



NATIONAL CAPITAL DISTRICT COMMISSION
Regulatory Services Department

OPEN SPACE POLICY 2016



Strategic Planning Section, December 2016

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ABBREVIATION & ACRONYMS

APEC	Asia Pacific Economic Co-operation
CEPA	Conservation and Environment Protection Authority
CPP	Chief Physical Planner
DCMRS	Deputy City Manager Regulatory Services
DCP	Development Control Policy
DLPP	Department of Lands & Physical Planning
EIA	Environmental Impact Assessment
FC	Finance Controller for NCDC
FIFA	Fédération Internationale de Football Association
GoPNG	Government of Papua New Guinea
GPO	Government Print Office
HGS	High Growth Scenario
JICA	Japanese International Cooperation Agency
LDP	Local Development Plan
LFC	Land File Creation
LGS	Linear Growth Scenario
LPAs	Local Planning Areas
Ltd	Limited
MNE	Moresby North East
MNW	Moresby North West
MOA	Memorandum of Agreement
MPA	Marine Protected Area
MP	Member for Parliament
MS	Moresby South
NAT	National Appeals Tribunal
NCD	National Capital District
NCDC	National Capital District Commission
NCDPPB	National Capital District Physical Planning Board
NFA	National Fisheries Authority
NUP	National Urbanization Policy
OFC	International Olympic Committee
OS	Open Space
PLO	Principle Legal Officer NCDC
PPA	Physical Planning Act
PPE	Physical Planner Environment
PNG	Papua New Guinea
SDA	Seventh Day Adventist
SP	Strategic Planning
TPO	Tree Preservation Order
UDP	Urban Development Plan
UPNG	University of Papua New Guinea
UN	United Nations
WCC	Waigani City Centre
WSUD	Water Sensitive Urban Design
WFL	Walk for Life
YFL	Yoga for Life

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PART A: BACKGROUND

1.0 INTRODUCTION

The quality and quantity of open spaces, sports and recreational facilities have been a pressing issue in the National Capital District (NCD). There has been a significant reduction in the resources dedicated to maintaining these places and a decline in their quality. There has been a great decline in funding and investment in open spaces by National Capital District Commission (NCDC) resulting to loss of open spaces to private entities and squatter settlements and deteriorating recreational facilities. The continued development in the National Capital District have put increased demand for open spaces and recreation areas. For example, the infill developments in residential areas have caused loss of open space zoning and place greater demand for public recreational spaces within residential and built up areas. Given the limited amount of open spaces in many parts of the city, it is important that the NCDC makes the most of its open space network by striving to achieve high quality standards. Open space is a land use zoning in its own right and should be planned in the right location and conveniently visible, accessible, functional and usable to all segments of the population including the disables.

The current internal and external funding should be assessed and levels and distribution of existing revenue and capital expenditure should be identified in order to tap into alternative funding sources. An example would include developer contributions and private business contribution as part of community service to the people. It is very important to secure enough funds to establish a particular open space area and enough funds for maintenance, protection and monitoring to ensure longevity of the open spaces. Without this money and public participation, plants die, the soil is compacted, the area may be vandalized or covered with litter, and could become crime-ridden or taken over by squatters, thus losing the benefits that they were designed to generate.

The challenge for NCDC now is to reinvigorate our open spaces, recreational parks and sporting fields with new features and facilities that will put them at the centre of an urban renaissance. It needs joined-up thinking to provide a platform for new partnerships and initiatives and to gain political and community support. This cannot be done without a policy which will provide a strategic approach to open spaces with a vision for making a diverse, attractive and well-managed networks of green spaces as an integral part of our urban environment and the way we choose to live in the city.

1.1 PURPOSE

To provide a strategic approach in assessing the needs of the community purposely for planning an open space network that safeguards the future of our open spaces in the National Capital District. The policy provide for a wide range of recreational activities and facilities, and for the protection of the natural and built environment. The policy anticipate that all Open Spaces must be well planned and designed for people to connect with friends, families, neighbors and meet new people through social and physical interaction.

1.2 LEGAL BASIS

Section 5 Considerations of the Physical Planning Act 1989 provides the legal basis from which this policy is formulated. Where consideration is being given to a physical planning matter under this Act, the appropriate authority shall take into account such of the following matters as relevant to the matter under consideration.

1.2.1 Physical Planning Act 1989

Section 5 - (b) "The impact on the environment and, where harm to the environment is likely to be caused, any means that may be employed to protect the environment or to reduce that harm".

- (g) "Whether land is unsuitable for development by reason of its being, or being likely to be, subject to flooding, tidal inundation, subsidence, slip, bush fire, earth quake, volcanic eruption, or to any other risk whether natural or man-made.
- (m) The landscaping of the land on which development is proposed and whether trees on the land should be preserved.
- (n) Representations made by a public authority in relation to the development of an area, and to the rights and powers of that public authority.
- (p) Policy directives given by the Minister or provincial minister provided that such directives may not conflict with any other provisions of this Act.

1.2.2 Physical Planning Regulation 2007

Section 37 of the Physical Planning Regulation 2007 which provides for "*4 hectares of open space areas for every 1000 people anticipated to be resident shall be provided in any development plan covering an urban area and within any proposed subdivision in an appropriate combination of formal sports grounds, parkland and playgrounds*".

There are other supporting legislations that guides development and management of open spaces, recreational parks and preservation of the natural environment and these include:

1.2.3 NCDC Act 2001

Section 41 of the NCDC Act 2001 empowers Commission to legislate matters relating to sub-section (c) Parks & Gardens and, (d) Physical Planning.

1.2.4 Motu Koita Assembly Act 2007

Section 36 (1) Subject to the Constitution, the Assembly may in so far as Motu Koita areas are concerned, make laws on the following matters –

- (d) Community sport, recreation, cultural and industrial shows and Centre's; and
- (e) Land and land development; and
- (u) Protection of customary sacred sites; and
- (ab) Customary fishing grounds and reefs.

1.2.5 Land Act 1996

Section 52 of the Land Act 1996 states that "Special Purposes Lease to be granted over reserved land," Where Government land is reserved from lease, the land shall not be granted on application or tender, and a special purposes lease over the land shall be issued and registered in the name of the Independent State of Papua New Guinea in this case NCDC.

Section 100 (2) "A special purposes lease shall not be granted for private residence purposes within a physical planning area". Part V of the Land Act provides for the reservation of the land from lease required for public purposes.

Section 67 of the Act states that a state lease shall not be granted for a purpose that would contravene zoning requirements under the Physical Planning Act 1989. Section 125 (2) of the Land Act requires that a license shall not be granted for a purpose that would contravene zoning requirements.

1.2.6 PNG Sports Foundation Act 2005

Section 11 of the Act provide for individuals and groups within the community to have access to and to make use of, the resources, services and facilities of the Foundation, whether or not for purposes related to sport.

1.2.7 CEPA Act 2014

Conservation and Environment Protection Act 2014 provide for the conservation and protection of the environment in accordance with the Fourth National Goal and Directive Principle (National Resources and Environment) of the Constitution.

Section 8 of this Act provide the function of CEPA with special reference to:

(b) To co-ordinate with provincial and local-level governments and sub-national authorities to foster, manage and monitor environmental conservation strategies and programmes in the country; and,

(c) In relation to land under the care, control and management of the Authority

(i) To establish and maintain zoological and botanical parks and gardens; and

(ii) To permit and assist zoological and botanical research.

(f) To give advice to the Minister and maintain dialogue with other government agencies on environmental conservation laws and policies.

1.3 RELATIONSHIP TO OTHER PLANS, POLICIES & DOCUMENTS

In formulating this policy, consideration has been given to a number of Government Development Strategies and Government commitment to the international community on sustainable development and to the promotion of a more active and healthy lifestyle and conservation of biodiversity. This policy will give effect to the provisions provided in the approved local development plans and policies relating to open spaces for passive and active recreation and the natural environment in the National Capital District. Detail evaluation of various policies and plans is outline in Appendix A (2) whilst Figure 1 demonstrate the relationship of open space policy to other related policies.

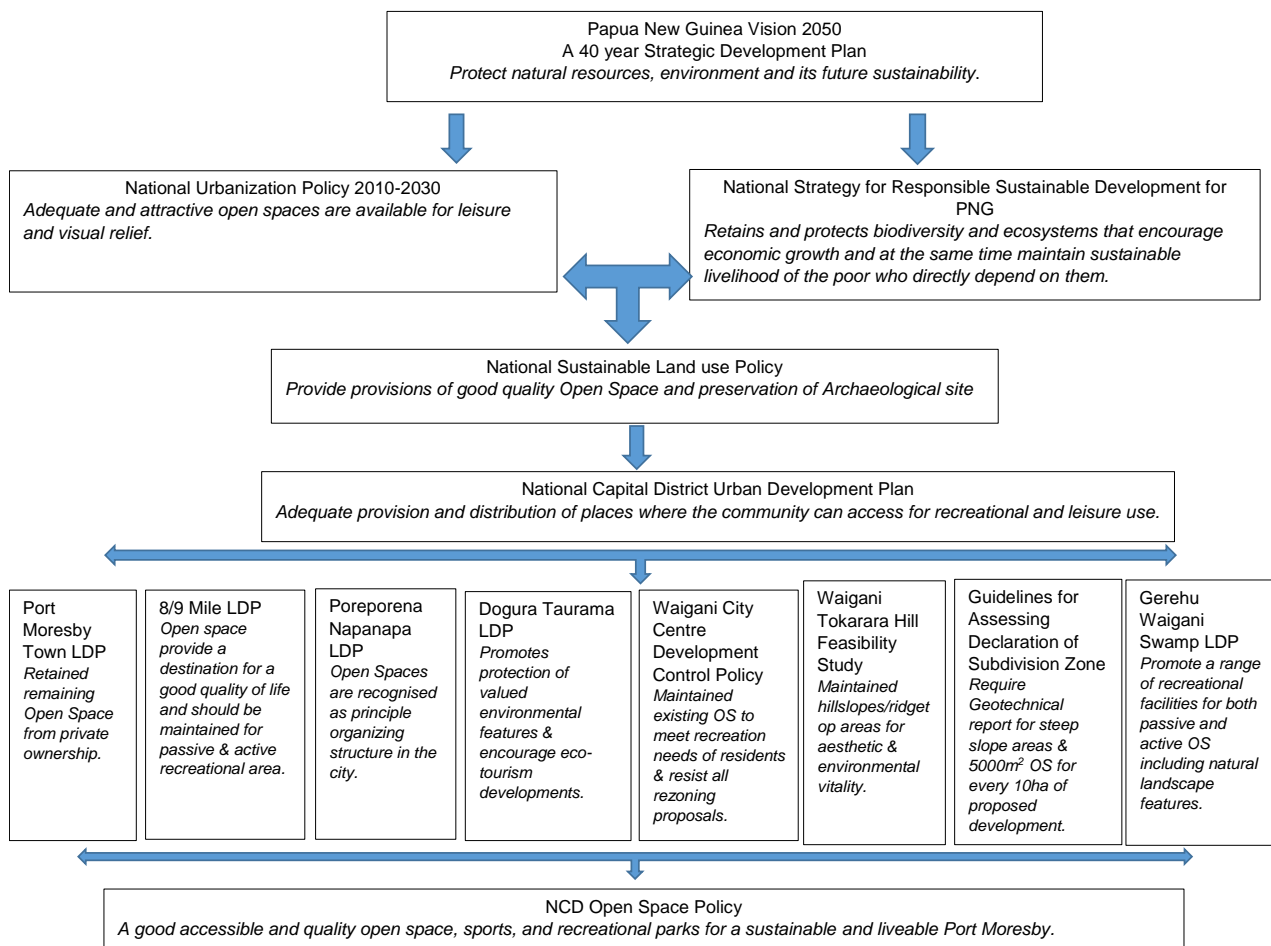


Figure 1: Relationship of Open Space Policy to other plans and policies.

1.4 INSTITUTIONAL ROLES AND RESPONSIBILITIES (MANAGEMENT OF RECREATION PARKS & SPORTING FIELDS).

The responsibility of providing recreation and open space facilities in the National Capital District is shared between government organizations and the private sector. The sole responsibility for planning, development and management of recreational and open space provision lies with the NCDC through its Regulatory Services Department and the Community and Social Services Department. The role of different Government departments is provided in *Appendix B (6)*.

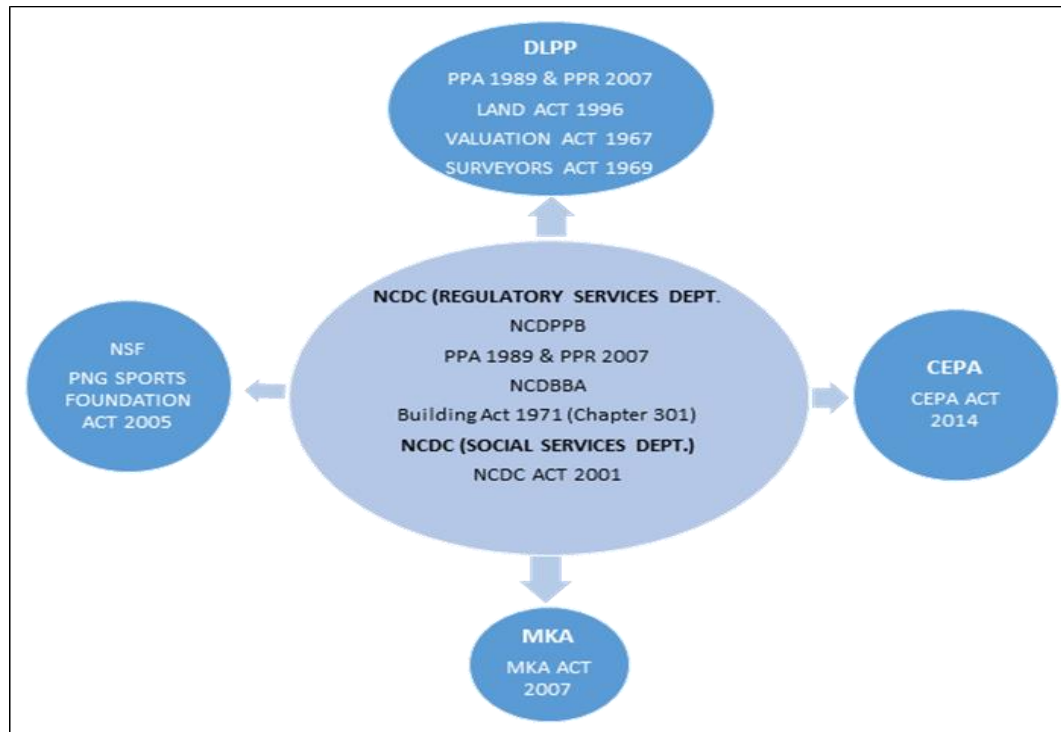


Figure 2: NCDC's legislative powers and functions relating to the management and development of open spaces and recreation parks and its relationship to other legislations.

1.5 APPLICATION OF THE POLICY

This policy will be used to assess all development applications for planning permission pertaining to open space development, allocation and distribution in the NCD. This policy must be read in conjunction with other approved local development plans and policies in the assessment of development proposals for the use of land for sports, outdoor recreational activities and developments on environmentally sensitive areas. The Policy outlines the principles that guide the planning and decision making with respect to the provision of recreational activities, sporting facilities and natural habitat. It also outlines NCDC's key priorities for recreation provision and the actions it will take over the next 5 years to achieve these priorities.

2.0 INTERPRETATION (DEFINITION)

All interpretations are consistent with terms defined under Part 1 and Schedule 1 of the Physical Planning Regulation 2007. The following definitions relate directly to the application of this policy:

2.1 OPEN SPACE

Open Space is a statutory land use zone for the provision of open space and recreation facilities for enjoyment of the general public. It is a term used interchangeably with public recreational open space which means land used or intended for use for recreational purposes. Public open spaces also include natural areas consisting of coastal foreshore reserves, waterways, wetlands, areas of escarpment and grassland. These areas are typically less suitable for recreation, but serve other public or environmental purposes, such as drainage reserve for storm-water management, road reserves, asset protection and other buffer zones, habitat protection and lands used for community facilities and other infrastructure purposes.

2.2 PUBLIC RECREATION

Public recreation defined in Part I of the *Physical Planning Regulation 2007* is use of land for a public park, public gardens, foreshore reserves, playground or recreation ground and sports ground which are normally open to the public with or without charge. It is further defined in Section 37 of the Regulation as open space areas which shall be provided in any development plan covering an urban area and within any proposed subdivision in an appropriate combination of formal sports grounds, parkland and playgrounds.

2.3 RESTRICTED OPEN SPACE

Restricted open space is another important element of open space system and often provided within a private allotment or as part of common property of higher density areas where outdoor spaces may be scarce and its quality is dependent on the house or unit design and orientation (e.g. Islander Village). Restricted open space also includes sports stadiums, golf courses and country club estates where access is restricted.

2.4 CATEGORY OF OPEN SPACES

Open space have many forms and functions and differ greatly in their end use, and can be categorized into the following categories:

2.4.1 Active Open Space

Active open space are areas that provide for organised sporting and recreational functions such as sports fields or ovals for soccer, rugby, basketball, netball, cricket and tennis courts, showgrounds and other outdoor and indoor sports.

2.4.2 Passive Open Space

Passive open space are areas that provide for other recreational needs such as scenic purposes, landscape amenity, picnic areas or other areas where infrastructure is maintained for a specific use, such as playgrounds, bird watching, boating, fishing and other informal activities where users can relax and enjoy the space without a specifically organised sporting activity.

2.4.3 Natural/Green Space

Natural areas are areas with little or no recreational value but serve other purposes such as the protection of sensitive ecosystems, scenic values or as part of stormwater management devices including retention basins and wetlands. These areas may provide some limited uses or similar recreational opportunities, but will often be restricted or have no access at all. According to NCD UDP, it is a term referred to as Green Spaces serving as a protective buffer for environmentally sensitive areas.

2.4.4 Linear streetscape

Streetscapes include landscaped traffic islands/roundabouts and street tree that provide a “softening” effect in a harsh environment of hard infrastructure and built form and enhance the streetscape. In this context referred to as TPO trees and where possible should incorporate Water Sensitive Urban Design (WSUD) to enhance green corridor.

2.5 HIERARCHY OF OPEN SPACES

A hierarchy is a means of categorizing open space according to the range and level of use by the community and on the basis that all residents should be within approximately 300m of useable public open space (*Guideline on Declaration of Subdivision, 2015*).

2.5.1 Local Open Space

Local open spaces are smaller sites of at least **500m² (0.05ha)** which are more passive in nature and provide sitting-out areas and children playgrounds to serve the neighborhood population. For local open spaces serving a larger neighborhood, some active recreation facilities may be provided such as basketball courts (e.g. Gerehu Stage 2 Recreation Park).

2.5.2 District Open Space

District open spaces are medium size sites of **1 hectare** which provide facilities for the core activities and for passive recreation to meet the needs of city residence (e.g. Ela Beach Recreational Park).

2.5.3 Regional Open Space

Regional open spaces are large sites of at least **5 hectares** and provided at prominent central locations close to major transport interchanges where accessibility is easily available. They provide facilities with greater scope than the core activities and serve wider recreational needs of the entire population of Papua New Guinea (e.g. Bisini Sports Oval/Sir John Guise Stadium).

2.6 ACCESSIBILITY

2.6.1 Freely Accessible

Public space is commonly shared and created for open usage without charge and are located within residential neighborhood and Town Centre parks.

2.6.2 Restricted Accessibility

Open spaces with restricted access such as the Port Moresby Golf Course where accessibility is restricted to members only.

2.6.3 Ownership

Publicly accessible parks and open spaces in NCD are under a variety of ownerships. Although, some of these publicly accessible parks have some restrictions and charge for entry and these include:

- Sports Stadiums such as Sir John Guise Stadium, Bisini Sports Oval and Sir Hubert Murray Stadium were under National Sports Federation, Taurama Aquatic Centre Kone Tigers oval was formally under Kone Tigers Trustees, however has been sold to private entity. It is currently under dispute by the Minister Sports and National Events to revoke the Leases back to its original intent.
- Botanical Gardens namely Nature Park and Adventure Park under private ownership and management but are accessible by public at a cost.

