School;
- Christmas Island Cricket and Sporting Club;

- Christmas Island Soccer Federation;
- Arts & Culture Christmas Island;
- the Neighbourhood Centre; and
- Other sporting clubs on the Island.

### 9.2.1 Department of Immigration and Citizenship

The Sports & Recreation Strategic Plan for Christmas Island prepared by DSR included the following recommendation in relation to funding of facility upgrades:

‘That DIAC be approached as a potential funding contributor for the development of the sports grounds based on the utilisation of the public amenities by their clients centre.’

DIAC currently utilise both the Recreation Centre and sporting grounds for family groups, increasing ‘wear and tear’ on the facilities. The oval is currently maintained by the CICSC to support low level community and club use. As a community group, the CICSC cannot be expected to maintain the current sports fields, let alone expanded fields, to a suitable standard for use by the general community as well as DIAC clients.

The recommendation that DIAC should be approached for funding for the

upgrade and maintenance is considered appropriate, given their level of use of the facilities that has, in part, facilitated the need for upgrades and expansion to existing recreation facilities. The establishment of a joint funding agreement between DRA and DIAC could form the basis of funding requirements and arrangements.



### 9.2.2 WA Department of Sports & Recreation

SOCI are able to apply to the Department of Sport and Recreation's (DSR) Community Sporting and Recreation Facilities Fund (CSRFF) under the State-type Grants Programme. This program enables Indian Ocean Territory residents and groups to apply to the Australian Federal Government for funding equivalent to that provided under WA Government programmes for WA residents.

DSR assesses an application under the guidelines of the existing CSRFF and prepares a recommendation to the Federal Department of Regional Development Australia, Regional Development and Local Government, who ultimately determine the level of funding.

The primary aim of CSRFF is to increase physical activity and participation in sport and recreation through well designed, well utilised and sustainable facilities. The program also promotes the rationalisation of existing facilities that are at the end of

their life cycle into shared facilities where appropriate.

DSR assesses the application and provides comment as to the demonstrated need and feasibility of the project and whether it complies with the CSRFF program. Where an application is non compliant the department highlight the area that it would be non compliant and ultimately this funding decision lies with the Department of Regional Development Australia, Regional Development and Local Government.



# Appendix A

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## Probable Order of Cost

**Phosphate Hill - 2 Year Phase**  
Probable Order of Cost

Item	Description	Qty	Unit	Rate	Amount
<b>1.0</b>	<b>Demolition / Earthworks / Civil</b>				
a	Demolition and site clearing works	26,152	m <sup>2</sup>	\$7	\$185,941
b	Provisional Sum for protection of existing site conditions	1	Item	\$10,000	\$10,000
c	Estimated Earthworks - regrading	21,408	m <sup>2</sup>	\$36	\$761,054
d	Installation of new roads, including all sub-grade and sub-base preparation, asphalt, and road markings as required	2,216	m <sup>2</sup>	\$195	\$432,120
e	Resurfacing of existing car park and access road	5,565	m <sup>2</sup>	\$55	\$306,075
f	Allowance for water to run to skate park, lawn bowls, and sports pitches and installation of bip taps	1	Item	\$20,000	\$20,000
	<b>Section 1 Subtotal</b>				<b>\$1,715,190</b>
<b>2.0</b>	<b>Hard Landscape</b>				
a	Pathway construction, including all haunching, subgrade and installation of unit paving	3,882	m <sup>2</sup>	\$200	\$776,400
d	Provisional Sum for Signage	1	Item	\$40,000	\$40,000
e	Relocation of Cricket Pitch (installation of new astro turf if required)	1	Item	\$12,500	\$12,500
f	Synthetic grass for lawn bowls surfacing (including preparation and installation)	693	m <sup>2</sup>	\$160	\$110,880
g	Synthetic grass for Tennis court surfacing (including preparation and installation)	792	m <sup>2</sup>	\$160	\$126,720
	Concrete surfacing between tennis courts	156	m <sup>2</sup>	\$100	\$15,600
	Permeable surfacing to parking at front of lawn bowls (gravel aggregate)	1,227	m <sup>2</sup>	\$100	\$122,700
h	Provisional sum for supply and construction of skate park	177	m <sup>2</sup>	\$500	\$88,500
i	Provisional sum for Grandstand seating element, includes shipping, concrete base (15m long - 5 tier approximately 120-140 people)	1	Item	\$100,000	\$100,000
k	High perimeter fencing to tennis courts	236	Lm	\$500	\$118,000
	<b>Section 2 Subtotal</b>				<b>\$1,511,300</b>
<b>3.0</b>	<b>Electrical and Lighting</b>				
a	Supply and install sports pitch lighting, allow for cabling, wiring, ducting and connection to power supply	1	Item	\$476,000	\$476,000
b	Supply and install amenity lighting to upgraded landscape areas, pathways. Provisional allowance for cabling, wiring, ducting and connection to power supply	1	Item	\$75,000	\$75,000
	<b>Section 3 Subtotal</b>				<b>\$551,000</b>
<b>4.0</b>	<b>Soft Landscape</b>				
a	Soil preparation including supply and spreading of amendments to extended sports pitches	19,060	Lm	\$5	\$95,300
b	Supply and lay turf grass including fertilising - not irrigated	19,060	m <sup>2</sup>	\$32	\$609,920
c	Extension of Swimming pool soft landscape amenity (preparation and installation for trees, shrubs and groundcovers, lawn) to be irrigated	1,423	m <sup>2</sup>	\$90	\$128,070
d	Refurbishment of soft landscape to existing car park and Recreation Centre Entrance	1,371	m <sup>2</sup>	\$90	\$123,390
e	Installation of automatic irrigation system for soft landscape around pool, connect into existing system	1	Item	\$40,000	\$40,000
f	Soil preparation and installation of soft landscape around existing car park, skate park and water tower - not irrigated	2,625	m <sup>2</sup>	\$80	\$210,000
g	Soil preparation and installation of tree plantings to all road verges	86	Item	\$550	\$47,300
h	Soil preparation and installation of native ground covers to road verges - not irrigated	4,806	m <sup>2</sup>	\$50	\$240,300
	<b>Section 4 Subtotal</b>				<b>\$1,494,280</b>
				<b>Total</b>	<b>\$5,271,770</b>
Note: The above order of cost does not include for the following:					
1	Preliminaries such as contract supervision, insurances, setting up and maintaining site offices, mobilisation, security etc				
2	Any defects liability periods				
3	It has been assumed no GST will be applicable and has not been allowed for.				



