NATIONAL CAPITAL DISTRICT COMMISSION

8/9 MILE INTERIM LOCAL DEVELOPMENT PLAN (2010 – 2015)

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Strategic Planning

Regulatory Services

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Glossary

In this plan, unless the contrary to the intention appears:

Developable Land	Land that can be feasibly developed without any costly engineering or environmental intervention.
District	For the purposes of Plan, planning areas clearly distinguished by boundaries of existing and proposed land uses as depicted on Map 13.
Landscaping	any development that modifies the visible feature of the area, including but not limited to 1) flora or fauna, 2) landforms, terrain or elevation, or 3) structures such as buildings, fences, etc.
Outcomes	A desired end result as a derived from implementing the Plan.
Physical Development	Carrying out of building, engineering, mining or other operations in, on, over or under land, or the making of any material change in the use of any building or other land.
Plan Area	The area of the Local Development Plan as depicted on Map 01.
Subdivision	Subdivision of an area of land into two or more parts.
Urban Design	Special arrangements which are guided by accepted principles to achieve a desired urban form.

Acknowledgements

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We take this opportunity to also acknowledge all those government agencies, non-governmental agencies and individuals who assisted us with valuable information in the Background and Research phase of the project.

Legal Basis

This 8/9 Mile Interim Local Development Plan has been prepared in accordance with Part VI of the Physical Planning Act 1989 and PART V. of the Physical Planning Regulation 2005. It complements the Building Act and Regulations (Chapter 301) 1994, Land Act 1996, and the National Capital District Act 2001.

The plan is a physical development plan which will guide the land use, physical and infrastructure development, economic and social aspects of people's livelihoods in the 8/9 Mile Planning Area as well as allow for an integrated and comprehensive concept of urban development.

SECTION 1 - INTRODUCTION

1.1 Introduction

The 8/9 Mile Planning Area is situated north of Port Moresby at 534, 850 mE and 8, 960, 120 mN. The Plan boundary is shown on Map 01.

The plan was prepared from a background study of existing land uses, physical environment and infrastructure within the plan area. The background study provided the inter-relationships between the various factors from which the appropriate land use plan and infrastructure expansion program that provided the best outcome on the quality of life was developed. It sets out the permissible uses and the controls to achieve the desired outcomes for each of the 8 districts within the plan area.

The overall population of the study area has grown from less than 3000 in the 1980s to 8,981 persons in 1990 and 26,686 in 2000. This is an annual growth rate of 10.96 %. This growth is way above the overall NCD annual growth rate of 2.7% demonstrating the areas dynamic high population influx within the inter-censal periods. Accordingly the population density rose from 2.1 persons per ha in 1990, to 6.1 persons per ha in 2000.

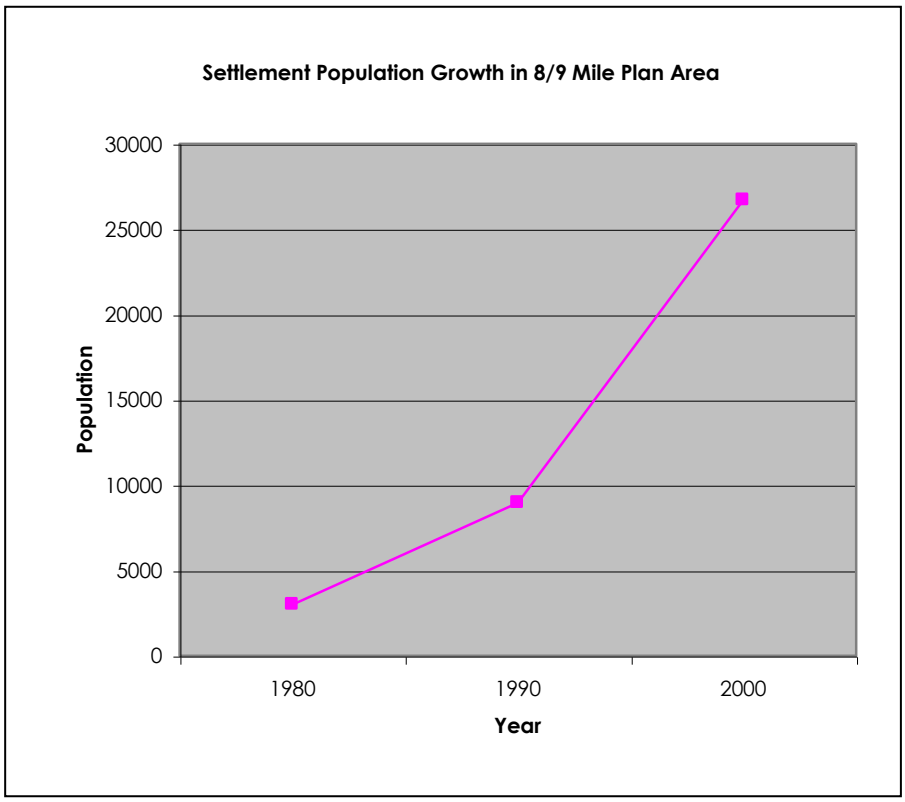

Figure 1: Population Growth

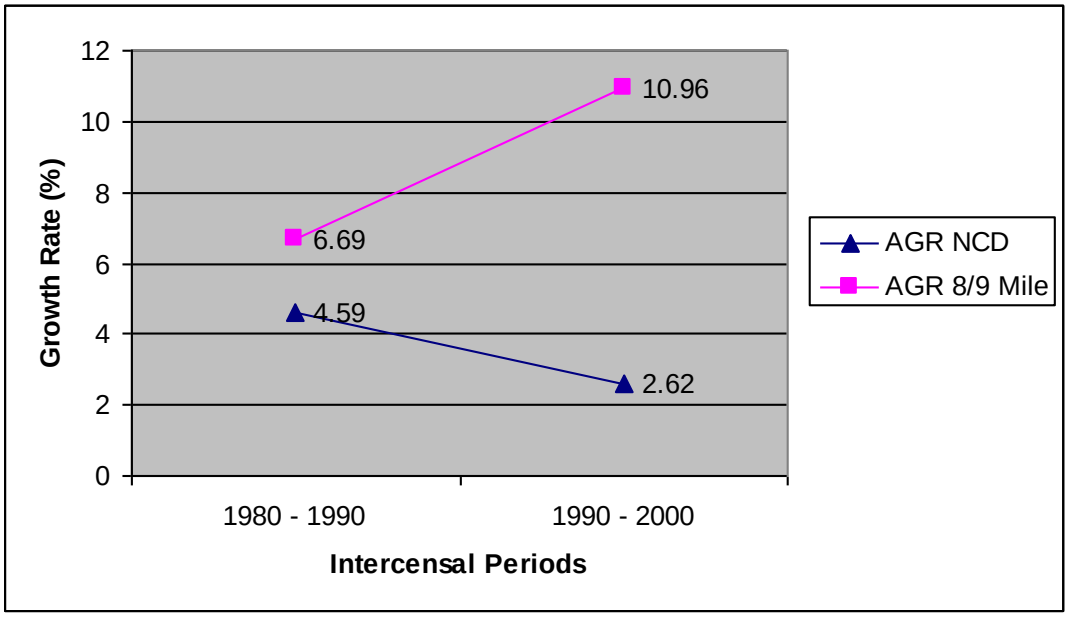

Figure 2: Intercensal Annual Growth Rate

The greatest challenge in the planning area has been the informal settlements and the associated social problems characteristic of most settlements. This is also seen as a threat to investment in development in the area and NCDC together with the National Government should find redress to this settlement problem. However, settlement growth is a result of lack of affordable housing in the city and the failure to identify and release land for housing developments.

About 70% of the people in the plan area live in settlements and self-help housing areas and fall under the low income earning bracket or are involved in informal sector activities.

This forms the backdrop of this plan, to create a sustainable community at an acceptable standard with exceptional habitable areas within a clean and safe environment in close proximity to employment, shopping, recreational and social services.

1.2 Role of the 8/9 Mile Area in the NCD Context

In recent years the 8/9 Mile area has witnessed a rapid influx of people settling in both the formal subdivisions for example the National Provident Fund (NPF) Housing Estate, and informal or settlement areas such as the 8 Mile Settlement. The area is sparsely developed with wide scope for expansion to accommodate the growing need and ease the high demand for developable land in the inner-city built-up areas.

Located along one of the main routes and at the eastern gateway to Central Province, the Plan Area will function as an interchange in transport and business. It can be seen as the nexus between the urban NCD and the rural Central Province.

The area will serve as a new urban district with supporting services and land uses. Its chief role will be for residential development with the introduction of industrial activities and commercial activities in the major and minor centers as the main economic base.

The area will make provisions for employment areas for unskilled and semi-skilled labour drawing supply of manpower from the settlements in the plan area. This will reduce cross-city travel and foster growth in the local economy of the area.