3.0 SURVEY, RESEARCH & ANALYSIS

3.1 EXISTING LANDUSE

A land use survey was carried out in early 2014 using a desktop Inventory of Existing Open Space within NCD, focussing on the issues of stock, hierarchy, function and quality of existing open spaces. Since then, no further work was carried out until September 2015, a verification survey was carried out to determine existing uses of open spaces using an update Desktop Inventory. Immediately after survey, results were analysed and passed over to the Urbanization Section to carry out further Land File Search with the Department of Lands and Physical Planning.

3.1.1 Available amount of Open Spaces

The available amount of open spaces in NCD is **5114.591ha**, of which **182.5586ha** are developed open spaces. This figure is distributed among built sporting facilities with **154.4616ha** and built recreational parks and gardens occupy **28.0970ha** (Adventure Park & Nature Park). The remaining amount of undeveloped open spaces for passive is **33.9938ha** and active is **44.4667ha** and most are in very poor conditions and in dare need of upgrading. Uncounted open spaces of **104.2028ha** is currently occupied by informal settlements. Table 1 indicate various allocation of open spaces in the 3 electorates in NCD. Tree Preservation Order sites are categorized under linear linkages and provide a scene of green network along road corridor. There are **35** declared TPO sites approved by the NCDPPB protecting **2303** trees of varying species. However, further field survey is required to verify this figure. Moreover, historical trees at 3 TPO sites have been lost to developments such as Ela beach Recreation Park (Casuarina trees), Hunter Street (Mango trees), Koura Way (Neem trees/Rosewood) and Sir William Skate Memorial park (Neem/Casuarina).

Table 1: Stock of open spaces in the three electorates.

OS Classification	Annotation	MNW (Area in ha)		MNE (Area in ha)		MS (Area in ha)	
		Developed	Undeveloped	Developed	Undeveloped	Developed	Undeveloped
Counted OS							
Passive Open Space	P	6.0217	9.0672	22.8586	13.0546	4.7116	5.3103
Recreation park	Rp	0.1947	5.066		10.4506		5.3103
Landscape amenity	La		4.0012	0.5886	1.531	0.2416	
Civic Spaces	Cs				1.073	4.47	
Botanical Gardens	Bg	5.827		22.27			
Active Open Space	A	80.093	5.1569	35.594	0	43.6006	20.2013
Sports Fields	Sf		5.1569				20.2013
Stadiums	St	17.213		34		9.3371	
Specialized sports	Ss	62.88		1.594		34.2635	
Natural Green Spaces	N	0	353.4867	0	4.815	0	557.5059
Ridgetop Areas	Rt		10.0277		4.815		
Storm water reserve	Sr		2.789				
Wetland areas	W		340.67				82.34
Islands	Is						475.1659
Uncounted OS		20.4758	0	82.141	0	1.4016	0
Linear Linkages	L						
Declared TPO sites	TPO	13 (6 sites tagged)		19 (9 sites tagged)		3	
Other							
Squatter settlement	Sq	20.4758		82.141		1.4016	

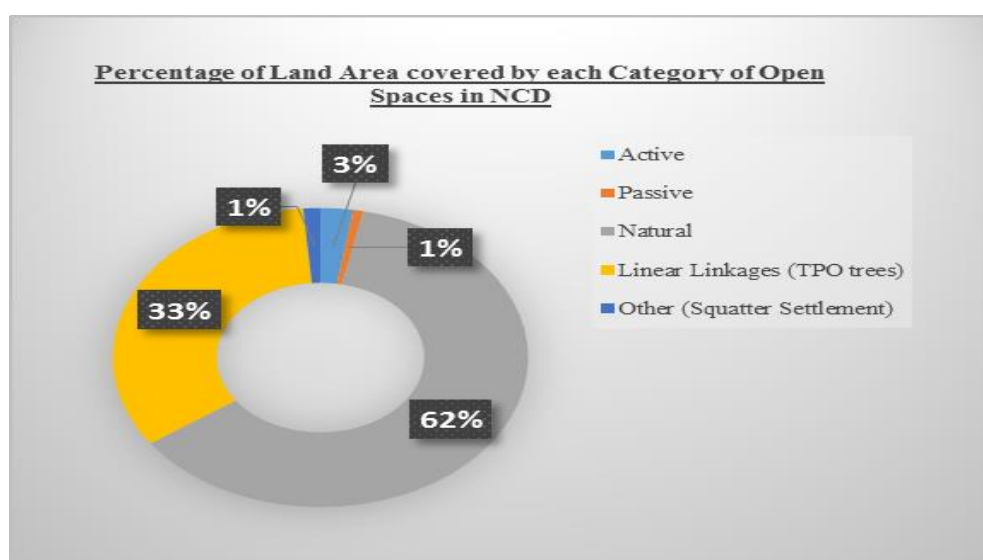


Figure 3: Percentage of land area under each category in NCD.

Table 2: Built Sports and Recreational Facilities in NCD.

No	Built Facilities	Land Description	Land area (ha)	Ownership	Management	Accessibility
1	Sir John Guise Stadium	Portions 2040, 2131, 1554, 1580 & 1592 Granville	17.213	PNG Sports Foundation		Public with charge
2	Sir Hubert Murray Stadium (*PNG Football Stadium)	Section 61, Lots 1 & 2 Granville	4.5111	Hubert Murray Stadium Trust	PSF/Inter-Oil	Public with charge
3	Bisini Sports Oval *Bava Park *National Football Stadium (NFS)	Portion 3155 Granville	34	Lloyd Robson Oval Trustee Ltd		Public with charge
4	Steamships Racquet Centre	Section 68, Lot 2 Boroko	1.594	POM Tennis Club Incorporated		Restricted
5	Sir Donald Aquatic Centre (Taurama)	Portion 628 & Section 88 Lot 17 Granville	34.2635	Sir Donald Cleland Trust		Public with charge
6	Nature Park	Portion 1473 Granville	5.827	PNG IPA		Public with charge
7	Adventure Park		22.27			Public with charge
8	Port Moresby Golf Course	Section 276 Lot 4 Hohola	62.88	Port Moresby Golf Club Inc		Restricted
Total			182.5586			

In comparison, the NCD UDSS by SMEC 1995 states that total open space area available in NCD during 1995 was **458.4 ha** and further divided into the following proportions provided in table 3. Revision of the 1995 audit appears to reveal some substantial changes in the provision of open spaces in the National Capital District as summarized in Table 1 (above).

Table 3: Available amount of open spaces during 1995 (abstracted from NCDUDSS)

Classification of Open Space	Availability in the NCD	
	Estimated Number	Area (ha)
Small parks/Children's Playgrounds (all areas less than 0.5ha & used as children's playground)	11	2.4
Playfields/Sports Grounds	26	259.1
Other sporting facilities, e.g Basketball, Netball, court facilities	12	31.7
Developed Parks (areas falling into categories of landscaped parks, gardens, scenic areas & civic space)	9	90
Beaches or areas of Natural/Scenic Beauty	1	30
Stadiums	3	45.2
Total	62	458.4

**Plate 1: Konebada recreational park (170927HEKonebadabeach.jpg).**

3.1.2 Hierarchy

The hierarchy of Open Space is determined according to the range and level of use by communities. Knowing why and what an open space or sports facility is there is critical in making judgments about its adequacy in respect of quantity, quality and accessibility. The following hierarchies were used for the purposes of this open space inventory. The community has a diverse range of needs for informal recreation as well as structured sporting activities. The open space needs of the community will be best served by providing a range of different types of open spaces and developing parks and reserves to complement each other, rather than duplicating the experiences provided by each.

3.1.3 Function

The classification of open space involves identifying the intended use or function of each parcel of open space in order to understand the role that different open spaces play within the community is shown in Table 1 and Figure 4. Parks and other types of open spaces play a valuable role in sustainable development; therefore it is important to consider how parks and open spaces have been planned in the past.

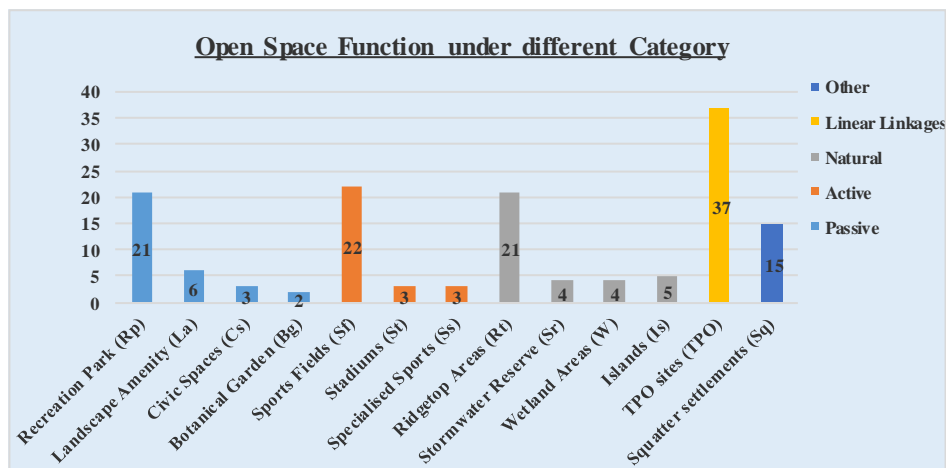


Figure 4: Quantity of different Open space use (counted & uncounted open spaces).

3.1.4 Quality

It was revealed from survey results (Appendix B1: Facility Audit) that all public accessible open spaces were below quality standard with no park furniture, rundown facilities and unusable spaces which need upgrading. In comparison, the recently upgraded stadiums (Sir John Guise, Bisini Sports oval, Sir Hubert Murray and Sir Donald Cleland Leisure Centre) were up to international standards through co-funding by the National Government and private business investors (BSP, Inter-oil, etc). These built facilities are under the ownership and management of the National Sports Foundation (Table 2). The Coronation Park in Downtown Port Moresby will undergo upgrading valued at K900, 000.00 by the Minister for Sports and National Events, Hon. Justin Tkatchenko under his electorate budget. The budgeted amount includes fencing, internal landscaping, architectural drawing & design (Carno & Phoenix Builders Limited) and construction works (*source: Post-Courier 2016*).



Plate 2: Sporting field at Hohola in poor condition (150807GMTokarara.jpg).



Plate 3: Redevelopment of stadiums (150807GMWaiganicitycentre.jpg).

3.2 REVIEW OF NCD PPB MEETING MINUTES 2005-2015

A review was carried out using the NCD Physical Planning Board Meeting Minutes from 2005 to 2015 to determine Board's Decision on the number of open space applications that were received. 76 formal applications were received by the Board for deliberation. Of these applications, 51 were refused, 2 were withdrawn and 23 applications were approved under the following categories (*Appendix B4*):

- 4 natural open spaces
- 4 natural drainage reserve;
- 8 passive open space;
- 4 active open space; and
- 3 unknown categories (difficult to determine the type of category).

Figure 5 shows that the Board refused most applications with the highest of 16 applications in 2014. It is also noted from the analysis that the 2 withdrawn applications were further deliberated and later approved by the Board. An analysis of the Board Minutes 2005-2015 revealed the following issues:

- Meeting Minutes were not clearly recorded and documented which makes it difficult to determine the type of specific use including the total land area and site location on the NCD Zoning Plan;
- 14 Open space sites were approved by the Board as revealed by Development Control Section. However, there was no record in the Board Meeting Minutes which makes it difficult in terms of matters arising in future, e.g. legal challenge against Board's Decision; and
- Most approved decisions of the Board are not reflected in the NCD zoning plan.

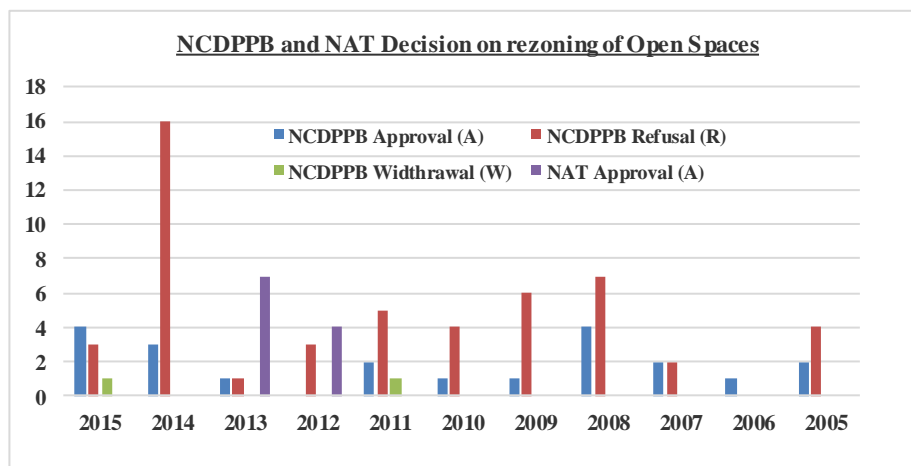


Figure 5: NCDPPB and NAT Decision on rezoning of open spaces.

3.3 REVIEW OF NATIONAL APPEALS TRIBUNAL DECISION

Current administrative processes, in particular the Appeals process, do not seem to support sustainable planning and land use management. These situations result in the NCD Physical Planning Board being forced into making zoning decisions which diverge from the approved zoning. NCDC has never been notified at all to make representation during NAT Hearing to defend its Decisions. A prominent example is provided in Table 4 which indicate that of the 11 cases that have appealed to the Appeals Tribunal against the NCDPPB decisions from 2011 and 2012, Appeals Tribunal upheld its decision and approved all 11 cases. NCDC on the other hand has not pursued these cases further for a legal challenge at the National Court and most of our open spaces have been lost forever to private interests.



Plate 4: Gerehu 3B Recreation Park at Section 416, Lot 01 Hohola (part remains and part taken) (150917GMGerehu.jpg).

Table 4: Open Spaces Approved by the National Appeals Tribunal (DLPP) from 2012-2013.

Site Description	Area (ha)	Category of OS	Change of use	Suburb	Appeal No.	Date	Applicant	Refusal date of NCDPPB
Vacant site adjoining Section 470 Lots 42 & 43 Hohola	0.264	Natural ridgetop	Residential	Waigani Heights	02/2012	15/11/2012	John Leo Kandekali	11/2011 8/12/2011
Portion DA2269 & 2264 Granville	6.118	Natural steep slope	Subdivision zone	Hohola	05/2012	15/11/2012	Star Homes Ltd	01/2012 26/01/2012
Part open space of Section 302 Lot 56 Hohola	0.34	Sports ground	Residential	Gerehu	08/2012	15/01/2012	Marius Kin	04/2009 29/04/2009
Vacant land adjoining Section 93 Hohola Gordons Market	0.7538	Civic space	Commercial	Gordons	15/2012	16/01/2012	Grand Ltd	Non-determination
Part Section 416 Lot 01 Hohola	0.65	Recreation park	Commercial	Gerehu 3B	21/2012	15/01/2013	Kodalane Properties Ltd	09/2012 7/11/2012
Portion 2192 Granville (Jack Pidik)	8.5	Active Showground	Commercial	5mile	22/2011	15/01/2013	Capital Centre Ltd	09/2011 29/09/2011
Open space between Spondias and Sterculia Streets	0.2313	Landscape Amenity (Traffic Island)	Residential	Hohola	25/2011	15/01/2013	Justine Karasa	09/2012 7/11/2012
Vacant land along Baruni Rd close to Baruni Landfill	14	Natural ridgetop	Subdivision zone	Baruni	04/2012	15/11/2013	Paradise Spice & Vanilla Exports Ltd	02/2012 23/02/2012
Vacant land adjoined Section 227 Hohola	1.218	Natural ridgetop	Residential	Tokarara	14/2012	15/01/2013	Jephat Kol	08/2012 30/08/2012
Open space along Le-Hunte Rd	0.2544	Natural ridgetop	Residential	Koki	13/2012	16/01/2013	Founish Development	08/2012 19/09/2012
Open space along Le-Hunte Rd	0.3010	Natural ridgetop	Residential	Koki	17/2012	15/01/2013	Baliabalia Investments Pty Ltd	08/2012 19/09/2012

3.4 REDIFINITION SURVEY

Due to the large amount of open spaces within NCD, the boundary identification survey was outsourced to private survey firms. The first part of the survey was carried out at Gerehu suburb by Manacon Consulting Engineering Survey Ltd and completed on the 30th September 2016 (Table 5). The ID survey will continue to other open space sites in the city. The scope of this project also include the construction of perimeter Fencing/Billboards at all surveyed open space sites which is also to be outsourced to a private firm. It was suggested that boundary ID survey should only be carried out on areas that have no legal description or on identified

open spaces that part of the area has been rezoned and allocated to private entity (e.g. Section 416, Lot 1 Hohola, Gerehu 3B Recreation Park). It was noted that some land parcels in Table 5 have been rezoned and in private ownership therefore any work in line with this must be done well and ensure all information provided is true and will not incur problems later.

Table 5: Complete boundary ID survey site by Manacon Consulting Engineering Survey Ltd at Gerehu suburb.

No	Land description	Locality	Survey Cat No:	Open space type	Zoning status	Strategic Planning Comments
1	Section 302 Lot 56 Hohola	Gerehu Sports Centre	49/2354	Gerehu Sports Oval	Remain OS	
2	Section 273 Hohola	Gerehu		Kasio Circle		Not included in OS listing
3	Section 273 Hohola	Gerehu Sivari Rd	49/1197	Nature Strip		Not included in OS listing
4	Section 512 Lot 24 Hohola	Gerehu - Sivari Rd	49/2170	Drainage Reserve		Not included in OS listing
5	Section 482 Lot 12 Hohola	Gerehu	49/1999			Not included in OS listing
6	Section 483 Hohola	Gerehu	49/1999, 2001,2016	Nature Strip		Not included in OS listing
7	Section 355 Hohola	Gerehu	49/2196	Drainage Reserve		Sited within PJV compound
8	Section 508 Lot 81 Hohola	Gerehu - Sivari Rd	49/2170	Drainage Reserve		Not included in OS listing
9	Section 510 Lot 14 Hohola	Gerehu	49/2171	Drainage Reserve		Not included in OS listing
10	Section 480 Lot 30 Hohola	Gerehu	49/2093	Open Space		Not included in OS listing
11	Section 237 Hohola	Gerehu	49/1196	Nature Strip		Not included in OS listing
12	Section 507 Lot 42 Hohola	Gerehu - Sivari Rd	49/2171	Drainage Reserve	Further verification	Not included in OS listing
13	Section 273 Lot 81 Hohola	Gerehu	49/1125	Reserve	Further verification	Not included in OS listing
Undone and still to be outsourced						
14	Section 317 Lots 63 Hohola	Nigibata Road, Gerehu	49/1375	Open Space	Rezone Residential	Remove
15	Section 317 Lots 64 Hohola	Nigibata Road, Gerehu	49/1375	Open Space	Rezone Residential	Remove
16	Section 317 Lots 65 Hohola	Nigibata Road - Gerehu	49/1375	Open Space	Drainage reserve squatter settlement	Remove
17	Section 310 Lot 52 Hohola	Tarumana Aven - Gerehu	49/1374	Open Space	Further verification	Not included in OS listing
18	Section 310 Lot 169 Hohola	As above	49/1409	Open Space	Squatter settlement	Remove
	Section 310 Lot 170 Hohola	As above	49/1409	Open Space	Squatter settlement	Remove
19	Section 393 Lot 2 Hohola	Debone St – Gerehu Stg 1	49/1408	Recreation park	Open space	Ok
20	Section 308 Lot 35 Hohola	Alotau St - Gerehu	49/1362	Open Space	Drainage reserve	Submission to DLPP for Land File Creation
19	Section 416 Lot 01 Hohola	Larata Cres - Gerehu	49/1516	Recreation park	Part Open space & commercial	Submission to DLPP for Land File Creation
20	Section 482 Lot 90 Hohola	Sivarai Rd - Gerehu	49/1025,2094	Open Space	Further verification	Not included in OS listing
21	Section 480 Lot 50 Hohola	As above	49/1025,2094	Open Space	Further verification	Not included in OS listing

3.5 CREATION OF LAND FILE AND TITLING

The Urbanization Section of NCD is working with the DLPP to secure legal title over all open spaces which comprised of recreation parks, sporting fields, natural drainage reserves and ridgetop areas in NCD. In 2014 and 2015 a combined inspection was carried out by NCD and DLPP as prescribed in *Appendix B (5)*. NCD has purchased 50 Land File hard cover at Government Printing Office to enable DLPP to commence work on Land file creation and proceed with land process for acquisition of land title. Review of the NCDPPB and the National Appeals Tribunal indicates that some major open space areas such as Kone Tigers Oval and Jack Pidik Park have been lost to private entities in the name of commercial development. Progress to date on land file creation is ongoing and NCD must take a proactive role in ensuring that more land files are created on time in order to secure legal title before they are lost to private entities forever.

