

Government of Mauritius  
Ministry of Housing and Lands  
**Review of the**  
**National Physical Development Plan (NPDP)**  
Final Report: Volume 1  
Development Strategy and Policies

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- 3 Strategic Transport Projects**
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- 5 Strategy Implementation Programme**



# 1 Introduction

## 1.1 *Introduction and Background*

### 1.1.1 *Introduction*

This Report represents the National Development Strategy and related Policies which forms the Review of the National Physical Development Plan (NPDP) for the Ministry of Housing and Lands.

As part of the Review, separate documents have been prepared covering Institutional and Legislative Aspects, and Planning Policy Guidance. This Strategy encompasses the island of Mauritius.

### 1.1.2 *Background*

The current operational NPDP was approved by Government in 1994. It covered the island of Mauritius for the period to 2010 and had two main objectives:

- To provide a national framework for the formulation of local councils' Outline Schemes and development and environmental control criteria for the effective monitoring of physical development and environmental management at local level, and
- To provide a spatial framework for public sector investment programmes.

The NPDP strategy was based on the concept of balanced growth in compact settlement form. The second strand of the strategy was to focus urban development on larger settlements to make the most efficient use of human, financial, economic, physical and social resources. The strategy was supported by 160 policies covering each main land use activity.

### 1.1.3 *Achievements*

The first objective was largely achieved with the preparation and approval of Schemes for the district councils North, South and Moka/Flacq and the Outline Scheme for Black River being prepared for approval. The municipal councils' urban Outline Schemes have also been revised but remain to be approved whilst the Port Louis Outline Scheme revision is long overdue. The key concepts and

policies of balanced growth in compact settlement form and focusing development on larger settlements contained in the NPDP have also, up to the last two years or so, been relatively successful, not the least because of the constraints imposed on development in the countryside by large tracts of intensively-farmed good quality agricultural land under sugar cane.

In addressing the second objective however, the NPDP has been less successful. Previous reviews have suggested that the reasons for this included:

- Lack of sectoral and spatial linkages to promote better resource management
- Changed priorities of the Government and public sector investment agencies
- Bottlenecks in the decision-making process, and
- Lack of commitment to the NPDP.

#### 1.1.4

##### *Implementation Constraints*

Although a workshop was organised in 1995 with the assistance of the Urban Management Programme and the UNDP to consider the integration of spatial and economic planning and development, the recommendation for multi-sectoral investment planning and prioritisation was not approved and in consequence the effectiveness of the NPDP through its implementation process was significantly constrained.

The absence of any systematic monitoring of the implementation of policies and proposals at either central or district levels, apart from the process of morcellements (land subdivisions) where applications are at least recorded in a central register at the Morcellement Board, has meant that the successes and failures of the previous Plan have been almost impossible to accurately determine. Because of this lack of a consistent and comprehensive planning data base, and a significant human resourcing problem at both central and local levels, the exercise of the development control functions of the urban municipalities and rural districts has led in some instances to inconsistent and *ad hoc* decision-making.

Whilst a high level of quality Census-type data exists through the Government Central Statistics Office (CSO), forecasting economic growth in a period of significant land use adjustments and redirections is fraught with difficulty. As a consequence, in some economic sectors which were changing rapidly in response

to local and international market pressures, policies and proposals for the use of land contained in the 1994 NPDP became rapidly out of date.

In particular the sugar industry is being restructured and diversified and recent Government-backed initiatives have led to significant tracts of sugar cane land being released for other uses. Together with the demands from the new economic growth engines of information and communication technology (ICT) and financial services as well as tourism expansion, economic change is re-moulding the traditional balance of land use requirements between the conurbation, the countryside and the coast.

### 1.1.5

#### *Current Planning Service*

In responding to these significant changes, Government's central planning service focused in the Ministry of Housing and Lands and the local level service in urban municipalities and rural district councils continues to operate under increasing pressure for advice on a very wide range of development applications, re-zoning and related town and country planning matters.

However, the shortfalls in up to date policy, implementation, monitoring and enforcement, combined with serious under-resourcing at both central and local government levels, have led to consumer frustration and a lack of confidence in many aspects of the planning process.

## 1.2

### ***Purpose of the Review***

### 1.2.1

#### *Key Aims*

Because of these shortcomings, compounded by the dynamic changes taking place in the economy, the Government of Mauritius, through the Ministry of Environment's EIP2 programme, and the Ministry of Housing and Lands have recognised there is an urgent need to update the current NPDP.

The Review process is designed to provide an updated national-level strategy and policy framework within which the wide range of public and private sector infrastructure and development projects now being prepared can be more efficiently guided, implemented and managed within a sustainable environment.

Related to this is a second key aim to facilitate the rapid update and rolling-forward of local councils' Outline Schemes (Local Plans) which provide the basis for development control at the local level, so as to ensure consistency and

compatibility of policy and planning guidance within the overall national framework.

In carrying out these tasks, the third main thrust is to ensure that effective development planning institutional structures, procedures and mechanisms are in place to provide for future efficient implementation, monitoring and updating of the strategy and policies on a regular basis.

### 1.2.2

#### *Key Outputs*

The revised NPDP has been re-titled the new National Development Strategy. It marks a change in direction and focus from the old style plan-making process which fixed on a prescriptive set of land use allocations; the new Strategy is designed to be more flexible and dynamic in response to fast-changing requirements. It identifies areas of growth and restraint as before but rather than prescribing specific land use allocations to each area, the revised Strategy aims to provide a flexible framework involving public-private and community partnerships within which a broad variety of uses can be implemented. The Strategy contains an inter-linked package of outputs comprising an updated vision of the future land use pattern of Mauritius, and related to this, a spatial development strategy and sectoral policies with supporting maps. The timeframe covers the next twenty years to 2020.

The Review has also been tasked with identifying the main institutional improvements needed for effective development strategy implementation and monitoring at central government level. Complementing these outputs is a series of Policy and Planning Guidance Notes covering key aspects of future land use development.

The contents of the updated National Development Strategy include:

- Goals and objectives
- Overall strategy
- Sectoral and settlement policies
- A proposals map
- Procedures for handling major non-conforming applications, and
- A plan monitoring and evaluation scheme.
- Policy and Planning Guidance notes

The Policy and Planning Guidance Notes cover key development activities relevant for a variety of schemes at both national and local levels. The Notes have been designed to supplement existing Planning Guidelines produced by the Ministry of Housing and Lands and to help in updating local councils' Outline Schemes hereafter re-titled Local Development Plans or Local Plans. The existing Guidelines cover Commercial, Industrial and Coastal Developments, and Residential Morcellements. It is envisaged that the updated Guidance will also be of assistance to Government agencies as well as scheme promoters in carrying out development control and project preparation activities.

### **1.3**

#### **1.3.1**

### ***The Process of Strategy Updating and Consultation***

#### ***Strategy Updating***

The updating process was carried out quickly as a three phase work programme in response to the urgent need for a revised development framework. The process has included site visits, consultations and desk research work which culminated in the identification of Key Issues and Options and the preparation of ten sectoral Working Papers at the end of Phase 1.

Both the Phase 1 Report and the Working Papers were circulated in draft form to relevant public sector stakeholders for comment. These were then revised and updated in the light of comments received and feedback from other stakeholder consultations outlined below.

Phase 2 brought these strands of work together in the form of two Discussion Papers which focused on:

- Alternative Development Strategies and
- Institutional Aspects.

At the end of Phase 2 a first draft of the revised Strategy and Policies was prepared. The Phase 2 reports were also circulated to relevant Government stakeholders for comment and feedback.

During the third and final phase of the process, opportunity was taken to discuss the form and content of the revised Strategy with the client agencies, to ensure as far as possible that the key outputs were in line with requirements. It was also important to establish and maintain working linkages in the Strategy updating process with national and local level agencies as well as the private sector, prior to the updating of local councils' Local Plans.

### 1.3.2

#### *Consultation*

A significant and integral part of the Review has been the consultation process. To date more than one hundred individual stakeholder consultations have been carried out. These have embraced the Government and other public sector agencies, the private sector and Non-Governmental Organisations (NGOs).

In addition to more formal Technical Coordination Committee and Steering Committee Meetings convened by the Ministry of Housing and Lands, two national workshops were held to discuss:

- the key Issues and Options (July 18<sup>th</sup>, 2002), and
- the draft Development Strategy (September 19<sup>th</sup> 2002)

Both of the national workshops attracted over 100 participants from the public and private sectors.

The importance of the workshops was underlined by the Minister of Housing and Lands who made keynote speeches at both sessions. The Minister of Tourism also gave a keynote address at the first workshop and the Minister of Environment addressed the second workshop.

Following the workshops, a series of more detailed focus group sessions was conducted covering the following topics:

- Agriculture
- Economic Development
- Environment
- Housing and Settlements
- Industry
- Institutional Aspects
- Physical Infrastructure
- Tourism
- Transport
- Town Centre Policy Guidance
- Coastal Zone Policy Guidance
- Tall Buildings Policy Guidance.

In total some 200 invited participants drawn from the public and private sectors made contributions at these sessions and their feedback where appropriate has been incorporated in this final output.

The Review process has therefore included and has benefited from a wide range of stakeholders' comments, incorporating views expressed at central and local government level, and from private sector organisations and non-government bodies with an interest in land development.

## **1.4**

### ***Goals and Objectives***

#### **1.4.1**

##### *Overall Goal*

The original goal of the NPDP Review as summarised in the Description of Services for the project was identified as:

“To provide a solid basis for the physical development of the nation over the next 20 years which supports the new national development strategy in an economically and environmentally sustainable manner.”

Following the wide range of consultations and focus group sessions, this goal was refined to reflect both the investment priorities and the key actions required by both Government and the private sector for the future efficient development of the country's land resources:

“To update the NPDP strategy and policies to provide a more flexible and positive framework for economic growth and physical development whilst safeguarding and enhancing the nation's natural and built assets”.

#### **1.4.2**

##### *Objectives of the NPDP Review*

Reflecting the overall goal for the study, the objectives of the New National Development Strategy are as follows:

- (1) **To provide strategic guidance** and context to Government in the improvement and **provision of new infrastructure** to enable the planned development to be achieved
- (2) **To provide suitable development opportunities** for both local and international investors to achieve significant economic development that will secure higher standards of living for Mauritius

- (3) **To promote sustainable development** which allows for the protection of the best quality agricultural land and of environmentally sensitive areas
- (4) To provide a **basis for the revision of all local land use plans**
- (5) **To provide guidance on the need for strengthening the institutional/legal framework** for physical planning.

The objectives provide the framework within which the revised National Development Strategy has been prepared and the benchmarks against which the future effectiveness of the Strategy can be measured.

In particular the requirements for strategic guidance to Government on the efficient provision of infrastructure to support development opportunities, to provide for significant economic growth and to protect best quality agricultural land and environmentally sensitive areas (ESAs) have been fundamental guiding principles in preparing the new Strategy.

## **1.5**

### **1.5.1**

#### ***Content and Format of the Revised Development Strategy***

##### *Overall Content*

In order to address the key aims and required outputs the revised National Development Strategy is designed to achieve, the Final outputs comprise the following:

- This Report contains the ***National Development Strategy***
- A second report contains proposed changes to the ***Institutional and Legislative Framework***
- A separate series of four ***Planning Policy Guidance*** notes covering ***Commercial Development, Industrial Development, Coastal Development and Residential Development***.

### **1.5.2**

##### *Policy Scope and Intent*

The strategic framework and policies described in this document focus on those aspects of land use development which are likely to have national or strategic level implications. The purpose is to provide the broad development framework within which local level policies that consider more detailed aspects of land use can be used to control and manage development through revised Local Plans and Action Area Plans.



The planning policies are primarily concerned with the consideration of applications for development permits for the change of use or other development of land as defined in the Town & Country Planning Act and proposed Amendments. It should be understood that the granting of a development permit by a planning authority does not override obligations under any other legislation relating to the proposal or its site.

### 1.5.3

#### *Format of National Development Strategy Report*

Following this introduction (section 1), the Report is structured as follows:

#### *Volume 1 Development Strategy and Policies*

- Section 2 discusses the context for the Development Strategy process
- Section 3 provides the Vision for the future development of Mauritius to 2020
- Section 4 outlines the Core Strategy for the Conurbation, Countryside and Coast
- Section 5 contains a description of the Housing policies
- Section 6 provides the policies for Social and Community Facilities
- Section 7 discusses policies in the Industrial and Commercial sectors
- Section 8 comprises policies for the Tourism sector
- Section 9 gives a description of policies for the Agriculture sector, including Forestry and Natural Resources
- Section 10 outlines policies on the Environment
- Section 11 contains policies on Transport, and
- Section 12 provides policies concerning Physical Infrastructure/Utilities.

#### *Appendix*

- 1 Settlement Clusters
- 2 Theoretical Conurbation Densities
- 3 Major Transport Projects
- 4 Major Infrastructure Projects
- A Strategy Implementation Programme

#### *Volume 2 Institutional and Legislative Aspects (separate report)*

- Section 13 provides the Introduction
- Section 14 gives an Institutional Review
- Section 15 provides a Legislative Review

- Section 16 describes the Proposals for an Effective Planning System
- Section 17 outlines the Priority Actions for a Restructured Planning Service
- Section 18 discusses Implementation Mechanisms

*Appendix*

- 1 Definition of Major/Strategic Projects
- 2 The Restructured Ministry of Housing and Lands
- 3 Approach to Strategic Environmental Assessment (SEA)

*Planning Policy Guidance Notes (separate documents)*

- Commercial Development
- Industrial Development
- Hotels and Integrated Resorts Development
- Residential Development.

## 2 Context

### 2.1 *Socio-Economic Context*

#### 2.1.1 *Land Use*

The island of Mauritius covers some 186,500ha of land of which 43% or 84,000ha is estimated to be under agriculture. Of this proportion, some 77,000ha or 39% of the total land mass is under sugar cane. Other significant land uses include forests and scrub (estimated at 57,000ha or 30%) and built development including roads and utilities (about 43,000ha or 26%).

#### 2.1.2 *Population and Housing*

The Government Central Statistics Office (CSO) has estimated that the island's population in 2000 was 1.14 million, an increase of around 120,000 since 1990: this increase is associated with decreasing birth rates and fertility, especially in the last 4-5 years. Trends towards an ageing population are being experienced, implying less need for new schools in the longer term following the current major building programme, except to provide for future growth where large new communities/morcellements are being contemplated. Correspondingly an increasing requirement for health services, clinics and facilities for the elderly is likely to be encountered, including for example new types of housing.

The number of households has been estimated at 287,700 in 2000, an increase of 59,000 since 1990, which implies a growth rate over double that for population – a direct consequence of declining fertility. Emerging trends show a decreasing family and household size: the average household size has decreased from 4.5 persons to 4.0 since 1990. These characteristics are likely to lead to changes in demand for house types, for example for smaller sized apartments and town houses, for more housing/apartments/secure accommodation for the elderly and which could in turn produce higher densities in and around town centres.

Housing has grown in most main settlements including those in rural areas, with a trend towards further increasing urbanisation in and around the capital city Port Louis and the adjacent Plaines Wilhems urban conurbation. Nearly 50% of the increase over 1990-2000 occurred in the conurbation, with between 14% and 16%

in the north, east and south of the island. The introduction of the Cybercity project east of Rose Hill at Ebene will consolidate this trend.

### 2.1.3

#### *Economy*

The economy has developed over the past 30 years from a sugar mono-culture to a relatively diversified multi-sector economy based on export-oriented textile manufacturing and tourism, as well as sugar cultivation and milling. Gross Domestic Product (GDP) has grown from Rs 42.4 billion in 1992 to Rs 101.7 billion in 2000. Employment now stands at 483,600 (based on the 2000 Census), which represents 42% of the island's population. The conurbation accounts for 54% of this total and the capital city Port Louis 27% (ie. 1 in 4 jobs are in Port Louis). This national economic growth has been one of Africa's great success stories.

As the economy has grown, vehicle ownership has risen rapidly: car registrations per 1000 population have increased by 34% since 1994—a rate equivalent to over 50% in the last ten years. Both the port (10% increase in goods loaded) and airport (6.5% increase in aircraft movements) have also experienced significant growth since 1994; for both these strategic transport facilities, long term master plans to cover the period to 2025 are being implemented in line with demand.

After very low unemployment in the early 1990s however, the unemployment rate has grown steadily and the economy is now experiencing levels in the 8 - 9% range. In addition to the loss of jobs out of the primary sector, principally sugar cane, the secondary sector is also going through structural changes resulting from the industry's diversification programmes, which could give rise to some further job losses from an ageing, low skill textile workforce. On the upside as niche manufacturing markets are developed and service sectors continue to expand in ICT and tourism, different skills are likely to be required signifying additional requirements for training and re-training programmes and import of specially-skilled labour in the short term if the Government's economic objectives are to be fulfilled.

## 2.2

#### *International and Regional Perspective*

Being a small island state with a strategic location in the Indian Ocean between Africa, the Indian sub-continent and to a lesser extent the Middle East, Mauritius is influenced by natural, economic, social and political factors regionally and internationally. The country is party to many international agreements and conventions which address a range of factors - particularly trade, commerce and

the environment, and which have a direct effect on spatial and land use planning. These influences include:

- Contonou Agreement – originally entitled the Lome Convention (1975), allowed Mauritius duty free and quota-free trade preferences most notably on some manufactured products and about 85% of agricultural products with the EU. These quotas will come to an end in 2008 when new trading agreements will come into force. This is having a direct impact on land in sugar cane production and industrial development as the country responds to structural changes in its economy and in meeting the needs of traditional and emerging international markets.
- COMESA – consisting of 20 Southern and Eastern African states - aims to foster more balanced and harmonious cross-border trade and investment and regional security. This organisation is also influencing EPZ manufacturing and IT business development in Mauritius.
- SADC Trade Protocol – the Southern African Development Community (SADC). The main objectives are to achieve economic development, alleviate poverty and to provide support for the socially disadvantaged. Market liberalisation and privatisation have been encouraged along with economic integration with regard to infrastructure development. This has an influence on imports and exports for Mauritian and other SADC member states.
- AGOA - the African Growth and Opportunity Act enacted under the US Trade and Development Act. This Act enables sub-Saharan countries, including Mauritius, to gain trade preferences on the US market. This is seen as assisting the textile sector following the expiration in 2004 of the Multifibre Agreement which currently gives Mauritius preferential access to the EU. Other Mauritian products could also benefit under AGOA.
- UN Framework Convention on Climate Change 1992 and Kyoto Protocol 1999 – these address climate change and global warming issues. These issues have a direct impact on Mauritius with a reliance on maintaining marine and coastal ecosystems and their vulnerability to changes in sea levels.

These conventions, protocols and international agreements have an important macro-economic influence on the longer term land use of the country. Planning for the future physical development of Mauritius consequently needs to be geared to assist Mauritius' growth in the short, medium and long term in line with these macro-economic influences.

### 2.3

#### ***Sustainable Development***

Alongside the above national and international trends and influences there is an increasing global awareness that economic growth and social and environmental issues are interlinked. In Mauritius there is an urgent need for new skills and services to supplement more traditional sectors of the economy as it undergoes significant structural changes. In such fast-changing and unpredictable circumstances it is now being recognised that future development patterns cannot simply follow the models of the past.

As the economy continues to evolve and moves from an agrarian to a more developed manufacturing and services-based society there is an emerging consensus that the conservation of the natural environment in Mauritius, the enhancement of the country's quality tourism industry, the protection of its unique coastline and lagoons and the conversion of ex-sugar cane lands for new forms of built development are all inextricably linked. There is a growing recognition that development cannot be left to grow unchecked either in its location or style of building and that major new projects should be concentrated in and around places capable of being well-served by infrastructure and transport services. Such development scenarios foresee new schemes being located in or adjacent to existing settlements, in the urban areas and town centres, before considering the option of developing greenfield sites. Indeed this is a cornerstone objective of the new National Development Strategy.