Adequate land will be given for housing developments to cater for the increased demand for land for housing in the NCD.

1.3 Existing Land Use

The composition of the existing land use in the study area is shown in Figure 3.

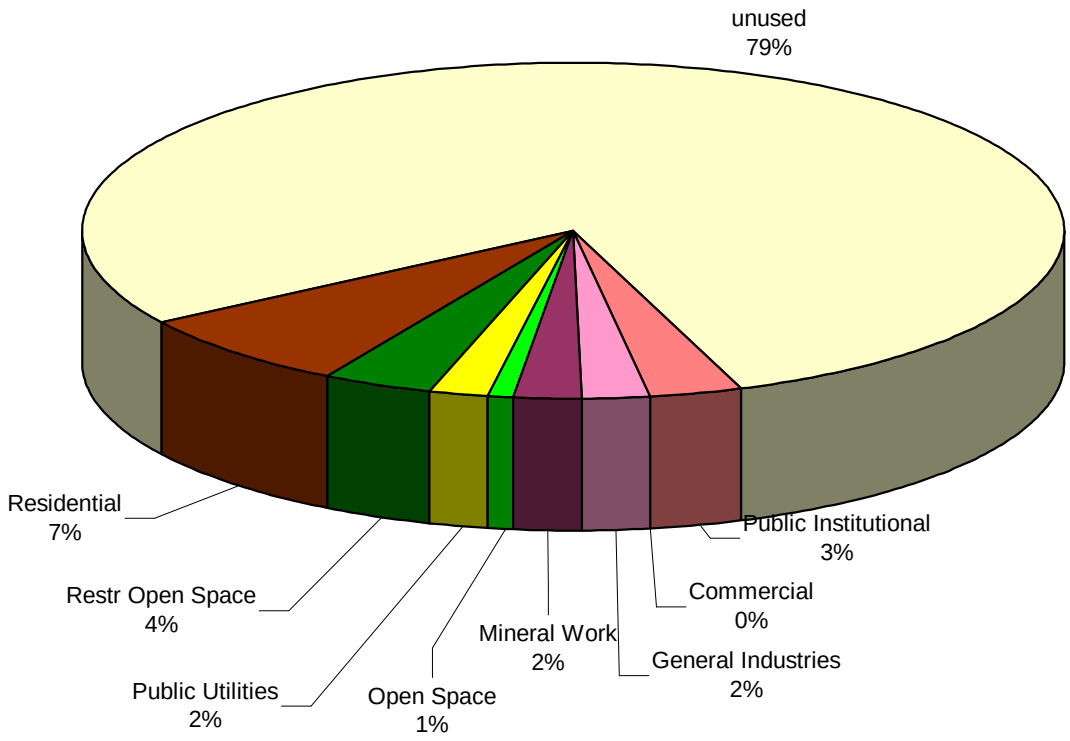

Figure 3: Existing Land Distribution Chart

Almost 80% of the land in the study area is unused, either undeveloped or not developable. Of the parcels of land under some utilization, Residential Use makes up the major land use followed by Public Institutional use. Commercial use is almost negligible due to its informal nature.

The plan area historically has been considered as a semi-rural area, because of the low intensity of development and its seclusion in-land from the main built-up areas of NCD due to its location.

Until recently the only significant developments in the area were the institutional areas of Bomana Police Training College, the Regional Prison, Catholic Institutions and schools, the Bomana War Cemetery, the Moitaka Showground and the Public Utility Facilities for example the Moitaka Power Station, the 9 Mile Cemetery and Mt Eriama Treatment Plant.

More recently large parts of the area have been developed as self-help housing and settlements. A lack of surveillance by the municipal authority has resulted in a rapid growth of settlement development with approximately 500 hectares occupied by settlements (2003).

1.4 Existing Zoning

The existing zoning of the Plan area is shown on Map 04.

These zones are approved by the NCD Physical Planning Board for the respective purposes and land uses. Although these land parcels may have been zoned and planning permission granted, in some cases, no development took place and planning permission would have since lapsed.

Much of the Plan Area is “White Land” or not zoned.

1.5 Constraints and Opportunities

Map 05 shows a general indication of constraints, opportunities and factors affecting development. Physical constraints exist as consequences of the landform, environment, and existing man-made developments. This means that they cannot be economically developed easily and require higher level engineering design and environment assessment.

Some features however, are not entirely constraints to development but can influence the outcome of the development in terms of the type, bulk, layout, height and design considerations. Other factors may include the current land ownership structure and land disputes that may arise in future.

Settlements have been included as a factor that can influence development. Even though they do not have legitimate land tenure, evicting them can be expensive and may result in many social and political implications.

SECTION 2 – PLAN OUTCOMES

2.1 Vision

It is hoped that the plan area will achieve its character in terms of:

- *A habitable area with building designs and urban form responsive to the tropical environment setting.*
- *A destination for major passive and active recreational needs.*
- *A major employment area for accommodating the private and public sector.*
- *Promoting sustainable communities of mixed background and cultures.*

2.2 Desired Outcomes

The desired outcomes of the Plan Area are based on the background study and are in line with the NCD Urban Development Plan Desired Outcomes and the NCD Settlements Strategic Plan.

2.3 Environment

A clean sustainable environment that is an integral part of the daily lives of the community as well as being an identifiable feature of the area.

BACKGROUND

There are four (4) principle hill features that include two (2) prominent ranges within the plan area. The ranges rise to about 250 metres above sea level at the highest peak and the valleys are generally less than 50 metres above sea level. The first range lies to the north west of the plan area and spreads south east through Neibiri and Rouna Quarries and the other lies in the south west of the plan area behind the Malolo and National Provident Fund Housing Estates. Some of the ridge reliefs have considerable rock and soil exposure and liable to erosion if disturbed.

Photo 1:View of the Neibira Hills from East Morata

The terrain is generally described as flat with undulating hill slopes interspersed between the principle ranges. This presents an excellent potential for urban development. The topography of the study area is shown on Map 23.

Photo 2: Savannah grassland in the East Morata District

Photo 3: View of the ranges from Mt Eriama

Savannah grassland, the most common vegetation type around the plan area, comprises shrubs and trees including several native species of *eucalypts* (Eucalyptus alba, E. tereticornis) and Protium spp, Albizia procera, and Cycas circinalis. It also intermingles with other exotic plant species and common grass species for example the *kunai grass* – Imperata cylindrical. Other native species of trees and shrubs observed in the both the developed and undeveloped parts of the plan area include Schefflera spp, Terminalia catappa, Mangifera minor, Cocos nucifera, Pandanus and Betelnut.

There is no proper account of the number of exotic plants introduced into the plan area. However, common plants observed in the area include the Samanea saman (rain tree), Cassia fistula, Hibiscus roseus, Azadarachta indica, Lucina, Gmelina arborea and other species of the same genus Gmelina. Most are highly adaptive to the dry condition of Port Moresby and have become naturalized. They are also highly competitive against the native flora.

Photo 4: Section of the Laloki River at De LaSalle Secondary School

Photo 5: Visible effects of erosion of the Laloki River

Photo 6: Rice fields at Pacific Advertist University

There are three main surface water courses within the study area: the Laloki River that forms the northern boundary of the plan area, Erima Creek to the east of the plan area, that follows the northerly direction into the Laloki River and the Iwa Garu Creek that also runs in a northerly direction in the western part of the plan area draining into the Waigani Swamp. There are also small streams with seasonal flow, which drain into the Laloki River or the Waigani Swamp.

The *Laloki River* catchment located in the Central Province is 440 km^2 in area. The length of the Laloki River that spans the northern boundary of the plan area is 44.45 km. The only known and documented data of water abstraction from the Laloki River is by Eda Ranu at the rate of 1.6m^3/s throughout the year for Port Moresby water supply. However, there are small operators and individuals along the river who extract water for irrigation, livestock farming and domestic use. Their use of water is unregulated and points of operation cannot be determined and actual abstraction rates can not be established. Nonetheless, the annual water abstracted by Eda Ranu in terms of annual volume is about 50.5 million cubic meters.

Management of water-ways is important to preserve the health of the rivers and creeks systems. At present the NCD's water supply is being drawn from Sirinumu Dam which is at the head of Laloki river system in the Central Province. However, in the future there might be a need to draw water downstream within the plan area.

The preservation of the natural river flow rates are important for the local aquatic flora and fauna as well as the aquifers that recharge ground water supplies. Therefore, a control on water extraction and diversion is important for the river or creek's sustainability.

There are also three larger-sized ponds in the Plan area: one in the Cloudy Bay property, another in the Rouna Quarry and the third one at the Nebiri Quarry. The two former ones are naturally occurring ponds while the latter developed as a result of the quarrying activities in the area. Anecdotally, they are all filled with natural spring water and the water levels are mostly constant.