Table 6: 2016 Land File Created at DLPP

LAND FILE CREATION 2016 @DLPP			
ID	Land description	Open space use	Status
1	Sec 393, Lot 02 Hohola (Gerehu stg. 01)	Recreational Park	Title issued 2017
2	Sec 416, Lot - Hohola (Gerehu Stg. 3B)	Recreational Park	Work in progress
3	Sec 310, Lot 69 Hohola (Gerehu Stg. 5)	Squatter settlement	Work in progress
4	Sec 310, Lot 170 Hohola (Gerehu Stg.5)	Squatter settlement	Title issued 2017
5	Sec 302, Lot 56 Hohola (Gerehu Stg. 2)	Gerehu sports centre	Title issued 2017
6	Sec 349, Lot 09 Hohola (Gerehu. Stg. 2)	Squatter settlement	Title issued 2017
7	Sec 308, Lot 35 Hohola (Gerehu. Stg.4)	Natural stormwater reserve	Title issued 2017
8	Sec 313, Lot 52 Hohola (Gerehu Stg.5)	Squatter settlement	Work in progress
9	Sec 431, Lot 78 Hohola (NCC)	Recreational Park	Title issued 2017
10	Sec 229, Lot 15 Hohola (Toks)	Landscape amenity	Work in progress
11	Sec 229, Lot 69 Hohola (Toks)	Sports field	Title issued 2017
12	Sec 395, Lot 23 Hohola (North Hohola)	Natural ridgetop	Title issued 2017
13	Sec 459 Lot 53 Hohola (Erima)	Sports Field	Title issued 2017
6	Sec 349, Lot 09 Hohola (Gerehu. Stg. 2)	Squatter settlement	Work in progress
7	Sec 308, Lot 35 Hohola (Gerehu. Stg.4)	Natural stormwater reserve	Work in progress
8	Sec 413, Lot 78 Hohola (NCC)	Recreational Park	Work in progress
9	Sec 229, Lot 15 Hohola (Toks)	Landscape amenity	Work in progress
10	Sec 229, Lot 69 Hohola (Toks)	Natural ridgetop	Work in progress
12	Sec 459 Lot 53 Hohola (Erima)	Sports Field	Work in progress

Table 7: NCDC Legal Title to date

NCDC SPECIAL PURPOSE PARK RESERVE (99 years lease)			
ID	Land description	Open space use	Hard copy title located
1	Section 322, Lot 30 Hohola (Gerehu stage 6)	Recreational park	Unknown
2	Section 230, Lot 61 Hohola (Toks)	Sports field	Unknown
3	Section 227, Lot 100 Hohola (Toks)	Sports field	Unknown
4	Section 227, Lot 165 Hohola (Toks)	Sports field	Unknown
5	Section 236, Lot 93 Hohola (Toks)	Sports field	Unknown
6	Section 231, Lot 162 Hohola (June Valley)	Sports field	Unknown
7	Section 232, Lot 162 Hohola (June Valley)	Sports field	Unknown
8	Section 17, Lot 16 & 17 Hohola (Hohola Sports centre)	Sports field	Unknown
9	Section 27, Lots 12 & 14 Hohola (Hohola)	Sports field	Unknown
10	Section 26, Lot 33 Boroko (Boroko market)	Landscape amenity (Car park)	Unknown
11	Section 06, Lot 19 Granville (CBD)	Landscape amenity (Car park)	Unknown
12	Section 28, Lot 01 Granville (Ela Beach)	Recreational park	Unknown
13	Section 28, Lot 06 Granville (Ela Beach)	Recreational park	Unknown
14	Section 195, Lot 01 Hohola (Hohola No. 04)	Sports field (with Hens)	Urbanization Section
15	Section 100, Lot 18 Boroko (East Boroko)	Kipo settlement (Squatter)	Urbanization Section
16	Section 56, Lot 15 Boroko (China town market)	Civic space (market)	Urbanization Section
NCDC SPECIAL PURPOSE LEASES issued on 11 th October 2017 on G804		PURPOSE OF LEASE	Hard copy title located
17	Section 393 Lot 02 Hohola (Gerehu Stg.1)	Recreation Park	NCD Land Unit
18	Section 310, Lot 170 Hohola (Gerehu Stg.5)	Recreation Park	NCD Land Unit
19	Section 302, Lot 56 Hohola (Gerehu Stg. 2)	Recreation Park	NCD Land Unit
20	Section 349, Lot 09 Hohola (Gerehu. Stg. 2)	Recreation Park	NCD Land Unit
21	Section 308, Lot 35 Hohola (Gerehu. Stg.4)	Recreation Park	NCD Land Unit
22	Section 313 Lot 63 Hohola (Gerehu Stg.6)	Recreation Park	NCD Land Unit
23	Section 313 Lot 64 Hohola (Gerehu Stg.6)	Stormwater Reserve	NCD Land Unit
24	Section 431, Lot 78 Hohola (NCC)	Recreation Park	NCD Land Unit
25	Section 229, Lot 69 Hohola (Toks)	Sports Field	NCD Land Unit
26	Section 395, Lot 23 Hohola (North Hohola)	Ridgetop Reserve	NCD Land Unit
27	Section 459 Lot 53 Hohola (Erima)	Sports Field	NCD Land Unit
TITLE IN PROGRESS (2016)			
1	Sec 122, Lot 13 Hohola (Unagi park)	Recreational Park	DLPP
2	Sec 81, Lot 09 Matirogo (Konebada park)	Recreation Park	DLPP
3	Sec 83, Lot 02 Matirogo (Kaugere)	Unable to locate on zoning map	DLPP
4	Sec 28, Lot 08 Granville (Ela Beach)	Recreational park	DLPP

4.0 CURRENT TREATMENT OF OPEN SPACES

4.1 ASSESMENT STANDARD

The current treatment of open spaces, sports and recreational parks in the NCD is provided in the *Physical Planning Act 1989* and *Physical Planning Regulation 2007* as well as local development plans. A certain amount of open space is required in any development as a 'standard' which is set in Section 37 of the *Physical Planning Regulation 2007*, "4 hectares per 1000 anticipated residents." The Development Control Section assessed development applications and makes recommendations to the NCD Physical Planning Board for distribution and allocation of adequate provision of open space in new subdivisions. In order to assess the adequacy of open spaces, sport and recreation provision, it is important to consider different types of provision and their primary role and function. The quantitative standards are expressed as a number of hectares per 1000 people.

4.2 ALLOCATION OF OPEN SPACES IN A SUBDIVISION DESIGN

A review into five approved subdivision designs in the 9 Mile area from 2010-2014 were analyzed against a *proposed development control* to determine the planning assessment in the allocation and distribution of open spaces within these subdivisions. This control include "For residential development of 300units or more, or for development sites of 15ha or more, 15% of the total site area must be devoted to recreational parks and sporting fields". Given this only three subdivision designs conform to this criteria and the following reveal:

- Boyne Ltd 15% of 16.63ha of 41.82ha = **2.65ha** which is sufficient to what has been provided as **2.3656ha** open space in residential area.
- Bernal No.8 Limited 15% of 18.97ha 32.43ha = **3.8997ha** which is sufficient to what has been provided as **3.964ha**. However, current development on land does not conform to the approved design which questions the compliance and enforcement of the NCDC relating to Section 81 Agreement provided in the *Physical Planning Act 1989*.
- Nipo Investment Ltd 15% of 25.21ha of 39.05ha = **4.304ha** which is not equivalent to what has been provided as **0.6460ha**. The allocation of open spaces by Nipo Investment is below required standard.

Table 8: Allocation and distribution of open spaces in approved subdivision designs in 9Mile Area from 2010-2014. Details provided in Map 7.

Allocation of various uses										
Applicant	Location	NCDPPB		Total Land Area (ha)	Commercial (ha)	Residential (ha)	Public Institutions (ha)	Public Utility (ha)	Open Spaces (ha)	Open spaces within Residential (ha)
		Meeting #	Date							
Boyne Ltd	Portion 2152 Granville	05/2014	6/10/2014	41.82	11.32 (74 Lots)	16.63 (524 Lots)	0.6104 (2 Lots)	10.075	2.9151(5)	2.3656ha (2)
Bernal No.8 Limited	Portion 2124 & 76 Granville	06/2013	9/03/2013	32.43	0.4104 (4 Lots)	18.97 (355 Lots)	1.022	6.934	5.082 (3)	3.964ha (2)
Millennium Guards & Security Services	Portion 2171 Granville	07/2012	1/07/2012	5.693	3.261 (27 Lots)	Nil	Nil	1.391	Nil	Nil
Sinnamon Investment Ltd	Portion 2170 Granville	09/2010	30/9/2010	3.652	0.5125 (12 Lots)	2.087 (59 Lots)	Nil	0.9211	0.13392 (2)	0.06159ha (1)
Nipo Investment Ltd	Portion 2158 Granville	01/2016	16/3/2016	39.05	1.184 (4Lots)	25.21 (264Lots)	0.6963 (2Lots)	10.56	1.3948 (2)	0.6460ha (1)

5.0 REVIEW OF TRENDS, ISSUES & OPPORTUNITIES

Review of existing trends, issues and opportunities is detailed below.

5.1 EXISTING TREND

- 5.1.1 Analysis of existing situation and anticipated trend indicate that increasingly developers are subdividing vacant land for residential and commercial developments. Most of the aesthetic and scenic ridgetop areas, steep slopes, flood prone areas and foreshore areas in the city have been sacrificed for construction activities to cater for residential and commercial developments and also taken up by informal settlements.
- 5.1.2 Major public open spaces such as Jack Pidik Park, Kone Tigers Oval, Paga Hill, Turf Club, Section 416, Allotment 1 Hohola and Section 136, Allotment 3 Hohola (next Laguna Hotel) have been lost to individuals and private companies due to leases issued contrary to the original open space zoning. Losses contribute to shortage of open spaces in NCD falling below the recommended provision of the Physical Planning Regulation 2007.
- 5.1.3 Population in NCD is projected to rise in each of the electorates according to Local Planning Areas projections. The provision of open spaces and recreational facilities has not kept pace with new developments and increased population putting more pressure on existing open space facilities.

5.2 ISSUES

- 5.2.1 Our open spaces are not welcoming and under threat of becoming closed and lost forever to private entities due to decline in their quality.
- 5.2.2 The neglect of developing public recreational spaces had always given minimal attention and there has never been a defined public open space system in the National Capital District.
- 5.2.3 There are parks and reserves that are not used and enjoyed because of safety, law and order and maintenance problems.
- 5.2.4 NCDC has no control over the administration and allocation of land in NCD resulting in loss of many of our open spaces for recreational purposes to private interests.
- 5.2.5 There is no representation of NCDC at the National Appeals Tribunal to reinforce the decisions of the NCDPPB. All decisions of the NCDPPB have always been upheld by the Appeals Tribunal giving confidence to developers to pursue further once NCDPPB refused their applications.
- 5.2.6 NCDC has never been given a copy of the gazetted Land Board Agenda Items to make verification of zoning and submit to Land Board Secretariat for consideration during Land Board Hearing.
- 5.2.7 There is no compliance mechanism to tie down the developers to the Section 81 Agreement of the Physical Planning Act 1989 resulting to developers getting away with their commitments to provide provision of open spaces and surrendering leases back to NCDC after 5 years.

5.3 OPPORTUNITIES

- 5.3.1** As the city grows and the density of housing and commercial uses increases, parks and open spaces will become more important because they serve as escape from congested urban life and provide a sense of city's urban form and community identity.
- 5.3.2** As people come to have smaller private backyards, they will be looking to local parks as their backyard which means that the parks need to be user friendly and should reflect some of the features of private backyard (e.g. tree shades, play equipment, toilets & lights).
- 5.3.3** Establishment of NCD Land Unit to work closely with DLPP to protect and retain all open spaces (recreation parks & sports field) and public utility and acquire title to NCDC for public purposes. Strong political support from the NCD Open MPs and Governor have shown progress in the issuance of titles in late 2017 under Section 72 (A) Notice of the Land Act 1996.
- 5.3.4** The NCD Physical Planning Board has retained its decision that no open spaces should be allocated to, or allowed for use by private clubs, organizations, or any other use for private purposes and interest.
- 5.3.5** Port Moresby is a member city of the **Global Active City Program** which is one of the programs of the International Olympic Committee (OFC) that utilize sports and physical fitness to campaign and mobilise communities to drive social and economic change, promote healthy lifestyle and enhance urban ecological services. Some of these programs are *Walk for Life Program* and *Yoga* initiated by the NCD Governor Hon. MP. Powes Pakop.
- 5.3.6** There is strong political support for Redevelopment of Ela Beach Recreational Park (NCD Governor) worth of K45.23 million, Redevelopment of Coronation Park (MS MP) worth of K900, 000.00 and proposed 9 Mile Mini Sports Stadium (MNE MP) adding to the stock of recreational facilities.
- 5.3.7** Bootless Bay has been declared as first Marine Protected Area (MPA) in PNG, a project initiated by PNG Government (CEPA) and JICA in partnership with Central Papuan Advantage Church (SDA), UPNG and indigenous landowners.

6.0 PROJECTED NEED FOR OPEN SPACES

6.1 POPULATION TREND IN NCD

The population of NCD is growing at a rate of 3.3% based on 2011 census data and is projected to grow at an exponential rate projected to reach more than 500,000 in the next decade. NCD has an increased number of young people, thus the demand for more service facilities will also increase. The population distribution of NCD is clustered into LPAs to determine mobility and prioritized social and infrastructural services such as the provision of open space facilities and allocation. The pie chart in Figure 6 shows percentage distribution of each LPAs. Waigani have the highest proportion of population (16%) followed by University/ Tokarara with 14% and Kilakila/Koki /Badili with (13%). All the other LPAs are in between 5 to 13% while Taurama, NapaNapa, Huhunama and Dogura remain the smallest LPA in terms of population size with less than 2%. The growth rate of each LPA also increased but varied

among the LPAs due to the development planning and service infrastructure of each LPAs as shown in line graph in Figure 6 below. Analysis of population density per open space by LPA is provided in Appendix B (2).

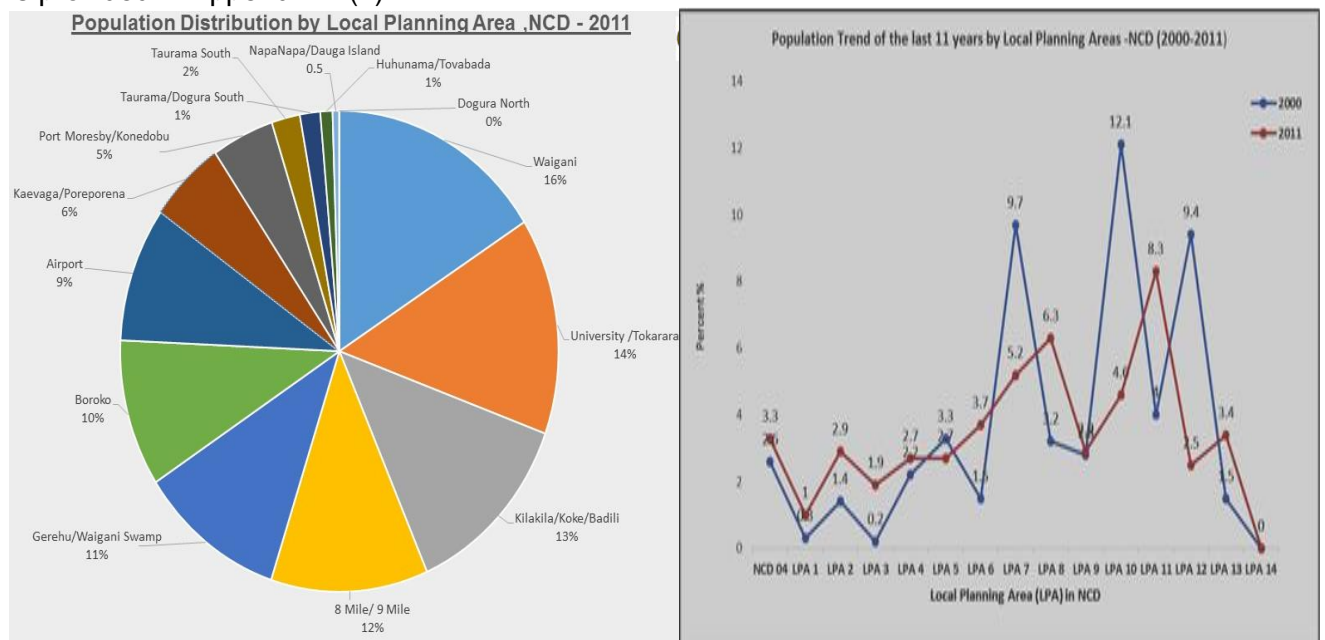


Figure 6: Growth rate and population distribution in percentage per LPA from 2000-2011.

6.2 POPULATION ANALYSIS PER OPEN SPACE STANDARDS

To derive quantitative standards of 4ha per 1000 population at a reasonable level, this standard was compared with the following proportions tabulated in the Table 9 (A). These provisions were analyzed against the high and low population growth from 2011 to 2021 by Local Planning Area to determine open space provision against population growth (Appendix B (2): A & B). The result is provided in Table 9 (B) and demonstrate that as population increases, demand for open spaces also increases putting additional demand on existing recreational facilities. Alternatively, the accessibility and quality standards may be applied to determine whether existing facilities may be upgraded to provide additional capacity. The projected open space requirement for 2016 and 2021 using low population growth is higher compared to the high population growth. Figure 7 showed that increased demand for open spaces are found in LPAs 4, 5, 7, 8, 2 and 6 which corresponds to the high population concentration in these LPAs.

Table 9 (A): Open space Provision of standard.

Open Space function	Proportion (amount in ha)
Basis: 4ha/1000people	
Sports Centre	2ha per 1000 people resident
Recreational park	0.5ha per 1000 people resident
Town Centre parks	0.1ha per 1000 people resident
Informal parkland & Garden	0.5ha per 1000 people resident
Others (reserve use)	0.9ha per 1000 people resident

6.3 POPULATION, RECREATION & LEISURE TREND

Using the low population growth scenario for the year 2016, the projected open space required for a population of 429, 449 is 1718.1ha and is projected to increase to 2025.1ha in the year 2021 with a population of 506, 393. In contrast, the high population growth scenario also indicates that as population increases, demand for open spaces also increases. Using this exponential growth, by 2016 NCD's population will have reached 431, 730 with an open space requirement of 1726.8ha. The population will constantly increase to 514, 599 with 2058.2ha open space required to meet this increase. The demand for open spaces required in each of the LPA is determined by the population growth which is shown clearly in Figure 7. The available amount of open spaces in NCD is **5114.591ha** which needs to be protected and retained for future recreational needs. Assessing the current provision against the accessible open space standards shows that in general the quantity of provision is below acceptable standard; therefore raising quality standards at existing sites is a higher priority than creating new spaces at this time. It is shown in Figure 7 that the projected population of LPA 4 and LPA 5 is high with the projected demand for open spaces using both scenarios. In contrast, projected demand for open spaces in LPAs 10-13 is very low due to its low population growth. LPA 14 has no demand for open spaces as there is no population count according to the 2011 National Census data.