To reinforce this objective, it is noted that Mauritius imports all oil and fuel for energy production and motorised transport. Increases in costs of non-renewable sources of energy will have a dramatic impact on the economic and social livelihood of all Mauritians. Sustainable patterns of development in integrating land use and transport, access to public transport and providing the option to walk and cycle to jobs, homes and recreation and leisure facilities and services will thus become more important over the next 20 years and beyond, especially in and around new ICT-based communities and tourism resorts.

### 2.4

#### ***NPDP (1994) and the Need for Review***

The 1994 NPDP strategy was based on the concept of balanced growth in compact settlement form. The second strand of the strategy was to focus urban development on larger settlements to make the most efficient use of resources. To some extent these concepts have found expression in the current spatial structure of the country's towns and villages.

However towards the end of the last decade there was also beginning to emerge a new and different set of land use challenges as key sectors of the economy were beginning to restructure and diversify. In planning for the strategic regions of the island – the conurbation, the countryside and the coast – over the next 20 years and beyond, three key land use trends will need to be addressed by the new National Development Strategy:

- (i) The continued urbanisation of the conurbation manifested in the growth, consolidation and intensification of housing, retail, commercial and industrial development and related to this, challenges to the quality of life, environment and travel for urban residents and workers
- (ii) Partly as a result of the above, the dispersal and decentralisation of some uses to the urban fringe and to other countryside locations where notably new housing is being developed through the various land conversion schemes and related to this, challenges to the efficient provision of utilities and services and to the quality and image of the rural landscape
- (iii) The anticipated continued expansion of tourism and hotel resorts almost exclusively on land-extensive coastal sites and related to this, challenges to the maintenance and enhancement of the natural environment, wetlands and lagoons and access to the coast for all Mauritians.

#### 2.4.1

##### *Planning for the Conurbation*

In and around the conurbation, employment opportunities and housing areas continue to grow and consolidate as major new retailing, commercial and industrial premises are constructed particularly in the motorway corridor. Cybercity east of Rose Hill adjacent to the M1 and beyond this, further Government and private sector projects at Highlands under the Illovo deal will consolidate the conurbation's predominance, with the provision of additional infrastructure and support services. Over the last 10 years some 34,000 new housing units and 38,000 new jobs have been attracted to the conurbation. Around 50% of the population lives here (refer to Table 2.1 and 2.2 and MAP 1 – Settlement Structure).

However, these 'natural' trends should not be left to continue indefinitely. In the longer term, if this economic infrastructure in terms of jobs and homes continues to be intensified in the conurbation, there is a danger that parts of the hinterland as

well as more remote locations in the countryside will gradually lose their critical mass resulting in loss of local activities, jobs and with it a downward spiral of decaying rural communities and social exclusion for some sections of civil society, as has been evidenced in more developed economies.

Because Port Louis is naturally constrained to the west and east, the pressures for a variety of uses including industry and commerce are increasingly being felt in the north and south along the motorway axis, where a mix of industrial, commercial and residential developments already exists and where commuting and access to the port is becoming more time-consuming and environmental conditions are deteriorating. Over time such pressures can only increase the burden on Government resources to provide transport and utility networks which will become increasingly expensive and socially and environmentally disruptive to extend. Any trend towards rural-urban migration would only add to such pressures and contribute to a reduction in quality of life standards.

In this context, the new Cybercity at Ebene which adjoins and enlarges the conurbation can be seen as the forerunner of new 'campus-style' developments which can help to redistribute some of these urbanisation pressures, providing they continue to be planned and developed in an integrated fashion. Cybercity will be home to a variety of high tech./ICT offices, education, commercial and retail services and support facilities. Close by new lower density residential communities are being planned to provide further impetus to this fourth pillar of the Government's current economic initiatives. Complementary business growth centres are proposed to build on existing key settlements in the north at Goodlands and in the south at Rose Belle, where support services and activities including industrial sites and SMEs already exist and where future clustering will be facilitated by upgraded highway linkages.

The updated Strategy will need to take these new trends on board, but should not neglect the viability and vitality of traditional town centres including the capital Port Louis and its CBD and waterfront. Here, improvements in accessibility by a variety of modes including the proposed LRT system, will be needed to enhance and sustain opportunities to a range of specialist administrative, business, retail, leisure, residential and cultural pursuits.

Please Refer to Map 1: Settlement Structure



#### 2.4.2

##### *Planning for the Countryside*

Recent structural changes in the sugar industry, which have led to the release of lands for other purposes will have potentially far-reaching effects on the future disposition of land use in the countryside. Under the Mauritius Sugar Authority's Sugar Sector Strategic Plan 2001-2005, less land is likely to be required for sugar cane production in future: a number of sugar factories are also likely to become surplus to requirements. Current estimates indicate some 4,600 ha of sugar cane land has so far been committed by Government for conversion. In the long term a further 14-19,000 ha of land could be released.

Where lands have been proposed for conversion and where sugar factories are scheduled for closure, there will be a need to replace lost jobs in order to sustain local economies. Unless these jobs are replaced, the knock-on effects of these direct losses on rural incomes and service sector activities in local centres are therefore likely to exacerbate rural decline in some areas. Over time, such losses and decline could lead to increasing social and economic disparities between rural and urban society.

Whilst some smaller settlements in the countryside and on the coast have benefitted from an infusion of tourism growth which has provided new employment opportunities and helped to maintain a quality environment around resorts, other towns and villages are suffering from a lack of critical mass and resources to implement much needed face-lifts to the fabric of high street buildings and the local environment. Where such settlements are closely linked to the sugar industry and are thus vulnerable to impending changes, these problems are likely to deepen. The mitigation of such adverse economic, environmental and social effects is fundamental to the objectives of the new Strategy.

Much of the land already committed for conversion is proposed for housing, some on sites outside existing settlements and some distance from transport and infrastructure networks. The impact of these decentralisation pressures and *ad hoc* developments on the shape of towns and villages and on the efficient provision of utilities, together with potential adverse effects on the surrounding environment and landscape could significantly increase public sector expenditure needs and irreversibly change the character of the countryside.

### 2.4.3

#### *Planning for the Coast*

Tourism has grown through the development of high-end hotel resorts along the coast. Some 656,000 tourists arrived in Mauritius in 2000 when there were around 8,700 hotel rooms. High quality hotel stock, supported with excellent service from well-trained staff, has given Mauritius an exceptional image and a highly competitive market positioning.

The basis of the island's tourism success and quality image is largely attributable to its exceptional natural assets: majestic mountain peaks, lagoons and coral reefs, white sandy beaches, ultramarine coastal seas, pleasant year round climate and the welcome of its people. Supporting these assets are the green swathes of sugar cane fields and forests, which in combination cover over two thirds of the island's land mass. The quality of the natural environment is thus an integral component in the continuing success and growth of the tourism industry.

Yet environmental conditions are increasingly giving cause for concern. Coastal erosion continues whilst development pressures and conflicts of recreational, leisure, residential and commercial use have placed more pressure on this fragile ecosystem. There are still concerns over water quality and pollution - both in the rivers, and in the mangroves and lagoons (freshwater and marine respectively). Stakeholders have already voiced their anxieties over the increase in *ad hoc* and out of scale developments along the coastline and inland, which combined with poor quality and unsympathetic designs in some cases are conspiring to lower the image of the coast and neighbouring countryside as an exclusive and relaxing holiday destination.

Rapid growth in the tourism sector is expected to continue as it diversifies through upgrading and repackaging of its products and the introduction of land-extensive integrated resort complexes including in some cases new golf courses. Requirements for supporting infrastructure, including new access, traffic management and sanitation facilities will continue and with these, the creation of new jobs and life styles around the country's attractive and sensitive coastline.

Because of the almost exclusive focus of tourism and in particular the major hotels and resorts on the island's finite amount of coastline, further pressures on the environment and on public accessibility to the beaches are inevitable. Inland, few opportunities for major tourism growth are anticipated in the near future, though

the Ministry of Tourism is stimulating interest in non-coastal locations such as Black River Gorges National Park as part of its nationwide Tourism Development Plan. Increasingly however, pressures for larger new and upgraded resort complexes are being experienced and some 2000 ha of land around the coast are currently being considered for resort-related leisure and recreational uses.

In this connection the new Strategy will need to balance the competing demands for tourism growth and environmental protection – another cornerstone objective. Mechanisms involving private sector and Government partnerships need to be explored to ensure accessibility to and enhancement of natural assets (eg. wetlands, beaches) can be sustained. Such initiatives and related mechanisms for implementation will need to be increasingly sophisticated in the light of competing demands for sites and funding in many coastal locations.

## **2.5**

### **2.5.1**

#### ***Future Development Parameters***

##### *Population, Housing and Employment*

Government (CSO) projections of future population point to there being around 1.35 million people by 2020, an increase of over 200,000 on present levels, and a future total of some 403,000 households - an increase of around 115,000, and nearly double that of the last 10 years. For the future, there is a requirement to plan for around 140,000 new housing units, to allow elimination of more than 1 household per unit and an acceptable vacancy rate. Of this total, some 20,000 units are expected to be for the lowest income groups based on current NHDC construction programmes. The conurbation currently houses some 550,000 people in 143,000 units which could grow under current trends to 650,000 people living in 215,000 units by 2020.

Overall the total number of jobs on the island is expected to increase by about 120,000 to around 610,000 by 2020, of which at least 50% are expected to be in the enlarged conurbation including Cybercity and 25% in Greater Port Louis. These predictions represent increases of 25% over current levels. Total jobs in the conurbation are likely to rise from 245,000 to over 300,000 during this period.

Outside the conurbation, the main settlement clusters each provide homes for between 15,000 and 30,000 people and jobs for 5-10,000 workers. These are expected to grow by an average of 1-3% per annum over the planning period; by 2020, the largest of these clusters may reach around 40,000 population. However even if these clusters expanded much faster than anticipated and doubled in size, the largest would still only house some 60,000 population, that is about one tenth

the size of the conurbation. Based on these trends, the primacy of Port Louis and the conurbation is assured; and it is equally unlikely that a significantly different development strategy could emerge which would shift the concentration of homes, jobs and commuting patterns away from its current focus.

### 2.5.2

#### *Supply of Land*

Under the Government's Sugar Sector Strategy Plan the intention is that sugar production should continue at 620,000 tonnes/year until 2010. With further improvements in technology, de-rocking, irrigation and mechanization, it is estimated that this level of output may be achieved on 60,000-65,000ha. Some 12,000-17,000ha of sugar cane land could therefore become 'surplus' to requirements and possibly released for other agricultural and non-agricultural uses. As part of this rationalisation and centralisation process the number of sugar factories could be reduced from 14 to 7 or 8, and some 7-8,000 voluntary redundancies from the current workforce (about 25% of the sugar sector total in 2000) are estimated.

During the second decade of the planning period (2010-2020), the private sector has tentatively forecast a production target of 450,000-550,000 tonnes per annum: under present and foreseeable productivity programmes, this level would require some 53,000ha of mechanized land under sugar, which could result in a further 7,000ha becoming available for conversion.

In summary, over the next 20 years or so, some 19,000-24,000ha of sugar cane land could be released for other agricultural and non-agricultural purposes. Of this amount just over 4,600ha have already been committed by Government for conversion by 2006, mainly into housing but also for other development including Cybercity (ref. Table 2.3 and Figure 2.1).

### 2.5.3

#### *Demand for Land-Housing*

Of the future demand for land use development, housing represents the largest single sector requirement. Based on CSO forecasts of population and households, the total demand for new housing units is likely to be in the order of 140,000 between 2000 and 2020; (note this estimate does not include potential demand from foreign purchasers in the proposed IRS-Integrated Resort Schemes, small scale additions to existing dwellings nor squatter housing relocations-estimated at around 2,000 in 2002).

Based on market demand, current trends and commitments about 50% of the forecast increase is likely to occur in and around the conurbation, around Port Louis, Beau Bassin, Rose Hill, Quatre Borness, Vacoas, Phoenix and in Curepipe. Under this scenario, some 70,000 new housing units may need to be accommodated in the enlarged conurbation i.e. including Cybercity and another 70,000 units spread in the surrounding countryside and on the coast, in and adjoining existing settlements and related growth clusters.

As a planning guideline it has been assumed that 50% of housing unit growth in the conurbation (or 35,000 units) will be on existing sites within the built-up areas involving densification and increases in the number of units in multi-occupied buildings and flats. The balance of 35,000 units within the conurbation is expected to occur through morcellements on the remaining greenfield sites close to existing built up areas.

Outside the conurbation in and adjacent to settlements in the countryside and the coast similar residential sub divisions are assumed to occur together with some public sector housing schemes, resulting in a total 'greenfield' demand for 105,000 new units. At an average density of 21 units/ha (representing a mix of public/private schemes), this gives rise to a demand for land of around 5,000ha.

#### 2.5.4

##### *Demand for Land for Other Uses*

For planning purposes and taking into account current trends and commitments, preliminary estimates of other land demands over the planning period suggest 800ha could be needed for new business parks and industry including SMEs and perhaps 400ha for new schools, colleges, and universities and other institutions, in addition to the current major school construction programme.

To this should be added current proposals and possible growth in demand for integrated resorts, leisure complexes etc (say 3,000 ha), public transport, highways and utilities including the LRT and new dams (say 3,000 ha).

The following table (Table 2.4) summarises indicative planning data on the future demand for various uses over the period 2002-2020, and compares this with the potential supply of land:

**Table 2.4 Planning Estimates of Supply and Demand for Land 2002- 2020**

<b>Supply of Land Estimate*</b>	<b>ha</b>
Possible 'Surplus' Sugar Cane Land	19,000 – 24,000
Approved Land Conversions (2000-2005/6)	(4,600)
<b>Net Supply</b>	<b>14,400 – 19,400</b>

Note: \* excludes land already allocated in Local Plans/Outline Schemes but not yet taken up

<b>Demand for Land Estimate</b>	<b>ha</b>
Housing (105,000 units @ 21/ha)	5,000
Industry/Business Parks	800
Schools/Colleges/Universities	400
Hotels/Resorts/Leisure complexes	3,000
Roads, Public Transport, Airport, Port etc	1,500
Infrastructure/Utilities	1,500
<b>Sub Total</b>	<b>12,200 ha</b>
Agricultural Diversification programmes	2,400
Reforestation programmes	2,400
Possible Buffer requirement	7,000
<b>Gross Demand</b>	<b>24,000 ha</b>
<b>Net Demand<sup>(1)</sup></b>	<b>12,200 ha</b>

(1) i.e. less possible diversification, reforestation and buffer uses

Source: Consultants Estimates, 2002

### 2.5.5

#### *Key Planning Variables*

These planning estimates are important not in their provision of broad brush land use forecasts, which will inevitably change as new projects are introduced and new information becomes available, but in helping identify some of the key variables which will need to be taken into account in preparing updated policies to implement the new Development Strategy.

Some of the key variables and policy influences include:

#### *Housing*

- Whether some sections of Mauritian society including the elderly will increasingly choose to live in higher density town houses and apartments, or want to continue to live in lower density detached houses; and the degree to which new housing construction will reflect these preferences;
- What will be the impact of the proposed LRT system on urban redevelopment and especially on attracting higher density housing in and around town centres and interchanges in the conurbation

#### *Agriculture*

- Whether agricultural diversification and/or buffer sugar uses will require the level of 'surplus' land take assumed and if not, what other forms of development (including leisure and recreation) could the surplus sugar cane lands be most effectively used for without dramatically altering the landscape
- What alternative sources of economic activity can be achieved for those countryside residents and workers where sugar factory closures and loss of jobs could seriously undermine the future sustainability of rural settlements and villages

#### *Manufacturing*

- Whether the changing nature of some manufacturing activities towards value added and niche markets both in urban areas and in the countryside, involving new technologies and production methods will lead to changes in the level of demand for land and sites for new industrial premises and campus-style settings vis-à-vis existing locations and buildings;
- Whether retro-fitting new technologies into existing buildings in traditional locations is economically and financially viable

#### *Tourism*

- Whether the recent rate of growth of the tourism industry and the potential for large integrated resorts and leisure complexes can be sustained, especially as to date most have been sited on the finite natural resource and environmentally-sensitive coast.
- Whether a realistic balance can be achieved between the hotel industry's requirements for a high quality image and exclusivity in location terms, the need to sustain rural economies which requires a degree of economic integration and the availability and maintenance of access to sections of the coastline for the benefit of all Mauritians

#### *High Tech/ICT*

- Whether the anticipated increase in growth in the ICT and financial services sectors will be realised, the degree to which this growth will assist in sustaining rural economies and jobs lost from the primary sector and related to this whether the demand for new greenfield business park and associated life style communities will lead to a gradual dispersal of activities to the urban fringe and/or to other sites in the countryside

#### *Landscape and the Environment*

- What level/size of sugar cane land is considered appropriate for use as a buffer stock which would help maintain the existing high quality character of the countryside's landscape, and how should this land be best managed and maintained, if from a productivity perspective, it is seen to be increasingly marginal.

### 2.5.6

#### *Summary*

The new National Development Strategy will need to be flexible enough to provide guidance on all these issues, which have significant implications for the future use of land in the conurbation, the countryside and the coast. In responding to these challenges, the new Strategy is guided by its key objectives which focus on providing strategic guidance to Government on the efficient provision of infrastructure and to the private sector, both national and international, on helping to stimulate development opportunities. It also aims to support mechanisms which will safeguard high quality agricultural and environmentally-sensitive land. These objectives, and the economic, social and environmental context discussed above, provide the framework around which the strategic vision and development principles have been identified.