The economic use of this springs need to established in light of the surrounding developments. However these environmental assets can be a feature attraction in for the plan area.

Photo 7: Pond at Cloudy Bay

Photo 8: Pond at Rouna Quarry

The Strategies to achieve this environment sustainability include:

- The ridge tops above 90m from sea level at Mt Eriama and Neibira Ridge should be free from all developments and maintained for their natural and landscape values.
- Encourage proliferation of native trees and plant species and control use of introduced exotic species.
- Ensure that major water courses of Laloki River, Erima Creek and Iwa Garu Creek are protected from contamination and degradation. Any development that will impact these streams and river systems must meet the requirements of the Environment (Water Quality Criteria) Regulations 2002 which provides the guidelines for the protection of aquatic life.
- Ensure that the Laloki Catchment Management System project proposal submitted by the Department of Environment and Conservation to SOPAC to promote the sustainability of the available water resources for economic, social and environmental benefit of the people residing in the catchment and Port Moresby City is approved for donor funding and established.

- Natural drainage ways should be developed using appropriate engineering design.
- Regulate extraction from Laloki River to maintain and control quality and quantity.
- Water pools resulting from quarrying activity should be protected from contamination and degradation.
- Establish proper management of waste collection and disposal system for general and hazardous waste in the area.

2.4 Economic Vitality

A thriving economy that is diverse and equitable establishing 8/9 Mile as a major employment area servicing the manufacturing and downstream processing needs of the NCD.

BACKGROUND

The actual contribution from the study area to the Gross Domestic Product of the NCD cannot be ascertained. However the level of economic activity can be described as low only in comparison with other established centers like Boroko, Waigani and Port Moresby Town. Apart from limited industrial activities from the Northern District Sawmill, Rouna and Nebiri Quarries, Moitaka Power Station and Gouna Eggs which provide some employment opportunities, the area depends mostly on the informal sector for its wellbeing. Thus *liklik stoas* and road side markets selling cheap consumables, snacks and *betelnut* are common in the area. Some settlement areas like the 8 Mile Settlement and Laloki Block cultivate vegetables and fresh produce to sell at the markets in other parts of NCD.

Some concentration of local economic activity can be observed at the 9 mile intersection around the Market area. However, these are informal businesses which developed around the market and PMV stop.

Photo 9: 9 Mile Market

Photo10: Entrance to Bomana Police College

Photo 11: Bomana Jail

Photo12: Cloudy Bay Timber Yard

Photo 13: Rouna Quarry Yard

The main employment areas are institutions under the government and churches. The private sector is limited to industrial activities especially in the quarrying, timber processing, water-treatment plant and thermal power plant, most of which are heavily mechanized therefore the rate of employment is very low. The Rouna Quarry for example, has more than 1000 employees, half of which are laborers with little or no formal education. Most of the employees live and commute to work in and around the 8/9 Mile area. The level of income generated by most workers in the area is approximately K350 – K400.00 per fortnight. The Bomana Police and Correctional Service College is the largest establishment followed by the Bomana Prison.

Strategies to achieve economic vitality include:

- Establish clear commercial retail centers in the 8/9 Mile areas.
- Protect existing employment areas such as the Bomana Correctional Services and Training College.
- Establish new employment areas for 8/9 Mile Area.

- Promote 8/9 Mile as the Industrial Area of the NCD.
- Recognize 8/9 Mile LPA as the gate way to Central and Gulf Provinces and establish a whole-sale center for fresh food transported from these two province.
- Promote low-scale commercial agricultural/horticultural and grazing activities at the designated periphery areas.

2.5 Social Services

Social services that are equitable and accessible to all cross-sections of the community in the 8/9 Mile area.

2.5.1 Schools

BACKGROUND

The implementation of the restructured education system in the year 2000 has contributed to a decrease in the number of drop outs and an increase in the number of school students in NCD. The Plan Area contains approximately twelve (12) learning institutions both government-run and private, taking care of the local area, the provincial and regional needs. Table 1 below provides an overview of the existing educational facilities in the Plan Area taking into account the student-to-teacher ratio. The enrollment rates of New Erima Primary and Evadahana Primary Schools are notably high with high student-to-teacher ratios. The current provision of educational facilities demonstrates that there is a need for new educational facilities to be established and sites for expansion of existing classrooms identified. To address this perceived shortfall NCD Division of Education proposes that an additional secondary school and a technical and vocational centre be built in the Plan Area.

Any new proposal for schools should be based on accessibility, distance and political objective. Existing learning institutions are shown on Map 07.

Table 1: Existing Educational Facilities

Facility	Location	Agency	Current Enrollment	Total No. of Teachers/Lectures	No. of Classrooms	Student/Teacher Ration
Elementary						
Peter Torot	8 Mile	Catholic	281	6	2 blocks	47:1
Laloki	Laloki	Proma	No information available			
Evadahana	9 Mile	Government	711	18	6 blocks	40:1
Bomana	Bomana	Government	474	12	4 blocks	40:1
New Erima	Erima	Government	550	12	3 blocks	46:1
Primary						
Evadahana	9 Mile	Government	1134	37	28	31:1
Bomana	Bomana	Government	750	22	23	34:1
Moitaka	8 Mile	Government	Now closed			
New Erima	Erima	Government	1653	26	30	64:1
Christian Academy	8 Mile	Government	No information available			
Secondary						
Marianville	Bomana	Catholic	656	32	15	21:1
Della Salle	Bomana	Catholic	879	35	20	25:1
Tertiary						

Bomana Training College	Bomana	Government	165 per intake (bimonthly)			
Other						
Catholic Seminary	Bomana	Catholic	132			

Source 1: NCD Division of Education, 2010

Photo 14: Marianville Secondary School

Photo 17: Evadahana Community School

Photo 15: Moitaka Primary School (closed)

Photo 16: Day care centre at Bomana Police College

2.5.2 Police

Police presence in the area is visible daily as the area accommodates two major Police institutions. However, the actual community policing in the area is very minimal with only one police sub-station at 9Mile NPF Estate. This provides for a ratio of one policeman to over 10,000 people. Crime rate in the area is comparably low but daily occurrences of petty crimes are not uncommon.

Photo 18: Police Post at 9 Mile

2.5.3 Health Services

There are three health clinics in the study area, two of which serve the government institutions of Bomana Correctional Institute and Bomana Police College. The other is the 9 Mile Clinic operated by a Non-Government Organization, Hope World Wide. These clinics provide only outpatient care as well as maternal and child care services. Major cases are referred to the Port Moresby General Hospital.

Photo 19: Nine Mile Clinic

The 9 Mile Clinic staffed by a total of 17 employees comprising one Doctor, one Health Extension

Officer, seven Nursing Officers and eight Community Health Workers, on average serves 110 patients a day. Of the 110 patients approximately two thirds are adults.

Strategies to achieve accessible social services include:

- Locate social services in designated centers so that they are close to the residents.
- Establish a hierarchy of school system to provide for educational needs and options for the community.
- Establish police and law enforcement agencies presence in convenient locations in the districts to maintain law and order and increase community based policing.
- Establish a medical and clinical service in the districts in line with the Department of Health's required standards which can be easily accessible to the communities.
- Establish one major referral hospital which can cater for the 8/9 Mile area and other areas within the outer north-eastern region.
- Encourage good designs of streetscapes and buildings to create a safe and secure environment and promote civic pride.

2.6 Historic & Cultural Setting

The footprints of recent and past history of the region found in the 8/9 mile area is preserved and appreciated by the residents and visitors to the area.

BACKGROUND

Photo 19: Blasting at Rouna Quarry

The study area has a strong association with the regions past and recent history. Of significance is the Neibiri Hill and Mt. Eriama. Archeological investigation by the PNG University has revealed a traditional burial site at the Neibiri Hill area while Mt. Eriama was a traditional source for ochre used for body paints and for artifact decorating. Artifacts found on the site include pottery, shells and stones. Traces of these artifacts were found in the coastal regions of Boera indicating past interactions. Unfortunately, Neibira Hill is a subject of active quarrying and there is a high likelihood that most of these artifacts have been destroyed.

Photo 20: Bomana College Drive

The current Bomana College Drive runs over what was once known as 12 Mile Drome or otherwise called Berry Drome, which is a significant Royal

Australian Airforce aerodrome named in honor of pilot Mathew Jack Berry during World War 2. Built before the current Jacksons Aerodrome, Berry Drome was made up of 112m of crushed rock and pit gravel runway having 40 dispersal bays and 4 alert bays that could accommodate 15 fighter aircraft.

The Bomana War Cemetery was first used in 1942 by the Australian Medical Unit. Today it is one of the most significant historic sites in the country accommodating close to 4000 graves of soldiers who fought during World War 2. This site continues to attract war veterans, history students, diplomats, tourists and casual visitors all year round. This is an iconic site in the plan area and must be preserved.