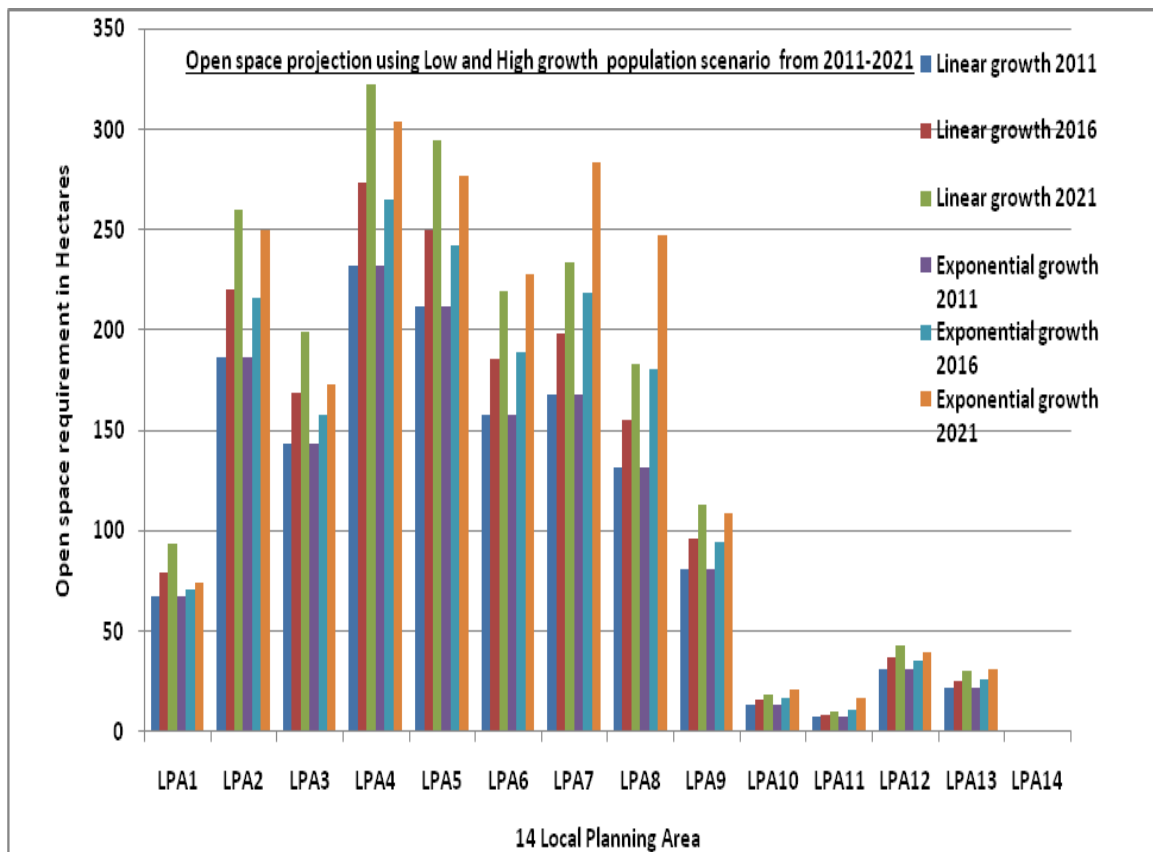


Figure 7: Open space projection using low and high growth population scenario by LPA from 2011-2021.

Table 9 (B): Open space requirement (ha) projected using Low and High population growth from 2011-2021 by LPA. Detailed analysis is provided in Appendix B (2): A & B.

LPA	Open space requirement						Population projection				
	Low growth population scenario			High growth population scenario			Low growth		High growth		
	2011 (ha)	2016(ha)	2021(ha)	2011(ha)	2016(ha)	2021(ha)	2011	2016	2021	2016	2021
1	67.5	79.7	93.8	67.5	71.1	74.6	16 878	19 906	23 477	17 743	18 653
2	187.2	220.8	260.6	187.2	216.6	250.3	46 821	55 220	65 127	54 127	62 573
3	143.5	169.4	199.7	143.5	157.7	173.6	35 890	42 328	49 922	39 467	43 400
4	232.3	274.2	322.9	232.3	265.8	304.5	58 093	68 515	80 711	66 490	76 100
5	212.1	250.3	295.1	212.1	242.7	277.7	53 025	62 537	73 756	60 689	69 461
6	157.7	186.2	219.4	157.7	189.7	228.3	39 430	46 504	54 846	47 443	57 084
7	168.6	198.9	234.6	168.6	218.6	283.7	42 156	49 719	58 638	54 673	70 908
8	131.9	155.4	183.4	131.9	180.6	247.5	32 960	38 873	45 846	45 164	61 886
9	81.5	96.1	113.4	81.5	94.3	108.9	20 388	24 046	28 359	23 569	27 247
10	13.4	15.8	18.6	13.4	16.8	21.1	3 337	3 936	4 642	4 200	5 286
11	7.4	8.8	10.4	7.4	11.4	17.1	1 872	2 208	2 604	2 835	4 293
12	31.2	36.8	43.4	31.2	35.3	40	7 792	9 190	10 838	8 830	10 005
13	21.8	25.7	30.6	21.8	26.2	30.9	5 483	6 467	7 627	6 500	7 703
14	0	0	0	0	0	0	0	0	0	0	0
Total	1456.1	1718.1	2025.1	1456.1	1726.8	2058.2		429,449	506,393	431,730	514,599

7.0 VALUE OF OPEN SPACES

7.1 Economic value

Good quality parks and open spaces play an important role in marketing Port Moresby as a place to invest and a destination for tourism attraction. Well-managed high quality open spaces provide positive impact on commercial property prices and domestic house prices. The seafront development at Harbor City is an important investment attraction that brings investors, visitors and their money into the city. Current market value for properties at Harbour City ranges from K2, 449, 000.00 to K4, 900, 000.00 according to NCDC Revenue Section.

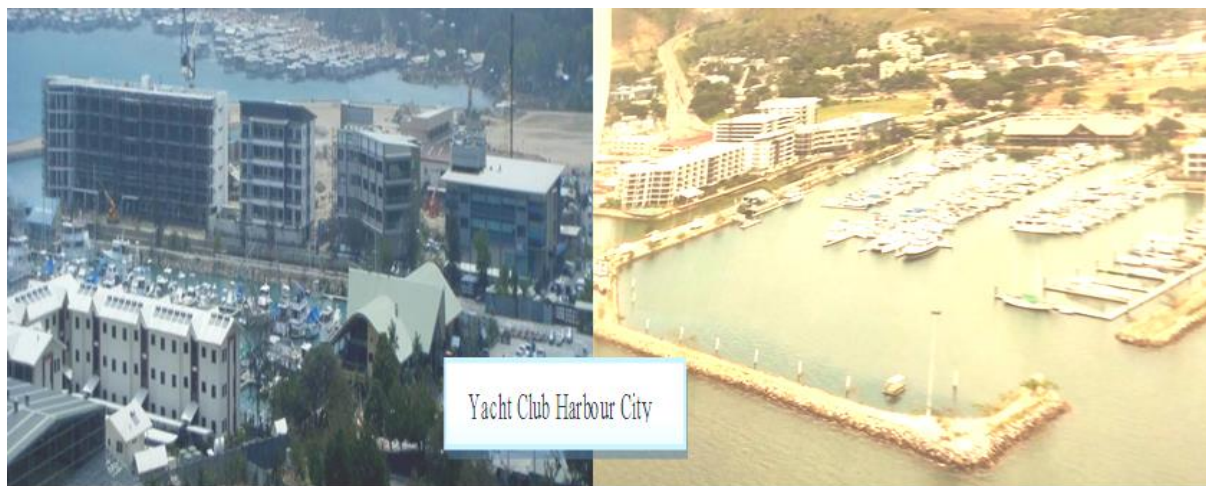


Plate 5: Yacht Club (171013MTKonedobu.jpg)

7.2 Physical and Mental Health

The benefits of open spaces to mental health and wellbeing provide opportunities for people to be more physically active. Access to good quality public open spaces lead to healthier lifestyles by encouraging walking and cycling as alternatives to cars and public transport. The presence of green spaces provide natural views and places to get away from stresses of urban living and working by reducing stress illnesses and the consequent social and economic impact of mental ill health.

7.3 Social dimension of public places

Parks and open spaces bring people together and encourage groups of society such as ethnic, age or gender to interact and foster social ties that help define neighborhoods and make them better places to live. High quality public spaces have the potential to be venues for social events that re-enforce civic society and give a sense of identity to the city. For example, the Ela Beach Recreational Park is considered a culturally significant site of the annual staging of the Hiri Moale Festival and has been used as a public beach since the establishment of the city. Plan is underway for the redevelopment of Ela Beach.



Plate 6: Nature Park (left) and Ela Beach Recreation Park (Right) (16GMNaturePark.jpg).

7.4 Benefits for children and young people

Parks and open spaces are integral part of our quality of life as places to enjoy sport and recreation, appreciate outdoor gathering and for children to play. It is a valuable breathing space within our densely populated city and vital to the success of the urban communities by providing opportunities for fun, exercise, learning and play which is vital for children's physical, emotional and social development.



Plate 7: World Environment Day at Nature Park (160605GMNaturePark.jpg)

7.5 Biodiversity and nature value

Increased developments of hard surfaces in cities contribute to higher temperatures and increases soil erosion and flood risks. More green spaces particularly trees reduce air temperatures and improve air quality and make cities more comfortable places to live. Open spaces when left as natural and wild green spaces encourage conservation of biodiversity and enhanced wildlife habitats and bring city residents close to nature and contribute to physical and mental health of people.



Plate 8: Undeveloped open space at Section 44 lots 23, 24 & 26 Granville (Konedobu) opposite Sir Hubert Murray Stadium act as a detention pond for flood control measures during wet season. If properly landscaped can provide an attractive avenue for passive and active recreational activities with playground equipment installed for children to enjoy and play (171013MTKonedobu.jpg).

PART B: POLICY FRAMEWORK

8.0 GUIDING PRINCIPLES

There are a number of guiding principles that can be used to assist in considering how open spaces can be designed and located within different areas and these include:

- 8.1 *Balance*** means providing variety of open spaces to serve a range of different active and passive recreational activities to meet the diversity of community needs.
- 8.2 *Access*** means providing safe and convenient open spaces within communities, shops, schools and other community facilities to reduce walking distances.
- 8.3 *Safety*** means design and maintain open spaces to ensure that public safety correspond to the level of use and targeted user group.
- 8.4 *Equity*** means providing equitable access to parks and open spaces to ensure that the type, location and quality of the infrastructure are evenly distributed within the 3 electorates of NCD.
- 8.5 *Preservation*** means using open spaces to protect and enhance the environmental, cultural, and heritage values of an area.
- 8.6 *Place-making*** means locate open spaces to build on the special attributes of an area for long-term public amenity and sense of place such as hill-tops, river/shore frontage and mature trees.
- 8.7 *Sustainability*** means design, development and management of open spaces should respond to environmental values and conditions, community aspirations and economic considerations and must remain viable in the long term.
- 8.8 *Water-wise*** means providing areas within the open space network sufficient to detain and cleanse storm water runoff and avoid impacting sensitive areas.
- 8.9 *Water conservation*** means open spaces requiring irrigation should be located close to retention or detention basins where possible to facilitate the reuse of storm water.

9.0 OBJECTIVE

The main objectives of the Policy are:

- 9.1** To set new provision for all existing and new open spaces, sports and recreational parks in the NCD and reserve exclusive areas of an adequate size in new subdivisions for recreational purposes.
- 9.2** To ensure planning provides and maintain adequate provision and distribution of open spaces in the NCD where community can access for recreational and leisure use and enjoyment.
- 9.3** To ensure adequate open space, park, and recreation facilities serve the needs of residents through maintenance and management practices, and expansion of the park system where feasible.

- 9.4** To ensure that an appropriate amount of public open spaces, Sports and Recreational Parks are provided to contribute towards the recreational and social needs of the community in appropriate locations in NCD.
- 9.5** To safeguard existing open spaces and sites identified for future open space provision and management of open spaces to cater for widespread public demand (maintenance & fund allocation to priority areas).

10.0 DESIRED OUTCOME

The Policy anticipate to achieve the following outcomes:

10.1 ACTIVE

- 10.1.1** Ensure new recreation parks and sporting fields are provided as an integral part of new residential development and appropriate arrangements are made for their management and maintenance.
- 10.1.2** Ensure new recreation parks and sporting facilities are convenient and accessible to all groups of people in the city, particularly children, youths, elderly and disabilities.
- 10.1.3** Design parks and sports fields to complement the cultural preferences of the local population, and provide facilities like paths, running tracks, playgrounds, and sports courts that accommodate a range of activities safely and securely for different age groups.
- 10.1.4** NCDC to manage and maintained facilities and allocation and distribution of funding resources.
- 10.1.5** When designing offices and commercial spaces, provide exercise facilities or walking paths nearby.
- 10.1.6** Design new school physical activity facilities to potentially allow for public use outside of school hours.
- 10.1.7** Provide lights on sidewalks and active play areas to extend opportunities for physical activity into the evening.
- 10.1.8** Activities that generate high volumes of traffic should locate along main arterial roads that are well connected to avoid high levels of additional traffic on local roads that may detract from the amenity of the surrounding area particularly neighboring residential areas.
- 10.1.9** Recreate recreational facilities in an alternative location to substitute for the loss of existing open spaces or recreation facilities.

10.2 PASSIVE

- 10.2.1** Preserve archeological, cultural and historical sites for passive recreational activities and ensure development does not destroy areas of historical significance. However, should redevelopment be unavoidable, an equivalent replacement facility should be provided in a suitable location.

- 10.2.2** Convert Waigani Swamp into a wetland wildlife habitat for scientific research and for passive recreational activities such as walking, swimming, picnicking, etc.

10.3 NATURAL

- 10.3.1** Preserve and protect all ridgetop and steep slope areas from built developments, informal gardening activities, stone collection and tree cutting. Ridgetop areas and environmental sensitive areas are permanent features and their protection must be maintained.
- 10.3.2** Any associated buildings should be compatible with the natural character of the public open space, including outstanding natural features, areas of habitat and ecological value, landscape, landform and geological features.
- 10.3.3** Existing vegetation must be preserved and integrated into the development scheme and adequate measures must be considered during construction works for protection of tree species that are of historical, cultural and ecological significance.

10.4 GENERAL

- 10.4.1** Prohibit allocation and use of public open spaces to private clubs, organizations or other use for private purposes.
- 10.4.2** All existing recreational areas and open spaces should be retained in public ownership by NCDC and resist all rezoning proposals.
- 10.4.3** Each open space areas must have a site-specific management plan and must have certain degree of community involvement through self-help and corporation for care of their local neighborhood parks.
- 10.4.4** Buildings should be located and design to activate the public open space or adjacent streets to provide interest and safety for pedestrians and those that use the public open space.
- 10.4.5** Create partnerships with organizations to sponsor and maintain sporting fields, recreation parks and declared wetland areas for nature conservancy.
- 10.4.6** Car parking should be designed and located not to adversely affect the open space character, natural landscape or amenity of the open space and surrounding properties.

11.0 DESIGN GUIDELINE

11.1 ACTIVE

- 11.1.1** Built facilities of active open spaces such as stadiums that serve multiple-uses are not permitted near public cemeteries, Funeral Homes, Hospitals and place of worship (church).
- 11.1.2** When designing playgrounds, include ground markings indicating dedicated areas for sports and multiple use.

11.1 PASSIVE

11.1.1 A minimum of 0.5m² of open space per worker must be provided in new industrial, industrial-office, business areas and special industrial areas for landscaping and passive recreation use.

11.1.2 A communal garden orderly landscaped with trees, shrubs, flowers must be provided with seating out areas for workers.

11.3 NATURAL

11.3.1 In coastal cliff face areas, trails should be designed so that they do not impact on the stability of the cliff and retain as much vegetation as possible.

11.3.2 Developments in environment sensitive areas (flood-prone, water front, hill-slopes, fault-zones) should be of specific standards and be assessed on merit, otherwise restrain developments in these areas.

11.4 GENERAL

11.4.1 Limit the extent of building and development so that an open and spacious character is retained. The maximum permitted site coverage or cumulative total area of buildings must not exceed 70%.

11.4.2 Provide trees with architectural features of cultural and historical significance at the entrances to buildings will strengthen the identity of the building and increase value of the area.

11.4.3 Integrate green landscaping into building design to reinforce the identity of a prime commercial development in CBD which is characterized by attractive buildings and landmarks of high quality and high standard of architectural design.

11.4.4 Integrate water sensitive urban design concept into the open space design for reuse of waterways for tree landscaping program.

11.4.5 Landscaping should be compatible with the rest of the public open space and be sympathetic with the broader landscape character of the area.

11.4.6 Environments that have a special natural character, the landscaping must be consistent with the vegetation that occurs in the area.

11.4.7 Car parking areas should be convenient, safe, and have an efficient internal circulation pattern.

12.0 DEVELOPMENT CONTROL

This section sets out permitted or allowable uses of various categories of open spaces and should be read in conjunction with other detailed local development plans and development control policies in the assessment of development proposals for the use of land for sports and recreational activities.

12.1 GENERAL

- 12.1.1** For new residential of 25 or more units or on sites of 1ha or more, where public open space is provided as an integral part of the development. An exception to the requirement of providing public open space will be permitted in the case of apartment developments or specialized housing projects where a reasonable level of private communal open space is being provided.
- 12.1.2** For residential development of 300 units or more, or for development sites of 15ha or more, 15% of the total site area must be devoted to recreational parks and sporting fields. This means out of the 15ha, 2.25ha is allocated to neighborhood recreational park and sporting field.
- 12.1.3** For residential development of 100 units or more, or for development sites of 5ha or more, an equipped Children's play area will be required as an integral part of development and must exist within reasonable walking distance of approximate 300m of the majority of the units or 15 minutes' walk.
- 12.1.4** Planning permission will not be granted until the developer has satisfied the NCDPPB that suitable arrangements will be put in place for the future management and maintenance in perpetuity of areas of public open spaces through a Legal Agreement Contract binding developer to transfer ownership (title) and responsibilities of open spaces to NCDC¹.
- 12.1.5** For any event generating noise at public open space areas must get approval from the NCD Physical Planning Office at least two weeks prior to the event and will be assessed on merits (e.g. timing, duration, sound levels, and the compatibility of the noise with the neighborhood) whilst maintaining an appropriate bottom line for noise emission.²
- 12.1.6** Recreational and commercial activities within the public open space should be designed and operated to minimize adverse effects on any adjoining residential zone.
- 12.1.7** The open space character of the site must be retained and avoid any adverse effects on the visual amenity and character of the open space associated with the agglomeration of buildings and a structure.

¹ This provision is provided in Section 81 of the Physical Planning Act, however, this has never been enacted upon and developers have not held liable against this provision. It is now recommended that a binding Legal Agreement must be provided by the NCDC Legal Division and signed off by Deputy City Manager Regulatory Services Department, Principle Legal Officer, Legal Division, Chief Physical Planner, DLPP and the Developer. Chief Physical Planner is part of the signatory team to ensure standards are maintained for transparency purposes so no compromise for change of ownership or any other purposes at the DLPP in breach of the Agreement.

² NCDC may impose conditions on the hours of operation, noise and restriction on the use of amplified music, members attending, lighting and signs associated with these activities.

12.2 SPECIFIC

12.2.1 Active Open Spaces

Built Facility	Permitted uses	Provision standard	Minimum Site Area (ha)	Colour	Accessibility	Minimum Car parking spaces	Landscape	Fencing & Signboard	Facility Specification ³	Maximum Height	Maximum Site Coverage	Other Embellishments
Sports Centre ⁴	Organized sporting and recreation fields such as Soccer, Basketball, Netball, Cricket Tennis, Squash, Bowling, volleyball, Gymnasium, Fitness training, Activity/Dance,	1 per 10,000-15,000	2ha	Light green with a dark green border & specific use annotated	Publicly accessible with charge and located at Local Center's identified in the UDP 2007 ⁵ .	1 car space per 2 players plus 1 car space per 15 spectators	WSUD concept into landscaping plan. Public Art depicts PNG culture	Comply to Fencing Policy No.2/2006 & Sign Board Policy No.02/2016	All sports ovals/courts must comply to international standards	2-3 levels	50-70%	Toilets, cafeteria, outer bench seats, rubbish bins pedestrian pathways, internal roads, lightings, stormwater & wastewater treatment facilities & utility easements.
Leisure Centre ⁶	Alternative to Sports Centre with ancillary uses such as concert theatre, outdoor open space parkland,	1 per 10,000-15,000	2ha	Light green with a dark green border & specific use	Publicly accessible with charge and located at Major Centres identified in the UDP 2007.	1 car space per 2 players plus 1 car space per 15 spectators	WSUD concept into landscaping plan. Public Art depicts PNG culture	Comply to Fencing Policy No.2/2006 & Sign Board Policy	All sports ovals/courts must comply to international standards.	2 levels/1 story	50%	Toilets, cafeteria, outer bench seats, rubbish bins, pedestrian pathways, internal roads, lightings, children swings & slides, picnic tables & shelter (traditional style huts),

³ The development of active sporting facilities will be required to meet the following criteria: (1) identify base population, (2) calculate area required for built recreation building (minimum site area), (3) calculate area required for specific sports activities (e.g soccer FIFA), (4) calculate the area of active open space.