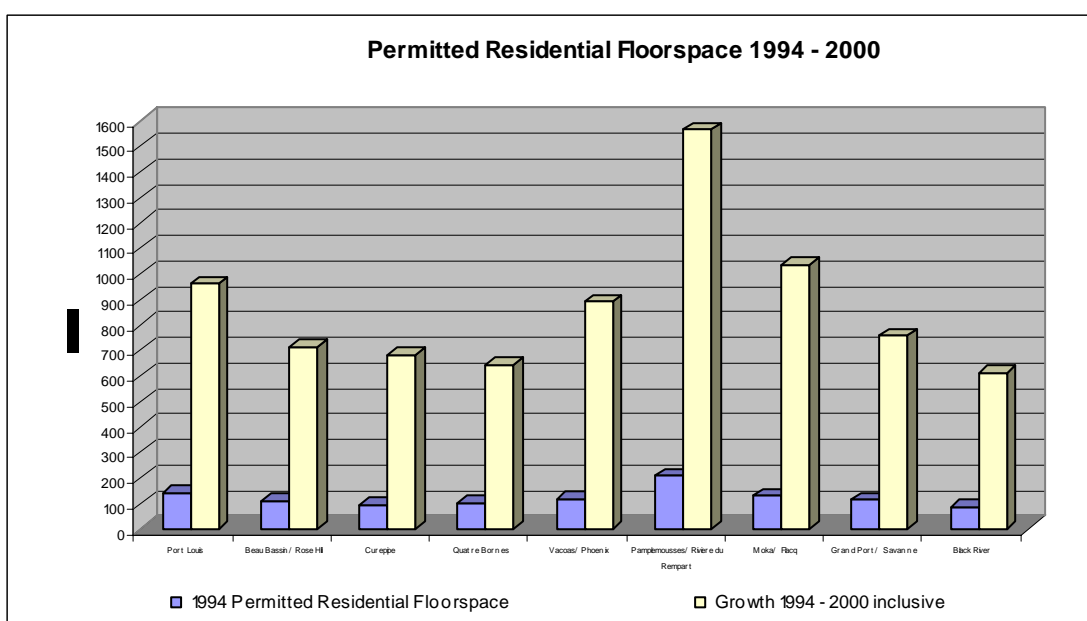


**Table 2.1 Housing Units Growth by Urban/ Rural Areas <sup>(1)</sup> 1990-2000**

Area	1990 Census	1990	2000 Census	2000	Intercensal Increase		
		% of Total		% of Total	No.	% of increas e	Annual Growth Rate %
<b>Island of Mauritius</b>	<b>216,011</b>	<b>100</b>	<b>288,344</b>	<b>100</b>	<b>72,333</b>	<b>100</b>	<b>2.9</b>
<b>Urban Areas</b>							
Greater Port Louis	38,418	18	48,664	17	10,246	14	2.4
<i>City Proper</i>	<i>29,456</i>	<i>14</i>	<i>32,716</i>	<i>11</i>	<i>3,260</i>	<i>5</i>	<i>1.1</i>
<i>Outer Area North<sup>(2)</sup></i>	<i>5,413</i>	<i>3</i>	<i>8,914</i>	<i>3</i>	<i>3,501</i>	<i>5</i>	<i>5.1</i>
<i>Outer Area South<sup>(3)</sup></i>	<i>3,549</i>	<i>2</i>	<i>7,034</i>	<i>2</i>	<i>3,485</i>	<i>5</i>	<i>7.1</i>
Beau-Bassin/ Rose-Hill	21,037	10	27,733	10	6,696	9	2.8
Quatre-Borness	15,469	7	20,582	7	5,113	7	2.9
Vacoas/Phoenix	18,194	8	24,701	9	6,507	9	3.1
Curepipe	16,831	8	21,578	7	4,747	7	2.5
<b>Total Urban</b>	<b>109,949</b>	<b>51</b>	<b>143,258</b>	<b>50</b>	<b>33,309</b>	<b>46</b>	<b>2.7</b>
<b>Rural Areas</b>							
Pamplemousses/ Riviere du Rempart	33,462	15	46,253	16	12,791	18	3.3
Moka/Flacq	31,339	15	40,887	14	9,548	13	2.7
Grand Port/ Savanne	31,902	15	43,190	15	11,288	16	3.1
Black River	9,359	4	14,756	5	5,397	7	4.7
<b>Total Rural</b>	<b>106,062</b>	<b>49</b>	<b>145,086</b>	<b>50</b>	<b>39,024</b>	<b>54</b>	<b>3.2</b>

Source: CSO; Derived from 1990 and 2000 Census Reports;

- (1) Significant changes in boundaries took place between 1990-2000. The above table compares current 2000 administrative boundaries with equivalent geographical areas/VCA's in 1990 to enable a 'like for like' comparison.
- (2) Outer Area North comprises: Baie du Tombeau, Terre Rouge and Le Hochet
- (3) Outer Area South comprises: Pailles and Pointe aux Sables

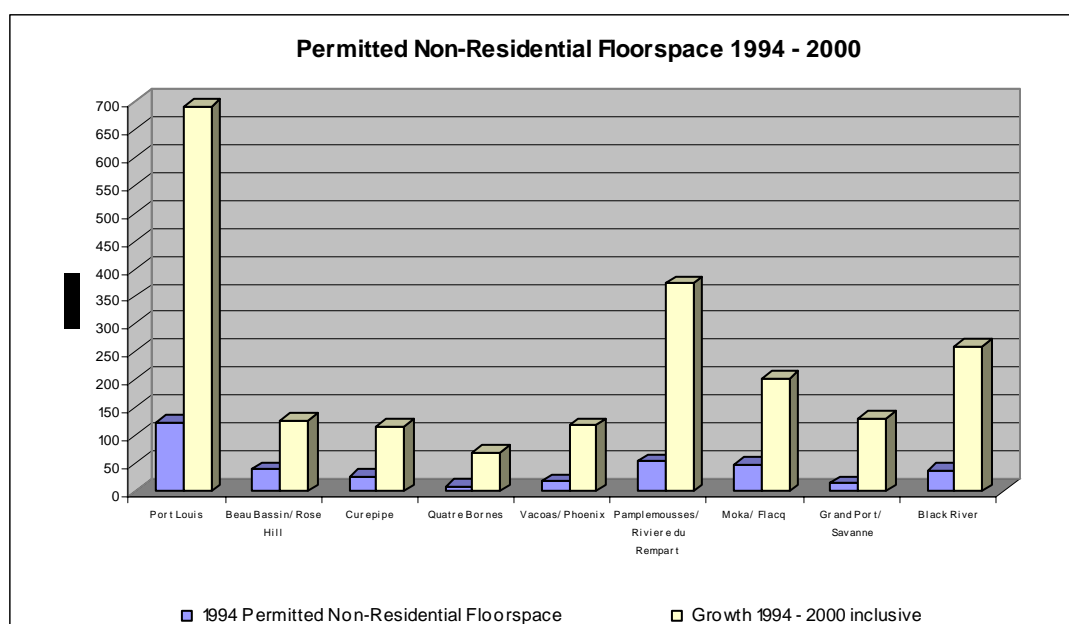


**Table 2.2 Workplaces Growth by Urban/ Rural Areas (1) 1990-2000**

Area	1990 Census	1990 % of	2000 Census	2000 % of	Intercensal Increase		
					No.	% of	Annual
<b>Island of Mauritius</b>	<b>389,481</b>	<b>100</b>	<b>453,172</b>	<b>100</b>	<b>63,691</b>	<b>100</b>	<b>1.5</b>
<b>Urban Areas</b>							
Greater Port Louis	103,252	27	120,548	27	17,296	27	1.6
<i>City Proper</i>	87,235	22	94,443	21	7,208	11	0.8
<i>Outer Area North<sup>(2)</sup></i>	8,538	2	13,579	3	5,041	8	4.7
<i>Outer Area South<sup>(3)</sup></i>	7,479	2	12,526	3	5,047	8	5.3
Beau-Bassin/ Rose-Hill	26,655	7	35,625	8	8,970	14	2.9
Quatre-Borness	17,715	5	21,775	5	4,060	6	2.1
Vacoas/Phoenix	28,462	7	33,582	7	5,120	8	1.7
Curepipe	30,641	8	34,577	8	3,936	6	1.2
<b>Total Urban</b>	<b>206,725</b>	<b>53</b>	<b>246,107</b>	<b>54</b>	<b>39,382</b>	<b>62</b>	<b>1.8</b>
<b>Rural Areas</b>							
Pamplemousses/ Riviere	53,262	14	64,916	14	11,654	18	2.0
Moka/Flacq	56,791	15	64,357	14	7,566	12	1.3
Grand Port/ Savanne	53,617	14	59,157	13	5,540	9	1.0
Black River	19,086	5	18,635	4	-451	-1	-0.2
<b>Total Rural</b>	<b>182,756</b>	<b>47</b>	<b>207,065</b>	<b>46</b>	<b>24,309</b>	<b>38</b>	<b>1.3</b>

Source: CSO; Derived from 1990 and 2000 Census Reports;

- (1) Significant changes in boundaries took place between 1990-2000. The above table compares current 2000 administrative boundaries with equivalent geographical areas/VCA's in 1990 to enable a 'like for like' comparison.
- (2) Outer Area North comprises: Baie du Tombeau, Terre Rouge and Le Hochet
- (3) Outer Area South comprises: Pailles and Pointe aux Sables

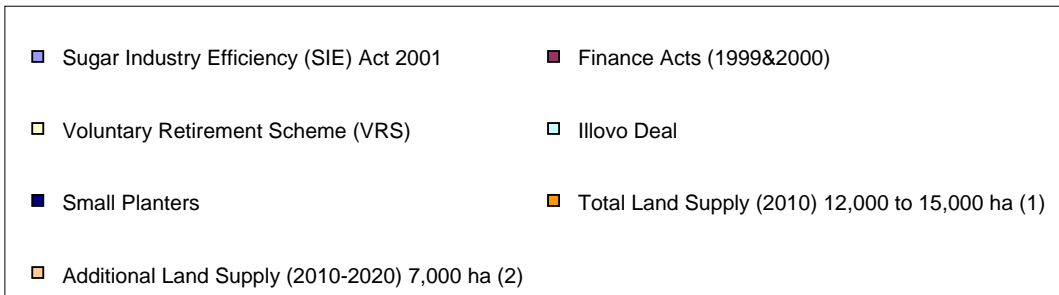
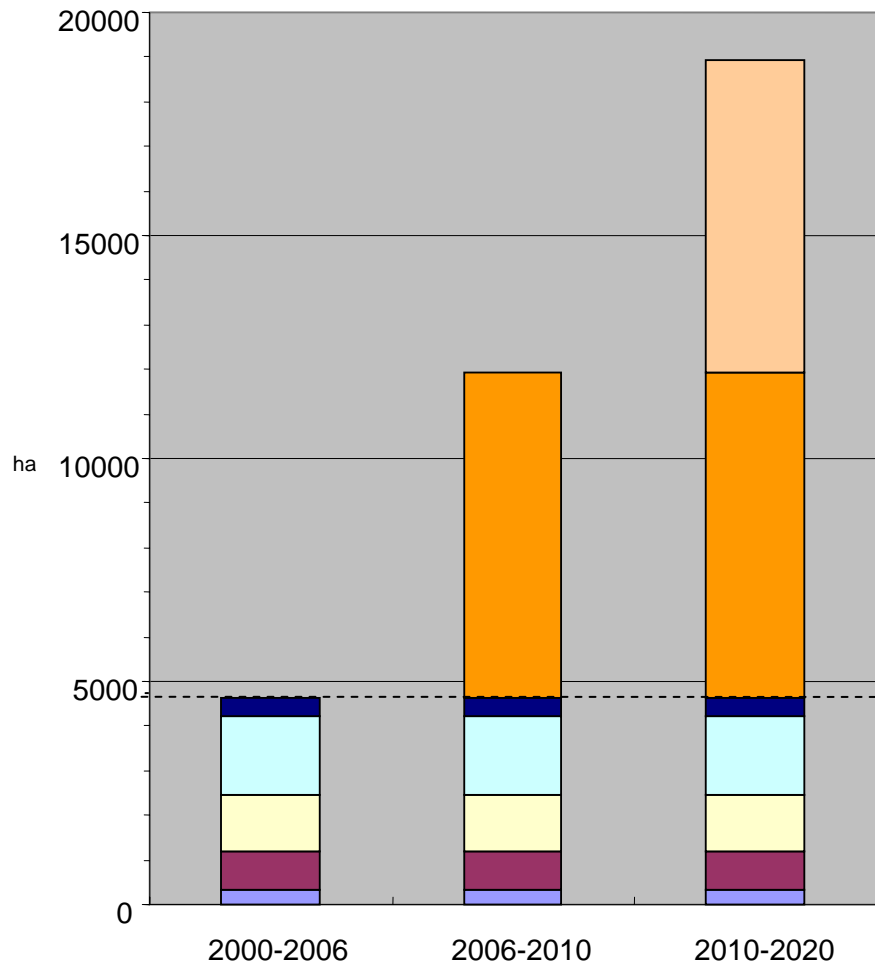


**Table 2.3 Land Conversions for Government and Private Sector Purposes**

Enabling Instrument	Private Sector (Arpents)	Purpose	Govt. (Arpents)	Purpose	Total
Finance Act 1999 (1:3)	900	Residential/Other Non-Agricultural Uses	300	Low Income Housing	1,200
Finance Act 2000 (1:3)	600	Residential	200	Low Income Housing/ Social/ Educational Uses	800
<i>Sub Total</i>	<i>1,500</i>		<i>500</i>		<i>2,000 (by July 2003 at latest)</i>
Illovo Deal (1:2)	1,200	Morcellements for sale as Residential/Commercial/Industry	1,000 <sup>1</sup> 1,400 600	Highlands Area (20% of 7000A) <sup>2</sup> purchased by SIT for Non-Agriculture Uses, Cybercity/Airport etc	4,200
<i>Sub Total</i>	<i>1,200</i>		<i>3,000</i>		<i>4,200</i>
VRS	3,000 (approx)	Employees Settlement and Residential Morcellements for sale			3,000
S.I.E. Act 2001 1:3 New Deal (introduced over and above financial year 1999 & 2000)	600	Residential/ Other Non-Agricultural uses	200	Low-Income Housing/ Other Govt Needs	800 <sup>3</sup> (by year 2006 at latest)
Small Planters	1000 <sup>4</sup>				
<b>TOTAL (A)</b>	<b>7,300</b>		<b>3,700</b>		<b>11,000</b>
<b>TOTAL (ha)</b>	<b>3,081</b>		<b>1,562</b>		<b>4,643</b>

- (1) Out of the 3000A, the Sugar Authority envisages the release of 1000A for various projects including extension of Cybercity eastward. However the location of the 1000A would depend on the Bagatelle Dam area.
- (2) Out of the 7000A purchased by the SIT, 20 % (i.e. 1400A) would be converted to non-agricultural use, the remaining 5600A would stay under sugar cane and parcelled out for sale to shareholders.
- (3) Financial year 1999 & 2000 carried over in SIE Act 2001
- (4) Information obtained from Ministry of Agriculture

**Figure 2.1 Estimates of Land Supply**



(1) Due to reduced sugar production of 620,000 tonnes

(2) Due to reduced sugar production of 550,000 - 600,000 tonnes

## 3

# Vision and Key Development Principles

### 3.1

#### *The Need for a New Approach*

Mauritius stands at the dawn of a new era in land use planning and development. Significant changes are taking place in the economy which will have a direct impact on the use of land and these will continue to take place over the coming years:

- Restructuring in the sugar sector with potentially significant amounts of land being released out of sugar cane in the countryside as the industry diversifies, with centralisation of sugar factories and reductions in the number of workers;
- Further evolution of manufacturing activities on existing sites in towns and villages as the sector adapts to new international challenges, in its drive to add value to its products and secure new niche markets, which could lead to demands for new types of industrial sites in new locations;
- Continued expansion and upgrading in the tourism sector, especially hotels and new integrated resort schemes mainly focused on and around the environmentally-sensitive coastline
- New growth in the tertiary sector, particularly high tech/ICT and financial services and with these, demand for new styles of campus development on spacious greenfield sites, which could lead to a dispersal of activities from traditional sites in urban areas to edge of town sites (urban extensions) but also perhaps to the countryside (new community clusters).

The planning system should therefore be open to the new economic paradigms: planning first for sugar industry needs and only secondly for other uses may no longer be the most economically-advisable approach. A more balanced approach to land use planning is required, which can underpin and facilitate growth in the new economic engines whilst conserving and enhancing existing activities and natural resources.

In summary the new National Development Strategy needs to recognise the socio-economic and environmental diversity in the conurbation, the countryside and the coast and which can set the direction and support appropriate conditions for future changes. The new Strategy needs to accept and plan for the continued importance of the conurbation, within the national economy, whilst at the same time recognising the need to maintain and enhance countryside and coastal

economies which are going through significant change and which therefore need support and encouragement.

## 3.2

### ***Strategic Vision***

#### 3.2.1

##### *Vision*

The vision contained in the new National Development Strategy focuses on:

**“Encouraging economic growth in the conurbation, the countryside and the coast, whilst maintaining and enhancing the quality of the environment and striving for a more sustainable pattern of development”.**

Key aims of a sustainable future for the development of Mauritius will include:

- Stimulation of high and stable levels of economic growth and employment
- Effective protection of the environment and prudent use of natural resources
- Social progress which recognises the needs of all Mauritians.

The focus is on concentrating future major development in and around strategic growth clusters in the conurbation including Cybercity, and in existing major settlements elsewhere, where a critical activity mass has already been built up or can shortly be envisaged. The spatial disposition of this growth is based on promoting an urban renaissance, particularly in key town centres in the conurbation and enabling rural regeneration and tourism development in and around other major settlements and activity nodes in the countryside and on the coast.

This strategic vision also sees the encouragement over the planning period of a closer integration of land use and transport planning mechanisms, of providing a wider choice of access to employment opportunity in both urban and rural areas, as well as safe and convenient travel options. The long term aim here is to reduce dependency on the private car especially for journeys to work, and for those groups in the community who may feel disadvantaged by being unable to afford or use private transport, thereby contributing to improvements in social and environmental conditions for all Mauritians.

The strategic vision also realises that such improvements cannot and will not happen overnight. Significant quantitative and qualitative improvements to

institutions involved in the planning process at both central and local Government levels will be required to support the new strategy and to assist in upgrading the image and effectiveness of the Government's planning service.

### 3.2.2

#### *Foundations of the New Strategy*

This physical development -oriented strategic vision builds on the principles contained in a number of recent important Government documents including Meeting the Challenges of Sustainable Development 2002<sup>(1)</sup>, Into The 3<sup>rd</sup> Millenium, National Strategy for Sustainable Development 1999-2005<sup>(2)</sup>, Sugar Sector Strategic Plan 2001-2005 <sup>(3)</sup>, the Tourism Development Plan for Mauritius 2002<sup>(4)</sup>, the Integrated National Transport Sector Strategy Study 2001(INTSS)<sup>(5)</sup>, the Review and Updating of the Port Master Plan 2002<sup>(6)</sup> and the New Master Plan for Airports of Mauritius 2000<sup>(7)</sup>. An important component of the work in preparing the new strategy has therefore been the assimilation of the land use-related aspects of these important Government-endorsed foundations to guide future growth and development in the conurbation, the countryside and the coast.

The efficient integration of economic, environmental, transport and other physical development aspirations will only be achieved however if the complex and dynamic process of land use change is better understood, its importance recognised, and a consensus achieved between Government and the private sector as to the best way ahead, with realistic and effective mechanisms for implementation quickly put in place.

As a consequence there is now a need to make significant adjustments as much in the way land use development is planned and managed as where it should be directed to; the revised National Development Strategy needs not only to identify the future direction for these actions, but equally importantly how they are to be achieved.

## 3.3

### ***Key Development Principles***

#### 3.3.1

#### *Main Elements of the Vision*

The planning approach which has given rise to the identification of the key development principles has embodied a considerable consultation and consensus-building process. Based on this approach, the objectives set for the study by Government and the consultants' experience drawn from other similar situations, the following principles to guide future development have been identified:

1. In order to make efficient use of utility and transport infrastructure, and existing social and economic investments, the pattern of development should tend towards concentration rather than dispersal. This strategy which involves clustering of workplaces, homes, leisure activities and cultural and community facilities will assist in reducing pressures on environmentally-sensitive areas and important landscapes in the countryside and on the coast, thereby creating a more sustainable pattern of activity.
  
2. Major new developments should be directed towards strategic growth clusters in the conurbation, the countryside and on the coast. Strategic growth clusters have been identified on the basis of:
  - Critical mass in terms of population, housing and workplaces;
  - Strategic location in terms of accessibility to the major highway and public transport network, (current and proposed), port and airport;
  - Current development commitments including social and economic infrastructure and potential for sustainable growth
  - Administrative and geographic factors.

Major settlements and growth clusters, which in 2000 comprised 76% of the island's housing and 80% of its workplaces, are detailed in Appendix 1.
  
3. In order to focus planning and transportation initiatives and public and private sector investment programmes, Urban Renaissance Zones, Rural Regeneration Zones and Tourism Zones have been identified in the conurbation, the countryside and on the coast. In these growth Zones there will be a general presumption in favour of a variety of mixed use developments particularly intensive uses, and raising densities. Special Use Zones have also been identified where clusters of similar land uses focussing on industrial, port and airport-related activities should be consolidated and promoted.
  
4. Outside of identified growth Zones and other main settlements, major new greenfield developments (i.e. on previously undeveloped land) should normally only take place after other alternatives have been considered and rejected or where there is a project of national significance, and where the full economic social, environmental and transport costs of the location have been taken into account. Generally, there will be a presumption against major new developments in the open countryside and on the coast, taking into consideration a site's suitability for agriculture, and its environmental and landscape sensitivity.



5. In other cases, development will be limited to those areas where employment opportunities are needed to sustain local economies, especially where structural changes to the agricultural sector are taking place. In these areas, sites within existing settlement limits followed by edge of limit locations should be preferred, before out of settlement locations are considered. In all cases proposed development should take account of a site's accessibility to transport and infrastructure networks, its suitability for agriculture and its environmental and landscape significance.
6. In providing for future clustered growth, access to jobs, services, leisure and cultural facilities for all Mauritians should be less dependent on long distance movements and over the long term, there should be increasing options for safe and efficient travel by public transport, cycle and on foot with reducing reliance on the private car.
7. Priority for transport and infrastructure investment should support the new Development Strategy, by maintaining and upgrading strategic networks, enhancing public transport and highway access as part of more clustered forms of development, overcoming bottlenecks and supporting higher capacity, and promoting alternative modes of travel (including cycling and walking) and less polluting forms of energy use wherever possible.
8. An area wide approach to planning for strategic developments should be followed. Land use and transport proposals should be closely integrated, which will need cooperation and participation from a variety of public and private sector stakeholders. Action Area Plans should be drawn up where Urban Regeneration Zones, Rural Regeneration Zones, Tourism Zones and Special Use Zones are proposed. These Action Area Plans, to be drawn up jointly by central and local Government agencies and involving the private sector, will form important components of local councils' revised Local Plans.
9. The role of Port Louis as the nation's capital city and seat of Government, finance, commerce and culture should be reinforced within the region and its international links should be developed particularly with Africa, the Middle East and Asia. Niche economic activities will continue to be encouraged in locations which can support a wide range of specialised business and commercial services and which can benefit from improvements in public transport provision and environmental enhancements.