Photo 21: Bomana War Cemetery

9 Mile Cemetery is a public cemetery located off the Sogeri Road at Nine Mile and accommodates more than 1000 graves. For Papua New Guineans, this is a significant site as burying their dead here legitimizes their connection to Port Moresby as their “home”. With the current burial rate, the site will soon reach its capacity. Further expansion is not possible as it is restricted by the Mt. Eriama Ridges. A new burial site for the city is urgently required soon.

Established during the colonial period in the 1950s and 1960s is the Nine Mile Kerema Settlement by quarry labourers from Malalaua in the Gulf Province. The settlement has since expanded with inhabitants originating from all over the country.

Photo 22 & 23: Views of 9 Mile Cemetery

Strategies to preserve historic and cultural sites include:

- Ensure all historic sites such as Neibira Hill and Mt Eriama are properly investigated and declared under relevant legislations.
- Establish a cultural and history centre which the visitors and residents can visit for educational and recreation purpose.

2.7 Settlements Upgrading

Settlements living standards reach a satisfactory urban level through self-help schemes and are controlled.

BACKGROUND

Settlements are one dominating feature of the Plan Area and therefore critical in consideration in the urban expansion of this area. Settlements such as the 8 Mile Settlement, Moitaka Ridge, Laloki Block have evolved around sources of food and water, while Kerema Block and Makana settlements were established near locations of prospective economic opportunities and employment. Settlements in the study area are characterized by low-set shanty type buildings to semi-permanent buildings without any consideration as to the spatial planning of the overall layout.

Settlements make up about 500 ha of the plan area and are steadily growing in absence of proper control.

Strategies to achieve settlements upgrading include:

- Require upgrading of houses in the settlements at 9 Mile Settlement, Morobe Block, Eight Mile, Moitaka Wildlife, Moitaka Ridge, Kerema Block, Makana Block, Laloki Block, Vanuatu Turn-Off and Moitaka Ridge to meet basic standard, by removing poor house types and control the dominance of settlements as the main feature in the 8/9 mile area.
- Stop all unauthorized buildings and use of land that can grow into squatter settlements and restrain area covered by settlements/self-help housing under 500 hectares
- Road access within the above settlements should be upgraded to meet applicable NCDC Design Standards and should satisfactorily accommodate the local traffic.
- The recognized settlements should be connected to the water and sewerage network grid when it is established.
- Ensure liklik stoas meet minimum standards –*see Liklik Stoa Policy*

2.8 Transport & Road

A road network that connects the whole 8/9 Mile area with efficient mobility between vital areas.

BACKGROUND

The plan area is connected from the inner city through the Hubert Murray Highway. The Highway then forks out into the Sogeri Road running north-east and the Hiritano Highway which heads north. The major nodes in the area are linked by sealed collector roads. However, most local accesses consist of gravel and dirt road with poor geometric design.

A proper traffic count is vital to assess the volumes and vehicle types on the Sogeri Road and Hiritano Highway. However, a generous road reserve width should be allocated to cater for the future widening of the road.

Due to the informal nature of most of the settlement areas there is lack of internal street network and connectivity in these areas. The existing accesses have poor setbacks and at some points can only allow for one vehicle to pass at one time.

Lack of maintenance to key road trunks have resulted in deterioration of road pavements and failure of road cross-sections in some segments of theses roads in the plan area. There are some evidence of road patching however, poor practices and techniques have resulted in short life of the patches.

Photo 24: McGregor Barracks Road

Photo 25: Sogeri Road (Nine Mile Cemetery Section)

It can be observed that the main reason for the use of PMV buses is to commute to the inner city rather than for local destinations. The area is poorly served by the PMV buses due to the road conditions and the distance into the inner city which means higher operating costs. It can be observed that due to the high demands, it is normal for PMV buses to carry more than the legal capacity of passengers. This is unsafe and does not provide the expected passenger safety and comfort. The PMV buses are seen to be the main transport for market produce from the area.

Strategies to encourage proper road connectivity include:

- Develop all major road trunks routes within the 8/9 Mile to connect the various proposed land uses.
- Establish a legible road hierarchy for the 8/9 Mile Area.
- Establish a bus service to cater for the local transport needs for 8/9 Mile area.
- Establish a major PMV transit station to cater for exchange into Port Moresby and to Sogeri and Hiritano Highway
- Implement the construction of the Gerehu – Dogura Arterial Road.
- Ensure that road designs meet the applicable standards approved by NCDC, as to the carriage width, design speed, horizontal curves, vertical curves, super-elevations, gradients, etc.

2.9 Infrastructure Services - General

All growth areas are adequately serviced with physical infrastructure with potential for further expansion.

BACKGROUND

Infrastructure services in the plan area is limited and connected to specific sites. Map 12 shows infrastructure networks.

2.9.1 Water Supply

Water supply is limited to public institutions and some residential subdivisions. The rest of the area receive water through water tanks, fetch from nearby creeks, or tamper with water pipes to get water. Eda Ranu Water Company is not able to supply water to most sites as they are not properly planned and do not have proper land ownership instruments, which is the company's security for cost recovery. Water can be supplied throughout the plan area by upgrading some of the existing water mains to 500mm diameter pipe size and installing new ones on the existing trunk routes. Mt Eriama is the one main water treatment plant in the area that serves parts of the area and the entire NCD.

2.9.2 Sewerage

Sewerage in the plan area is disposed only through septic tanks in formal areas and pit latrines in settlements and low cost housing areas. A major capital works is required to put in a reticulated sewerage system for the plan area.

2.9.3 Electricity

Electricity supply is available throughout the study area. In settlement areas there are indications of some connection however; it is haphazard and substandard and follows no fixed systems network. This is dangerous and must be upgraded to meet PNG Power Ltd standards to ensure safety of the users.

According to PNG Power Ltd there is already provision for electricity in the vicinity of 8/9 Mile Area with power supplied from Rouna Hydro and transmitted at 66 KV to Bomana Substation located opposite the old Showground. There is also a 33 KV single line circuit from Rouna 1 & 3 to Bomana Substation. It is envisaged that the Bomana Substation is supplying power to the entire Plan Area with sufficient capacity to meet current demand and future load growth.

General Capacity:

- Peak Demand - 78 MW
- Available System Output - 73 MW

PNG Power supplies 180 mega watts to service the entire city of Port Moresby, however with increase in the population and urban development there is a need for an additional supply of 100 mega watts.

The current power development outlook requires an additional 12 MW thermal in the years 2008 & 2009 and a major additional power supply is required around 2013, depending on the load growth and retirement of Moitaka diesels.[1]

PNG Power has plans to increase the current power supply with two new units that were commissioned on 17th July 2008 at the Rouna 2 Power Station and the arrival of Moitaka's 13 MW Gas Turbine 2 machine from New Zealand. The machines will decrease the need for load shedding throughout the city.

2.8.4 Telikom

Telikom PNG Limited's main telecommunication main copper cables network cover the main areas of the plan area. However, with the introduction of the wireless fixed line service and VSAT and ADSL broadband service the area can be adequately covered with respect to voice and data transmission requirements. Mobile telephone coverage is available in the area.

Strategies to make available Utility Services include:

- Implement immediate service infrastructure expansion to the various land uses in 8/9 Mile Area based on current and future demands.
- Ensure that all development applications for new subdivisions comply with Section 81 of the Physical Planning Regulation 1989 by providing standard infrastructure services together with social services to the community.

[1] **Brown River Hydro Power Development Report for Port Moresby Power Supply by PNG Power Limited.**

SECTION 3 - CONTROLS

3.1 Plan Structure

The plan area has been divided into eight (8) districts for ease of planning based on the location and the surrounding features.

These include:

1. Core District
2. Moitaka/8 Mile
3. Bomana
4. Iwa Garu
5. Neibira
6. Mt Eriama
7. Eriama East
8. Morata East

3.2 Plan Controls

This section of the report covers the development controls necessary to attain the desired outcomes for each district.

A specific outcome of each district is outlined taking into consideration the district's location in the plan area, its unique features and the district's function in relation to the vitality of the plan area. The strategies outlined to achieve this outcome have evolved from the background study of the area and an effort is made to ensure that they encapsulate the basic minimum requirements of the Physical Planning Regulation.

3.2.1 District 1 – Core District

Overview:

The area forms the central low land region of the 8/9 Mile Plan Area containing residential areas at the center and the McGregor Police Barracks and the City Cemetery on the west and easterly fringes.

Character:

The main locus of the area is the major road intersection from which the Sogeri Road turns east to Sogeri while the Hiritano High runs north to Kairuku and Kerema, and Hubert Murray returns south to the Port Moresby Down Town. The area is characterized by the detached housing and dual occupancy developments in formal subdivisions within the NPF Estate and the McGregor Barracks stored away from vast track of open space towards east and south.