⁴ Hohola Sports Centre (Hohola), Unagi park (Gordons), Bisini Sports oval (Boroko East), Sir William Memorial Park (Kaugere/Badili), Kone Tigers oval (Waigani North), 6mile (proposed site in new subdivision), 8Mile (proposed site in new subdivision), Taurama (proposed site in new subdivision), East of Airport (proposed site in new subdivision), Baruni (proposed site in new subdivision).

⁵ Local Centre's include Hohola, Gordons, East Boroko, Badili, North Waigani, Tokarara, 6Mile, 8Mile, Taurama, East of Airport & Baruni (NCDUDP 2007).

⁶ Gerehu Sports Centre (Gerehu), 9Mile (proposed site in new subdivision near public cemetery) and Apex Park.

Built Facility	Permitted uses	Provision standard	Minimum Site Area (ha)	Colour	Accessibility	Minimum Car parking spaces	Landscape	Fencing & Signboard	Facility Specification ³	Maximum Height	Maximum Site Coverage	Other Embellishments
				annotated				No.02/2016				barbecue, stormwater & wastewater treatment facilities & utility easements. .
Sports Ground/ Sports Complex	Athletics field tracks with seating capacity of 10 000 spectators in standard design sports ground, accommodate all indoor sports (e.g. Table tennis, squash, gymnastics) and outdoor sports activities (e.g. Football, soccer, rugby),	1 per 15 000	2ha	Light green with a dark green border & specific use annotated	Publicly accessible with charge and located along main arterial /distributor road at each LPA.	1 car space per 2 players plus 1 car space per 15 spectators	WSUD concept into landscaping plan. Public Art depicts PNG culture	Comply to Fencing Policy No.2/2006 & Sign Board Policy No.02/2016	Comply with international standards for specific sports.	1 level	70%	Toilets, cafeteria, outer bench seats, rubbish bins, pedestrian pathways, internal roads, lightings, children swings & slides, picnic tables & shelter (traditional style huts), barbecue, stormwater & wastewater treatment facilities & utility easements.
Swimming Pool complex	Aquatic swimming facilities for adults & children complimented with Gymnasium & picnic facilities		2ha	Light green with dark green border annotated with Sp	Publicly accessible with charge and located along main arterial/distributor road.	1 car space per 2 players and 1 car space per 15spectators	Barricades or security fencing is to be of low visual impact (e.g. dense landscaping)	Comply to Fencing Policy No.2/2006 & Sign Board Policy No.02/2016	Comply with International Swimming Federation (FINA) Standards (50m long by 25m wide).	3 Levels/2 Story	70%	Toilets,/shower blocks, stormwater & wastewater treatment facilities & utility easements,

Built Facility	Permitted uses	Provision standard	Minimum Site Area (ha)	Colour	Accessibility	Minimum Car parking spaces	Landscape	Fencing & Signboard	Facility Specification ³	Maximum Height	Maximum Site Coverage	Other Embellishments
Golf Course	Food services, plazas, party areas		5ha	Light green with dark green border annotated with Gc	Restricted access and located near waterways areas (coastal/Inland waters)		WSUD concept into landscaping plan. Public Art depicts PNG culture	Comply to Fencing Policy No.2/2006 & Sign Board Policy No.02/2016	Teeing ground, water hazard, rough, out of bounds, bunker, water hazard, fairway, putting green, pin & hole.	Assess on merit		Stormwater & wastewater treatment facilities & utility easements.
Stadiums	Indoor stadium: multi-purpose, Indoor stadium: sports, Outdoor stadium, Office, Residential apartment, entertainment club, and motel.		5ha or more	Light green with dark green border annotated with St .	Publicly accessible with charge and located along main arterial/distributor road.	1 car space per 2 players and 1 car space per 15spectators	WSUD concept into landscaping plan. Public Art depicts PNG culture	Comply to Fencing Policy No.2/2006 & Sign Board Policy No.02/2016	Comply with international standards for specific sports.	Assess on merit	70%	Toilets, cafeteria, outer bench seats, rubbish bins, pedestrian pathways, internal roads, lightings, children swings & slides, picnic tables & shelter (traditional style huts), barbecue, stormwater & wastewater treatment facilities & utility easements.
Showgrounds	Annual shows & Festivals (Provincial Days, Hiri Moale, Independence), Circus Shows, Religious crusade, Rally, Exhibitions.		2ha	Light green with dark green border annotated with Sg .	Publicly accessible with charge and located along main arterial/distributor road.	1 car space per 15 visitors	WSUD concept into landscaping plan. Public Art depicts PNG culture	Comply to Fencing Policy No.2/2006 & Sign Board Policy	Open air and surrounded with traditional PNG style huts.	Outdoor open air facilities.		Toilets, cafeteria, outer bench seats, rubbish bins, pedestrian pathways, internal roads, lightings, children swings & slides, picnic tables & shelter (traditional style huts),

Built Facility	Permitted uses	Provision standard	Minimum Site Area (ha)	Colour	Accessibility	Minimum Car parking spaces	Landscape	Fencing & Signboard	Facility Specification ³	Maximum Height	Maximum Site Coverage	Other Embellishments
								No.02/2016				barbecue.
Country club estates	Yacht club, waterfront resorts,	5ha/1000		Light green with dark green border annotated with Cc	Restricted access and located along waterfront areas.	1 car space per 3 workers plus 1 car space per 5 members & 1 car space per 10 visitors	WSUD concept into landscaping plan. Public Art depicts PNG culture	Comply to Fencing Policy No.2/2006 & Sign Board Policy No.02/2016				Cafeteria, outer bench seats, rubbish bins, pedestrian pathways, internal roads, lightings, children swings & slides, picnic tables & shelter (traditional style huts), barbecue, stormwater & wastewater treatment facilities & utility easements.

12.2.2 Passive Open Spaces

Type	Permitted uses	Land area/per 1000 population	Minimum Site Area	Colour	Accessibility	Minimum Car parking spaces	Landscape	Fencing & Signboard	Maximum Site Coverage	Management	Other Embellishments
Neighborhood Recreation park	Children playgrounds, informal play area, kick-about areas, walking-about areas, community gathering, mini sports competition & temporary garage sales.	0.5ha	300m ²	Light green annotated with Cp	Accessible within 15 minutes' walk by residents	N/A but allowance is made for bicycle park	WSUD concept into landscaping plan.	Comply to Fencing Policy No.2/2006 & Sign Board Policy No.02/2016	100%	NCDC/Community	
Parks & Gardens (District)	Botanic Gardens, PNG rainforest, Wildlife sanctuary native to savanna grassland, Garden Centre, picnic area, outdoor social gathering such as wedding ceremonies, photography, outdoor gardens, Walkways, Recreation trails, Cycle ways and promotional activities, educational activities such as WED, Book Week, etc. Commercial ancillary uses such as Plaza's and Business premises for the sale of food and drink including licensed premises, restaurants and cafes are allowed in some of these open space environments.	1-5ha	1ha	Light green annotated with Pg	*Located in areas of special interest & adjoins other community facilities. *5km from most residence and close to a distributor or main arterial roads and within walking distance of regular public transport	1 car space per 5 workers plus 1 car space per 10 visitors	WSUD concept into landscaping plan. Public Art depicts PNG culture	Comply to Fencing Policy No.2/2006 & Sign Board Policy No.02/2016	100%	Private	Toilets, cafeteria, souvenir shops, outer bench seats, rubbish bins, pedestrian pathways, internal roads, lightings, children swings & slides, picnic tables & shelter (traditional style huts/haus-wins), barbecue, water taps,

Type	Permitted uses	Land area/per 1000 population	Minimum Site Area	Colour	Accessibility	Minimum Car parking spaces	Landscape	Fencing & Signboard	Maximum Site Coverage	Management	Other Embellishments
Town Centre parks	Informal day-to-day activities such as resting, people watching, eating lunch meeting friends, children's play, reading, chatting, busking and street art along with planned activities such as markets, schedule performances, festivals, parades, political rally, religious outreach and awareness programs, and other events.	0.1ha		Light green annotated with TCp	Surrounded by pedestrian through-movement where there is good visual and physical access	N/A	WSUD concept into landscaping plan. Public Art depicts PNG culture	Comply to Fencing Policy No.2/2006 & Sign Board Policy No.02/2016		NCDC	Seats, tables, rubbish bins, pedestrian pathways, lightings, children swings & slides, shade trees, raised lawn, seating ledges & varied floorscape pavements.
Amenity reserves ⁷	Art & Music Performance, Outdoor special events such as Political & religious rally, Awareness activities, informal sports & training, Water & Sewerage Mains, Power-lines, Telecommunication lines, Mini Markets, Walkways, Cycle ways, Carparks.	N/A		Light green with dark yellow boarder		N/A	WSUD concept into landscaping plan.	Comply to Fencing Policy No.2/2006 & Sign Board Policy No.02/2016		NCDC	Seats, rubbish bins, , lightings, children swings & slides, shade trees, raised lawn, seating ledges, stormwater & wastewater treatment facilities & utility easements.
Memorial parks	War Cemetery, Monuments of War Heroes, War relics, walkways, internal roads, ceremonial garden, Chapel, social gathering park.	5ha		Light green with dark green			WSUD concept into landscaping plan. Public Art depicts			NCDC/AUSAI D/JICA	

⁷ Where practical, car parking and access should be designed and located so as to enable its joint use by other activities that use the open space.

Type	Permitted uses	Land area/per 1000 population	Minimum Site Area	Colour	Accessibility	Minimum Car parking spaces	Landscape	Fencing & Signboard	Maximum Site Coverage	Management	Other Embellishments
				boarder and annotated with specific use.			war heros, war relics, war amination				

12.2.3 Natural/Green Spaces

Types	Permitted uses	Development control
Stormwater reserves (drainage reserves)	Storm drains, Buffer, Boardwalks, TPO	<p>*Adopt environmental and sustainable design (Water Sensitive Urban Design) and landscape with vetiver grass/lemon grass with native eucalyptus trees to along drainage reserves to complement drainage channels and enhance their amenity value.</p> <p>*Existing natural streams should be preserved and drainage channels/systems should be revitalized for irrigation purposes.</p> <p>*Encourage tree planting scheme in this area and should be protected under TPO.</p> <p>*All drainage reserves and landscape amenities must be built with bollards and landscape with trees that will be protected under TPO.</p> <p>*Rehabilitate creek networks and converting the waterways into attractive green areas for walkways/pedestrians and cyclists;</p>
Hillslope areas/ridgetop areas/coastal cliffs	Scenic view look-outs, Recreational trails and walkways, Quarries,	<p>*High sloping areas of more than 20% slope and 20 degrees or more are considered unsuitable for development</p> <p>*Grading should be avoided in areas where the slope is greater than 25 percent.</p> <p>*New buildings located on ridgetop areas must be designed to minimize impacts on views to acceptable building heights strictly adhered to prominence of these features.</p> <p>*Drainage channels should receive a naturalizing treatment including native rock and landscaping.</p> <p>*Existing vegetation must be preserved and integrated into the development scheme and adequate measures must be considered during construction works for protection tree species that are of historical, cultural and ecological significance.</p> <p>*In coastal cliff face areas, trails should be designed so that they do not impact on the stability of the cliff and retain as much vegetation as possible.</p> <p>*Natural or man-made slopes should be covered with vegetation.</p> <p>*Existing vegetation must be safeguard and planted with tree and shrub to enhance slope appearance</p> <p>*Vegetation chosen must be suitable to soil depths of the slope, e.g. on thin soil, grass, grass cover and climbers should be considered and on deep soil larger trees and shrubs are recommended.</p>

Types	Permitted uses	Development control
		<p>*Existing trees should be retained unless for genuine need and make replanting a condition.</p> <p>*Vetiver grass is encouraged on hill slope areas.</p> <p>*Restoration plans must be in place at initial start of the quarry and form part of the development application to the NCD PPB.</p> <p>*Re-contouring for mass tree planting of native species and vetiver grass on exposed areas for erosion control and restoration to natural outlook.</p> <p>*Implement development planning based on environmental impact assessments and recommended mitigatory actions.</p> <p>*Ensure development complements the natural features and ensuring that development is subordinate to the ridgelines.</p> <p>*Encourage a development pattern and practices which minimize disturbance that causes soil erosion;</p> <p>*Ensure view corridors to the ocean and the harbor are maintained.</p>
Fault lines	Geological studies, Geological observatory stations,	<p>*Provide 20m buffer</p> <p>*Restrict built developments close to fault lines.</p>
Wetland areas of biotic significance	Sewerage ponds, Conservation purposes, Scientific research, picnic, jetties, boardwalks, pedestrian bridges, research station, workers residence, village bungalows, conference room	<p>*Promote Eco-tourism activities.</p> <p>*Implement development planning based on environmental impact assessments and recommended mitigatory actions.</p> <p>*Ensure protection and stability of coastlines and natural water ways through application of best practices and management principles.</p> <p>*Pedestrian and cyclist access is provided along the riverbank and includes pedestrian/ bikeway paths and passive recreation features such as seats, and viewing areas.</p> <p>*Aquatic environments must be maintained to a good standard to maintain a quality ecosystem and a safe setting.</p>
Islands	Picnic areas, diving, snorkeling, Resort development, jetties, Conservation purposes, Scientific research, Game fishing, hiking, boardwalks, scenic view look-outs, village bungalows, workers quarters, conference rooms, souvenir shop	<p>*Developments in this area should be of minimal impacts</p> <p>*Promote Eco-tourism activities</p> <p>*Ensure protection and stability of coastlines and waterways is maintained through application of best environmental practices and management principles.</p> <p>*Promote beachfront bungalows for holiday getaways</p>
Foreshore (coastline and waterfront)	Commercial apartments of unique designs, Yacht club, jetties, recreation parks, children playground, boardwalks, Beach bungalows	<p>*Maintain coastal vegetation mostly of mangroves to act as coastal buffer.</p> <p>*Ensure protection and stability of coastlines and waterways is maintained through application of best environmental practices and management principles.</p> <p>*Ensure view corridors to the ocean and the harbor are maintained.</p> <p>*Pedestrian and cyclist access is provided along the riverbank and includes pedestrian/ bikeway paths and passive recreation features such as seats, and viewing areas;</p>

Types	Permitted uses	Development control
Linear streetscape corridor	TPO sites along road reserves, Buffer, Utility service facilities, pedestrian walkways, cycle trails, boardwalks.	<p>*Create avenues of trees and shrubs preferably native species or those that grow well in Moresby climate along central dividers, pavements of road corridors and in pedestrian areas.</p> <p>*All Roadside trees⁸ must be planted at a minimum of 5m away from the edge of the roads and 12m apart in the row, so that they get enough space for spreading and do not interfere with the traffic. For Main Arterial roads/Highways, double rows of trees should be planted.</p> <p>*Pedestrian footpaths must be built behind the trees for road safety purposes.</p> <p>*Avoid growing trees and shrubs that obscures the visibility of road signs, traffic lights, CCTV, bus stops and intersections, sight-lines for pedestrians and drivers.</p> <p>*Median strips of the roads must be landscaped with grass swales, shrubs, and palms.</p> <p>*Utility Service Facilities such as pumping stations, sewerage treatment works, power-line reserves, refuse collection points must be protected with tree planning and bollards created all around the perimeter of these facilities. These areas can be utilized by communities for leisure activities.</p> <p>*Recreational trails, walkways and cycle ways should provide for safe and convenient access for users including safe connections with the existing road network.</p> <p>*Development is designed and located to ensure existing connectivity is maintained between canopy trees within and external to the site and enhancement of the connection between canopy trees through appropriate landscaping with local providence canopy species;</p> <p>*Integrate existing tree cover into TPO program and where additional planting is required, native species is preferable to maintain a healthy, balanced, mixed-age tree stock throughout the city;</p> <p>*Tree planting schemes (program) of new trees, & replacing trees be incorporated into the TPO program to improve the quantity, quality and variety of the city's tree stock;</p> <p>*Make bicycle and pedestrian routes to parks and public spaces safe and visible;</p> <p>*Any pruning undertaken on TPO trees shall be done by Parks officers</p>

⁸ Recommended tree species for Main Arterial Roads, Distributor roads, Collector roads and Access roads is provided in Appendix C.

13.0 ACTION PLAN

The Action Plan provided in the table below sets out keys areas for immediate to long term development priorities and actions to be taken for successful implementation of the Open Space Policy for a 5 year period commencing 2016-2021.

Key Area	Goal	Strategies	Actions to be taken	Target	Timescale for action	Responsibilities for delivery		Costing	Status
						Internal	External		
Redefinition survey of all open spaces without legal description.	To acquire legal description for all open spaces, recreation parks and sporting fields on state land in NCD.	*To ensure all open spaces, recreation parks & sporting fields are surveyed and legal description is allocated accordingly by the Office of Surveyor General, DLPP.	*On site supervision of the execution of the field survey from start to completion by NCDC Surveyor *NCDC Surveyor to ensure all field works and processing of the final ID Survey Plan by private surveyor is complied with the Instructions set by NCDC.	*12 sites have been surveyed at Gerehu area by Manacon Consulting Engineering Surveyors in September 2016. *Survey firms short-listed for other sites	Sept 2016-2018	NCDC	*DLPP *Private survey firm	To be determined by Urbanization Section.	Work in progress
Compulsory acquisition of legal title by NCDC	To ensure NCDC acquire legal title for all open spaces, drainage reserves, recreation parks & sporting fields in NCD.	*To maintain and protect all open spaces, recreations parks and sporting fields. *NCDC to provide incentives to DLPP staff to fast tract the process of titling process. *Ensure an MOA is established between DLPP and NCDC to strengthen coordination and working relationship *To ensure all due processes are completed on time and to satisfactory standard *Establishment of NCD Land	*Urbanization to organise Site inspection with various Sections of NCDC *Combine inspection by NCDC & DLPP *Urbanization to develop report and submit to DLPP for Land file creation. *Issuance of LG & LAF, Valuation and submission to Register of Title for the hard owner's title copy. *Regular visit by Lands Officers to DLPP	*NCDC has purchase 50 Land File hard cover at Government Printing Office (GPO) *13 sites in the Milinch of Hohola was submitted to DLPP on the 18/10/2016 for creation of Land file *All land file creation for other Milinch areas will continue in 2017 *NCD Land Unit secure 11open space titles under NCDC (7 Recreation Park Leases, 2 Sports Leases, 1 Stormwater Reserve Lease & 1 Ridgetop Reserve Lease)	2016-2021	NCDC	DLPP	To be determined by Urbanization Section.	11 Leases issued to NCD Land Unit and gazetted on 11/10/17 on G804.