10. Outside the capital city and the conurbation, the life of the countryside and the coast and village communities should be sustained through economic diversification which respects the character of the different districts and enables sustainable agriculture, forestry and tourism.
11. In these areas, in the countryside and on the coast, there should be enhanced protection of the country's best quality agricultural land, its natural resources and biodiversity, its environmentally sensitive areas and its landscapes.
12. In all areas, and in response to changing socio-economic trends, the provision of housing over the planning period will need to encompass a different balance of unit sizes, types and tenures, having regard to the changing structure of households, the ageing population and people's ability to access homes and jobs.
13. In both urban and rural areas the nation's built and historic heritage should be conserved and promoted. Innovative solutions and mechanisms involving key stakeholders in the public and private sector should be sought whereby access to, and management and maintenance of the country's built and natural assets can be assured to the benefit of all Mauritians - both current and future generations.
14. In all areas, but especially in town centres in the conurbation and in new developments in the countryside and on the coast, design, sensitivity and quality should form an increasingly important part in planning for major new developments.

### 3.3.2

#### *Clustering Development and Urban Renaissance*

A key feature of the new Development Strategy is the concentration of major employment-generating activities and other high intensity uses at strategic locations both in urban areas and major settlements elsewhere, accompanied by actions to achieve a real renaissance in town centres. Urban Renaissance Zones, Rural Regeneration Zones, Tourism Zones and Special Use Zones will be the strategic focus for major new development activity.

There is a close relationship between transport and land use policies for the conurbation, which are at the heart of the revised Development Strategy. The proposed light rail transit (LRT) system linking Port Louis with the Plaines Wilhems conurbation towns is a fundamental component of the Government's

approved transport strategy, and this has significant implications for future settlement strategy, town centre policy and urban renaissance. Related to this will be complementary highway and traffic management programmes, bus feeder services involving where possible priority measures and environmental enhancements.

In and around urban areas, Special Use Zones have also been identified which involve clustering of industrial and commercial activities, including small and medium sized enterprises (SMEs) around the port and airport, and around existing major industrial complexes, and where new business communities based on high tech/ICT technologies and systems have been established.

All new development within urban areas should be sustainable, both in the ease of access by public transport and walking and in the longer term cycling, and in layout and design. Where alternative modes of travel are available and convenient for the use of a variety of trips, especially journeys to and from work, and where dual use of space is possible, the amounts of land used for car parking can be reduced.

National development policies will promote a sequential approach to the release of land and sites for major developments, both in the conurbation and major settlements, as well as when considering the release of land in the countryside and on the coast. In the conurbation this will require cross-boundary collaboration between central Government and local councils to identify suitable strategic locations for major developments especially those linked to 'regional' facilities such as the proposed LRT system. The sequential approach identifies town centres as the preferred location for major retailing and commercial services which require accessibility by large numbers of people, followed by edge of centre sites. Out of town sites for major retailing should not be encouraged if suitable, more accessible in-town alternatives are available.

Urban management and design of the physical environment alongside policies to stimulate economic success and social progress will be crucial to ensuring improvements in quality of life and enabling major settlements to become more attractive and pleasant places to live and work in, and enjoy leisure and recreation opportunities. Local councils will need to work with a wide variety of central Government agencies and private sector partners to achieve this renaissance where strategic mixed use developments, higher densities and complementary transport projects are proposed. This will be especially the case in conurbation town centres

where the introduction of the LRT system will create significant opportunities for urban redevelopment and renewal.

### 3.3.3

#### *Efficient Use of Land*

Large areas of the country are under sugar cane or forest and many parts of the coastline are environmentally sensitive. All these areas contribute to the country's appeal and image on which much of its future tourism livelihood and residents' quality of life is likely to depend. Rising incomes will result in increasing demands for land for new homes, and for leisure and recreational activities, including hotel resorts and golf courses, as well as for more travel and private cars. Already there has been a significant lowering of average residential densities; the trend towards more residential development in dispersed locations on the urban fringe and in the countryside as a result of land conversion schemes can lead to environmental deterioration, loss of landscape quality and ecologically sensitive areas. Such dispersed developments are more costly to service with utilities and other Government support infrastructure and could over time increase economic, social and physical disparities in isolated and vulnerable communities.

Efficient use needs to be made of land including previously developed land: local councils will need to re-assess the capacity for future development in their jurisdictions within the overall framework laid down by the revised National Development Strategy as they update their Local Plans, especially those identified for strategic growth. More varied forms of development are likely to be needed, including different uses and densities, with carefully-integrated open space networks. Green wedges will be identified to reinforce their strategic function in shaping urban form and maintaining openness around and between urban areas.

Over the planning period there will be a growing number of smaller households and elderly households and these will need to be provided for. These trends provide an opportunity to diversify the mix of dwelling stock including provision of smaller units and dwellings suitable for those who would prefer to share accommodation or communal services. Family dwellings will continue to be needed, but not as exclusively as in the past, and layouts should create pedestrian friendly environments and safe and secure streets and spaces for children. In particular, peripheral housing areas of poor layout and design and those which are remote from local services and public transport and utility networks and which depend primarily on accessibility by private car, should be discouraged.

### 3.3.4

#### *Integrating Land Use and Transport*

In order to meet the objectives of the revised National Development Strategy, transport investment will need to be directed to support an urban renaissance and the concentration of growth in major settlements and for the clustering of activities in rural areas and on the coast. Transport exerts an important influence on land use, by facilitating movement, and by physically taking up space, especially for the parking and movement of cars. Congestion in parts of the conurbation during peak periods is at a level which is starting to constrain growth to the extent that some decentralisation out of Port Louis to other areas of the conurbation is now taking place, whilst environmental conditions as a result of increased car ownership and use (traffic noise, air pollution) will inevitably deteriorate.

In future wherever possible, major new land uses and transport facilities will need to be more closely integrated, through the preparation of area-wide Action Plans involving consensus and participation of key stakeholders including the private sector. For the conurbation to continue to function successfully in the future and to create safer, more attractive and sustainable places to live, work and enjoy, greater reliance will need to be placed on public transport, incorporating both LRT and buses, and on walking and cycling for local journeys.

New ICT technologies can also play a role in reducing the longer term need to travel and in the longer term more home working can be envisaged. This will also require innovative solutions to the use and re-use of land and buildings, including redundant sugar factories in rural areas, to sustain critical mass for local employment, and thus help reduce the need to travel longer distances to new work opportunities and for other purposes.

Transport policies cover both intra-urban and inter-urban travel needs. There will be opportunities in the conurbation and in major public transport corridors to seek some modal shift that will allow greater interaction and accessibility without excessive use of land and the continued dispersal of activities. The identification of strategic sites in town centres and around major public transport and LRT interchanges will assist in defining future Urban Renaissance Zones where public and private sector initiatives can be focused. Together with the National Transport Sector Strategy, these policies will provide the long term framework for the development of transport systems and facilities in the conurbation, and the basis for the revision of local councils' Local Plans.

The INTSS indicates:

“The LRT strategy affirms a consolidation of the existing pattern of development on the island, with approximately half the population concentrated in a single conurbation, which is effectively a linear city. A key part of this pattern is the role of Port Louis as capital city, port, financial centre and cultural hub of the nation.

It is obviously desirable that large numbers of people should use the LRT when it comes into service. The provision of LRT is expensive and large volumes of passengers are needed to contribute to system viability, which in turn will reduce some pressures on the use of the highway network.

It is therefore reasonable to expect strategic planning to contribute to the promotion of the scheme through such mechanisms as encouraging the location of high-density housing and large office blocks near stations.”

In Rural Regeneration Zones and Tourism Zones in the countryside and on the coast, opportunities will be sought to support strategic growth clusters through the provision of upgraded highway and public transport facilities. Within these Zones, traffic management will play a key role in determining the appropriate balance between vehicular accessibility, public transport use and the needs of pedestrians and cyclists. The release of marginal sugar cane lands for transport improvements including local bypasses, where these are located near to strategic growth areas, and adopting a sequential approach as to suitability for development, will be instrumental in the successful implementation of integrated land use and transport initiatives.

#### *Development in the Countryside and on the Coast*

The environmental quality and variety of rural areas and the coast are among the defining characteristics of the countryside’s national image. The amount of land currently planted to sugar cane and to a lesser extent tea enhances this image and attraction for tourists and residents alike. Significant areas of the coast, the lagoons, the countryside and mountain peaks are recognised to be of strategic importance in terms of nature conservation, landscape character and cultural value, though not all of these have yet been quantified nor indeed are they all protected by statute.

However, little of the countryside is far from the main towns and capital city and the majority of the population is employed in the urban-based economy. Areas in the countryside and on the coast are therefore subject to strong residential, tourist

and recreational pressures. Such pressures, if left unchecked, can threaten the quality and character of the country's image.

In other parts of the countryside, different pressures exist: despite the relative prosperity of the country, some areas of deprivation and relative isolation can be found; with the structural changes in traditional rural-based activities including sugar cane cultivation, such conditions may be aggravated. The continuing viability of many rural enterprises, local communities and local community services and facilities will therefore be of increasing concern over the planning period.

The essence of the strategy for the countryside and the coast seeks:

- To secure a multi-purpose countryside and coast, protecting it from inappropriate and ad hoc development and enhancing its natural and cultural resources
- To support targeted measures through the clustering of employment-generating activities in Rural Regeneration Zones and Tourism Zones, and to help sustain the economic and social vitality of rural communities
- To facilitate the release of some marginal agricultural land for other uses, following a sequential approach which takes into account its suitability for sugar cane and for use as a sugar cane buffer, for other (non-sugar) agricultural uses as well as a site's environmental and landscape importance.

The new National Development Strategy stresses the inter-dependency between urban and rural areas: if rural and coastal development and employment opportunities cannot be sustained and enhanced, then increasing pressures will be placed on land, on the environment and on transport and utility support services in the conurbation.

Whilst recognising the need to support consolidation and growth in the conurbation, equal weight in policy terms needs to be given to ensuring a vital and multi-purpose countryside and coast. Such a strategy will require innovative approaches to the provision and clustering of local industry and commercial employment opportunities, tourism and leisure developments, and related housing, transport and community support facilities and services to help enhance local employment opportunities and social inclusion which will help reduce the need to make ever longer journeys (in time terms) to the main urban centres.

The role of the National Development Strategy in enhancing the viability of strategic rural and coastal settlements in obtaining a critical mass to provide a focus for economic development, local services, transport links and cultural activity is therefore emphasized. Integrated packages of policies are required at the local level involving Government and private sector partnering, in order to balance the need for environmental protection with measures to sustain and enhance the economic, social and physical viability of rural and coastal communities.

The three MAPS overleaf depict in diagrammatic terms the new National Development Strategy, the Areas of Strategic Development Restraint and the Strategic Development Growth Areas.

Please Refer to Map: Development Strategy

Please Refer to Map: Strategic Development Growth Areas

Please Refer to Map: Areas of Strategic Development Restraint



### **3.4**

#### ***Settlements and Development Pattern***

##### **3.4.1**

##### *The Strategy for Clustered Growth*

Underpinning the strategy for the future development of Mauritius is the concept of clustered growth in the conurbation and major settlements in the countryside and on the coast. To facilitate this clustering, the designation of Urban Renaissance Zones, Rural Regeneration Zones, Tourism Zones and Special Use Zones will form the basis of the new National Development Strategy. These growth Zones have been identified to provide a focus for public and private sector initiatives.

Consistent with the overall strategy, which seeks to safeguard valuable agricultural land and to protect the unique landscape and environmental qualities of the island, promoters of major new development schemes should in the first instance be guided to sites within these Zones where a critical mass of investments and commitments has already been established or can shortly be envisaged. In relation to these Zones, complementary programmes involving housing, social, community, public transport and other infrastructure developments should be prioritised, packaged and integrated by relevant agencies so as to achieve optimum benefits. The use of public private partnering agreements should be explored at the planning stage to bring forward 'anchor' projects for early implementation in order to kick-start the area-wide process.

Generally speaking, a sequential approach to release of unused or new sites will be promoted for a range of mixed land uses. Preference will be given to town and village centre sites, followed by edge of centre locations before edge of town or out of town/open countryside sites should be considered. Streamlined development permit regimes and new implementation mechanisms for major projects should also be considered for operation in these Zones. Major new developments in the open countryside or on the coast outside these Zones will normally not be encouraged, unless alternative suitable sites in town are not available or in cases of national interest. Where there are exceptions the full economic, environmental, social and transport costs should be taken into account.

### 3.5

#### 4.2.1

### ***The Conurbation***

#### *Sustainable Development*

The urban conurbation includes the island's capital city Port Louis, the city's hinterland of Baie du Tombeau, Terre Rouge and Le Hochet to the north and Pointe Aux Sables/La Tour Koenig and Pailles to the south (defined here as Greater Port Louis), and the six Plaines Wilhems towns of Beau Bassin, Rose Hill, Quatre Borness, Vacoas, Phoenix and Curepipe. The total population in the conurbation (including outer areas of Port Louis) was just under 550,000 in 2000 (48% of the total island population), an increase of some 52,000 since 1990. In 2000 54% of the work places were located in the conurbation, of which a half or 120,000 jobs were found in Greater Port Louis.

The conurbation is effectively a "linear city" spreading 23 kilometres north to south, the municipal boundaries covering an area of some 164 square kilometres. The advantage of corridor or "linear band" development over more dispersed forms of growth is the potential for more efficient public transport operation, where higher intensity activities are located along the system's central spine and lower intensity activities served by feeder operations on the fringe. Linear band development should not be confused with ribbon development. Whereas ribbon development is typically one property either side of a road, the linear band can be as wide as possible to maintain high levels of accessibility to the public transport spine.

Complementing the emphasis on focussing development on the main urban areas is transforming their transport provision in the direction of sustainability. In the Mauritius context the conurbation has the greatest potential for use of non-car modes. The revised National Development Strategy considers that the island's capital city and Plaines Wilhems town centres should provide the focus for the social and economic life of communities and should generally be the preferred location for developments which attract large numbers of people. Such concentration of facilities should encourage more efficient and viable use of public transport and in particular contribute to the viability of the LRT scheme that is proposed to link the capital with the Plaines Wilhems towns.

#### **Strategic Policy SP1 – Urban Renaissance and Growth**

***The potential of Port Louis and the conurbation towns of Beau Bassin, Rose Hill, Quatre Borness, Vacoas, Phoenix and Curepipe to develop as the most economically dynamic parts of the island and a focus for further growth should be optimised. Major proposals for new development should***

*be focussed on designated Urban Renaissance Zones for which Action Area Plans should be drawn up as part of Local Council's revised Local Plans (Outline Schemes). Such Plans should:*

- *Provide for developments that attract large numbers of people, including shops, commercial and public offices and entertainment and leisure uses by enhancing urban areas as attractive places to live and work. There should be a strong emphasis on quality of design and quality of life and on tackling urban area and town centre economic, environmental, social and transport problems including strategies for public transport, transport management, car restraint and parking;*
- *Have a strong emphasis on mixed use development and on increased housing and the redevelopment of opportunity sites within the built up area;*
- *Be fully integrated with Government proposals for the introduction of a light rapid transit (LRT) system, which links the capital Port Louis with the Plaines Wilhems towns.*

*In conjunction with the preparation of Action Area Plans, reference should also be made to Policy SP19.*

*Justification:* The conurbation is the key strategic growth cluster of the island with the greatest economic potential. Its strengths include the heavy investments already made in social, physical and intellectual infrastructure. Concentrating facilities in town centres is dependant upon maintaining and enhancing their accessibility in sustainable ways and provision for such developments within identified Urban Renaissance Zones should be supported and strengthened.

Action Area Plans involving public and private sector stakeholders should be drawn up as part of the planning process for major new mixed use development schemes in these locations. These Plans should be fully integrated with Government proposals for the introduction of an LRT service linking Port Louis with Curepipe and other major conurbation towns which will also form an important component of Municipal Councils' revised Local Plans.

### 3.6

#### 4.3.1

### ***The Capital City***

#### *The Role of the Capital City*

Port Louis remains the primary administrative and commercial centre for Mauritius but it faces increasing competition from other urban centres, particularly the Plaines Wilhems towns. A decentralisation trend is being experienced from within the city where both population and the level of non-residential floorspace permissions have declined over the last few years. Restricted strategic access, traffic congestion, parking problems, fragmented land ownership and difficulties in land assembly, high land values and rental charges, and a lowering in the quality of the urban city environment and quality of life have all been cited in consultations as reasons for considering relocation out of the city.

Whilst the success of Port Louis and the concentration of commercial activities in a relatively small and constrained central area does bring with it pressures of congestion and environmental degradation, policy support for decentralisation and restraint is considered to run contrary to key sustainability objectives and to the principle of reinforcing the viability and quality of public transport and particularly the Light Rail Transit (LRT) proposals. The challenge is to strengthen Port Louis' special role as the capital city to enable its full potential to be realised, allowing its development needs to be met in a sustainable way, whilst achieving new development of the highest quality and providing an outstanding environment and quality of life.

The location of new development should reflect the sustainability advantages of more concentrated development and in particular of locations in or close to Port Louis and the conurbation and accessibility to public transport facilities.

#### **Strategic Policy SP2 – Protect and Enhance the Role of Port Louis**

***Port Louis should be a focus for growth within Mauritius with a strong emphasis on urban renaissance and regeneration, enhancing the historic urban environment and addressing dereliction. Its economic potential should be maximised, building on the city's strengths in sectors such as international banking, financial services, essential Government services, leisure, shopping and waterfront and port activities.***

*Justification:* The City Council supported by central Government and other local partners including the private sector should develop a vision covering the proposed Urban Renaissance Zones of the Central Business District (CBD) and

Waterfront (Downtown), as well as the Uptown area around St. Georges, the administration quarter and the financial area that will:

- Allow the city to develop further and foster the dynamism, prosperity and expansion of the centre for corporate headquarters, multi-national companies, international banking, financial and insurance services, shopping, leisure and residential uses;
- Protect and enhance the important environmental, historic qualities of the city, its setting and the surrounding area;
- Secure development of the highest quality, provide a high quality of life and avoid social exclusion;
- Encourage mixed use and tenures, raise densities and reduce congestion, and in particular create a more sustainable balance between jobs and housing provision within the city centre;
- Allow scope for, rather than constrain, continuing development within the city up to and beyond 2020.

Previously developed and undeveloped land around the port at Les Salines and Fort William provides a major opportunity to accommodate high quality development, repopulate the central area, further open up and link the city to the waterfront through improved public transit and access upgrading and thereby enhance the city's image as an investment location. Action Area Plans should be drawn up for the CBD Waterfront and Uptown areas and integrated with Government proposals for the introduction of an LRT service which will be an integral component of the City Council's Local Plan.

#### **4.4**

#### ***Higher Density Developments***

The maximisation of development densities commensurate with the provision of opportunities for improvements in accessibility to public transport in an attractive urban environment is generally supported in the revised National Development Strategy. However it would be both unrealistic and unreasonable to expect emerging new economic growth engine uses such as Cybercity and other future ICT/media-based business parks that seek lower density, "campus type" settings, to be high density. It is suggested that the pursuit of sustainable higher densities is linked to areas of high accessibility (existing and potential) close to good public transport interchange points and corridors (e.g. LRT/Bus/Taxi stations) and within existing town centres.