Outcomes:

A central business node is established, creating the main administrative and commercial centre for the 8/9 Mile area with ancillary uses and amenities.

Strategies:

- *Establish a main commercial area as the business district for 8/9 Mile area.*
- *Retain 120 ha of land over the Old Moitaka Show Grounds and near Mc Gregor Barracks for government uses.*
- *A referral hospital is established to deal mainly with in-patients to cater for local and inter-provincial tertiary level health care demands.*
- *A high school is established to enroll local school age population in addition to Marianville and Della Salle Secondary Schools, whose intakes currently are mostly from cross-city.*
- *The 9 Mile Cemetery is properly planned and managed to ensure prolong use as site for burial, remembrance, genealogical research and passive recreation.*
- *A modern multi-purpose sports stadium is established adjacent to the main transport route as a venue to host international, national and local sporting events, encouraging healthy lifestyle through active recreation.*
- *A mix residential area is established with proper urban design having a medium to high covenant type residences.*
- *An industrial land of not more than 10 ha is established to cater for light/ low-impact industrial needs of the central business node.*
- *Resist developments on all ridge tops in order to maintain their natural and landscape values.*
- *Maintain that all buildings meet the requirements of the Building Design Checklist Policy.*

- *Ensure infrastructure expansion covers this district.*
- *Promotion of good quality design of streets that provide a safe public realm and a distinct sense of place.*
- *Appropriate landscape treatment should be required along the streetscapes to create attractive vistas on main roads.*
- *A safe and secure pedestrian network should be established to link the various uses with minimal conflicts with, and having clear separation from vehicular traffic.*
- *Where appropriate traffic calming measures should be introduced to enhance safety within the central business node.*
- *Sufficient community areas should be established with essential public amenities.*
- *Due consideration is given to the likely effects of height, bulk, scale, orientation and appearance of any proposed development.*

Specific Outcomes:

In the Commercial Zone: -

- *Lands primarily accommodate offices for business, shops, catering shop, restaurants and business support services, together with mixed use residential and tourist accommodation.*
- *Residential and tourist accommodation is only provided above ground level in mixed use developments.*
- *Built form is commercial and modern in design incorporating appropriate landscaping treatment.*
- *Noise from the Sogeri Road traffic is attenuated through techniques such as buffers and/or appropriate built form and design.*
- *Land uses provide sufficient on-site car parking to avoid increased demand on public parking areas.*
- *Multi-storey or underground car parking must be encouraged to ensure efficient site use and to avoid large expanses of ground level parking.*

In the Public Institutional Zone: -

- *Lands primarily accommodate Government offices, Technical College, High School and Regional Hospital.*
- *Residential developments are ancillary to the institutional establishments and within easy walking distance to schools, bus-stops, shopping area and public open space.*
- *Developments are responsive to the climate, landscape and character of its locality.*

In the Residential Zone: -

- *A high quality living environment is created which capitalizes on the sites proximity to the wide range of amenities available in the commercial centre.*
- *Lands primarily accommodate residential development of a wide variety of urban housing forms ranging from detached houses and dual occupancies to multiple dwellings and accommodation building types.*
- *Non-residential uses are associated with residential land uses and do not have significant adverse impacts on residential amenity.*

In the Industrial Zone: -

- *Land primarily accommodates light industrial uses complementing the function and character of the main commercial area.*

In the Open Space Zone: -

- *Land primarily accommodates the ridge top protection and sports and recreation.*

In the Public Utilities Zone: -

- *The land accommodates the public cemetery.*

Use		Max Height	Car Parking	Min Site Area	Max Site Coverage	Min Setback
Commercial	Offices Hotels Residential flats (consent)	12 Storeys total above natural ground level, measured at the façade, inclusive of ground floor	1 space per 50m^2 of GFA of Office space, Hotels; 1 space for every 5 hotel rooms plus 15 spaces per 100m^2 if restaurant or function room included, and 1 space per 2 residential flat rooms.	300m^2	70%	n/a
	Retail Shops	2 Storeys, including ground floor	Minimum 1 space per 60m^2 of leasable floor space	300 m^2	70%	n/a
Light Industrial		3 storeys or 12 meters from natural ground level, whichever is the lesser	1.3 spaces per 100m^2 of gross floor space plus	300m^2	60%	Buildings and car park areas are set back not less than 10m from an arterial or local distributor road frontage, or 5m from any other road frontage
Residential	Dwelling houses	2 storeys or 8.5 meters whichever is the lesser	2 spaces on site for single occupancy. For dual occupancy requirements are minimum 1 space onsite per dwelling under 125sqm	300m^2	70%	i. 4.5m from primary frontage ii. From side boundary:
	Residential	2 storeys or 8.5	1 bedroom unit : 1 space			

Use		Max Height	Car Parking	Min Site Area	Max Site Coverage	Min Setback
	flats for multiple occupancy	meters whichever is the lesser	2 bedroom unit: 1.25 space per unit 3 bedroom unit: minimum multiple 1.5 spaces per unit. Visitor parking: 1 space per 4 units			A.1.2m B.3m from the secondary frontage if abuts more than one street
Institutional	Learning Establishments	3 Storeys, or 12 meters whichever is the lesser	Minimum of 1 space. Plus 1.5 car space per staff plus 1 car space per 5 ancillary employer plus 1 car space per 15 students plus a minimum of 5 car spaces for visitors.	2 ha for primary schools, 8 ha for day high school, 30 ha and for boarding high school	60 %	10m from primary frontage
	Churches, Places of Public Worship	Treated on its merits but should be consistent with adjacent zone.	Each application will be treated on its merits, with a parking assessment report required. As a guide, the provision of 1 space per 10 seats is recommended. The need for additional parking for church halls should be assessed on merit. The parking study should take into account the supply of and demand for parking in the vicinity of the site at the time of the proposed use of the site.	Each application will be treated on its merits and assed on its bulk, scale, height and character of the locality.	50%	10m from primary frontage

3.2.2 District 2 – Moitaka/8 Mile

Overview:

The area has the largest multi-ethnic squatter settlement in the whole of the study area and is one of the fastest growing urban settlements in NCD.

Character:

The area is characterized by densely clustered low cost shanty type dwellings to medium covenant dwellings with no systematic layout, backing up to low rolling hills. The settlement is poorly setback from a deteriorating road access. A line of low lying hills cordon the squatter settlement therefore it is not visible from the Hubert Murray High Way. The areas near the Erima creek flowing north westerly through the area are normally inundated through out. The utilities services are haphazard and substandard.

Outcomes:

A low to medium cost residential area encouraging self-help housing with related amenities with emphasis/ giving prominence to informal sector activity/home based industry.

Strategies:

- *Undertake a master plan that creates allotments that meet the legal standards, with appropriate allocation of land uses and amenities and road network within the district.*
- *Develop a "core house" concept that is affordable and efficient for the area and its low income residents.*
- *Ensure infrastructure expansion covers this district.*
- *Maintain development within the master plan area and prevent further informal development outside this district.*
- *A commercial area is established to provide for the daily retail needs of the District and its adjacent areas.*
- *Improve the primary school to cater for the local school age children.*
- *A pedestrian foot path network is introduced to service the community more than 80% of whom do not own vehicles.*
- *Encourage developments that are responsive to the climate, landscape and character of its locality.*
- *Appropriate reserves and setbacks are established along the main transport routes with clear separation from pedestrian footpath.*

- *The natural water-ways should have ample land reserves to protect the riparian zone along the bank.*
- *Promotion of good quality design of streets that provide a safe public realm and a distinct sense of place.*
- *Bus-stops are provided along Moitaka Road.*
- *Community Area should be established for community use.*

Specific Outcomes:

In the Institutional Zone:

- Land primarily accommodates the Primary School

In the Commercial Zone:

- Lands primarily accommodate a shopping centre to cater for daily shopping requirements for a population of 10,000 people.

Use		Maximum Height	Car Parking	Minimum Site Area	Maximum Site Coverage	Minimum Set back
Institutional	Learning Establishments	3 Storeys, or 12 meters whichever is the lesser	Minimum of 1 space. Plus 1.5 car space per staff plus 1 car space per 5 ancillary employer plus 1 car space per 15 students plus a minimum of 5 car spaces for visitors.	2 ha for primary schools, 8 ha for day high school, 30 ha and for boarding high school	60 %	10m from primary frontage
	Churches, Places of Public Worship	Treated on its merits but should be consistent with adjacent zone.	Each application will be treated on its merits, with a parking assessment report required. As a guide, the provision of 1 space per 10 seats is recommended.	Each application will be treated on its merits and assessed on its bulk, scale, height and character of the locality.	50%	10m from primary frontage
Commercial		2 Storeys, including ground floor	Minimum 1 space per 60m^2 of leasable floor space	300 m^2	70%	n/a

3.2.3 District 3 – Bomana

Overview:

The Bomana district is situated at the north eastern boundary of the study area skirting the Laloki River. The area in general is an institutional area comprising of the Police and Correctional Service Training College and the main Prison on the west of the Bomana Road and the Catholic Church institutions on east.