Key Area	Goal	Strategies	Actions to be taken	Target	Timescale for action	Responsibilities for delivery		Costing	Status
						Internal	External		
		Unit with strong political support by MS MP (Hon.J.Thachenko) & NCD Governor (Hon.Powes Parkop) to protect and retain all open spaces for recreational purposes.							
Concept design of architectural drawing	To provide attractive and good quality standards of all recreation parks and sporting fields through concept design	To ensure all recreation parks and sporting fields have quality concept design of manageable and cost-effective principle. *To raise standards of strategic sports centres *Increase levies on infill developments to cover the cost of upgrading. *Ensure the concept design incorporate water sensitive urban design principles.	*Prepare TOR, mobilize funds and engage consultant. *Call for tender and successful applicant to proceed with the project. *NCDC to apply these design principles to new and existing sites prioritize for redevelopment and upgrading projects by NCDC or Political MP's for the 3 electorates including NCD Governor.	*Ela Beach Redevelopment into 3 precincts will commence in 2017 *Coronation Park upgrading site will commence in 2018. *Priority areas for redevelopment and upgrading include Gerehu Sports Centre, Hohola Sports Centre, Unagi Park, Sir William Memorial Park, Consolidate Section 44, Lots 23, 24 & 26 Granville (Konedobu), Erima wildlife sports ground on Section 459 Lot 53 Hohola, Morata Sports ground.	2018-2022	NCDC	*Office of the MP's *Developers *Private/Public partnership	To be determined by Manager Strategic Planning	Work to commence in 2018/2019
Site specific management plan	Prepare a site management plan of each open spaces	To ensure all strategic sports centres, neighbourhood parks and town centre parks have a site management plan	*Management plan will be prepared prior to acquisition of survey plan and legal title of specific open space site *Carry out land use survey to determine existing situation on site.	*Facility Audit survey to be carried out to verify existing information *Conduct community workshop as a bottom-up planning concept so communities take ownership and responsibility in the day-day care and management of the park	2018-2022	NCDC		To be determined by Manager Strategic Planning	Work to commence after statutory consultation of the policy.

Key Area	Goal	Strategies	Actions to be taken	Target	Timescale for action	Responsibilities for delivery		Costing	Status
						Internal	External		
			*Carry out statutory public consultation to include community in the planning process.						
Source external funding	To deliver key improvements to strategic sites and meet adopted standards	To secure external funding options through grant programmes and developer contribution.	*Liaise with Department of National Planning, Monitoring & Implementation to find out on priority development grants relating to urban environment. *Liaise with National Sports Foundation for partnership in developing sporting fields in residential areas to enhance and increase community participation in sporting activities through local competition	*Develop a project proposal to NPMI seeking development grants *Establish an MOA between NCDC/NSF/private developers	2018	NCDC	NPMI,NSF	To be determined by DCMRS	To be determined by DCMRS.
Open space Policy	Set minimum standards for provision of open spaces in NCD.	*Ensure provision of new open space areas are provided in new subdivision design and proposed development plan. *It provides the basis in informed decision in the allocation of funding resources and exploring opportunities to develop additional neighbourhood parks and sporting fields in each of the LPAs in NCD	*Apply open space policy in the assessment of development application. *Liaise with NCDC Legal division to review the Section 81 Agreement between NCD and the developer specific to open space. *No planning permission should be granted until developer put in place suitable arrangements for future management and maintenance of public open spaces.	*By 2017 all development applications will be assessed against this policy. *Develop a Legal Contract Agreement binding developer to transfer ownership (title) and responsibilities of open spaces to NCDC *DCMRS, NCDC PLO, FC, CPP(DLPP) & Developer to sign of the Open space Agreement	2017	NCDC	Private developer		Statutory consultation to commence on 19/01/18 to 27/02/18

Key Area	Goal	Strategies	Actions to be taken	Target	Timescale for action	Responsibilities for delivery		Costing	Status
						Internal	External		
Open space Audit Team ⁹	Set up an open space Audit team ¹⁰ to conduct an audit of open space provision every 2years	To assess the quantity and quality of recreation parks, sports grounds and other open spaces of passive and natural significant. To ensure no illegal developments occur on designated passive and active spaces	Site visits to verify existing situation on site in order to evaluate the success of the open space policy.	*Develop a criteria and evaluation checklist *Inform relevant Sections of the Commission who will form the Audit Team via approval of DCM RS	Every 2 years	NCDC		To be determine by Managers of each Audit Team.	
TPO Design Guideline	Develop a design guideline for all TPO sites	*To provide guidance to landscaping of tree planting, care and maintenance work for all approved TPO sites in NCD *Set out standards on the use of trees in landscape design and on the choice of trees, how to plant them and how to take care of them. *Once approved by the Board the guideline will be used to assess development applications of new road construction and new subdivision developments.	*Carry out site specific research on soil, geology, drainage condition, vegetation to determine suitability of plant species and its adaptability to tolerate drought/heat conditions, pest/disease and root systems. *Liaise with UPNG and Forest Authority to compiled database of tree species suitable in the Port Moresby climate. *NCDC to replant 2000 trees along new roads in the city	*Prepare scope of works and activity plan in the first quarter of 2018 *Prepare an information paper to the NCDPPB to get its endorsement to carry out the project in mid-2018 *Formulation of Guideline should commence by mid-2018. *K200,000.00 has been allocated for the tree replanting project along new roads *To be implemented in all Open space sites with Title.	2018	NCDC	NFA, UPNG	To be determined by SP Manager	To be determined by SP Manager in the 2018 work plan

⁹Audit team will comprise of Planner Environment (Strategic Planning), Compliance Planner (Development Control), Land & Valuation Officer (Urbanization), Parks Officer (Parks & Gardens Section), Revenue Officer (Revenue Section) and Sports Coordinator (Sports Desk).

13.0 REFERENCE

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14.0 APPENDICES

APPENDIX A: (1) Open Space Category definitions

Category	Type	Definition
Active open space	Sports ground	A sportsground is an area of open space that primarily used for formal sport through playing fields and other structures, e.g. soccer field, football oval, cricket field, softball diamond, hockey field, tennis or netball courts. It can also be used for recreation activities and other informal recreation, social, cultural and leisure activities.
	Stadiums	A stadium (stadia) is a place or venue for mostly outdoor sports, concerts, or other events and consists of a field or stage either partly or completely surrounded by a tiered structure designed to allow spectators to stand or sit and view the event (https://en.wikipedia.org/wiki/Stadium). There are three types of sports stadia with different function as detailed below.
	Indoor multi-purpose stadium	An air condition building which has a central arena surrounded by spectator seating and accommodate sporting events as well as other events such as roadshows, entertainment, graduations, etc. Sir John Guise Indoor complex building is an example.
	Indoor sports stadium	A built indoor facility for organized training and for international competitions and dedicated to indoor sports. Sir John Guise indoor sports complex.
	Outdoor stadium	comprised of several sporting fields and an athletic 400m running tract that should be of an internal standard with spectator seating capacity for 10, 000-50,000 population. They can also be used for other large-scale open air entertainment and activities. An example is National Football Stadium, Sir John Guise Stadium and PNG Football Stadium.
	Specialized sports	Specialized sports in this context is referred to the facility built purposely for that specific sports requirement and this include Port Moresby Golf Course, Taurama Aquatic Centre and Steamships Racquet Centre.
Passive open space	Recreation Park	Recreation Park are primarily used by community for informal recreation, social, cultural and leisure activities and may also provide for other complementary values such as bird watching, picnic areas, conservation areas, e.g. Varirata Park in Central Province.
	Landscape Amenity	Amenity reserves are land primarily used for landscape for amenity, visual or buffer purposes and may also be used by the community for informal recreation, social, cultural and leisure activities as a secondary function. Some of this areas include traffic islands (roundabouts), streetscapes in road reserves that contribute to a places aesthetic amenity.
	Civic Spaces	Civic spaces are public places that can be used as open forums for people to encounter art, to enjoy performances, and to participate in other cultural activities. Civic spaces in this context include informal markets, memorial parks, etc.
	Botanical Garden	A botanical garden is a garden dedicated to the collection, cultivation and display of a wide range of plants labelled with their botanical names. It may contain animal zoology. Visitor services at a botanical garden might include tours, educational displays, art exhibitions, book rooms, open-air theatrical and musical performances, and other entertainment.
National open space	Ridgetop areas	Ridgetop are natural landscapes that provide aesthetic and scenic views.
	Storm water Reserves	Stormwater/drainage reserves are land areas designated for storm movement or treatment and may provide secondary benefits to support recreation uses and environmental corridors.
	Wetland areas	Wetland is defined by the RAMSAR Convention as "swamps and marshes, lakes and rivers, wet grasslands and peat-lands, oases, estuaries, deltas and tidal flats, near-shore marine areas, mangroves and coral reefs, and human made sites such as fish ponds, rice paddies, reservoirs and salt pans. Wetland areas can be referred to as linear parks or corridor which refers to a continuous length of land that provides a connection or supports movement between open space or other features and facilities. A linear corridor could be designed as a park setting with grassed areas, trees, pathways and seating or include substantial vegetation and provide a movement corridor for birds and other fauna species.
	Foreshore areas	Foreshore refers to the open space along the edge of the coastline, including coastal vegetation. Sections of foreshore open space could be developed to support recreational needs.
	Islands	

APPENDIX A: (2) Detailed review of approved NCD local development plans and policies.

Existing Plan/Policy	OS Vision	Land Area (ha)	Specific Strategies	Standard
NCD UDSS		324.9	<ul style="list-style-type: none"> *Provide ample provision of facilities at the local, city & regional levels; *Maintained recreation reserves at a minimum level of 3ha/1000people; *Encourage active participation of communities in the design & development of open space facilities; and, *Promote partnership with traditional land owners for upgrade and easy accessibility of areas such as traditional beaches, foreshores areas & the outer islands. 	<ul style="list-style-type: none"> *3ha/1000 population *Playgrounds/small parks be accessible by user within 5minutes walking distance & should not cross major roadways; *Playing fields & other sporting facilities be accessibly within 15minutes maximum walking distance.
NCD UDP	Adequate provision and distribution of open spaces and recreational areas where community can access for recreational and leisure use.	3597	<ul style="list-style-type: none"> *Retain all existing open spaces to meet the recreational needs of the residents and resist all rezoning proposals; *Reserve exclusive areas of an adequate size in new subdivisions for recreational purposes; *Preserve and restrict built developments on Natural areas such as stormwater reserves, wetland and ridgetop scenic areas; *Provide ample areas for both passive and active open spaces at strategic locations in the city. 	Provisions are provided in detailed LDPs.
POM/TOWN LDP	Important public resource essential to good quality city life.		<ul style="list-style-type: none"> *Landscape & streetscape upgrading of public recreational parks, sporting facilities & ridgetop scenic lookouts; *Retain remaining open spaces from being lost to private ownership *Make available open spaces accessible and safe for public use and enjoyment *Prohibit allocation and use of public open spaces to private clubs, organizations or other use for private purposes. 	
8/9Mile LDP	A destination for major passive and active recreational area.		<ul style="list-style-type: none"> *Protect ridgetop areas & prohibit built developments above 90m contour. *Provide modern multi-purpose stadium adjacent main transport route to host international, national & local sporting events. Encourage *Promote passive use functions as buffer between incompatible land uses 	No detail provision provided so it is superseded by the PPR 2007
PNLDP	Public and civic spaces are recognized as the principal organizing structure in the city.	5,250	<ul style="list-style-type: none"> *Preservation of ridgetop areas, waterways and areas of high ecological values such as mangroves, reefs, beaches, foreshore areas; *Promote open space connectivity with the bay through: <ul style="list-style-type: none"> -Movement corridor such as pedestrian/cycle between residential neighborhood & waterfront; -Activity corridor such as gardening, community and cultural facilities along existing waterways; -Green corridor to provide for biodiversity and habitat corridors -Integrating public open space and public buildings supplemented with stormwater detention and filtration elements; *Provide Town Centre in the vicinity of the town and local center's *Promote multi-use of Sports ground by schools for exercise and residents use after school hours; and, *A large sports stadium be built on a reclaimed land north of the proposed Town Centre with good accessibility to public transport and amenities. 	<ul style="list-style-type: none"> *4ha/1000population is distributed into the following proportions: <ul style="list-style-type: none"> -Children's playground 0.5ha/1000people resident -Formal community sports ground 2ha/1000 people resident -Town Centre parks 0.1ha/people resident -Informal park 1.4ha/people resident.

Existing Plan/Policy	OS Vision	Land Area (ha)	Specific Strategies	Standard
DTLDP	Protection of valued environmental features potential for eco-tourism activities.	2470	<ul style="list-style-type: none"> *Preservation of waterfront areas, bay front areas & ridgetop areas; *Permitted uses within the Bootless Bay EPA will be approved in the presence of an approved environmental impact report; *Promote and encourage eco-development/environmentally sensitive development techniques along bay front areas to minimize negative impacts to the surrounding landscape. 	<ul style="list-style-type: none"> *Provision set in Section 37 of Physical Planning Regulation 2007; *20m Bay Environment Protection Buffer; *90m Landscape Protection Area; *30% slope gradient *Approved EIA report for Environment sensitive areas; *10% (0.1ha) of 1ha residential land use be allocated to open space & public parks.
WCCDCP		78.533	<ul style="list-style-type: none"> *Retain all existing open spaces to meet the recreational needs of the residents and resist all rezoning proposals; *Protect and restrict developments on Natural areas such as stormwater reserves, wetland and ridgetop scenic areas; *Ensure enough open space is available for city residence to enjoy now and in the future; *Ensure that open spaces act as a valuable buffer between different land uses in order to combat environmental pollution and maintained wildlife habitat; *Provide open spaces adjacent to special features to maximize its quality, use and enjoyment by city residence *Access to open spaces must be through a clear designated route and entrance in order to minimize pedestrian vehicular conflict. *Established a parkland and recreation amenities at Constitutional Park. 	
Waigani/Tok arara Hill Feasibility Study	Hillslopes & ridgetop areas create a sense of spatial enclosure as a defining natural character.	70.18	<ul style="list-style-type: none"> *No developments on highly sloping land of more than 20% gradient for preservation and protection of ridgetop areas and maintain it for aesthetic and environmental vitality. 	
Guidelines for Assessing Declaration of Subdivision Zone	Sensitive planning is required in the declaration of steep slopes	6659	<ul style="list-style-type: none"> * Provide Geotechnical reports to confirm suitability of slopes and elevation within: <ul style="list-style-type: none"> -more than 90m contour and less than 20% slope; -below 90m contour & 20% slope -conditions of soil and rock types. *Minimize impacts on the natural environment and reduce risks to public health, safety and welfare from unmanaged disturbance of steep slopes. 	<ul style="list-style-type: none"> *5000m² open space for every 10ha of land proposed to be developed *300m usable open space area.

APPENDIX B: (1) Facility Audit Land use survey result (2015)

No	Park Description	Land Area	Category	Function (Purpose)	Hierarchy	Accessibility	Suburb LPA	Status/Condition	Cat #	ID survey	Lease Ownership	Lease type
1	Kasio Circle round-about	2.818	Passive	Landscape amenity	Local	Public (free)	Gerehu Stg 2 (6)	TPO trees, fountain, Xmas lights		Yes		
2	Gerehu Stage 2 Recreational Centre	0.6442	Passive	Recreation park	Local	Public (free)	Gerehu Stg 2 (6)	Run-down facilities				
3	Section 486, Lot 23 Hohola (Walala compound)	0.0589	Passive	Recreation park	Local	Public (free)	Gerehu Stg 2 (6)	Poor condition				
4	Nature-Strip reserve front of Section 486 Hohola and along Keni-Vani Rd (Walala compound)	1.079	Passive	Landscape amenity	Local	Public (free)	Gerehu Stg 2 (6)	Poor condition		Yes		
5	Section 393, Lot 02 Hohola	0.3609	Passive	Recreation park	Local	Public (free)	Gerehu Stg 1 (6)	Title issue on 11/10/17 on G804	49/1408		NCDC	SPL (RP)
6	Section 416, Lot 01 Hohola (Stg 3B recreational park)	0.9274	Passive	Recreation park	Local	Public (free)	Gerehu Stg 3 (6)	Rundown-facilities	49/1515-1516		LFC (2016)	
7	Section 322, Lot 30 Hohola	2.609	Passive	Recreation park	Local	Public (free)	Gerehu Stg 6 (6)	Surrounded by bush		Yes	NCDC	
8	Drainage reserve within Section 355 Hohola PJV Compound	1.193	Natural	Stormwater reserve			Rainbow (6)	Drainage reserve				
9	Section 310, Lot 169 Hohola	0.2453	Squatter	Squatter	Squatter		Gerehu Stg 5 (6)	Informal settlement	49/1409	Yes	LFC (2016)	
10	Section 310, Lot 170 Hohola	0.2935	Squatter	Recreation park	Local		Gerehu Stg 5 (6)	Informal settlement. Title issue on 11/10/17 on G804.	49/1409		NCDC	SPL (RP)
11	Section 302, Lot 56 Hohola (Gerehu Sports Centre)	8.886	Active	Sports Fields	Local	Public (free)	Gerehu Stg 2 (6)	Run-down facilities. Title issue on 11/10/17 on G804.	49/2354	Yes	NCDC	SPL (RP)
12	Section 349, Lot 9 Hohola	1.505	Squatter	Recreation park	District		Gerehu Stg 2 (6)	Informal settlement. Title issue on 11/10/17 on G804.	49/2080		NCDC	SPL (RP)
13	Drainage reserve bounded by Sections 237,346-348,341,345,250,306 Hohola	11.56	Squatter	Squatter	Squatter		Gerehu Stg 2-5 (6)	Drainage reserve part area upgraded				
14	Section 308, Lot 35 Hohola	1.596	Passive	Recreation park	Local	Public (free)	Gerehu Stg 4 (6)	Title issue on 11/10/17 on G804.	49/1362	Yes	NCDC	SPL (RP)
15	Section 313 Lot 63 Hohola	1.51	Squatter	Recreation park	Squatter		Gerehu Stg 6 (6)	Informal Settlement. . Title issue on 11/10/17 on G804.	49/2329	Yes	NCDC	SPL (RP)
16	Section 313 Lot 64 Hohola	1.51	Squatter	Stormwater Reserve	Squatter		Gerehu Stg 6 (6)	Informal Settlement. . Title issue on 11/10/17 on G804.	49/2329	Yes	NCDC	SPL (SR)
17	Section 317 Lot 65 Hohola	2.492	Squatter	Stormwater reserve	Local		Gerehu Stg 6 (6)			Yes		
18	Gerehu Swamp	70.59	Natural	Wetland	Squatter	Public (free)	Waigani (6)					
19	Waigani Swamp	259.7	Natural	Wetland	Squatter	Public (free)	Morata (6)					
20	Morata Swamp	10.38	Natural	Wetland	Squatter	Public (free)	Morata (6)					
21	Section 431, Lot 78 Granville	0.065	Passive	Recreation park	Local	Public (free)	Ensis (5)	Poor condition. Title issue on 11/10/17 on G804.	49/1578		NCDC	SPL (RP)
22	Portion 1473 Granville (Nature park Garden)	5.827	Passive	Recreation park & Gardens	Regional	Public (charge)	UPNG (5)			Yes		
23	Section 230, Lot 61 Hohola	0.5328	Active	Sports Fields	Local	Public (free)	Tokarara (5)				NCDC	
24	Section 227, Lot 100 Hohola	1.142	Active	Sports Fields	Local	Public (free)	Tokarara (5)				NCDC	