**Phosphate Hill - 10 Year Phase**  
Probable Order of Cost

Item	Description	Qty	Unit	Rate	Amount
<b>1.0</b>	<b>Demolition / Earthworks / Civil</b>				
a	Demolition of Existing Recreation Centre Car Park, existing buildings for new carpark installation	11,092	m <sup>2</sup>	\$7	\$78,864
b	Site Clearing and Demolition works for new perimeter roads and verges	24,086	m <sup>2</sup>	\$7	\$171,251
d	Provisional Sum for protection of existing site conditions	1	Item	\$10,000	\$10,000
f	Installation of new roads, including all sub-grade and sub-base preparation, asphalt, and road markings as required	15,346	m <sup>2</sup>	\$195	\$2,992,470
g	Installation of new car park for recreation centre, including all sub-grade and sub-base, asphalt and road markings as required	3,163	m <sup>2</sup>	\$195	\$616,785
j	Installation of services to all plots (power, water, sewer etc)	1,041	Lm	\$1,000	\$1,041,000
	<b>Section 1 Subtotal</b>				<b>\$4,910,371</b>
<b>2.0</b>	<b>Hard Landscape</b>				
a	Pathway construction, including all haunching, subgrade and installation of unit paving	3,230	m <sup>2</sup>	\$200	\$646,000
b	Plaza construction to both sides of entrance roundabout, including all haunching, subgrade, and installation of unit paving	602	m <sup>2</sup>	\$200	\$120,400
c	Site furnishings to new entrance plazas	10	Item	\$5,500	\$55,000
d	Provisional Sum for Signage (including street signage)	1	Item	\$40,000	\$40,000
e	Provisional Sum for Entrance Statement Walls/ Feature	1	Item	\$50,000	\$50,000
f	Relocation of football pitch markings and goals.	1	Item	\$5,000	\$5,000
g	Pathway construction to one side of perimeter road - (to recreation centre side - insitu concrete pathways)	2,014	Lm	\$175	\$352,450
	<b>Section 2 Subtotal</b>				<b>\$1,268,850</b>
<b>3.0</b>	<b>Building Works</b>				
a	Extention of Recreation Centre	508	m <sup>2</sup>	\$6,500	\$3,302,000
	<b>Section 3 Subtotal</b>				<b>\$3,302,000</b>
<b>4.0</b>	<b>Electrical and Lighting</b>				
a	Supply and install street lighting and carparks, allow for cabling, wiring, ducting and connection to power supply (estimate only)	1	Item	\$678,750	\$678,750
b	Supply and install amenity lighting to upgraded landscape areas, pathways. Provisional allowance for cabling, wiring, ducting and connection to power supply	1	Item	\$75,000	\$75,000
	<b>Section 4 Subtotal</b>				<b>\$753,750</b>
<b>5.0</b>	<b>Soft Landscape</b>				
a	Soil preparation and installation of soft landscape to upgraded areas, new car park and around water tower/ skate park - not irrigated	7,201	m <sup>2</sup>	\$80	\$576,080
b	Soil preparation and installation of tree plantings to all road verges and car parks - not irrigated	162	Item	\$500	\$81,000
c	Soil preparation and installation of native ground covers to medians - not irrigated	644	m <sup>2</sup>	\$50	\$32,200
d	Roundabout entrance/ statement planting	467	m <sup>2</sup>	\$90	\$42,030
	<b>Section 5 Subtotal</b>				<b>\$731,310</b>
				<b>Total</b>	<b>\$10,966,281</b>
<b>6.0</b>	<b>Optional Items</b>				
a	Propriety Public Toilets (Exceloo) installed to outer playing fields (near grandstand)	1	Item	\$200,000	\$200,000
b	Clearing and grading for housing plots and buildings on northern edge of site	18,261	m <sup>2</sup>	\$7	\$129,836
c	Regrading and site preparation for housing plots and buildings on northern edge of site	18,261	m <sup>2</sup>	\$36	\$649,179
	<b>Section 6 Subtotal</b>				<b>\$979,014</b>

Phosphate Hill - 10 Year Phase  
Probable Order of Cost

	Note: The above order of cost does not include for the following;				
1	Preliminaries such as contract supervision, insurances, setting up and maintaining site offices, mobilisation, security etc				
2	Any defects liability periods				
3	It has been assumed no GST will be applicable and has not been allowed for.				



GHD

GHD House, 239 Adelaide Tce. Perth, WA 6004


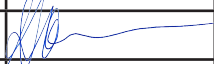
P.O. Box 3106, Perth WA 6832

T: 61 8 6222 8222 F: 61 8 6222 8555 E: [permail@ghd.com.au](mailto:permail@ghd.com.au)

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		Name	Signature	Name	Signature	Date
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