Character:

The area is generally flat with minor hills at the central area and relatively hilly towards at the south east of the District within the Marianville area. Parts of the area, especially towards the Laloki River are low lying and subject to flooding. The area exhibits some kind of planning concept with designated land uses including institutional buildings, residential areas and open spaces within some form of allotments. There is acceptable level of road access within the District.

Outcomes:

A low density public institutional area having strong emphasis on the protection of the adjoining Laloki River system as being an important environmental and landscape asset with low scale agricultural/horticultural activity.

Strategies:

- *Restrict uses that would be in conflict with the existing correctional service and educational establishments.*
- *Ensure that the roads are adequately developed to cater for the traffic in the District.*
- *Promotion of good quality design of streets that provide a safe public realm and a distinct sense of place.*
- *Maintain the current land areas covered by the existing correctional service and educational establishments and encourage programmed infill development.*
- *Retailing area of no more than _ ha of shops and market to serve the daily need of the District*
- *Ensure that any new future developments at Marianville High school take into consideration the protection of the Marianville Creek.*
- *Ensure that the existing frontage is maintained and avoid new developments beyond the established boundary line.*

- *Recognize and promote the easternmost area of the District as rural sustainable by encouraging low scale commercial agricultural or horticultural activities.*
- *Ensure agricultural and horticultural activities satisfy the requirements of the Environmental Regulations.*
- *Require a natural buffer of no less than 15m from the natural river bank of the Laloki River.*
- *Encourage land use planning of regions which borders with the Laloki River to maintain minimal intrusions into the river area.*
- *Developments are responsive to the climate, landscape and character of its locality.*

Specific Outcomes:

In the Public Institutional Zone: -

- Lands to primarily accommodate the Bomana Police/CIS Training College, the Bomana Prison and education establishments under the control of the Government and religious organizations.
- Residential developments are ancillary to the institutional establishments and within easy walking distance to schools, bus-stops, shopping area and public open space.

In the Open Space Zone: -

- The area provides a buffer between the built development and the Laloki River.
- Open space provides only for passive recreation functions.

In the Rural Sustainable Zone: -

- Lands primarily accommodate no more than 40 ha of light grazing for livestock and limited commercial agricultural plots.
- Residential developments are ancillary and of detached or dual occupancy housing.

In the Commercial Zone: -

- Lands primarily accommodate a shopping centre to cater for daily shopping requirements for a population of 10,000 people.
- A daytime fresh food market is also located within the zone

Use		Maximum Height	Car Parking	Minimum Site Area	Maximum Site Coverage	Minimum Set back
Institutional	Learning Establishments	3 Storeys, or 12 meters whichever is the lesser	Minimum of 1 space. Plus 1.5 car space per staff plus 1 car space per 5 ancillary employer plus 1 car space per 15 students plus a minimum of 5 car spaces for visitors.	2 ha for primary schools, 8 ha for day high school, 30 ha and for boarding high school	60 %	10m from primary frontage
	Churches, Places of Public Worship	Treated on its merits but should be consistent with adjacent zone.	Each application will be treated on its merits, with a parking assessment report required. As a guide, the provision of 1 space per 10 seats is recommended. The need for additional parking for church halls should be assessed on merit. The parking study should take into account the supply of and demand for parking in the vicinity of the site at the time of the proposed use of the site.	Each application will be treated on its merits and assed on its bulk, scale, height and character of the locality.	50%	10m from primary frontage
Residential	Dwelling Houses	2 Storeys, 8.5 meters whichever is the lesser	2 spaces onsite for single occupancy. For dual occupancy: requirements are minimum 1 space onsite per dwelling under 125sqm.	300 m^2	70%	i. 4.5m from primary frontage ii. From side boundary;

Use		Maximum Height	Car Parking	Minimum Site Area	Maximum Site Coverage	Minimum Set back
						a. 1.2m b. 3m from the secondary frontage if abuts more than one street
	Residential Flat for Multiple Occupancy	2 Storeys, 8.5 meters whichever is the lesser	1 bedroom unit: 1 space. 2 bedroom unit: minimum multiple of 1.25 spaces per unit. 3 bedroom unit: minimum multiple 1.5 spaces per unit. Visitor parking: 1 space per 4 units.			
Commercial	Retail Shops	2 Storeys, including ground floor	Minimum 1 space per 60m^2 of leasable floor space	300 m^2	70%	n/a

3.2.4 District 4 – Iwa Garu

Overview:

Iwa Garu District covers the central area of the 8/9 Mile Plan Area. The area is subject to densely populated informal housing and squatter settlements especially to the south along the Sogeri Road. Most parcels of land within the district are under agricultural lease but there is very little evidence of large scale agricultural activities except for the Gouna Egg Farm.

Character:

The area is generally flat throughout with some site next to Laloki River being water-logged. A distinguishable feature is the Iwa Garu Creek which runs north into the Laloki River. The area is characterized by mixed residential accommodation types ranging from shanty housing to medium cost housing, to dormitory type house.

Outcomes:

A medium to high density residential area, retaining all existing general industrial activities whilst promoting and/or developing the open spaces into active recreational areas.

Strategies:

- *Establishment of an appropriate mix of housing types and tenures encouraging affordable housing within mixed and sustainable communities in the District.*
- *Establishment of a minor commercial node to serve the surrounding communities with daily retail need within the District.*
- *Provision of pedestrian footpaths throughout the District linking up the different areas to promote cycling and walking.*
- *Maintenance and preservation of green spaces and playing fields in the District to add interest and vitality to the living and working environments.*
- *Promotion of good quality design of streets that provide a safe public realm and a distinct sense of place.*
- *Encourage developments that are responsive to the climate, landscape and character of its locality.*
- *Promoting building designs to be climate conscious and energy efficient where different means to obtaining natural ventilation, natural lighting and natural energy are exploited (ref: design principle 5.0— Approved Building Design Checklist Policy).*

- *Promoting the creation of attractive buildings in the built environment that are socially and culturally responsive and express a proud sense of the locality (ref design principle 6.0— Approved Building Design Checklist Policy).*

Specific Outcomes

In the Residential Zone: -

- Lands primarily accommodate a wide variety of urban housing forms ranging from detached houses and dual occupancies to multiple dwelling types.
- The mix of housing types and densities is consistent with the location and character of the location and market preferences for particular form of accommodation.
- Non-residential uses service their local communities and are associated with residential land uses, including uses such as open spaces, places of worship, shops and home industries, which do not have significant adverse impacts on residential amenity.
- Central active recreational open spaces at generally flat grade are provided and easily accessible to the community.
- Residential developments are located within easy walking distance of bus stops, shops, schools and other public facilities.

In the Commercial Zone: -

- Lands primarily accommodate a shopping centre to cater for daily retail needs for a population of not more than 10,000 people.
- A daytime fresh food market is also located within the zone

In the Open Space Zone: -

- Lands primarily accommodate parkland and active recreational areas and ancillary structures consistent with the type of activity.
- Development contributes to the scenic, landscape and opens space character of the area and is easily accessible.
- Open space provide and effective buffer between incompatible uses.

In the Industrial Zone: -

- Lands primarily accommodate light industrial activities.

- Non-industrial uses that service the workers in the locality, such as offices, catering, shops and indoor recreation should be located such that they are easily access to all surrounding industries.
- Land uses have little potential to cause serious harm to the surrounding environment.
- Sufficient buffer is provided between the industrial area and surrounding residential areas.

Use		Maximum Height	Car Parking	Minimum Site Area	Maximum Site Coverage	Minimum Set back
Residential	Dwelling Houses	2 Storeys, 8.5 meters whichever is the lesser	2 spaces onsite for single occupancy. For dual occupancy: requirements are minimum 1 space onsite per dwelling under 125sqm.	300 m^2	70%	i 4.5m from primary frontage ii From side boundary; a. 1.2m b. 3m from the secondary frontage if abuts more than one street
	Residential Flat for Multiple Occupancy	2 Storeys, 8.5 meters whichever is the lesser	1 bedroom unit: 1 space. 2 bedroom unit: minimum multiple of 1.25 spaces per unit. 3 bedroom unit: minimum multiple1.5 spaces per unit. Visitor parking: 1 space per 4 units.			
Industrial		3 storeys or 12 meters from natural ground level, whichever is the lesser	1.3 spaces per 100m^2 of gross floor space. Plus 15m^2 per 100m^2 of gross floor space subject to a minimum of 1 commercial vehicle.	300m^2	60%	Buildings and carpark areas are setback not less than 10 metres from an arterial or local distributor road frontage, or 5m from any other road frontage
Commercial	Retail	2 Storeys, including ground floor	Minimum 1 space per 60m^2 of leasable floor space	300 m^2	70%	n/a

Use		Maximum Height	Car Parking	Minimum Site Area	Maximum Site Coverage	Minimum Set back
Institutional	Churches, Places of Public Worship	Treated on its merits but should be consistent with adjacent zone.	Each application will be treated on its merits, with a parking assessment report required. As a guide, the provision of 1 space per 10 seats is recommended. The need for additional parking for church halls should be assessed on merit. The parking study should take into account the supply of and demand for parking in the vicinity of the site at the time of the proposed use of the site.	Each application will be treated on its merits and assed on its bulk, scale, height and character of the locality.	50%	10m from primary frontage

3.2.5 District 5 – Neibira

Overview:

Neibira District covers the north-west most of the 8/9 Mile Plan Area. About 3 per cent of the area is subject to heavy quarrying activity. The area serves as the gateway to Kairuku and Kerema.