Such an approach should be focused on the establishment of Urban Renaissance Zones where well-designed, higher density, mixed use development would be located. These would effectively exploit existing and proposed transport infrastructure corridors and nodes and promote the location of travel-intensive forms of development at sites with high public transport accessibility within major centres (and proposed urban extensions). In these locations a range of jobs, shops and entertainment is available and developers should be encouraged to contribute to improved public transport facilities (through public/private partnering arrangements, planning obligations and similar agreements for example).

### **Strategic Policy SP3 – Higher Density Developments**

***The density of all land use proposals should be as high as possible commensurate with achieving attractive quality urban environments and where they are located within areas that have good accessibility or the potential for good accessibility to public transport facilities. Revised Local Plans will be required to promote higher densities within existing urban centres that are or can be well served by public transport facilities and where higher densities will enhance the attractiveness and viability of modes of transport other than by private vehicles alone. To this end Urban Renaissance Zones as identified in Policy SP1 will provide a focus for major schemes which offer higher density development potential.***

*Justification:* Maintaining and raising residential and commercial densities can help achieve more sustainable urban areas by reducing the overall land take for development, exploiting more fully locations that have high public transport accessibility, increase the range of local services that can be supported and thus the need to travel, increasing the opportunity for providing a range of house types, including low cost/affordable housing, provide the opportunity to design developments that enhance the character and vitality of town centres, and provide the opportunity for more people-friendly environments by reducing the space given over to roads and car parking.

It is important to capitalise on the opportunities offered by the proposed LRT that would link the Plaines Wilhems towns to Port Louis. An improved travel corridor will be opened up, upgrading conurbation links and enhancing access north and south. The LRT proposals bring new regeneration and site development opportunities that need to be fully harnessed.

### 3.5

#### ***Sustainable Transport***

Land use planning has a key role in delivering the Government's integrated transport strategy. By shaping the pattern of development and influencing the location, scale, density, design and mix of land uses, planning can help to reduce the need to travel, reduce the length of journeys and make it safer and easier for people to access jobs, shopping, leisure facilities and services by public transport, walking, and in some cases cycling. Consistent application of these planning policies will help to reduce some of the need for car journeys (by reducing the physical separation of key land uses and activities) and enable people to make sustainable transport choices.

These policies contained in the Government's Integrated National Transport Sector Strategy (INTSS) address the needs of motorists, other road and public transport users, and business by aiming to improve some journey times, reducing pollution and achieving better access to development and facilities. They will also help to promote sustainable distribution. In this way, planning policies can increase the effectiveness of other transport policies and help maximise the contribution of transport to improving the Mauritian quality of life.

#### **Strategic Policy SP4 – Sustainable Travel Modes**

***Within the broad development strategy and particularly of increasing densities in key growth clusters, it is important to develop public transport, walking and where possible cycling accessibility and to guide development to locations that are accessible by a choice of means of transport. The designation of Urban Renaissance Zones for the capital city and conurbation towns and Special Use Zones, Rural Regeneration Zones and Tourism Zones elsewhere should seek to meet travel demands, and improve choice of more sustainable travel modes for businesses and individuals, by including measures which:***

- ***Increase opportunities for integration, by developing (in partnership with public transport operators and the private sector) high quality interchange facilities for bus and proposed light rail stations (particularly at the key development locations of Port Louis, Beau Bassin, Rose Hill, Quatre Bornes, Vacoas, Phoenix and Curepipe);***
- ***Where appropriate, develop bus and light rail-based park and ride, in particular schemes that maximise the use of public transport (such as at Pamplemousses, Arsenal, Richelieu, Chebel and Forest Side);***

- *Encourage walking and in some areas cycling (eg. in Tourism Zones, large morcellements) by developing networks of safe, direct and attractive routes linking residential areas, schools and other local facilities and main centres, and providing cycle parking and other facilities where possible in collaboration with private sector/developer contribution plans;*
- *Develop over time and as circumstances allow, longer distance coastal footpaths and where appropriate cycle ways which integrate with the above more local links to tourism destinations and major settlements; and*
- *Where feasible, give priority to public transport, walking and in some specific locations cycling in terms of road space and junction design.*

*The preparation of Action Area Plans for growth Zones as part of revised Local Plans and the involvement of private sector stakeholders will form the focus for new public-private partnership (PPP) initiatives.*

*Justification:* In support of Policies SP1 and SP3, the implications that travel demand generated by development has for sustainable transport must be emphasised.

In the conurbation, city and town centres experience peak period flows of mainly car-Bornes workers which place an increasing strain on highway capacity, with knock-on effects on the efficient operation of public transport services and parking provision and as a consequence the built and natural environment and quality of life. A complementary package of public transport, traffic management and selected highway improvements will be needed to support the development strategy, especially where new mixed use redevelopments are being promoted in Urban Regeneration Zones. As part of the urban renaissance process, non-essential central area uses such as warehousing should be encouraged to relocate to sites better served by the strategic highway network.

In Tourism Zones with sensitive, coastal locations, the periodic arrivals of car-Bornes tourists and day visitors can place vulnerable beach environments under severe pressure from indiscriminate parking and related fly tipping. In these cases, construction of new highways or by passes is unlikely to prove environmentally or economically viable: here public transport and traffic management schemes incorporating comprehensive access, off- road parking, loading and unloading



schemes for a variety of vehicular and pedestrian users and purposes should be drawn up. At these locations it is important to strike a balance between the needs of residents, businesses, local visitors and tourists. Environmental improvement programmes will form an integral component of transport and traffic management schemes in these locations.

In the open countryside, where major new developments are being considered in relation to the introduction of new highway schemes and village bypasses which can also relieve local traffic and environmental problems, opportunities will be afforded to improve conditions in traditional high streets and facilitate public transport improvements. In order to optimise benefits of such investments to a variety of local residents, businesses, landowners and transport facility operators and users, it will be important to prepare integrated traffic management schemes. Such schemes should be prepared as part of Action Area Plans in Rural Regeneration Zones and Tourism Zones; the planning process should involve key stakeholders including local councils, the Road Development Authority and public transport operators, in order to achieve a coherent local level land use and transport framework for future public and private investments. The potential for private sector participation in suitable schemes should be encouraged.

### 3.6

#### ***Out of Town Shopping***

The town centres within the conurbation have traditionally been the focus for shopping. However, the development of free-standing convenience food stores and retail parks have become a feature of the island's, and particularly the conurbation's shopping hierarchy, partly as a result of the continued growth of the conurbation over the last ten years or so. This growth of greenfield expansion is seen not least in the development of Cora at Phoenix, Toys 'R Us also at Phoenix and Super U at Grand Baie. Continuing this trend to out of town locations, the Trianon Shopping Park is now open to trading at the St Jean interchange on the M1 not far from Quatre Borness town centre and which houses not only large retailers such as Shoprite, Courts and Game, but also smaller activities such as fast food outlets like KFC.

These significant and relatively new developments, which although expanding the range of consumer choice (mainly for those with access to personal transport), can also adversely affect town centre retailing and other related activities and which over time as experienced elsewhere, can lead to town centre decay and loss of investment. Such a course of events is judged to be contrary to Government's intent in proposing the new LRT service, which *inter alia* is expected to contribute

positively to the vitality and viability of existing town centres. In addressing this issue the National Development Strategy whilst acknowledging the advent of out of town shopping seeks to actively encourage policies which support the need for continuing retail investment as part of wider initiatives to sustain the economic and social life of existing city and town centres.

In general town centres should be the preferred locations for developments that attract many trips, because these locations should be best served by a variety of transport modes including the proposed LRT. The revised Strategy proposes to adopt a “sequential” approach to identifying suitable sites for shopping development. Essentially this means that preference should first be accorded to town centre locations, where suitable sites exist and are available, followed by edge-of-centre sites and then only when all these are exhausted, should out-of-centre sites that are accessible by a choice of means of transport be considered. In all cases of major new retail developments the full retail impact, traffic impact and environmental impact should be considered at the application stage.

#### **Strategic Policy SP5 – Town Centres and Retailing**

*Major new retail stores should be located in city and town centres, or if there are no available sites then in edge-of-centre locations. Proposed out-of-centre retail stores will only be acceptable in cases where:*

- *No suitable site in the town centre or edge of centre is available;*
- *The development, either by itself or taken together with other development proposals, has been assessed by way of a Retail Impact Assessment to show it will not undermine the vitality or viability of nearby city or town centres;*
- *The site is well related to the highway network and readily accessible by a choice of means of transport and has been assessed by way of a Traffic Impact Assessment in line with the requirements of Policy SP21 ; and*
- *The site does not occupy land which is considered to be environmentally sensitive or of landscape importance and has been assessed by way of an Environmental Impact Assessment to the requirements of the EPA 2002 and Policy SP20.*

*NB. This approach should apply to all key city and town centre uses that attract large numbers of people, including commercial and public offices, entertainment, leisure and other such uses. These should be encouraged to*

*locate in city and town centres. For major projects a Transport Impact Assessment should be undertaken to show how the scheme provides for accessibility by a variety of modes and how it affects the local road networks.*

*Proposals for development outside of existing settlement limits in the open countryside should be considered in accordance with the approach adopted under Policy SP15.*

*Justification:* Key objectives for town centres and retail provision should be to sustain and enhance the vitality and viability of town centres; to maintain an efficient and innovative retail sector, and to ensure the availability of a wide range of shops and services to which people have easy access by a choice of means of transport.

It is recognised however that certain retail activities, for example those requiring large floor plates, are better located out of the town centres. When preparing proposals for such developments, scheme promoters will need to show that the project will not adversely affect town centre/high street retail by preparing a Retail Impact Assessment and a related Traffic Impact Assessment. The criteria outlined for use by developers in preparing new proposals and for planning agencies in assessing development applications should consider the following effects:

Does the new scheme:

- Contribute to local shopping needs
- Require a large single floor area (or external sales and storage area) and a substantial adjacent customer car park
- Have good road access, and good accessibility by public transport
- Show that the development will not lead to a decrease in sales sufficient to prejudice the role or vitality of existing town centres
- Make adequate provision for the disabled and pedestrians
- Show that infrastructure can be provided at acceptable cost
- Demonstrate that land of high/moderate suitability for agriculture, and that the local environment and landscape will be safeguarded or enhanced.

That approval would be subject to:

- The lack of availability of an alternative site within or adjacent to the town centre

- The proposed development being an appropriate use for the land.

That permission would be refused if:

- Any diversion of trade likely to result from the new scheme could seriously affect the vitality and viability of any nearby town centre as a whole, or
- The development could give rise to unsatisfactory traffic, public transport, parking or environmental problems.

### 3.7

#### ***Industrial Development and Growth***

Much of the country's heavy and manufacturing industry, warehousing and wholesaling continues to be attracted to new locations around Greater Port Louis, its waterfront and Port area. Both to the north of the port at Roche Bois and Riche Terre, and on the southern outskirts, at Pointe aux Sables/La Tour Koenig and at Pailles, a mix of heavy and light industries including SMEs and commercial uses are found. These southern locations represent extensions from the existing industrial estates at Plaine Lauzun and Coromandel, which have been successful but which are now running out of major sites.

For these uses, safe and secure access to the port remains a major concern as many products (e.g textiles) are for export. However given the natural constraints to the future expansion of Port Louis to the west and to the east (the harbour and Signal Mountain range respectively), these industrial areas also occupy strategic locations in terms of the city's long term growth potential. In connection with other policies in the new National Development Strategy which support the enhancement of Port Louis as the capital city and sustainable modes of transport, it is important that the competing demands for industrial growth, long term development of the city within the conurbation and strategic and sustainable transport including port access are considered in an area-wide context.

In the longer term, and continuing beyond 2020 similar considerations will apply to the SSRI Airport area including Plaine Magnien, where growth of airport-related industries, including distribution, secure storage and warehousing for specialised products and high value, low bulk commodities is envisaged. In the case of the port and airport, long term Master Plans covering the period to 2025 have already been drawn up but the scope of these needs to be widened and included in Action Area Plans to cover adjacent lands where strategic long term surface access will need to be safeguarded.

To support this approach, Special Use Zones have been identified to provide a focus for private and public sector initiatives, and to sustain an area-wide approach to long term planning.

### **Strategic Policy SP6 – Industrial Development and Growth**

*To facilitate growth and consolidation of industrial uses including manufacturing and SMEs, storage, warehousing and distribution uses, and related support services, Special Use Zones are proposed for emerging industrial estates around the Port, around the southern boundary of Port Louis city and around the Airport. In these Zones, which require a high level of strategic accessibility, there will be a general presumption in favour of mixed industrial uses.*

*Justification:* The purposes of this designation are:

- (i) To allow for the orderly growth and development of industrial and industrial support uses at key strategic locations including the Port, around the southern city limits at Pointe aux Sables/La Tour Koenig and Pailles and at the Airport
- (ii) to provide a focus for comprehensive area-wide transport and land use planning and investment initiatives which need to be seen in the context of the long term requirements of the Port and Airport
- (iii) to assist in reducing traffic and other adverse pressures on the conurbation's highway and utility networks, by facilitating strategic locations for industrial growth and relocations of existing industries from inappropriate locations elsewhere including town centre sites, thereby promoting environmental enhancements.

In areas where clusters of particular uses have already started to consolidate, or there is a particular land use focus, Special Use Zones have been identified. These have been identified at the Port/Roche Bois/Riche Terre (port-related storage and industry), Pointe aux Sables/La Tour Koenig, Coromandel (manufacturing and related SME industry) and at Pailles (mixed industrial/commercial) and around the Airport/Plaine Magnien (airport-related industry). In these Zones there will be a general presumption in favour of mixed industrial uses, taking into account a site's existing and future requirements for strategic highway access, public

transport and level of utility provision, the environmental impact of the proposed uses and measures for mitigation, including for solid waste and wastewater treatment.

Complementary highway and traffic management schemes will be required to provide for the orderly growth of these Special Use Zones (SUZ). To serve the south, the long term potential for extending the Port Louis Outer Ring Road across the GRNW to the A1 near Chebel and from the A3 at Petite Rivière to Pointe aux Sables is proposed for further study. In the north a new industrial standard distributor road is proposed across the Baie du Tombeau to link with the proposed Freeport business park to open up sites for further development and links with the M2 motorway.

In the longer term, the provision of an alternative strategic highway connection between the port and the airport can also assist in reducing pressure on the conurbation's highway network as well as facilitate development of new sites. The selection of the route should be designed in connection with the designation of Rural Regeneration Zones to facilitate new attractive locational options for employment-generating growth activities including value-added manufacturing, SMEs, high tech. ICT and financial services or storage, distribution and warehousing and other uses which require significant sites with high levels of accessibility. Reference should be made to the Transport section of the Strategy for further details.

### 3.8

#### ***Tall Buildings***

For a city seeking to maintain its economic vitality and viability, high buildings can be seen as symbols of innovation, a new building type that will allow increased intensity at major centres, provide a high-density focus to certain areas, and capitalise on views of the city and town centres, the coast and countryside. Conversely, in a relatively small city, high buildings can threaten to absorb the vitality of the city off its streets, whilst compromising the setting of existing landmarks and fundamentally changing the character of the city and other urban centres. In particular cases such as Port Louis, which has received a significant amount of the total floorspace permitted over the last ten years, and where pressure continues for tall buildings within the central area, the growth rate has been declining because of *inter alia* limited available plot sizes and other site/area constraints, fragmented ownership and high land values.

Within the city and town centres tall buildings can promote a sense of civic pride and scale, they can act as landmarks, mark “gateways”, provide a sense of place, enhance orientation and identification, providing a vertical element to the city and town centres in contrast to other more lower lying suburban areas. Tall buildings may for example provide a “frame” to the city and town centre areas. A high building may identify and emphasise a point of civic, functional (e.g. transport-related, centre of urban activity) or visual significance both locally and in relation to the urban scene over the whole area from which it will be visible.

Tall buildings proposed for out of centre locations are likely to generate visual, environmental and traffic concerns, especially if sited in lower density residential areas or on the edge of town: in these cases proposals for tall buildings should be subject to Environmental Impact Assessment and Traffic Impact Assessment to the requirements of the EPA 2002 and policies SP20 and 21 respectively.

#### **Strategic Policy SP7 – Tall Buildings**

*Proposals for new tall buildings will normally be permitted within the city and town centres and at key strategic locations such as Urban Renaissance Zones and other strategically accessible locations including key public transport/LRT interchanges and on the city Waterfront but only where they do not impinge on established views or opportunities for new views from public vantage points. Proposals should comply with the criteria contained within the revised Planning Policy Guidance Note on Design of Commercial Development (Policy SP18 refers) and incorporate a Traffic Impact Assessment to the requirements of Policy SP21.*

*Proposals for new tall buildings in out of centre and edge of town locations are likely to generate visual, environmental and traffic concerns: in these cases proposals should incorporate an Environmental Impact Assessment and Traffic Impact Assessment to the requirements of the EPA 2002 and policies SP20 and 21 respectively.*

*Justification:* Tall buildings are unlikely to be appropriate in most areas of Mauritius where they are out of scale with their surroundings. However in certain locations (e.g. the capital city and town centres in the conurbation and close to public transport nodes and corridors) high buildings may be considered appropriate particularly where these support other sustainable transport objectives.

In view of the inevitable prominence of tall buildings they must be of outstanding architectural quality. Due account will also need to be given to the effects of wind turbulence and overshadowing in the siting of any high building and every effort should be made to provide a comfortable micro-climate in the surrounding open spaces. Consideration may also be required to the situation where the freedom of layout that may result from a high building would enable major public improvements and amenities to be achieved e.g. new public open space, pocket parks, and secured through implementation mechanisms such as public private partnerships, planning obligations, developer contribution plans and similar arrangements involving public private collaboration.

Further guidance is included in Planning Policy Guidance (PPG) on Design Guidance for Commercial Developments: this is particularly important as the core strategy supports the creation of sustainable transport options and in tandem with that higher density development, which is likely to take the form of higher building forms. Such Guidance includes identifying high-rise “no go areas” e.g. those areas with a visual relationship to important, historic and famous buildings; within areas of special townscape character; situations in which high buildings would spoil traditional or locally important views, mountain backdrops including major high points and ridges. In out of centre and edge of town locations such concerns are likely to be significant: in these cases the visual, environmental and traffic implications should be assessed by way of an Environmental Impact Assessment and a Traffic Impact Assessment to be submitted by the promoter at the application stage.

### **3.9**

#### **3.9.1**

### ***Major Towns in the Conurbation***

#### ***Urban Regeneration and Rehabilitation***

Appendix 2 shows a population total of 358,700 in the Plaines Wilhems towns in 2000, an increase of 36,000 over the last ten years. The total number of housing units changed from 71,500 in 1990 to 94,600 in 2000 and the number of jobs from 103,000 to 124,000. Most notable is the range of densities experienced within the various towns, the highest densities being estimated in Rose Hill, with 5,137 persons/1,372 housing units per square kilometre. The lowest densities are seen at Vacoas/Phoenix at 1,857 persons/458 housing units per square kilometre.

If future densities rise to reflect those within Rose Hill (i.e reflect higher density levels already apparent and established within the conurbation towns) a potential additional capacity (maximum) of some 251,500 persons and around 68,300 housing units could be reached. These figures rise to 357,800 and 98,150



respectively if Port Louis is also included, and which would represent some 70% of total anticipated housing growth requirements (i.e 98,000 out of a total demand of 140,000 units) over the next twenty years. Additional land is of course available within Cybercity and especially the Highlands/Illovo sites which will enhance the ability of the conurbation to absorb further longer term growth.

### **Strategic Policy SP8 – Mixed Use Developments**

***Mixed-use development will be encouraged in appropriate locations particularly within Urban Renaissance Zones in the city, town centres, other urban areas well served by public transport and other areas of major new development.***

*Justification:* Policy SP8 encourages mixed-use developments within settlements subject to environmental safeguards to protect the quality of life. Mixed use development can contribute towards sustainable development by: making urban areas more attractive places to live; improving the vitality and viability of commercial centres, by increasing use during the day, in the evening (enhancing the “evening economy”) and at the weekends, and by introducing new residents (especially where densities are raised) and visitors.