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25	Section 227, Lot 165 Hohola	0.6608	Active	Sports Fields	Citywide	Public (free)	Tokarara (5)					NCDC	
26	Section 236, Lot 93 Hohola	0.1337	Active	Sports Fields	Local	Public (free)	Tokarara (5)					NCDC	
27	Section 229, Lot 15 Hohola	0.1042	Passive	Landscape Amenity	Local	Public (free)	Tokarara (5)	Carpark				LFC, 2016	
28	Section 229, Lot 69 Hohola	0.8691	Natural	Ridgetop	Local	Public (free)	June Valley (5)	Poor condition. Title issue on 11/10/17 on G804.	49/1432			NCDC	SPL (SF)
29	Section 231, Lot 162 Hohola	0.4909	Active	Sports Fields	Local	Public (free)	June Valley (5)		49/1432			NCDC	
30	Section 232, Lot 162 Hohola	0.3683	Active	Sports Fields	Local	Public (free)	Hohola (5)					NCDC	
31	Section 17 Lot 16 & 17 Hohola (Hohola Sports Centre)	2.87	Active	Sports Fields	Local	Public (free)	Hohola No.4 (5)	Hohola Sports Centre				NCDC	
32	Section 195, Lot 1 Hohola	1.237	Active	Sports Fields	Local	Public (free)	Hohola North (5)					NCDC	
33	Section 395, Lot 23 Hohola	0.4086	Natural	Ridgetop	Local	Public (free)	Hohola (5)	Natural grassland	49/1578			NCDC	SPL (RtR)
34	Section 27, Lot 5 Hohola (Further subdivided into S.27, Lot 12-14)	1.1615	Active	Sports Fields	Local		Morata (5)		49/1736 & 1977			NCDC	
35	Section 287, Lot 101 Hohola (Morata sports oval)	0.5914	Active	Sports Fields	Local	Public (free)	Morata (5)						
36	Portion 1558 Granville	4.276	Natural	Ridgetop	Local	Public (free)	Games vill (5).						
37	Portions 2040 Granville (Sir John Guise Stadium)	4.15	Active	Sports Fields	Local	Public (charge)	WCC (4)						
38	Portion 2131 Granville (Sir John Guise Stadium)	1.508	Active	Ridgetop		Public (charge)	WCC (4)						
39	Portion 1554 Granville (Sir John Guise Stadium)	6.162	Active	Sports Fields		Public (charge)	WCC (4)					POM Soccer Ass.Inc	
40	Portion 1580 Granville (Sir John Guise Stadium)	2.427	Active	Sports Fields	Regional	Public (charge)	WCC (4)						
41	Portion 1592 Granville (Sir John Guise Stadium)	2.966	Active	Ridgetop	Regional	Public (charge)	WCC (4)						
42	Courts Roundabout	1.531	Passive	Landscape Amenity	Regional	Public (free)	Gordons (4)						
43	Section 438, Lot 25 Hohola (Islander village park)	0.1947	Passive	Stadium	Regional	Restricted	Erima (4)						
44	Section 10 Boroko (Erima Recreation park)	2.28	Passive	Stadium	Regional	Public (free)	WCC (4)						
45	Section 390, Lot 15 Hohola (Vulupindi park)	0.0658	Passive	Stadium	Local	Public (free)	WCC (4)						
46	Section 122, Lot 13 Hohola (Unagi park)	6.409	Passive	Stadium	Local	Public (free)	Gordons (4)					Title in progress 2016	
47	Section 424 Lot 27 Hohola	0.8385	Natural	Landscape amenity	Local	Public (free)	Erima (4)						
48	Section 459 Lot 53 Hohola	1.365	Active	Sports Field	Local	Public (free)	Erima (4)		49/1713			NCDC	SPL (SF)
49	Section 276 Lot 4 Hohola (Port Moresby Golf Course)	62.88	Active	Specialised sport	Regional	Restricted	North Waigani (4)					POM Golf Club Inc.	
50	Open Space at rear of Section 276 Lot 60 Hohola	0.3998	Passive	Recreation park	Local	Public	North Waigani (4)						

51	Section 25 Lot 4 Boroko (Apex park)	1.371	Passive	Recreation park	Local	Public (free)	Boroko (3)					
52	Lahara park	0.143	Passive	Recreation park	Regional	Public (free)	5Mile (3)					
53	Open Space off Maragi Gardens	0.2476	Passive	Specialised sport	Local	Public (free)	East Boroko (3)					
54	Section 100, Lot 18 Boroko	1.238	Squatter				E.Boroko (3)	Informal Settlement				NCDC
55	Portion 1638, Granville (Tabari craft market)	0.5412	Civic space	Market	Local	Public (free)	E.Boroko (3)					
56	Section 26 Lot 33 Boroko	0.5886	Passive	Landscape amenity	District	Public (free)	Boroko (3)	Carpark				NCDC
57	Section 56 Lot 15 Boroko (China town Mini market)	0.5318	Passive	Landscape amenity	Squatter	Public (free)	4Mile (3)	Market				NCDC
58	Section 68, Lot 2 Boroko (Steamships Racquet Centre)	1.594	Active		Citywide	Restricted	4Mile (3)					Steamships
59	Portion 3155 Granville (Bisini Sports oval)	34	Active	Ridgetop	Citywide	Public (charge)	E.Boroko (3)					NSF
60	Portion 628 Granville (Taurama Aquatic Centre)	33.929	Active	Recreational park	Citywide	Public (charge)	3Mile (3)					
61	Portion 88, Lot 17 Boroko (Taurama Aquatic Centre)	0.3345	Active	Recreational park	Citywide	Public (charge)	3Mile (3)	Consolidate with Portion 628				NCDC
62	DA 2225 Granville	6.842	Squatter				E.Boroko (3)	Informal Settlement				
63	Portion 1546 Granville	1.141	Squatter				E.Boroko (3)	Informal Settlement				
64	Section 31 Lot 7 Boroko	4.815	Natural		Regional	Public (free)	5mile (3)					NBC
65	Section 81, Lot 9 Matirogo (Konedobu park)	0.7995	Passive		Squatter	Public (free)	Gabutu (2)					Title in progress 2016
66	Section 87, Lot 2 Matirogo	0.6021	Passive		Squatter		Kila Kila (2)					Private
67	Section 87, Lot 3 Matirogo	2.946			Local		2Mile (2)					Gabutu & Gabatou, UDL
68	Section 143, Lot 28 Matirogo (St Theresa's Primary School)	1.088	Active		Local	Public (free)	Badili (2)					
69	Field in front of Kilakila Primary School	0.9528	Active	Field	Local	Public (free)	Kila Kila (2)					
70	Section 15, Lot 11 Matirogo	0.7211	Active	Field	Local	Public (free)	Kaugere (2)					
71	Section 39, Lot 13 Matigoro	0.4794	Active	Field	Local	Public (free)	Kaugere (2)					Sabama Youth Group
72	Open Space adjacent Kilakila Secondary School	2.916	Active	Field	District	Public (free)	Kaugere (2)					
73	Section 83, Lot 02 Matirogo	EJ	Active	Field		Public (free)		Unable to locate on zoning plan				Title in progress 2016
74	Section 83, Lot 6 Matirogo (Sir William Memorial park)	13.02	Active	Field	Citywide	Public (free)	Kaugere (2)					
75	Manubada Island	39.08	Natural	Island	Citywide	Restricted	Manubada (2)					Customary
76	Section 6, Lot 19 Granville	0.2416	Passive	Landscape amenity	Local	Public (free)	Ela Beach (1)	Carpark				NCDC
77	War memorial park	4.47	Passive	Civic Space	District	Public (free)	Ela Beach (1)	Memorial park				

78	Section 6 Lot 22 Granville (Coronation park)	0.1659	Passive	Recreation park	Local	Public (free)	POM CBD (1)					
79	Section 28, Lot 1 Granville (Ela Beach Rp)	0.1223	Passive	Recreation park	Citywide	Public (free)	Ela Beach (1)	Ela Beach recreation park redevelopment 2017.				NCDC
80	Section 28, Lot 6 Granville (Ela Beach Rp)	0.1658	Passive	Recreation park	Citywide	Public (free)	Ela Beach (1)					NCDC
81	Section 28, Lot 7 Granville (Ela Beach Rp)	0.1591	Passive	Recreation park	Citywide	Public (free)	Ela Beach (1)					
82	Section 28, Lot 8 Granville (Ela Beach Rp)	4.427	Passive	Recreation park	Citywide	Public (free)	Ela Beach (1)					Title in progress 2016
83	Section 28, Lots 3,4,5 Granville (Ela Beach Rp)	0.2702	Passive	Recreation park	Citywide	Public (free)	Ela Beach (1)					
84	Section 44, Lot 23 Granville	1.024	Active	Sports oval	Local	Public (free)	Konedobu (1)	Poor				Tabudubu Ltd
85	Section 44, Lot 24 Granville	2.514	Active	Stadium	Local	Public (free)	Konedobu (1)	Poor				Tabudubu Ltd
86	Section 44, Lot 26 Granville	2.312	Active	Stadium	Local	Public (free)	Konedobu (1)	Poor				Tabudubu Ltd
87	Section 61, Lot 1 Granville (Sir Hubert Murray Stadium)	0.1801	Active	Recreation park	Regional	Public (charge)	Konedobu (1)	Stadium				Hubert Murray Trust
88	Section 61, Lot 2 Granville (Sir Hubert Murray Stadium)	4.331	Active	Recreation park	Regional	Public (charge)	Konedobu (1)	Stadium				Hubert Murray Trust, Special
89	Portion 990 Granville	20.48	Passive	Squatter			9 Mile (7)	Informal Settlement				Patu No.53 (TST)
90	Portion 989 Granville (Bomana Turf Club)	13.4	Passive	Squatter			9Mile (7)	Informal Settlement				
91	Portion 939 Granville	39.04	Passive	Squatter			9Mile (7)	Informal Settlement				
92	Adventure Park (17 Mile)	22.27	Passive	Recreation park & Garden	District		17mile					PNG Gardener
93	Gemo Island	59.27	Natural	Island	Citywide	Restricted	Gemo Island (10)					Customary
94	Lolorua Island	5.53	Natural	Island	Citywide	Restricted	Lolorua Island (10)					Customary
95	Daugo Isand	371.2	Natural	Island	Citywide	Restricted	Daugo Isand (10)					Customary
96	Taima Island	0.0859	Natural	Island	Citywide	Restricted	Taima Island (10)					Customary
97	Bootless Bay /Taurama Bay (20m environmental protection zone)	82.34	Natural	Wetland	Regional		Dogura/Taurama					Customary

APPENDIX B: (2) A 10 year projection of open space provision in hectares by LPA using Low and High growth population from 2011-2021.

A. Low Growth Scenario

LPA	Population 2011	Sports Centre (2ha/1000)	Recreation park (0.5ha/1000)	Town Centre park (0.1ha/1000)	Informal park & Garden (0.5ha/1000)	Others (reserve use) 0.9ha/1000	Population 2016	Sports Centre (2ha/1000)	Recreation park (0.5ha/1000)	Town Centre park (0.1ha/1000)	Informal park (0.5ha/1000)	Others (reserve use) 0.9ha/1000	Population 2021	Sports Centre (2ha/1000)	Recreation park (0.5ha/1000)	Town Centre park (0.1ha/1000)	Informal park (0.5ha/1000)	Others (reserve use) 0.9ha/1000
Port Moresby/ Konedobu	16 878	33.8	8.4	1.7	8.4	15.2	19 906	39.8	10.0	2.0	10.0	17.9	23 477	47.0	11.7	2.3	11.7	21.1
Kilakila /Badili	46 821	93.6	23.4	4.7	23.4	42.1	55 220	110.4	27.6	5.5	27.6	49.7	65 127	130.3	32.6	6.5	32.6	58.6
Boroko	35 890	71.8	17.9	3.6	17.9	32.3	42 328	84.7	21.2	4.2	21.2	38.1	49 922	99.8	25.0	5.0	25.0	44.9
Waigani	58 093	106.2	26.5	5.8	29.0	52.3	68 515	137.0	34.3	6.9	34.3	61.7	80 711	161.4	40.4	8.1	40.4	72.6
University /Tokarara	53 025	106.1	26.5	5.3	26.5	47.7	62 537	125.1	31.3	6.3	31.3	56.3	73 756	147.5	36.9	7.4	36.9	66.4
Gerehu /Waigani Swamp	39 430	78.9	19.7	3.9	19.7	35.5	46 504	93.0	23.3	4.7	23.3	41.9	54 846	109.7	27.4	5.5	27.4	49.4
8/9Mile	42 156	84.3	21.1	4.2	21.1	37.9	49 719	99.4	24.9	5.0	24.9	44.7	58 638	117.3	29.3	5.9	29.3	52.8
Airport	32 960	65.9	16.5	3.3	16.5	29.7	38 873	77.7	19.4	3.9	19.4	35.0	45 846	91.7	22.9	4.6	22.9	41.3
Kaevaga /Poreporena	20 388	40.8	10.2	2.0	10.2	18.3	24 046	48.1	12.0	2.4	12.0	21.6	28 359	56.7	14.2	2.8	14.2	25.5
Huhunama /Tovabada	3 337	6.7	1.7	0.3	1.7	3.0	3 936	7.9	2.0	0.4	2.0	3.5	4 642	9.3	2.3	0.5	2.3	4.2
NapaNapa /Daugo Island	1 872	3.7	0.9	0.2	0.9	1.7	2 208	4.4	1.1	0.2	1.1	2.0	2 604	5.2	1.3	0.3	1.3	2.3
Taurama South	7 792	15.6	3.9	0.8	3.9	7.0	9 190	18.4	4.6	0.9	4.6	8.3	10 838	21.7	5.4	1.1	5.4	9.8
Taurama /Dogura South	5 483	11.0	2.7	0.5	2.7	4.9	6 467	12.9	3.2	0.6	3.2	5.8	7 627	15.3	3.8	0.8	3.8	6.9
Dogura North	0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0

B. High Growth Scenario

LPA	Population 2011	Sports Centre (2ha/1000)	Recreation park (0.5ha/1000)	Town Centre park (0.1ha/1000)	Informal park & Garden (0.5ha/1000)	Others (reserve use) 0.9ha/1000	Population 2016	Sports Centre (2ha/1000)	Recreation park (0.5ha/1000)	Town Centre park (0.1ha/1000)	Informal park (0.5ha/1000)	Others (reserve use) 0.9ha/1000	Population 2021	Sports Centre (2ha/1000)	Recreation park (0.5ha/1000)	Town Centre park (0.1ha/1000)	Informal park (0.5ha/1000)	Others (reserve use) 0.9ha/1000
Port Moresby/ Konedobu	16 878	33.8	8.4	1.7	8.4	15.2	17 743	35.5	8.9	1.8	8.9	16.0	18 653	37.3	9.3	1.9	9.3	16.8
Kilakila /Badiilli	46 821	93.6	23.4	4.7	23.4	42.1	54 127	108.3	27.1	5.4	27.1	48.7	62 573	125.1	31.3	6.3	31.3	56.3
Boroko	35 890	71.8	17.9	3.6	17.9	32.3	39 467	78.9	19.7	3.9	19.7	35.5	43 400	86.8	21.7	4.3	21.7	39.1
Waigani	58 093	116.2	29.0	5.8	29.0	52.3	66 490	133.0	33.2	6.6	33.2	59.8	76 100	152.2	38.1	7.6	38.1	68.5
University /Tokarara	53 025	106.1	26.5	5.3	26.5	47.7	60 689	121.4	30.3	6.1	30.3	54.6	69 461	138.9	34.7	6.9	34.7	62.5
Gerehu /Waigani Swamp	39 430	78.9	19.7	3.9	19.7	35.5	47 443	94.9	23.7	4.7	23.7	42.7	57 084	114.2	28.5	5.7	28.5	51.4
8/9Mile	42 156	84.3	21.1	4.2	21.1	37.9	54 673	109.3	27.3	5.5	27.3	49.2	70 908	141.8	35.5	7.1	35.5	63.8
Airport	32 960	65.9	16.5	3.3	16.5	29.7	45 164	90.3	22.6	4.5	22.6	40.6	61 886	123.8	30.9	6.2	30.9	55.7
Kaevaga /Poreporena	20 388	40.8	10.2	2.0	10.2	18.3	23 569	47.1	11.8	2.4	11.8	21.2	27 247	54.5	13.6	2.7	13.6	24.5
Huhunama /Tovabada	3 337	6.7	1.7	0.3	1.7	3.0	4 200	8.4	2.1	0.4	2.1	3.8	5 286	10.6	2.6	0.5	2.6	4.8
NapaNapa /Daugo Island	1 872	3.7	0.9	0.2	0.9	1.7	2 835	5.7	1.4	0.3	1.4	2.6	4 293	8.6	2.1	0.4	2.1	3.9
Taurama South	7 792	15.6	3.9	0.8	3.9	7.0	8 830	17.7	4.4	0.9	4.4	7.9	10 005	20.0	5.0	1.0	5.0	9.0
Taurama /Dogura South	5 483	11.0	2.7	0.5	2.7	4.9	6 500	13.0	3.3	0.7	3.3	5.9	7 703	15.4	3.9	0.8	3.9	6.9
Dogura North	0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0

APPENDIX B: (3) LPA Analysis of different Categories of Open Spaces.

LPA	Available amount ¹¹ (ha)	Passive (ha)	Active (ha)	Natural (ha)	TPO trees	Squatter settlement (ha)	Unique Feature	Proposed plan	Comments
Port Moresby/ Konedobu	113.503	10.0219	10.3611	93.12 (Rt)			Ela Beach/Koki Fault-line	Redevelopment of Ela Beach Recreation park & Coronation park.	Of the 10.3611ha Sir Hubert Murray now called PNG Football Stadium make up 4.5111ha and 5.85ha is the adjacent sporting oval. The passive make up of 10.0219ha, Ela Beach recreation reserve comprised 5.1444ha which is planned for redevelopment.
Kilakila /Badillili	59.6589	1.4016	19.1773	39.08 (ls)		2.946	Konebada Park (Taikone Beach) & Manubada Island		19.1773ha are fields in very poor condition and Sir William park make up 13.02ha.39.08ha is Manubada Island under customary tenureship.
Boroko	95.6857	3.4232	69.8575	4.815(Rt) 17.59 (Rt)		9.221	Bisini Sports oval & Taurama Aquatic Centre		Of the 69.8575ha, Bisini sports oval comprised 34ha, Taurama Aquatic Centre 34.2635ha & Steamships Racquet Centre make up 1.594ha.
Waigani	97.9168	10.4805	81.458	1.2383 4.74 (Rt)			Sir John Guise Stadium & POM Golf Course		Of the total 81.458ha, Sir John Guise Stadium comprised 17.213ha and Port Moresby Golf Course make up 62.88ha whilst rundown field make up 1.365ha. 10.4805ha are poorly maintained recreational parks, e.g Unagi park.
University /Tokarara	21.6083	5.9962	9.1884	5.5537 0.87 (Rt)			Nature Park		9.1884 comprised mostly of neighborhood sporting fields in very poor conditions. Of the 5.9962 ha, Nature Park make up 5.827ha.
Gerehu /Waigani Swamp	360.8424	8.4974	8.886	343.459 (W)		19.1158	Waigani/Gerehu swamp	LDP work in progress by PLANPAC	No built facilities. Gerehu Sports Centre make up 8.886ha and need to be upgraded to a stadium.
8/9Mile	676.27	22.27		654 (Rt)		72.92	Bomana War Cemetery & Laloki/Bomana River/Adventure Park	Proposed 9Mile Mini Stadium on Portion 884 Granville (8.6ha)	No recreation parks and built sports facilities. Many new subdivisions have provided provisions for open spaces, e.g Net Holdings, Bernal No.8 Limited and Boyne Limited. Ensure these open spaces are developed as per tits intent and titles to transfer to NCDC after 5 years.
Airport	Nil			Nil			Jackson's International Airport	Old Airport redevelopment by NAC	No recreation parks and built sports facilities. The Airport Redevelopment Plan must ensure recreational areas for passive and active activities be implemented for a balance land use activities.
Kaevaga /Poreporena	Nil			Nil		Customary land	Burn's Peak Lookout/Idubada Beach front/Hanubada village/Baruni Fault		Poreporena Napanapa Local Development Plan covers 3 LPAs and the Plan provide provision for open space recreation and sporting activities and for the preservation of the natural environment. However, much of the land are under customary ownership where many decision making will be determined by the landowners.
Huhunama /Tovabada	1166			1166 (Rt)		Customary	Huhunama /Tovabada hills/ridgeline		
NapaNapa /Daugo Island	38.21			38.21 (Rt)		Customary	Daugo, Gemo & Lolorua Islands		
Taurama South	403.4			403.4 (Rt)		Customary	Tuna Bay/Taurama Beach	Proposed MPA by CEPA/JICA	Dogura Taurama Local Development Plan covers 3 LPAs and the Plan provide provision for open space recreation and sporting activities and for the preservation of the natural environment. It is similar to PNLDP as 95% of land are customarily owned and decision making vested with landowners.
Taurama /Dogura South	281.2			281.2 (Rt)		Customary	Bootless Inlet	Proposed MPA by CEPA/JICA	
Dogura North	1398			1398 (Rt)		Customary	Dogura Inlet/Dogura Beach	Proposed MPA by CEPA/JICA	

¹¹ Available amount include passive, active and natural as counted open spaces. TPO trees and open spaces currently being squatted by informal settlements are not counted open spaces.