Character:

The area has a distinct ridge running north west forming the spine of the area. The areas southwest of the ridge splay into the Waigani Swamp region while the eastern side along the Neibiri Road is fairly waterlogged and terminate at the Laloki River. Served by a dirt road, the area is sparsely developed with the main activity being heavy quarrying of the Neibiri Ridges.

Outcome:

An adequately serviced industrial area for 8/9 Mile Planning Area with residential developments and amenities to cater for the workforce having strong emphasis on the protection of the ridges running northwest and the lower Laloki River system.

Strategies:

- *Establish 140 ha of land for industrial use to serve as the main employment area for the Region.*
- *Provide incentives that encourage industrial developments.*
- *Create buffers to establish a clear distinction between the industrial and residential areas*
- *Adequate road standards that caters for the local traffic generated by industrial activities.*
- *Maintain noise at appropriate levels.*
- *Require that Residential development incorporates community services essential for urban living whilst providing accommodation near areas of employment.*
- *Promote good quality design of streets that provide a safe public realm and a distinct sense of place.*
- *Encourage developments that are responsive to the climate, landscape and character of its locality.*
- *Encourage detached residential development with wide setbacks from the Neibira Road.*

- *The current Rouna Quarry site to be investigated for future housing development.*

Specific Outcomes:

In the Industrial Zone: -

- Lands primarily accommodate a wide range of manufacturing, other industrial, transport storage and public utility works, other than isolation industries.
- Non-industrial uses that service the workers in the locality, such as offices, catering, shops and indoor recreation should be located such that they are easily access to all surrounding industries.
- Land uses have little potential to cause serious harm to the surrounding environment.
- Sufficient buffer is provided between the industrial area and surrounding residential areas.

In the Residential Zone -1: -

- Lands primarily accommodate a wide variety of urban housing forms ranging from detached houses and dual occupancies to multiple dwelling types.
- The mix of housing types and densities is consistent with the location and character of the location and market preferences for particular form of accommodation.
- Non-residential uses service their local communities and are associated with residential land uses, including uses such as open spaces, places of worship, shops and home industries, which do not have significant adverse impacts on residential amenity.
- A central recreational open space at generally flat grade is provided and easily accessible to the community.
- Residential developments are located within easy walking distance of bus stops, shops, schools and other public facilities.

In the Residential Zone – 2: -

- Housing is limited to detached houses and dual occupancies on individual lots.
- Non-residential uses service their local communities and are associated with residential land uses, including uses such as open spaces, places of worship, shops and home industries, which do not have significant adverse impacts on residential amenity.

- Higher density residential developments are located close to the Neibiri-Hiritano Highway intersection.

In the Open Space Zone: -

- Lands primarily accommodate ridge top protection areas and recreational and ancillary structures.
- Developments are subordinate to the natural values of the area and contribute to the scenic, landscape and open space character of the district.
- Open space for passive use functions, as an effective buffer between incompatible land uses

Use		Maximum Height	Car Parking	Minimum Site Area	Maximum Site Coverage	Minimum Set back
Residential	Dwelling Houses	2 Storeys, 8.5 meters whichever is the lesser	2 spaces onsite for single occupancy. For dual occupancy: requirements are minimum 1 space onsite per dwelling under 125sqm.	300 m^2	70%	i 4.5m from primary frontage ii From side boundary; a. 1.2m b. 3m from the secondary frontage if abuts more than one street
	Residential Flat for Multiple Occupancy	2 Storeys, 8.5 meters whichever is the lesser	1 bedroom unit: 1 space. 2 bedroom unit: minimum multiple of 1.25 spaces per unit. 3 bedroom unit: minimum multiple1.5 spaces per unit. Visitor parking: 1 space per 4 units.			
Industrial		3 storeys or 12 meters from natural ground level, whichever is the lesser	1.3 spaces per 100m^2 of gross floor space. Plus 15m^2 per 100m^2 of gross floor space subject to a minimum of 1 commercial vehicle.	300m^2	60%	Buildings and carpark areas are setback not less than 10 metres from an arterial or local distributor road frontage, or 5m from any other road frontage
Commercial	Retail Shops	2 Storeys, including ground floor	Minimum 1 space per 60m^2 of leasable floor space	300 m^2	70%	n/a

Use		Maximum Height	Car Parking	Minimum Site Area	Maximum Site Coverage	Minimum Set back
Public Institutional	Churches, Places of Public Worship	Treated on its merits but should be consistent with adjacent zone.	Each application will be treated on its merits, with a parking assessment report required. As a guide, the provision of 1 space per 10 seats is recommended. The need for additional parking for church halls should be assessed on merit. The parking study should take into account the supply of and demand for parking in the vicinity of the site at the time of the proposed use of the site.	Each application will be treated on its merits and assed on its bulk, scale, height and character of the locality.	50%	10m from primary frontage

3.2.6 District 6 – Mt. Eriama

Overview:

The Mt Eriama District is situated in the south-eastern part of the 8/9 Mile Local Planning Area. The district is predominantly hilly with one of the two main ridgelines running through it in the east. The Mt Eriama Treatment Plant is sited at the one of the highest peaks in the district. In comparison, the western end of the district is dotted by several more hills and it relatively flat.

Character:

The defining character of the Mt Eriama District is the prominent ridge-tops and the ridgeline that runs parallel through the district. The Mt Eriama Treatment Plant, nestled on the uppermost slope of one of the ridge-tops is also a significant landmark as is the sole water treatment plant that services the city of Port Moresby.

Outcome:

Orderly urban development comprising medium to high covenant residential area with related amenities and encouraging home-based industry that complements the natural features of the area and ensuring that development is subordinate and in harmony with the natural ridgelines. Development that is focused on active vibrant communities, creating a sense of place through distinctive architecture, entry statements and landscaping to make it identifiable, minimizes transport demands and encourages the cost effective provision of infrastructure.

Strategies:

- *Prohibit development above the 90 metre sea level to maintain the ridgelines as having natural and landscape values.*
- *Ensure urban development is harmonious with natural environment and built development is climate-conscious.*
- *Promote the development of intensification at district nodes such as the commercial centre at the junction of the Bomana Turn-off.*
- *Due consideration is given to the likely effects of height, bulk, scale, orientation and appearance of any proposed development.*
- *Ensure that buildings are sited clear of natural drainage lines, and minimising impact on topography.*
- *Ensure infrastructure expansion covers this district and infrastructure requirements for the Mt Eriama Treatment Plant are protected.*

- *Ensure appropriate reserves and setbacks are established along main transport routes with clear separation from pedestrian footpaths.*
- *Ensure adequate design of transport corridors at appropriate standards to cater for district traffic requirements.*
- *Require adequate provision of public transport facilities to be extended to the district.*
- *Establish a primary school to cater for local school age children.*
- *Develop the commercial area to meet the needs of the district community.*

Specific Outcomes:

In the Residential Zone: -

- Lands primarily accommodate a wide variety of urban housing forms ranging from detached houses and dual occupancies to multiple dwelling types.
- The mix of housing types and densities is consistent with the location and character of the location and market preferences for particular form of accommodation.
- Non-residential uses service their local communities and are associated with residential land uses, including uses such as open spaces, places of worship, shops and home industries, which do not have significant adverse impacts on residential amenity.
- Central active recreational open spaces at generally flat grade are provided and easily accessible to the community.
- Residential developments are located within easy walking distance of bus stops, shops, schools and other public facilities.

In the Public Institutional Zone: -

- Lands primarily accommodates the primary school and the Institute of business study

In the Commercial Zone: -

- Lands primarily accommodate a shopping centre to cater for daily retail needs for a population of not more than 10,000 people.
- A daytime fresh food market is also located within the zone

In the Open Space Zone: -

- Lands primarily accommodate parkland and active recreational areas and ancillary structures consistent with the type of activity.
- Development contributes to the scenic, landscape and opens space character of the area and is easily accessible.
- Open space provide and effective buffer between incompatible uses.