Mixed use developments can also reduce the need to travel by providing a range of opportunities and facilities in close proximity to homes and workplaces; fostering social inclusion by making it easier and cheaper for people to reach the facilities and jobs they need; providing increased activity and surveillance and hence an increased sense of safety and security (“self policing” through natural surveillance); and creating a variety of different buildings and spaces which can contribute to visual interest and preserve and enhance historic and cultural heritage.

### **Strategic Policy SP9 – Development of Vacant, Derelict or Unused Land and Sites**

***A sequential approach to the development of land in settlements should be followed. Priority to develop previously developed land and unused premises in existing centres followed by similar sites in edge of centre locations should be preferred before edge of town sites are considered. The designation of Urban Renaissance Zones and the preparation of Action Area Plans especially in relation to urban centres impacted by the proposed LRT should be drawn up to focus public and private sector initiatives.***

***Areas for regeneration and redevelopment should be identified and confirmed through the Local Plan revision process. Involvement of the Chambers of Commerce and Industry and other private sector stakeholders through for example public private partnership agreements and developer contribution plans should assist in bringing forward sites for redevelopment and renewal. The creation of a new Urban Regeneration Authority or similar body should be considered in relation to transport-related urban regeneration and the proposed LRT to coordinate and implement public and private sector initiatives.***

*Justification:* In different ways the city and main towns within the conurbation all have distinguished and historically-important urban centres, which are reflected in the uses still evident e.g. Government offices, the markets and the various important historic buildings and structures. However, within their urban fabric there are pockets of environmental degradation and underused and vacant land and buildings. In some cases these are the result of the complexities and fragmentation of land ownership in town (and main village) centres.

The regeneration of these areas, for example through the redevelopment of previously developed land will make an important contribution to their ability to accommodate more growth where such ownership problems can be overcome and will be an essential ingredient of the success of the proposed LRT. The designation of Urban Renaissance Zones, Rural Regeneration Zones and the use of public private partnering agreements can assist in this process. The identification and confirmation of regeneration and redevelopment areas should be incorporated in the Local Plan revision process and new parastatal agencies such as an Urban Regeneration Authority should be considered to coordinate and implement LRT-related urban redevelopment efforts in order to overcome some of the land ownership problems currently constraining urban regeneration.

#### **Strategic Policy SP10 – Urban and Rural Rehabilitation**

***To encourage and facilitate the rehabilitation and upgrading of run-down parts of built-up areas in town and villages. Rehabilitation should include:***

- (a) the rehabilitation and re-use of buildings no longer required for their original purpose provided that***

- (i) *utilities and services are available without unnecessary expense to public authorities, and*
- (ii) *the buildings are capable of conversion without the need for significant alterations or additions;*
- (b) *the re-use or refurbishment of large institutional facilities set within their own grounds;*
- (c) *the relocation of intrusive or incompatible uses to more appropriate locations.*

*Justification:* Many built-up areas in both urban and rural areas are in urgent need of rehabilitation. This may be due to many factors including: lack of basic amenities; substandard utility services; undesirable mixture of incompatible uses; or unsightly, neglected or run-down buildings and surroundings.

Where mitigating measures are insufficient to improve amenity for affected citizens in settlements, environmentally intrusive uses should be encouraged to relocate to more appropriate locations, subject to acceptable alternative sites being identified. This will contribute to urban and rural rehabilitation. New funding initiatives such as those involving application of the principles of the Community Development Fund managed by the Ministry of Tourism and the National Environment Fund under the Ministry of Environment should be explored to aid implementation in these cases.

### **3.10**

#### ***New Planned Communities***

It is recognised that new planned communities can have an essential role in accommodating development growth sustainably. The newest planned community clustered around Cybercity, Highlands/Illovo and Moka/St. Pierre will have emerged by 2010, when the conurbation will have reached a population of around 600,000. At that time Cybercity is expected to be fully operational with state-of-the-art high tech/ ICT/financial services, commerce and retailing and to support these, residential uses.

Close to this, at Highlands/Illovo land conversion and development is envisaged with a range of new insitutional, cultural, educational and leisure clusters, formed around the proposed Bagatelle Dam in an attractive master-planned, landscaped and water-based setting. Cybercity and the Highlands cluster will become integrated with Moka/St. Pierre to form a large strategic growth area which will transform from a rural-based to an urban-based zone and provide an additional,

complementary employment node for the conurbation's workforce over the planning period.

Strategic planning for this eastern extension of the conurbation including and beyond Cybercity is already underway. Proposals for extensions of the M1 motorway south from Redit and east from Cybercity and Phoenix into the Highlands/Illovo cluster should form part of a conurbation-wide integrated land use and transport framework.

Although it is not envisaged that an LRT connection to this emerging growth cluster will prove feasible within the short term, provision for strategic east-west public transport connections to the remainder of the conurbation should be encouraged, to take advantage of existing and proposed highway investments including the Phoenix- Beaux Songes link road. Such schemes will need to be coordinated with the INTSS recommendations and proposals for a Port Louis Outer Ring Road, the Moka-Port Louis Link Road and other schemes currently being studied by the Road Development Authority (RDA), as well as the land development schemes of relevant Government Agencies and the private sector. An area-wide Action Plan should be prepared as a matter of priority to integrate land use and transport proposals for this area.

#### **Policy SP11 – New Settlements/Settlement Extensions**

***Proposals for new settlements or substantially extended existing settlements should make appropriate provision for:***

- ***Mixed development to serve the needs of the new community and/or support existing settlement provision;***
- ***High standards in the design, layout and landscaping of urban development; and***
- ***Facilities to assist the operation of public transport and pedestrian and cyclist facilities.***

***For the Highlands/Illovo new settlement /extension an Action Area Plan for the area should be prepared as a priority action. The Action Area Plan will form an important component of the Local Council's revised Local Plan.***

*Justification* The design and provision for new settlements and substantial settlement extensions should incorporate specific arrangements for mixed

development, transport and movement, infrastructure provision and urban design. This is to ensure that the development provided is of a high quality, is supported by appropriate community facilities and infrastructure, it enhances existing settlement provision and linkages, and is developed in a sustainable way.

New settlements, when properly planned, can provide particular opportunities. The sites identified and committed for Cybercity and adjoining Highlands/Illovo have considerable merit as new settlement growth clusters within the wider conurbation, through attracting the attention of world-class businesses in leading technologies and providing the conditions for the emergence of technology-based clusters, which will further increase the area's attraction for investment and thereby add to these strengths. Such proposals can for example provide specific improvements to the setting of existing built-up areas through the provision of well-designed quality landscaped locations, provide for improved public transport links with existing settlements by increasing viability of services, and utilise spare and augment existing facilities and services (e.g. water, sewerage, education, health).

An Action Area Plan needs to be formulated which promotes the creation of a framework for land use and transport development and which integrates the Cyber City and its potential expansion eastwards to the adjoining Highlands /Illovo development sites, especially as these will involve access to the strategic highway network. In accordance with the aims of the National Development Strategy and development principles, key Government agency and private sector stakeholders including the local council should be involved in the planning process.

### **3.11**

#### ***Green Wedges***

Corridor development can lead to the loss of distinctive character of existing settlements along the route. However, physical separation can be maintained by green/open gaps along the corridor. The concept of maintaining green gaps between certain settlements is well established in existing Local Plans (Outline Schemes), although gaps such as at Candos Hill, Quatre Borness have recently been the subject of much development pressure and incremental loss.

The intention should be to avoid the merging of built-up areas where intervening open space land is infilled, and the gradual urbanisation of rural and coastal areas, where residential and tourism-related developments spill out into the surrounding countryside. Green gaps can be identified at the strategic level where areas of countryside, river corridors, green wedges or open spaces define or contribute to

the character of the settlements, and are considered worthy of retention and protection. Implementation of such policies will involve in appropriate cases acquisition and maintenance of important green wedges/open spaces through developer/private sector collaboration and contribution plans and public private partnering arrangements as part of area-wide Action Plans and proposals. The use of the Ministry of Environment's National Environment Fund under the EPA 2002, the Ministry of Tourism's Community Development Fund and other new mechanisms involving for example a 'green levy' should be explored to implement and maintain open space schemes.

### **Strategic Policy SP12 – Strategic Gaps**

*A positive approach to the retention, provision, use and treatment of open space shall be adopted by:*

- *Safeguarding appropriate open land from built development and maintaining its positive contribution in providing a visual and physical break in the urban areas*
- *Recognising the value of landscape and open space features throughout the urban environment*
- *Maintaining and increasing suitable recreational facilities*
- *Improving all aspects of the environmental quality of open spaces.*

*Development should not be permitted if it would contribute to a possible merging of settlements and the creation of urban sprawl. Development should not normally be permitted where it would be harmful to the natural, landscaped and/or rural character of areas of land that form belts of countryside around settlements and open spaces within Tourism Zones on the coast.*

*Opportunities afforded through public private partnerships, collaboration with developers through contribution plans and the use of existing and proposed mechanisms such as the National Environment Fund, the Community Development Fund and the green levy should be examined where necessary to acquire, replace and maintain valuable green wedges and open spaces, particularly within urban areas and along the coast in Tourism Zones.*

*Justification* Open spaces play a significant role in sustaining and improving the amenity of settlements in urban and rural areas and within Tourism Zones on the

coast, attracting new investment, employment opportunities and improving the quality of life. Open spaces plays an essential role in providing the necessary facilities for a wide range of leisure, educational and recreational activities from formal sporting facilities to walking, sitting, informal play and cultural and entertainment facilities. Open spaces form a key part of the landscape, making a contrast with built development and need to be considered during the planning process and conserved.

In appropriate cases, the use of public private partnerships and planning obligation agreements should be examined to acquire or replace, and maintain valuable green wedges and open spaces, particularly within urban areas and on the coast in Tourism Zones. Existing funding mechanisms such as the Ministry of Environment's National Environment Fund, the Ministry of Tourism's Community Development Fund and the proposed green levy should be examined in this connection.

### **3.12**

#### ***Urban Design and Quality***

The architecture and urban design of the island of Mauritius is reflected in the mix of splendid but decaying colonial buildings, freshly primed, restored buildings such as Saint Aubin, or the Mauritian Creole house, a mixture of East and West, bearing the traces of many civilisations. It is of an exquisite botanical garden and fine public spaces. It is of a capital city, with a jumble of new and decrepit old buildings, mosques, churches and temples and bursting with a spirited Mauritian fusion of international and tropical styles, seen in various and imposing high buildings and crowned by the "lifting" of the Caudan Waterfront, a lively, colourful and vibrant area of the city. It is an image of the highest quality luxury hotels that respond to the unique character and stunning natural beauty of the island, its beaches, mountains and lagoons.

But the image of Mauritius is also of a proliferation of bland, poorly designed buildings that display no concern for their setting or context. It is of incomplete, ugly and crumbling concrete slab buildings. A multitude of building eyesores congregating within urban areas, peppered throughout the island and marching along primary and secondary road networks. The perception is of a patchwork of construction sites, which reflects traditional cultural and economic circumstances. It is of a tidal wave of thousands of people pouring into and out of the city and through the conurbation each day, congested roads, poor pedestrian environments and public spaces, dirty and noisy city and town centres. It is of a capital city centre that simply shuts up shop and is as dead as the dodo after office and shop hours.

### Strategic Policy SP13 – Design Quality and Sustainable Development

*The city and towns of Mauritius should be maintained and enhanced so that they are accessible and desirable living and working areas that provide a high quality of living where Urban Renaissance Zones, Rural Regeneration Zones and Tourism Zones have been identified and Action Area Plans proposed as part of revised Local Plans. New Strategy and Policy Guidance includes measures to protect and enhance urban areas and address local concentrations of urban deprivation and poor physical conditions. Relevant considerations should include:*

- *Ensuring a high standard of design and improving areas of poor quality environment;*
- *Preserving and enhancing historic buildings and townscape and maintaining and strengthening local distinctiveness and sense of place;*
- *Protecting and enhancing urban open space, green wedges, formal and informal landscape areas, settlement edges and tree planting;*
- *Redeveloping vacant and under-used sites and optimising the use of previously developed urban areas;*
- *Continuing to secure the improvement of existing building stock.*

*In addition, the National Development Strategy promotes the realisation of appropriate Planning Policy Guidance for Design of Commercial, Industrial and Residential Developments and Hotels and Integrated Resorts, Action Area Plans and development briefing by:*

- *Encouraging mixed use including housing in city and town centre areas;*
- *Raising densities commensurate with the creation of quality urban environments and the viable use of public transport facilities; and*
- *Encouraging appropriate new development and changes in the urban environment to fit into an overall urban design framework.*

*In considering the application of this policy, reference should also be made to Strategic Policies SP18 and SP19.*

*Justification* The most thoroughly developed design policies will achieve little if they are ignored or not understood in the development control process. Thus the



National Development Strategy should reinforce and guide the production of relevant urban design concepts or visions for appropriate urban centres in accordance with relevant strategic policies.

A key objective of the Strategy is to promote sustainable development, and good design is essential if attractive, high-quality sustainable places are to be produced where people (both residents and visitors) will want to live, work and relax. Quality design is fundamental to any sustainable strategy of urban, rural or coastal redevelopment and upgrading which can make an important contribution to the accommodation of growth.

In order to facilitate the creation of high quality design for major projects a Design Review Panel is proposed to be established, incorporating both design and development professionals and non-professionals. The Design Review Panel would assist in pre-application advice and would be a “consultee” in the assessment and determination of major planning proposals. In association with the Design Review Panel a “Civic Design Award” could be created which celebrates on an annual basis, buildings considered to be the best design nationally and contributing the most to the built environment (e.g. public space, pedestrian facilities). This would help to raise the profile of good quality design in Mauritius.

### **3.13**

#### **3.13.1**

### ***The Countryside***

#### ***Rural Regeneration***

There is a need in the longer term to balance the continued growth of the conurbation through the provision of strategic location options in the countryside which can provide a high level of access to the conurbation markets, to the port and airport, as well as serve as a focus for local and regional employment needs.

Consistent with the overall strategy of clustered growth which builds on existing settlements, investments and commitments, new employment-generating activities and supporting housing, social and infrastructure developments should in the first instance be guided to key growth Zones and other main settlements in the countryside. However in some cases suitable sites to attract inward investments may not be available and so new mechanisms need to be found to facilitate growth.

In these cases consideration should be given to construction of selected new bypasses, which can contribute to a strategic link between the port and airport and open up new sites for development especially where public private partnering agreements with local landowners can bring forward implementation.

## Strategic Policy SP14 – Rural Regeneration and Growth

*In the countryside Rural Regeneration Zones will be promoted at strategic clusters in the north at Triolet, Goodlands, Pamplemousses, Riviere du Rempart, in the east at Moka/St Pierre/Highlands, Centre de Flacq, Bon Accueil, Quartier Militaire, and Bel Air Riviere Seche, in the south at Rose Belle and Chemin Grenier and in the west at Bambous. In these Zones, for which Action Area Plans should be prepared, there will be a general presumption in favour of mixed use developments, taking into account a site's level of accessibility to highway, public transport and utility networks, its suitability for agriculture and its environmental and landscape sensitivity.*

*Justification* In order to reduce development and infrastructure pressures on the conurbation, sustain rural economies and stimulate development opportunities, major new developments in the countryside should be focused on Rural Regeneration Zones. In strategic locations and based on existing settlement clusters, Rural Regeneration Zones are proposed to serve a range of purposes. These include:

- To facilitate economic growth outside the conurbation
- To create new development opportunities where suitable sites within existing settlements are not available or are constrained because of poor access
- To improve local traffic, safety and environmental conditions in adjacent town and village centres.

Criteria for designation of Rural Regeneration Zones should also take account of the need to sustain the economies of local towns and villages and in appropriate cases help smooth the transition from sugar cane dependency to a more diversified and multi-purpose countryside, where factory closures are envisaged.

On new sites within Rural Regeneration Zones there will be a general presumption in favour of a mix of industrial and commercial uses. In association with key stakeholders in the public and private sector, Action Area Plans should be drawn up in which sites for clusters of employment-generating activities can be promoted to attract new value-added manufacturing, and linked to these SMEs; sites for new knowledge-based high-tech. business parks to support the growth sectors of ICT and financial services, and storage, distribution and warehousing uses should also be identified.

The economic/employment clusters will be complemented by planned and committed Government projects such as new schools, health clinics and traffic centres to facilitate public transport improvements. The location of new residential morcellements and public sector housing schemes should also be considered to support clustered growth.

To facilitate improved strategic accessibility and provide for new opportunity sites, bypasses are proposed at Pamplémousses, Bon Accueil, Centre de Flacq and Bel Air which with private sector involvement can facilitate a strategic link between the Port and Airport in the longer term. Traffic management schemes including provision for public transport and where necessary new traffic centres should be considered for all Rural Regeneration Zones. Further information is contained in the Transport section of this Strategy.

#### **Strategic Policy SP15 – Development in the Open Countryside**

***Outside Rural Regeneration Zones and limits of permitted development in the open countryside as identified in revised Local Plans, a sequential approach to the release of major sites should be followed. Where land has been identified as having the following characteristics, there should be a general presumption against major new developments, except where such developments are in the national interest:***

- (i) Land identified by the Ministry of Agriculture as being highly or moderately suitable for agricultural use (sugar and non-sugar)***
- (ii) Land identified by the Ministry of Environment which has an environmental sensitivity and/or landscape significance.***

*Justification:* Where development is proposed on land in the open countryside which falls within these categories, there should be a presumption against major developments which would run contrary to the policies of the Ministry of Agriculture and the Ministry of Environment. However where proposals are made on land which has been classified as having marginal suitability for agriculture and which is surplus to private sector requirements, is sited within or adjoining existing settlement limits, and where existing physical and social infrastructure networks already exist, there should be a general presumption in favour of development where it can be shown to sustain local needs especially in areas vulnerable to change in the agricultural sector.

### 3.14

#### ***Coastal Development and Growth***

Along the coast, a presumption in favour of development clustering in existing settlements, resort complexes and major campement sites within approved Tourism Zones will be promoted. In such Zones, presumptions in favour of most forms of mixed use tourism-related developments, including hotels, resorts, housing and mixed business uses would be generally applicable.

In this way it is expected that sufficient critical mass will be created to make most efficient use of costly Government infrastructure investments such as new sewage treatment plants, whilst providing the range of support services and facilities to help stimulate the conditions for private sector involvement and initiative.

Where strategic developments are being considered within Tourism Zones especially along coastal locations, traffic management and integrated environmental improvement schemes rather than major new highway construction is likely to prove economically and environmentally sustainable. In coastal areas a balance is needed which can respond to the requirements of local residents and businesses, as well as hotel operators, tourists and day visitors for a range of transport services including public transport and private vehicular access, delivery, servicing and parking arrangements, and the needs of pedestrians and cyclists.

In some cases, especially where development pressures are acute and Government resources are limited, the private sector should be encouraged to lead the way through partnering arrangements to plan and implement major projects and environmental improvements as part of area-wide Tourism Action Plans.

#### **Strategic Policy SP16 – Coastal Development and Tourism**

***On the coast within Tourism Zones identified in the Tourism Development Plan for Mauritius, clustering of tourism and other employment-generating activities within or adjacent to existing settlements, resorts and campement sites and utility and transport networks will be encouraged.***

***Major new developments should be focused within the Northern Tourism Zone including Grand Baie, in the East Coast Tourism Zone including Trou d'Eau Douce, the Mahebourg Tourism Zone and the South West Tourism Zone including Flic en Flac/Wolmar, where Ministry of Tourism Action Area schemes and other initiatives have already been identified. In these Zones and where sites are within or adjacent to existing settlement limits, tourist resort complexes or major campement sites, there will be a***

*general presumption in favour of mixed use tourism and other forms of complementary employment creation.*

*Support will also be given to more specialized growth and conservation opportunities in the South Coast Heritage Zone including Surinam/Souillac, and in the South West Natural Zone including Black River Gorges National Park.*

*Proposals should comply with the criteria contained within the revised Planning Policy Guidance (Policy SP 18 refers).*

*Justification:* Tourism Zones should be the focus for new strategic developments on the coast. Existing settlements, resort hotels and complexes and major campement sites can form the basis of employment-generating clusters in these areas.