APPENDIX B: (4) Rezoned Open Spaces by NCDPPB from 2005-2015 (yellow no record in NCD Zoning Plan)

Site Description	Area (ha)	Category of OS	Change of use	Suburb	LPA	Leasee/ Applicant	Date of Approval by NCDPPB
Vacant Seafront adjacent Portion 474 Granville & opposite Portion 711 Granville	4.5	Natural (seafront)	Commercial Subdivision	Idubada	9	Fernhill Ltd	Special Board Meeting No:S01/2015 on 16/10/2015
Portion 2487 Granville		Natural	Subdivision	Bomana	7	NDB	Meeting No.04 on 1/10/2015
Section 206, Lot 47 Hohola & Part Portion 172 REM Granville	5.0982	Natural	Subdivision design for Residential, Public Institutional & Public Utility zones.	Erima (Kookaburra St)	4	NCDC	Meeting No.02 on 7/05/2015
Portion 2800 Granville		Natural	Residential	8Mile		Joel Konga Kapena	Meeting No.02 on 7/05/2015
Section 135, Lot 20 Hohola	4.624	Active OS	Commercial (Constitutional Park)	Waigani City Centre	4	Celtex 77 Limited	Meeting No.06 on 17/12/2014
Part Open Space Adjacent to Section 07, Matirogo		Passive OS	Residential	Gabutu	2	Northern Management Consultants	Meeting No.05 on 6/10/2014
Portion 3169 Granville (along Healy Parade road)		Passive OS	Commercial	Koki	2	NCDC	Meeting No.04 on 31/07/2014
Part Drainage Reserve Adjacent to Section 46 Lot 18, Boroko	0.1353	Natural Drainage Reserve	Residential	East Boroko	3	Robert Nenta	Meeting No.02 on 28/03/2013
Drainage Reserve Adjacent to section 119 Lot 8, Boroko		Natural Drainage Reserve	Subdivision	9Mile	7	Sawan Tili	Meeting No.11 on 8/12/2011
Drainage Reserve adjoining Section 42 Lot 117 Boroko	0.1379	Natural Drainage Reserve	Public Utility	3Mile	3	Kiddie & Associates Ltd	Meeting No.11 on 8/12/2011
Drainage Reserve Hohola		Natural Drainage Reserve	Community Message Billboard	Hohola	5	Health Department	Meeting No.10 on 4/11/2010
Portion 1586, Granville			Residential	Hohola	5	Elly Korua	Meeting No.03 on 31/03/2009
S 136 L 08, Hohola, (Waigani Drive)	2.31	Passive OS	Commercial	Waigani City Centre	4	Port Moresby Country Club	Meeting No.11 on 12/09/2008
S 317 L 054 - 058 & 063 & 064, Hohola	0.796	Passive OS	Residential	Gerehu Stg 6	6	Wimble & Co. Limited	Meeting No.09 on 30/08/2008
S 206 L 45 Hohola (Gordons)			Residential	Gordons	4	Rubmit Limited	Meeting No.06 on 25/06/2008
Portion 2522, Granville			Subdivision design for Residential, Public Institutional & Public Utility zones.			Pastor Kenneth Kiri Moses	Meeting No.05 on 30/04/2008
S 406 L 30, Hohola (Lamana Heights)	0.4038	Passive OS	Residential & part public utility	Waigani City Centre	4	NCDC Physical Planning Officer	Meeting No.07 on 25/07/2007
4Section 349, Lot 3 Hohola	0.9208	Passive OS	Industrial	Gerehu Stg 2	6	Jixing Industries	Meeting No.07 on 25/07/2007
S 374 L 19, Waigani (Independence Hill)	3.182	Passive OS	Public Utility	Waigani City Centre	4	National Executive Council	Meeting No.02 on 22/02/2006
Section 26, Lot 11 Matirogo	0.5313	Passive OS	Public Institutional	Sabama	2	Church of Jesus Christ Latter Day Saints	Meeting No.11 on 12/07/2005
S 44 L 23 Granville	1.01	Active OS	Part Commercial	Konedobu	1	Tabudubu Ltd	Meeting No.01 on 26/01/2005
S 44 L 24 Granville	1.01	Active OS	Part Commercial	Konedobu	1	Tabudubu Ltd	Meeting No.01 on 26/01/2005
S 44 L 26 Granville		Active OS	Part Commercial	Konedobu	1	Tabudubu Ltd	Meeting No.01 on 26/01/2005

APPENDIX B: (5) Combine site inspection by NCDC & DLPP in 2014 and 2015.

No	Description	Suburb	Comments
2014 inspected sites			
1	Section 122 Lot 1 & 2 Hohola	Gordons	Description has now changed to Section 122 Lot 13 Unagi Park
2	Section 56 Lot 15 Boroko	East Boroko	China town market, NCDC legal title
3	Section 100 Lot 18 Boroko	East Boroko	Along Namu St, NCDC legal title
4	Section 195 Lot 1 Hohola	Between Hoho/Toks	Along Boraigaino rd, NCDC legal title
5	Section 195 Lot 13 Hohola		
6	Portion 1550 Granville	Ela Beach	Description now changed to 2031 Sea park no longer exist
7	Section 28 Lot 8 Granville	Ela Beach	Ela Beach recreation park
8	Section 81 Lot 9 Matirogo	Kaugere	Along Karius rd
9	Section 83 Lot 2 Matirogo	Kaugere	Kaugere Sports Oval
2015 Inspected sites			
1	Section 229, Lot 15 Hohola	Tokarara	Hohola carpark
2	Section 229, Lot 69 Hohola	Tokarara	Natural Ridgetop
3	Section 431 Lot 78 Hohola	Tokarara	Recreation park
4	Section 396 Lot 23 Hohola	Hohola North	Natural Ridgetop
5	Section 287 Lot 101 Hohola	Morata 1	Morata Sports Oval
6	Section 302 Lot 56 Hohola	Gerehu	Gerehu Sports Oval
7	Section 308 Lot 35 Hohola	Gerehu	Drainage reserve currently fenced off
8	Section 308 Lot 37 Hohola	Gerehu	Rezone to residential at National Appeals Tribunal (NAT).
9	Section 310 Lot 169 Hohola	Gerehu Stg 5	Squatter settlement
10	Section 310 Lot 170 Hohola	Gerehu Stg 5	Squatter settlement
11	Section 317 Lot 63 Hohola	Gerehu Stg 6	Rezone to Residential
12	Section 317 Lot 64 Hohola	Gerehu Stg 6	Rezone to Residential
13	Section 317 Lot 65 Hohola	Gerehu Stg 6	Drainage reserve
14	Section 349 Lot 3 Hohola	Gerehu Stg 2	Rezone to Industrial
15	Section 349 Lot 9 Hohola	Gerehu Stg 2	Drainage reserve
16	Section 347 Lot 4 Hohola	Gerehu Stg 2	Rezone to Commercial
17	Section 347 Lot 5 Hohola	Gerehu Stg 2	Rezone to Commercial
18	Section 393 Lot 2 Hohola	Gerehu Stg 1	Recreation park
19	Section 416 Lot 1 Hohola	Gerehu Stg 3B	Part rezone to commercial at NAT
20	Section 495 Lot 53 Hohola	North Erima	Sporting Oval

APPENDIX B: (6): Roles and Responsibilities of various Government Agencies responsible for planning, development and management of open spaces, recreational and sporting facilities.

Lead Agency	Government	Roles & Responsibilities
Conservation & Environment Protection Authority (CEPA)		One of its functions is to co-ordinate with provincial & LLG and sub-national authorities to foster manage and monitor environmental conservation strategies and programmes in the country. Also to establish and maintain zoological and botanical parks and gardens in relation to land under the care, control and management of the Authority.
PNG Sports Foundation		PNG Sports Foundation is responsible for planning, development and management of sporting in PNG. It also provides advice to matters related to the activities of the Foundation including maintaining facilities of the Foundation.
Department of Lands & Physical Planning (DLPP)		The sole responsibility of the DLPP is administered and manage land in PNG. The allocation of Land title must conform to the zoning of the land.
National Capital District Commission (NCDC)		<p>NCDC is responsible for providing essential municipal services to the city residents. Three divisions within the NCDC have a sole responsibility in the planning and management of the open spaces in the NCD.</p> <ul style="list-style-type: none"> Strategic Planning Section <p>Forward planning through preparation of local development plans and policies to guide land use and infrastructure development in NCD. The Strategic Planning ensure that all standards of open spaces and recreational areas are provided in the Plan in order to protect and maintained all open spaces from being lost to private interest and built development in the NCD.</p> <ul style="list-style-type: none"> Urbanization Section <p>Liaise with the DLPP for acquisition of land titles, valuation and facilitate cadastral survey.</p> <ul style="list-style-type: none"> Parks & Gardens <p>The Parks & Gardens Section under Community & Social Services Department is responsible for the development and management of parks and recreation facilities such as children's play equipment. Execute Clean and beautification program of the city through:</p> <ul style="list-style-type: none"> *Clean all major roads, medium strips, open spaces and reserves; *Maintain standards of all park facilities; and *Develop and upkeep of parks, playing fields and children's playing equipment's. <ul style="list-style-type: none"> Sports Desk <p>Ensure city residents are given maximum opportunities and avenues to participate in sporting, recreation and leisure activities. They also coordinate with National Sports Foundation for capacity building (short courses for referees, teachers for physical education and special needs/ disable courses).</p>
Private		<ul style="list-style-type: none"> PNG Gardener <p>Carry out beautification programs in the city. They are currently performing most of NCDC Parks and Gardens functions.</p> <ul style="list-style-type: none"> Port Moresby Nature Park <p>Port Moresby Nature Park is PNG's only combined botanical and zoological parks and gardens that promote PNG's flora and fauna. The only city's rainforest garden with established gardens of native plant species of over 11,000 native orchids, palms, heliconias and over 150 animals such as tree kangaroos, cassowaries, birds of paradise, parrots, pigeons, reptiles, wallabies and many more. Facilities include café, souvenir shop, picnic areas, haus-wins and barbecue areas. Over 12,000 people visit the park annually and internationally recognised as a zoo.</p> <ul style="list-style-type: none"> Adventure Park <p>Adventure park is located at 14Mile outside NCD boundary but heavily used by city residents for recreational purposes.</p>

APPENDIX B: (7A): Requirement of specific sports facility according to standards set by International Sport Authority¹².

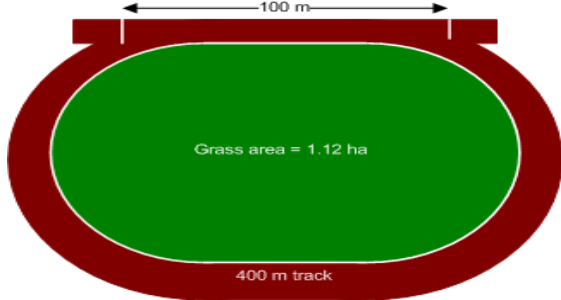
Sports Facilities	Requirement		World standard
	Land (ha)	Field	
Football field (Soccer)	0.62ha-0.82ha	100m X 64m (Min) 110 X 75m (Max)	Federation International Football Association (FIFA)
Rugby League	1.008ha	64-75m X 100-110m	World Rugby
Rugby Union	0.0428ha	144m long X 70m wide	World Rugby
AFL		135-185m long goal-to-goal and 110-155m wide wing-to-wing.	World Rugby
Netball court	0.133ha (1330m ²)	30.5m long by 15.25m wide	International Federation of Netball Associations (2001)
Basketball court	0.133ha (1330m ²)	28m long by 15m wide	International Basketball Federation (FIBA)
Tennis court	0.21ha (2100m ²)	23.77m X 10.97m	International Tennis Federation (ITF)
Beach Volleyball	0.0735ha (735m ²)		International Volleyball Federation (IVBF)
Volleyball		18m X 9m	International Volleyball Federation (IVBF)
Cricket	1.25ha; Lords 1.43ha	137m X 150m	International Cricket Council (ICC)
Softball	1.0117ha	65 ft base with 275 ft fence	World Baseball Softball Confederation (WBSC)
	0.607ha	60ft bas with 200 ft fence	
Baseball	0.83ha;1.12ha		World Baseball Softball Confederation (WBSC)
Swimming pool		50m	Federation International de Natation
Swimming pool		25m	
Gymnasium		73m X 33.5m 50m X 25m	Federation International Gymnastique (FIG)
Athletics Complex	2-3ha		Federation International Gymnastique (FIG)
Squash		9.75m X 6.4m	World Squash (WS)

¹² https://en.wikipedia.org/wiki/Australian_rules_football_playing_field; <http://ballfields.com/baseball-field-dimensions/space-needs-of-a-ballfield>;
http://www.pland.gov.hk/pland_en/tech_doc/hkpsg/full/ch4/ch4_text.htm;
<http://www.wikiwand.com/en/Hectare>; https://en.wikipedia.org/wiki/Rugby_union.

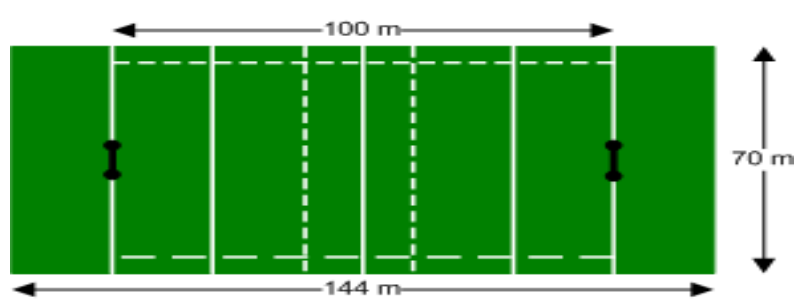
APPENDIX B: (7B): Specific sports field pictorial design

(<http://metricviews.org.uk/2007/11/how-big-hectare>)

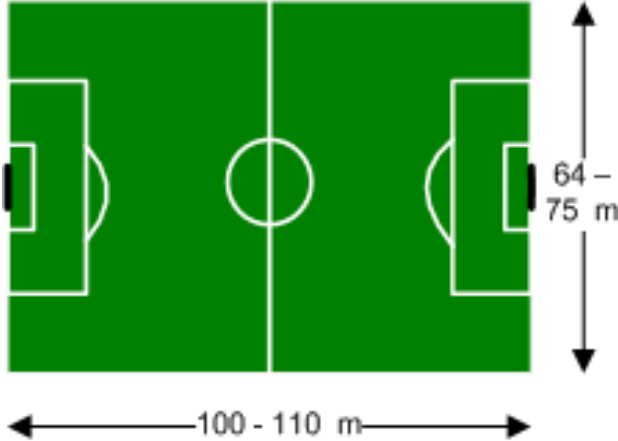
Athletics Track (1.2 ha inside the track)



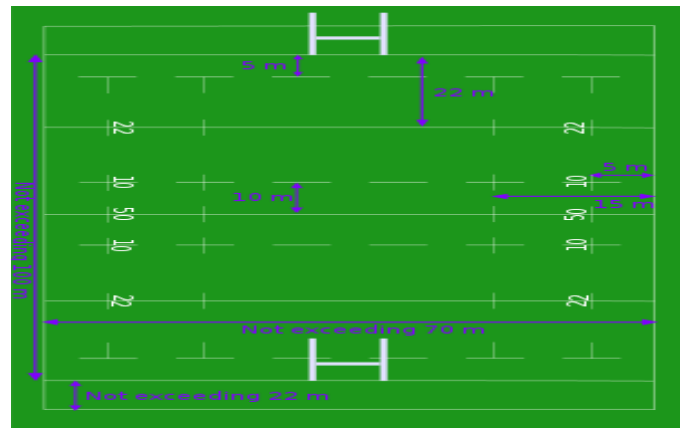
Football (International size: 0.62 ha to 0.82 ha)



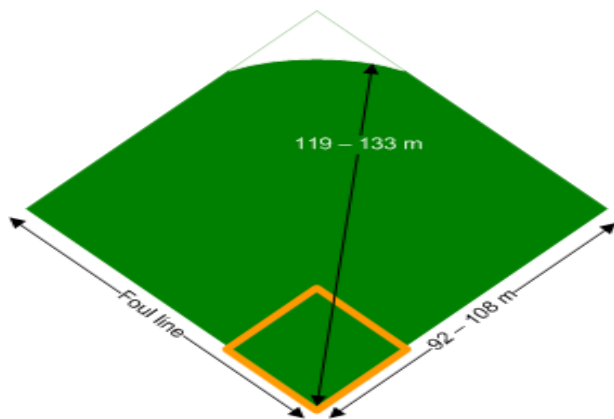
Rugby (International size: 1.008 ha)



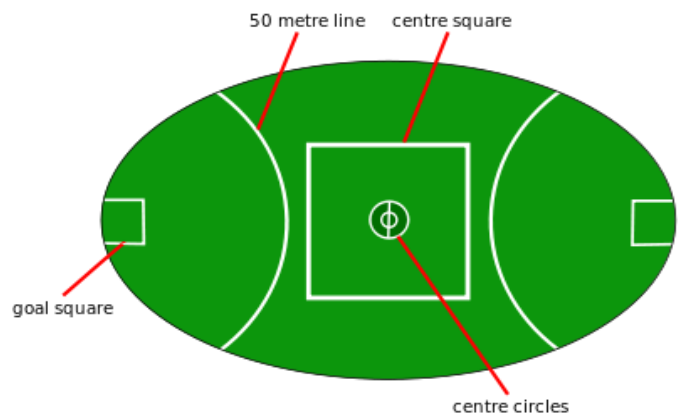
Rugby Union (144m long X 70m wide)



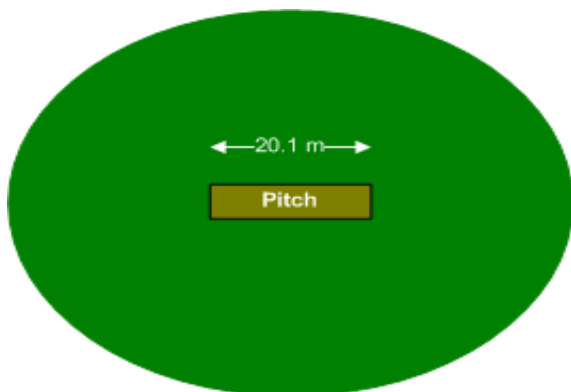
Baseball (Between 0.83 ha and 1.12 ha)



Australian Rules football field (135-185m X 110-155m)



Cricket (1.25 ha; Lords 1.43 ha)



APPENDIX C: Recommended Tree species for different Road Hierarchy in the National Capital District.

Scientific Name	Common Name
Main Arterial Road	
Plumeria	Frangipani
Cassia Fistula	Golden showers
Cassia Grandis	Pink showers
Cassia Nodosa	Pink and white showers
Polyalthia Longifolia	Pendula
Tabebuia	Roble tree
Delonix Regia	Royal Poinciana
Delonix Regia	Red fire
Eucalyptus	Gum tree
Roystonea regia	Royal palm
Elaeis guineensis	Palm oil
Casuarina	Yar tree
Ficus	Ficus
Distributor Roads	
Sloanea Australis	Maiden's Blush
Abies amabilis	Pacific Silver fir pine
Cocos nucifera	Coconut
Sylvestra Palm	Silver Date Palm
Cassia Javanica	
Cassia Brewsteri	
Cassia Siamea	Kassod tree
Cassia Rainbow showers	
Cassia Roxburghii	Rose showers
Delonix Regia	Orange fire
Delonix Regia	Gold cascade
Candle tree	
Indian Fur tree	
Chrysobalanus icaco	Coco plum
Collector Roads	
Ravenala Madagascariensis	Travellers palm
Washingtonia filifera	California Fan Palm Tree
Brahea edulis	Guadalupe Palm Tree
Cocos nucifera	Coconut Palm Tree
Copernicia alba	Caranday Palm Tree
Gmelina Arborea	
Median Strips	
Hyophorbe lagenicaulis	Bottle Palm Tree
Bismarckia nobilis	Bismarck Palm Tree
Veitchia Merrilli	Christmas Palm Tree
Chamaerops humilis	European Fan Palm Tree