Use		Maximum Height	Car Parking	Minimum Site Area	Maximum Site Coverage	Minimum Set back
Residential	Dwelling Houses	2 Storeys, 8.5 meters whichever is the lesser	2 spaces onsite for single occupancy. For dual occupancy: requirements are minimum 1 space onsite per dwelling under 125sqm.	300 m^2	70%	i 4.5m from primary frontage ii From side boundary; a. 1.2m b. 3m from the secondary frontage if abuts more than one street
	Residential Flat for Multiple Occupancy	2 Storeys, 8.5 meters whichever is the lesser	1 bedroom unit: 1 space. 2 bedroom unit: minimum multiple of 1.25 spaces per unit. 3 bedroom unit: minimum multiple1.5 spaces per unit. Visitor parking: 1 space per 4 units.			
Commercial	Retail Shops	2 Storeys, including ground floor	Minimum 1 space per 60m^2 of leasable floor space	300 m^2	70%	n/a
Public Institutional	Churches, Places of Public Worship	Treated on its merits but should be consistent with adjacent zone.	Each application will be treated on its merits, with a parking assessment report required. As a guide, the provision of 1 space per 10 seats is recommended. The need for additional parking for church halls should be assessed on merit. The parking study should take into account the supply of and demand for parking in the vicinity of the	Each application will be treated on its merits and assed on its bulk, scale, height and character of the locality.	50%	10m from primary frontage

Use		Maximum Height	Car Parking	Minimum Site Area	Maximum Site Coverage	Minimum Set back
			site at the time of the proposed use of the site.			
	Learning establishments		Minimum of 1 space plus 1.5 car space per staff plus 1 car space per 5 ancillary employer plus 1 car space per 15 students plus a minimum of 5 car spaces for visitors	2 ha for primary schools, 8 ha for day high school, 30 ha and for boarding high school	60%	10m from primary frontage

3.2.7 District 7 – Eriama East

Overview:

East Eriama covers the north-eastern boundary of the Plan area onto the Old Rigo Road.

Character:

Area is prolific lowland fed by a small creek flowing north into the Laloki River. The west of the area rises into Mt. Eriama while the east rolls into the swamp and farmlands of Pacific Adventist University. The district is easily accessible from the Sogeri Road as well as the Old Rigo Road.

Outcome:

A relatively set back location for isolation industry type development with commercial agricultural or horticultural buffer having easy access to the main arterial roads.

Strategies:

- *No more than 100 ha of land east at the base of Mt Eriama is be allocated as sustainable rural for Agricultural or Horticultural Use.*
- *Sufficient area adjoining the Old Rigo Road is allocated for Isolation Industrial Use.*
- *Any development within the Isolation Industrial Area must undertake an exhaustive environment impact assessment.*
- *Resist developments on all ridge tops in order to maintain their natural and landscape values.*
- *Maintain that all buildings meet the requirements of the Building Design Checklist Policy.*
- *Ensure infrastructure expansion covers this district.*
- *Roads are designed to the approved road standard.*
- *Appropriate landscape treatment should be required along the streetscapes to create attractive vistas on main roads.*
- *A safe and secure pedestrian network should be established to link the various uses with minimal conflicts with, and having clear separation from vehicular traffic.*
- *Where appropriate traffic calming measures should be introduced to enhance safety within the central business node.*
- *Sufficient community areas should be established with essential public amenities.*

Use		Maximum Height	Car Parking	Minimum Site Area	Maximum Site Coverage	Minimum Set back
Industrial		3 storeys or 12 metres from natural ground level, whichever is the lesser	1.3 spaces per 100m^2 of gross floor space. Plus 15m^2 per 100m^2 of gross floor space subject to a minimum of 1 commercial vehicle.	300m^2	60%	Buildings and carpark areas are setback not less than 10 metres from an arterial or local distributor road frontage, or 5m from any other road frontage
Commercial	Retail Shops	2 Storeys, including ground floor	Minimum 1 space per 60m^2 of leasable floor space	300 m^2	70%	n/a

3.2.8 District 8 – East Morata

Overview:

The area is an expanse of land under the flight path into the Jacksons International Airport. The area also contains the Moitaka Power Sub-Station.

Character:

The area is a low lying through out. On the west is part of the 8 Mile settlement characterized by shanty and self-help type houses.

Outcome:

An area with limited development accommodating the approach and take-off path to the Jacksons International Airport.

Strategies:

- *The flight path of aircrafts is to be kept free of all new built developments and land uses which attract birds or generate smoke, in the interest of safety.*
- *Promotion of compatible land uses to the flight path that meet the minimum required standards*
- *Promoting building designs to be climate conscious and energy efficient where different means to obtaining natural ventilation, natural lighting and natural energy are exploited*
- *Promoting the creation of attractive buildings in the built environment that are socially and culturally responsive and express a proud sense of the locality*
- *Convenient allocation of PMV bus-stop areas to serve the District.*
- *Promotion of the recently approved Fencing Policy. All fences to be constructed in the District should comply with it.*
- *Identification of Junction at Wildlife as a planning node in the District.*
- *Development of an efficient road network system throughout the District.*
- *Nodes are defined as high density multifunctional developments featuring a pedestrian — conducive environment and good public-transit accessibility.*

Use		Maximum Height	Car Parking	Minimum Site Area	Maximum Site Coverage	Minimum Set back
Residential	Detached dwelling	Single storeys	2 spaces on site	300m^2	70%	i. 4.5m from primary road frontage ii. From side boundary; A. 1.2m B. 3m from the secondary frontage if abuts more than one street

3.3 Road Development Program

Road infrastructure is crucial in the 8/9 Mile area for sustainable urban expansion. Eppel, Bunker & McClurg [2001] maintain that a functional road hierarchy is important to optimize accessibility, connectivity, amenity and safety for all road users, including motor vehicles, bicycles, pedestrians, and public transport patrons. They submit that in order for the hierarchy to be effective planning tools, means of achieving these objectives need to be identified. This is done by specifying desirable performance criteria. This plan supports this premise.

Map 09 gives the proposed road hierarchy for the Plan Area while general performance criteria for the specified road categories are given in the following table:

PERFORMANCE CRITERIA					
	Highway	**Arterial Road**	**Distributor**	**Collector**	**Local Access**
Traffic Volume	Traffic Volume not restricted	Traffic Volume not restricted	<10,000vpd	<3000vpd	<750vpd
Heavy Vehicle Movement	Heavy Vehicle /Dangerous Freight Route	Secondary Freight Route	Should bypass except for access	Access only	Access only
Public Transport Facilities	Freight Haulage receives priority treatment	Freight Haulage receives priority treatment	Bus Route	Bus Route	Nil
Residential Access	Nil	Nil	Undesirable, but allowed for consolidated	Individual	Individual
Commercial Access	Nil	Nil	Consolidated	Individual	Individual
Industrial Access	Nil	Nil	Nil	Individual	Individual
Traffic Speed Environment	>=100km/h	70-80km/h	60-80km/h	60km/h	<= 40km/h

PERFORMANCE CRITERIA					
	Highway	**Arterial Road**	**Distributor**	**Collector**	**Local Access**
Pedestrian Movement Facilities	Minimal and must be away from road	Minimal, footpaths	Footpath both sides	Footpath both sides	Footpath
Parking Provision	Nil	Nil	Nil	kerbside	No specific provision
Bus stop provision	Away from the road	Indented bays where appropriate	Indented bays where appropriate	Indented bays where appropriate	No provision
Pedestrian Crossings	Grade Separated	Signalized/Controlled points	Controlled points	Some control points	No specific provision
Intersection treatments	Grade Separated	Grade Separated/signalized/roundabout	Signalized/roundabout/priority T	Roundabout/priority	Priority
Intersection spacing	1-2km	500-1000m	300m	100m	Nil
Cross section	Volume defined	Volume defined, could be divided	Generally 4 lanes	2 lanes	1 or 2 lanes
Abutting Land Use Type	Non sensitive to traffic	Non sensitive	Retail/Commercial	As specified under zoning	As specified under zoning

PERFORMANCE CRITERIA					
	Highway	**Arterial Road**	**Distributor**	**Collector**	**Local Access**
Land Use Impact amelioration	Barriers/Buffers/Setbacks	Buffers/Streetscaping/Setbacks	Local Area Traffic Management/streetscaping	Local Area Traffic Management/streetscaping	Local Area Traffic Management/streetscaping

3.4 Factors for consideration in Planning

- ☐ Soil Types
- ☐ Airport Flight Path
- ☐ Cultural Heritage
- ☐ Quarrying/Mineral Working
- ☐ Steep and Unstable Land
- ☐ Water Catchments areas
- ☐ Waterways and wetlands

APPENDICES

Bibliography

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