Further guidance has been created as Planning Policy Guidance: this is particularly important as the core strategy supports the creation of sustainable development on the coast and the protection and enhancement of the environment and natural resources. In all cases of major development on the coast, considerations for approval of applications will include development impact on an area's natural environment (both terrestrial and marine), a site's national heritage features and the sensitivity and quality of its landscape. A comprehensive EIA to EPA 2002 requirements will be required in most cases.

#### **Strategic Policy SP17 – Development on Open Coasts**

*Within approved Tourism Zones but outside of existing settlements, resort complexes and major campement sites, and outside Tourism Zones in open coastal and countryside locations, particularly in green field and open locations where agricultural, environmental and landscape considerations are of national or district-wide significance, there will be a general presumption against major new development, unless and in the national interest suitable alternatives are not available. In these cases the full environmental, social and transport costs of the new location and the alternatives considered should form an integral part of the decision-making process.*

***In locations in and adjacent to limits of permitted development as shown in revised Local Plans, either within or outside Tourism Zones, there will be a general presumption in favour of small scale developments where these can be shown to sustain local economies, especially where changes due to agricultural restructuring and diversification are envisaged in the sugar sector.***

*Justification:* Within approved Tourism Zones but outside main settlements/limits of permitted developments, resorts and campment sites as shown in revised Local Plans, and on land outside Tourism Zones on the open coast, there will be a general presumption against major development except in cases of national interest. A sequential approach should be considered for the release of sites in these areas. Criteria will focus on maintaining land of high and moderate suitability for agriculture as defined by the Ministry of Agriculture, including use of land for sugar cane and non-sugar sector uses. Other factors will include protecting land with environmental sensitivity as defined by the Ministry of Environment or landscape significance.

Unless it can be shown that proposals can be integrated with existing settlements and activities and can also contribute to the enhancement and maintenance of the surrounding environment including wetlands, mangroves and lagoons, major new developments will not be permitted.

Where small scale developments are proposed on land within or adjoining limits of permitted development as shown in revised Local Plans, either within or outside Tourism Zones, there will be a general presumption in favour of new schemes where it can be shown that they meet local needs and can contribute to the sustainability of local economies. Such principles will also apply to proposals in approved Tourism/Natural Zones including the South West Natural Zone/Black River Gorges National Park and in the South Coast Heritage Zone, taking into account a site's agricultural, environmental and landscape significance.

### **3.15**

#### ***Planning Policy Guidance***

As an integral component of the new National Development Strategy, guidance is required to show how national policies can be translated into implementation actions at the local level. For example, how clusters of employment-generating activities such as mixed use commercial developments can be planned and integrated within existing settlements and town centres. Such schemes need to be planned and designed in relation to higher density residential, leisure and

recreational opportunities, social facilities such as community centres and health clinics, and the availability of existing and proposed public transport facilities, including the strategically-important Light Rail Transit system from Port Louis to Curepipe.

Another important aspect will be to show how new hotels, tourist resorts and related leisure complexes including golf courses can be clustered to sustain local economies and enhance existing built and natural environments on the coast. Key considerations here include the conservation, maintenance and enhancement of mangroves, wetlands and other coastal features for the benefit of all Mauritians as well as tourists, so as to improve the overall quality and image of the area-another important objective of the new Strategy.

To provide this bridge between policy and implementation, a series of Planning Policy Guidance notes has been prepared consistent with the National Development Strategy and policies and relevant Local Development Plans (Outline Schemes) as revised.

#### **Strategic Policy SP 18 – Planning Policy Guidance**

*Planning Policy Guidance provides advice on relevant planning policy for commercial and industrial developments, residential morcellement and hotels and integrated resorts. Its intent is to assist officers involved in development planning and control in national and local Government as well as project promoters, developers and designers in understanding and applying policies devised at national level to their schemes at the local or site level.*

*The principles embodied promote the consideration of an area wide approach to development, rather than viewing it as an isolated or ad-hoc activity. An extra dimension is the promotion of stakeholder involvement (private, public and non-government organisations) in the development planning process to facilitate implementation.*

*To date Planning Policy Guidance has been prepared on Design Guidance for :*

- *Commercial Development;*
- *Industrial Development;*
- *Residential Development; and*
- *Hotels and Integrated Resorts.*

*Planning Policy Guidance will be an important component in the drawing up of local councils' revised Local Plans and Action Area Plans.*

*Justification:* Planning Policy Guidance notes are an integral component of the National Development Strategy. They are designed to translate national policies to local-level sites and situations. To date Planning Policy Guidance on design of commercial development, hotels and integrated resorts, industrial development and residential development have been prepared. Over time it is expected that further guidance notes on different topics will be prepared.

Guidance notes are intended to be used by officers involved in development control activities at central and local levels, as well as project promoters, developers and design teams in planning and designing new projects. It is expected that Planning Policy Guidance will be an important element in preparing Local Councils' revised Local Plans and Action Area Plans by translating the National Development Strategy policies and principles for application at the local level.

### **3.16**

#### ***Action Area Plans***

In adopting an area-wide approach to planning for major new developments, Action Area Plans for mixed use, special use and tourism-related developments involving public and private sector participation should be drawn up for Urban Renaissance Zones, Rural Regeneration Zones, Special Use Zones and Tourism Zones. In preparing such Plans consideration should also be given to the requirements for future support activities including public transport, traffic management and new highways, and housing, education and health facilities. In these cases planning for future adequate water, sanitation and solid waste facilities will also be important considerations.



Provision is already made for the preparation of such Plans, called Detailed Schemes, in the operational 1954 Town and Country Planning Act, including schemes 'proposed by the owner of any land within the area'.

### **Strategic Policy SP19 – Action Area Plans**

*In Urban Renaissance Zones, Special Use Zones, Rural Regeneration Zones and Tourism Zones prior to the implementation of major new developments, the drawing up of Action Area Plans involving public/private partnering arrangements should be undertaken. Key stakeholders should be involved in the selection of Action Area Plan boundaries.*

*In the case of Tourism Zones these will build on the Action Area Plan proposals contained in the Tourism Development Plan. Planning Policy Guidance should be considered when drawing up Action Area Plans. Action Area Plans will form integral and important components in the revision of Local Councils' revised Local Plans.*

*Justification:* Within designated growth Zones, Action Area Plans will promote a wide range of mixed use developments; in these Zones, the Action Area Plan will provide the priority focus for integrated public and private sector development initiatives. Provision is already made for the preparation of such Plans, called Detailed Schemes, in the operational 1954 Town and Country Planning Act, including schemes 'proposed by the owner of any land within the area'.

In appropriate cases, streamlined planning principles will be considered, through application of the Investment Promotion Act 2001, the SIE Act 2001 and other planning mechanisms in order to facilitate permit requirements, subject to meeting specified criteria (eg. on environmental and traffic impact, utility provision and design quality appropriate to each site and type of development). Planning Policy Guidance on Design of Commercial Development, Hotels and Integrated Resorts, Industrial Development and Residential Development should prove of assistance in drawing up Action Area Plans.

Through preparation, participation and updating of the National Development Strategy, revised Local Development Plans (Outline Schemes) and Action Area Plans, and in considering Planning Policy Guidance Notes it is envisaged that inter-agency and public-private sector cooperation will be improved and delivery of timely advice to national and local authorities through formalised and regular consultations will be enhanced.

***Environmental and Transport Assessment***

Because of the importance of the country's natural and built environmental assets and landscape to the economy, to tourism and to the quality of life of its residents and visitors, it is essential that major new developments should not only be designed in sympathy with their surroundings, but such designs should strive to add value, ensure sustainable conservation and enhancement of valuable habitats, and facilitate economic and social interaction and inclusion by providing a variety of travel options. The assessment and mitigation of adverse environmental and transport impacts of major developments should form integral components of the project planning and permitting process.

**Strategic Policy SP20 – Environmental Reporting and Assessment**

***Where planning proposals for major mixed use, specialised or tourism developments are considered to have a potentially significant effect on the natural or built environment, on areas of landscape significance or on other areas of environmental sensitivity, comprehensive Environmental Impact Assessment (EIA) will be required. EIAs should be prepared by promoters at the project planning stage in consultation with central and local Government agencies, in accordance with the requirements of the Environment Protection Act 2002.***

*Justification:* The intent of Policy SP 20 is to reinforce the relationship between land use and environmental planning during the initial stages of the planning process. Environmental assessment is a technique which should be deployed throughout the feasibility planning and design stages of major projects to assist in identifying potential impacts and their mitigation, to make realistic proposals and improve project design, and help prepare mechanisms for effective implementation, mitigation, monitoring and after-care. Such actions will inevitably involve both public and private sector agencies: without such joint support and action it is unlikely that the country's environment and natural assets can be sustained in the longer term.

Provision is made for the preparation of Preliminary Environment Reports and Environmental Impact Assessments under the EPA 2002. Parts A, B and C of the First Schedule to that Act identify projects for which Preliminary Environmental Reports (Part A) and EIAs (Parts B and C) will be required for submission to and scrutiny by the Ministry of Environment.

## Strategic Policy SP21 – Transport Assessment

*Where developments will have significant transport implications, Transport Assessments should be prepared by scheme promoters and submitted alongside the relevant planning applications for development. The coverage and detail of the Transport Assessment should reflect the scale of development and the extent of the transport implications of the proposal. For small schemes, the Transport Assessment should simply outline the transport aspects of the application. For major proposals, the assessment should illustrate accessibility to the site by all modes and the likely modal split of journeys to and from the site. It should also give details of proposed measures to improve access by public transport, walking and in appropriate cases cycling, to reduce the need for parking associated with the proposal and to mitigate transport impacts.*

*Where proposals do not include a range of measures to improve the access to the site by non- car modes, the Transport Assessment should include an illustration of the potential mode split to the site if such measures were included.*

*Justification:* Prospective developers should hold early discussions with the MPI and RDA in order to clarify whether proposals are likely to be acceptable in transport terms and to “scope” the requirements of any Transport Assessment. Where proposals are clearly in line with planning policy (for instance where they accord with the growth Zone locations in the revised Local Development Plan and include measures to improve access by non- car modes) it should increase the likelihood of a development permit being granted without undue delay. In these circumstances, the relevant agency may want to reduce the requirements and coverage of the Transport Assessment to deal with those aspects necessary to finalising the scheme.

Transport assessments enable planning authorities and relevant road and transport agencies better to assess the application and provide a basis for discussion on details of development proposals, such as the level of parking, the siting of buildings and entrances, and the need for further measures to improve access arrangements to the site. Details of any firm proposals to improve the access to a site should be taken into consideration when assessing the suitability of a site for development.

Developments comprising jobs, shopping, leisure and services should offer a realistic choice of access by public transport, walking, and in some cases cycling, as well as by private transport. This should be assessed in terms of how easy it is to get to the site comparing the different modes (taking into account journey times, public transport frequency, quality, safety, and access for disabled people). Development comprising jobs, shopping, leisure and services should not be designed and located on the assumption that the car will represent the only realistic means of access for the vast majority of people.

Developers putting forward major, strategic development proposals (possibly incorporating a number of individual elements) which involve major generators of travel demand need to be flexible in terms of considering the potential for tailoring, reducing, or splitting projects so that they can be accommodated in the preferred locations (eg growth Zones) in the revised Local Development Plan or on other sites which are highly accessible by non- car modes. Where a development comprising jobs, shopping, leisure and services is proposed outside the preferred locations in the Local Plan, the onus will be on the developer to demonstrate why it cannot fit into the preferred locations, and to illustrate how the accessibility of the proposed development by all modes compares with other possible sites.

## 4 Housing

### 4.1

#### *Overview*

Since 1983, the population of Mauritius as a whole increased by around 180,000 people from just under 1 million in 1983 to 1.18 million in 2000. Most of the population increase occurred on Mauritius itself, which was estimated to be 1.14 million in the year 2000; the population of Rodrigues increased to around 35,800 in 2000 – 3% of the national total.

The annual growth rate since 1990 has been around 1.1% compared with around 0.8% annually between 1983 and 1990. The increase in the growth rate results from a decrease in emigration rather than a change in birth or death rates. Birth rates changed little between 1983 and 1994 when they averaged between 19 and 20 live births per 1000 population; since 1994, they have decreased by over 10% to 17 per 1000; similarly, the Total Fertility Rate declined by around 15% from 2.3 per 1000 in 1990 to around 2.0 per 1000 in year 2000. Death rates have changed little throughout the period.

As a result of these changes, there has been a pronounced ageing of the population with the median age increasing from 25.7 years (1990) to 29.0 years (2000). This trend is also evident in the changing age composition with lower proportions of the population in all age groups up to 34 years compared to previous years. Directly related to these changes, there has been a substantial fall in the average size of households from 4.8 in 1983 to 4.0 persons per household in 2000. Most of this decrease occurred since 1990. The rate of increase for households since 1990 has been around 2.3% annually which is twice the rate of population increase.

It should be noted that all the above characteristics are typical of many reasonably prosperous nations. For instance, similar trends are occurring throughout the Caribbean and in many European nations. These general trends are likely to continue entraining the following implications:

- Low levels of population growth
- Stable or decreasing population of school-age children
- Short-term increases in the labour force followed by a period of stability
- A continuing, relatively high rate of increase in the number of households and, as a corollary, housing requirements.

## 4.2

### *Housing Stock*

Between 1990 and 2000, over 50,000 new residential or partly residential buildings were constructed on the island of Mauritius; this represents a 28% increase over the 1990 figure. Simultaneously, the number of housing units increased by over 72,000 (a 33% increase) to around 290,000 in 2000. Construction rates were also some 40% higher than during the previous decade. These increases have been accompanied by substantial changes in the housing stock.

The main changes were:

- Over 40% of the increase in housing units occurred in buildings with more than 1 unit
- The number of one storey buildings hardly changed from 1990 to 2000. As a result the proportion of 1 storey residential buildings has decreased from 88% to 68% of the total stock. Over 90% of the increase in buildings was due to the construction of 2 storey buildings or the addition of an additional floor to one storey buildings
- The number of buildings with flats almost doubled from 14,000 to 27,400. In 2000, around 24% of housing units were classed as flats compared with under 12% in 1990.

## 4.3

### *Housing Supply*

Land for housing is currently provided or occupied in three principal ways:

- The National Housing Development Corporation (NHDC)
- Morcellements (sub-divisions)
- Squatting.

In addition two schemes under the Ministry of Housing and Lands are currently under review:

- The Housing Development Certificate, and
- The New Incentives for Residential Development.

It is not possible to determine accurately the increase in housing units as between existing settlements and greenfield locations as there is no monitoring either at central or local Government level once morcellements have been approved, or of other approved planning applications or building construction. It is however an important issue as the capacity of the existing urban areas to accommodate further growth ie through infill and additions/extensions will exert an important influence

on the updated housing strategy. Table 5.1 summarises the main sources of housing supply during the 1990's.

**Table 5.1 Estimate of Housing Supply 1990 - 2000**

Type of Supply	No. of Units	%	Comment
<b>Densification/ Within Existing Built-up Areas</b>			
Units in multi-occupied buildings (e.g. Flats)	30,000	42%	Total increase in multi-unit buildings between 1990 and 2000
Small morcellements	15,000	17%	All morcellements of less than 5,000 sq.m.
Sub-total	45,000	63%	
<b>Greenfield/ Peripheral locations</b>			
Morcellements	25,000	34%	Morcellements of 5,000 sq. m. and above. By subtraction
<b>Squatters</b>	<b>2,000</b>	<b>3%</b>	Consultants' Estimate
<b>TOTAL</b>	<b>72,000</b>	<b>100%</b>	From Census

Source: CSO, Consultants' Estimates, 2002

#### 4.4

##### *Demand for Housing*

The demand for housing units is essentially synonymous with the growth in households. Allowances must however be made for the ratio of households to housing units, second homes and the vacancy rate. By and large, the occurrence of more than one household per dwelling unit reflects overcrowding: this ratio also fell from 1.1 to 1.07 between 1990 and 2000. It is considered desirable to assume that by 2020, the ratio approaches unity.

In 2000, on the island of Mauritius, the number of second homes was equivalent to around 1.4% of the number of households; this proportion has been held constant for these purposes. The vacancy rate increased from 2.5% in 1990 to 5.2% in 2000. This is relatively high and it is considered that a vacancy rate of 3% should be incorporated in the projections. Table 5.2 presents the calculation of the demand for new housing units over the next 20 years.

**Table 5.2 Estimates of Future Housing Requirement**

<b>Item</b>	<b>No. of Units</b>
Households (2020)	403,100
Second homes (1.4%)	5,600
Vacancy (3%)	12,100
<b>Total demand</b>	<b>420,800</b>
Housing units 2000	288,350
<b>Requirement</b>	<b>132,450</b>

Source: Consultants' Estimates, 2002

The total demand for new house construction on the island of Mauritius will therefore be in the order of 132,000 or around 6,600 per annum, similar to the current rate. To this figure should be added another 8,000 dwellings resulting from the relocation of redundant sugar workers. This brings the total to around 140,000.

The following should also be noted:

- No account has been taken of replacement/ reconstruction of existing dwellings. This is not considered necessary as this is an ongoing process which essentially takes place 'in situ' and does not therefore constitute an addition to housing demand.
- Similarly, no account has been taken of the potential demand arising from foreign purchasers as this demand is expected to be catered for primarily by the proposals for Integrated Resorts Schemes (IRS). In any case, this element of demand cannot be predicted with any degree of accuracy.

#### **4.5**

##### ***Residential Land Allocation***

Trend projections of housing units and workplaces imply continued consolidation of development in the urban corridor from Port Louis to Curepipe and in the north and west of the island. The southern and eastern parts of the island remain relatively much less densely developed.

If policies to reverse this trend/increase development in the south and east of the country were deemed appropriate, significant new capital investments in transport and utilities infrastructure and services are likely to be required, in addition to a



strong development control and enforcement system that restricted housing and employment development where it was contrary to the overall strategy.

Housing policy should be consistent with the general development principles embodied in the revised National Development Strategy which include:

- Housing provision should be consistent with the Strategy's locational objectives, e.g. the concentration of development in existing settlements and/or designated growth Zones and clusters (including the urban conurbation/Cybercity)
- Housing should not be permitted where it is not economically sustainable i.e. which cannot be efficiently provided for because there are no adequate or committed utility and transport networks
- Housing should not encroach upon agricultural land classified as highly/moderately suitable
- Housing should not be permitted where it is not environmentally sustainable e.g. in Environmentally Sensitive Areas, in areas prone to flooding or which would affect water catchment areas, or in areas of landscape importance
- As a sensitive land use, new housing should not be permitted in close proximity to (ie within 1km of ) 'bad neighbour' developments such as landfill sites, which would have a negative environmental impact on future residents, or on sites which would constrain future expansion of employment or leisure activities.

Other considerations include:

- A large proportion of recent housing demand has been satisfied by densification and infill development. The potential for this process to accommodate future housing demands will inevitably decline in the years to come unless extensions to current administrative boundaries are made
- The large morcellements are being developed at densities of 18-25 dwellings per hectare. Resultant prices put them out of the range of a large proportion of potential house/land buyers.

These two considerations imply that greater flexibility will be required in the development of future large morcellements in order that they can address the housing needs of a larger proportion of the population.

The new strategy should also be flexible enough to enable applications for housing arising from demographic and social trends to be treated on their merits. These are likely to include applications for more town houses and higher density town centre apartments linked to proposed public transport improvements, for more and safe housing for the elderly, and for new life-style edge of town communities.

### **Policy H1 – Residential Land Allocation**

*Release of new sites for residential development should follow a sequential approach. Subject to the provisions of Policy H2, there will be a general presumption against proposals for new housing outside limits of permitted development identified in revised Local Plans, where such sites are located in the following areas:*

- *In areas of agricultural land classified by the Ministry of Agriculture as highly or moderately suitable for agriculture, or*
- *In Environmentally Sensitive Areas (ESAs) as defined by the Ministry of Environment including water catchment areas, or in areas regarded as having national or district-wide landscape significance, or*
- *In areas where they cannot efficiently be connected to public utility networks, highways or served by public transport, or*
- *In areas within 1km of 'bad neighbour' developments such as sewage treatment plants, landfill sites and civic amenity sites as defined in conjunction with the Ministry of Environment and specified in Policy ST3 and shown on revised Local Plans, or*
- *In areas where it would constrain expansion of a significant employment generator,*

*Unless:*

- *The development proposed is in the national interest, or*
- *It has been committed under a Land Conversion Scheme or NHDC Scheme.*

*Justification:* The potential excess of housing supply over demand due to significant land conversions from sugar implies there is no further major requirement to allocate more land for housing in the immediate future. To do so could further increase the potential for dispersed and difficult to service development and for adverse environmental impacts. This implies that, by and large, there should be a general presumption against permission for major new housing development unless the land involved:

- (a) Is within or adjoins the limits of permitted development shown in revised Local Plans (Outline Schemes)

Or

- (b) Concerns proposals committed under the various Land Conversion Schemes related to the Sugar Industry Efficiency Act and the VRS schemes

And

- (c) Reinforces the overall National Development Strategy's locational goals and objectives for clustered growth.

Proposals for residential development must also conform to well-defined planning criteria in terms of their relationship to the provision of areas for recreation, community and social facilities. MAP 2 shows the location of current major housing schemes.

Despite the potential surplus of land available for housing the reduction of limits of permitted development within revised Local Plans is not considered to be a viable option:

- It would mean withdrawing development rights from existing landowners
- There is no simple way of assessing how these limits should be redrawn, i.e. how much land should remain within settlement envelopes
- It could complicate the coherent integration of the Land Conversion Schemes into overall settlement planning within revised Local Plans.

## **4.6**

### **4.6.1**

#### ***Land Conversion and NHDC Housing Schemes***

##### *Land Conversion Schemes*

Since 1999, the Government has introduced several schemes to increase land delivery for housing including the Land Conversion Schemes under the Sugar Industry Efficiency Act and Finance Acts 1999-2001 (refer Table 5.3). These schemes had their genesis in two principal factors:

- The need to increase the supply of land for public sector schemes, initially for housing and latterly for other uses (e.g schools)
- The restructuring of the sugar industry, resulting in both surplus land and workers.

In short, these schemes enable the sugar estates/planters to develop land for residential purposes provided that they also sell a proportion (a quarter to one third depending on the agreement) to the Government at a nominal price and/or allocate it to the retired sugar workers. They also provide a supply of land, at concessionary rates, for the Government to develop for low cost housing and other purposes.

Virtually all the sites involved lie outside current limits for permitted development in Local Plans/Outline Schemes. Consultations with the Town Planning Division of the Ministry of Housing and Lands are however held in order to ensure that, where possible, the sites selected are located in reasonable proximity to existing settlements and involve land which can be developed and serviced cost-effectively. Nevertheless, it is understood that, in some cases, the locations selected are some way removed from existing settlements.

Characteristics of the schemes already in the pipeline indicate average and median densities for the 1200 Arpents schemes of 18 and 22 units per hectare respectively – almost identical to those in the larger morcellements. A quarter of the schemes are designed at densities of 25 units per hectare or greater. Many of these schemes are located around the coast with relatively few to be found in the urban corridor and central areas. In contrast, the SIE schemes are larger (possibly because they have not yet been subject to detailed study or the morcellement process) and are concentrated in Grand Port and Plaines Wilhems/Moka.

Please Refer to Map 2: Strategic Housing

**Table 5.3 Land Allocations under the Land Conversion Schemes, 1999-2006**

Scheme	Private Sector	Public Sector	Total	Comments
	Area (arpents)			
1200 Arpents	900	300	1200	Sites selected and mostly subject to morcellements. Public sites incorporated into NHDC programme
800 Arpents	600	200	800	Sites mostly selected but not yet subject to morcellements. Public sites incorporated into NHDC programme
Illovo Deal	1200	2400	3600	Includes SIT sites initially selected in Aug. 2002. Figures exclude Cybercity land.
Voluntary Resettlement Scheme (VRS)	3000	0	3000	Some sites identified but not yet subject to morcellement. Sites will be used for private development and resettlement of 8000 retired sugar workers
<b>Sub-total (arpents)</b>	<b>5700</b>	<b>2900</b>	<b>8600</b>	
<b>Sub-total (hectares)</b>	<b>2400</b>	<b>1200</b>	<b>3600</b>	
<b>Capacity (units)*</b>	<b>48,000</b>	<b>60,000</b>	<b>108,000</b>	
SIE Act 2001 (arpents)	600	200	800	Sites not yet selected but expected to be by 2006. Allocations will depend on demand.
<b>TOTAL (arpents)</b>	<b>6300</b>	<b>3100</b>	<b>9400</b>	
<b>TOTAL (hectares)</b>	<b>2650</b>	<b>1300</b>	<b>3950</b>	
<b>Capacity (units)</b>	<b>53,000*</b>	<b>47,500**</b>	<b>100,500</b>	

\* Assuming 20 housing units per hectare

\*\* Assuming 50 housing units per hectare except for SIT sites under Illovo deal where 20 units/ hectare has been assumed as these are destined for private sale.

Source: Consultants Estimates, 2002

#### 4.6.2

#### *The National Housing Development Corporation (NHDC) Schemes*

During the 1990s, the NHDC built around 6,400 units throughout the country, equivalent to around 9% of the total decennial increase. Most of these were apartments or terraced houses built at high densities of 50-100 dwellings per hectare. Around 70% were built in Port Louis and Plaines Wilhems.

Current NHDC policy is to provide core units and sites and services. The core units will consist of a 40sq.m room (capable of extension horizontally and vertically to 160 sq. m.) on 175 – 245 sq.m plots – equivalent to densities of 32-46 units per hectare. The sites and services scheme in Bambous indicates a density of 30-35 units per hectare including roads but no ancillary facilities.

The primary target group for the core units are households with ‘very low incomes’ (below Rs. 5,000 per month at year 2000 prices) who constitute around 18% of the population. The sites and services projects will target low income families (up to Rs. 7,500 per month) who make up another 19% of the population.

The NHDC plans to complete over 4,000 core units and 600 serviced plots over the period 2001-2006. Land for these projects is coming from the 1200 and 800 arpents schemes. Table 5.4 summarises their distribution by administrative area. Around a quarter of the planned NHDC schemes are to be located in the urban corridor compared with around 70% of schemes already built. Outside the conurbation, NHDC proposals are dispersed widely throughout the country.

**Table 5.4 Planned NHDC Schemes, 2001-2006**

LOCATION	NHDC Proposals	
	No. of units	%
Greater Port Louis	696	15%
Plaines Wilhems	418	9%
<b>Urban</b>	<b>1114</b>	<b>23%</b>
Pamplemousses	664	14%
Riviere du Rempart	356	8%
Moka	422	9%
Flacq	512	11%
Grand Port	556	12%
Savanne	496	10%
Black River (south)	187	4%
Black River (north)	438	9%
<b>Rural</b>	<b>3631</b>	<b>77%</b>
<b>TOTAL</b>	<b>4745</b>	<b>100%</b>

Source: NHDC, Consultants’ Analysis, 2002

## Policy H2 – Land Conversion and NHDC Schemes

*Local Plans will be revised to incorporate areas committed for private and public sector residential development under the Land Conversion and NHDC Schemes where these adjoin current limits of permitted development. These revisions will include some extensions to the current limits to ensure that schemes are fully integrated into existing built-up areas and to facilitate efficient provision of infrastructure and transport networks.*

*Justification:* The intent of this policy is to cover instances where housing commitments identified under the Land Conversion and NHDC Schemes which are outside current settlement limits can be integrated into existing settlements and infrastructure networks in a coherent and efficient manner.

## Policy H3 – New Land Allocations for Housing

*Other than to satisfy policy H2, outside revised limits of permitted development there will be a general presumption against allocation of new land for housing unless:*

- *They support the overall National Development Strategy and development principles of encouraging clustering of growth in defined locations, and*
- *Within these locations, they support existing or proposed major employment generators such as integrated resorts, light industrial parks, business parks, new or retro-fitted labour intensive factories (including converted sugar factories) consistent with national economic policy or*
- *They form part of currently unidentified sites resulting from the Land Conversion Schemes where policy H5 cannot be satisfied or*
- *They represent small morcellements, contiguous or within close proximity to existing settlement limits, which cater to local housing needs or those of the applicant and/or his close relatives, and*
- *They do not conflict with Policy HI.*

*Justification:* There is no quantitative need to allocate more housing land; however there is a need to reinforce the National Development Strategy's locational policies and to provide the potential for new development to be complemented by and integrated with housing adjacent to important new employment generators. The revised strategy should also be sufficiently flexible to cater for currently unforeseen developments to assist in rural regeneration and employment creation and to enable lower income households to develop their land for the direct benefit of their close relatives. The policy also seeks to provide for those Land Conversion schemes which have already been committed but for which specific sites remain to be identified.

#### **Policy H4 – Development within Settlement Limits**

***Housing proposals for sites located within settlement limits will normally be approved provided that they do not conflict with the provisions of policy H1 and that they conform to well defined planning principles in terms of their integration with the existing settlement, transport and infrastructure networks, the provision of adequate areas for recreation, social and community facilities, and their overall design.***

*Justification:* This policy seeks to maximise residential densities within existing settlements subject to general planning considerations and the development principles laid down in the National Strategy.

#### **Policy H5 – Land Conversion Schemes on Unidentified Sites**

***Developers of proposals under these schemes for as yet unidentified sites should be encouraged to locate their proposals within settlement limits shown in revised Local Plans. Proposals will not be approved unless they are in accordance with policy H1.***

*Justification:* Every effort should be made to ensure that proposals under these schemes are consistent with, and reinforce National Development Strategy and locational objectives.

### **4.7**

#### ***Residential Densities***

It has been estimated that around 60% of the increase in housing units during the 1990s resulted from densification and infill in the built-up areas. This amounted to around 45,000 dwellings. Around two thirds of this increase occurred through the



development of multi-unit buildings and the remainder through small morcellements.

The capacity of existing built-up areas to accommodate more housing is not limitless. Small infill plots can only be sub-divided once, although additional storeys can subsequently be added. A significant level of large scale redevelopment of existing residential plots for new housing is also not seen as likely in the near future as many families will wish to preserve their existing homes and the quality of their environment, whilst the costs of demolition and construction will inevitably increase, and the assembly of available larger sites to make this a commercially attractive venture is a complex and time-consuming business.

On the other hand, some level of further densification will inevitably occur as long as the acquisition of new greenfield plots of land from non-family owners remains expensive and outside the financial capability of most households. By the same token, densification/infill will remain the favoured option for most families other than the rich who can afford plots in the morcellements and the poor who will rely on the NHDC. Plot densification also reflects the Mauritian tradition of offspring continuing to live close to their parents.

The question remains however ‘What increase in housing could be reasonably expected within existing built-up areas through continued plot sub-division and the construction of additional floors?’ In the absence of the detailed land capacity studies which could inform a response to this question, alternative high and low estimates have been made. The High estimate assumes that infill/densification can provide the same number of dwellings over the next 10 years as was achieved during the 1990s and that another 50% of this amount is added during the 10 years to 2020. The low estimate assumes that just half these amounts are feasible. These estimates are shown in Table 5.5.

**Table 5.5 High and Low Estimates of Future Infill/ Densification (units)**

<b>Estimate</b>	<b>2000-2010</b>	<b>2010-2020</b>	<b>Total Units</b>
High	45,000	22,500	67,500
Low	22,500	11,250	33,750
<b>Average</b>	<b>33,750</b>	<b>16, 875</b>	<b>50,625</b>

Source: Consultants’ Estimates, 2002.

Based on these estimates, the potential increase in housing units in existing settlements will range between 34,000 and 67,000 without any increase in residential land allocations. Retaining the average (50,600) for further analysis, this potential increase is equivalent to adding another unit (floor) to 20% of existing 1 storey buildings and developing 300 small morcellements (plot subdivision) per annum at 3 dwellings each. The latter comparison is significantly below the current annual rate of 400 to 500 such morcellements.

The capacity of the Port Louis-Plaines Wilhems conurbation to accommodate further residential and other forms of development is likely to be increased if additional areas are 'annexed' due to for example, boundary extensions in relation to the absorption of Cybercity.

#### **Policy H6 – Residential Densities**

*Within limits of permitted development as shown in revised Local Plans, a sequential approach to the provision of higher density housing should be followed. Town centre sites, followed by edge of centre sites should be preferred for higher density housing, before edge of town sites are considered consistent with the physical and environmental characteristics of the area, the principle of sustainable development which seeks to minimize the need for travel to work by private car and without prejudice to existing inhabitants of the area.*

*Where higher densities are proposed within Urban Renaissance Zones they should conform to the principles of the Action Area Plan drawn up for such Zones within revised Local Plans, consistent with Policies SP1 and SP3.*

*Justification:* Increasing densities reduces the need for dispersed development which can otherwise substantially increase utility costs and transport on edge of centre sites, make inefficient use of valuable land resources and adversely affect the quality of the environment and landscape, all of which are contrary to Government policies. Higher densities outside town centres on edge of centre sites can also contribute to making land and housing more affordable to larger sections of the population.

#### **4.8**

##### ***Residential Morcellement***

Morcellements are primarily developed by small private owners or major landowners such as the sugar estates. The number of morcellements approved since 1991 has averaged around 450 per annum, of which only very few involve

sites of greater than 3 hectares. The total area of these larger sites was around 730 hectares giving an average size of each morcellement of around 8 hectares.

The morcellement (sub-division) process is currently complicated and protracted. Where agricultural land is involved, landowners wishing to develop their land for housing must first apply to the Ministry of Agriculture to obtain a land conversion certificate. Applications must also be made to the utility authorities to obtain a statement of intent that the land is capable of servicing. Preliminary Environmental Reports (PERs) and EIAs from the Ministry of Environment are necessary where the parcelling out of between 1-3ha of land and more than 3ha of land respectively, as well as housing development of more than 20 and 50 lots respectively are involved.

Application is then made to the Morcellement Board. Since the Local Plans were approved, permission for morcellements was in the great majority of cases only granted if the site lay within permitted development limits for that particular settlement. There were however examples of applications being turned down on the basis that they involved agricultural land. Recently, permission for morcellements outside development limits can also be granted for the Land Conversion schemes where some private land is sold to the Government at a nominal cost under the 1:2 and 1:3 Deals.

In the northern part of the country, substantial development pressures have built up in recent years as evidenced through a large number of applications for rezoning. As a result, the Local Plan/Outline Scheme for Pamplémousses/Rivière du Rempart is being revised to include substantially increased permitted development limits.

The geographic distribution of the large morcellements approved since 1998 indicates that only around a quarter of the planned lots are in the main urban corridor indicating a lack of remaining suitable sites there. This finding corroborates the Census results which showed that, since 1990, around half of new housing units had been built in the rural areas. Elsewhere, there are concentrations of large morcellements in the north of the island (around Goodlands) and in the south west, on the coast south of Tamarin.

Trends in the demand for morcellement plots are hard to ascertain. Prices remain high, due in no small part to rising infrastructure costs, which are included in the selling price. However developers generally have to price sensitively in order to

achieve sales within an acceptable period and there are examples of morcellements where site preparation and infrastructure has been completed and yet a substantial number of plots remaining unsold. Plots in the larger morcellements are often bought for long-term investment and/or eventual development for (younger) family members. As a result, some morcellements take many years to fully develop out. The implications are that:

- In many cases, the demand is not so high as to guarantee immediate sale
- The morcellements tend to address medium to long rather than short term housing demand.

#### **Policy H7 – Morcellements**

***Residential development by way of morcellements will be required to conform to the provisions of Summary Policy Guidance for Residential Morcellement forming part of the National Development Strategy and revised Local Plans.***

*Justification:* The development of new morcellements should be appropriately planned and designed and include an adequate provision of services and amenities. The policy seeks to ensure that the design of morcellements is consistent with revised guidance. Guidance contained in the Policy and Planning Guidance Note for Residential Morcellement and revised Local Plans will assist promoters of new schemes and relevant planning agencies in preparing and considering applications for development.

#### **4.9**

#### ***Land for Public Housing***

The results from the 2001 Multi-Purpose Household Survey (Economic and Social Indicators 384, CSO, August 2002) indicate that under 10% of households have a total monthly income above RS 25,000. In this context it is worth pointing out that the average price of a 400-500 sq. m. plot is around Rs 0.5 million (at 2002 prices). This amount is generally payable over 5 years and is estimated to require a monthly income of around Rs 25,000. The implication of this finding is that small morcellements can only cater for a small and high income segment of the housing market. In some cases, buyers are banding together to buy a single plot, subdividing it and then building a house each – sometimes going through the morcellement plot, sometimes through a ‘co-proprietor’ scheme. Some stakeholders are aware of this situation and are beginning to design morcellements with smaller plots.

**Table 5.6 Income Distribution 2001**

<b>Monthly Household Income</b>	<b>% of Households</b>	<b>Comment</b>
Under Rs 5,000	18%	NHDC core housing target group
Rs 5,000-7500	19%	NHDC sites and services target group
Rs 7,500-10,000	18%	Lower middle income
Rs 10,000-Rp. 15,000	21%	Middle income
Rs 15,000 – 25,000	15%	Upper middle income
Over Rs. 25,000	9%	Upper income. Capable of purchasing serviced 400sq m morcellement over 5 years
<b>TOTAL</b>	<b>100%</b>	

Source: Derived from 2001 Continuous Multi-Purpose Household Survey: Main Results', Economic and Social Indicators 384, CSO, August 2002.

#### **Policy H8 – Land for Public Housing**

**Policy H8A – *Proposals for public sector housing should conform to Policies H1, H3, H4 and H6. Locations close to public transport links, Urban Renaissance Zones, Special Use Zones and other employment-generating clusters should be encouraged.***

*Justification:* Public housing/sites and service developments should be consistent with overall strategy, the integration of land use and transport and sustainability principles. The emphasis should be on seeking locations close to or within existing built-up areas and with good access to public transport and employment centres.

**Policy H8B – *Government should continue to seek land for the development of core housing units and sites and service schemes for lower income groups.***

*Justification:* There will be an increasing demand for green field development for public housing as the potential for suitable infill and densification in existing built-up areas decreases. NHDC, with a substantial potential supply of land from the Land Conversion Schemes, should attempt to cater for a larger segment of market demand by investigating a wide range of sites and service type options as the current price of private morcellements makes them unaffordable for a large section of the population.

#### 4.10

##### ***Upgrading of Existing Settlements***

Government policy towards squatting which includes residential, agricultural, animal rearing (and religious), has changed over the years. The first major intervention was to adopt a policy of regularisation for all residential squatters 'in situ' at the end of 1991. At that time, around 3,000 squatters (households) were identified. The majority of these have now been regularised through the issuing of title deeds or through the provision of NHDC housing.

The current policy places greater stress on relocation (into NHDC developments) relative to regularisation as many of the remaining squatters are located in areas with other development potential or poor environmental conditions. At present, there are estimated to be around 2,250 unregularised squatting households on the island of Mauritius – less than 1% of all households. Major concentrations are in and around Port Louis and along the south coast road. Compared to the distribution of the 1991 squatters, there has been a major increase in Flacq which now accounts for a quarter of all squatters. Elsewhere, the relative proportions have decreased although Port Louis still accounts for 23% of squatters.

Since the end of 2001, squatting is no longer tolerated and regular surveillance programmes by the Police, central and local Government officials ensure that all new constructions are dismantled.

##### **Policy H9 – Upgrading of Existing Settlements**

***Residential Areas within existing settlements requiring upgrading will be identified in revised Local Plans and proposals for their improvement formulated. Relocation (as in the case of squatters) should be undertaken where regularisation and upgrading in situ are not feasible options.***

*Justification* Policy H9 seeks to encourage the upgrading of sub-standard residential areas. The objective is to improve conditions in existing settlements which have identified concentrations of sub-standard housing and/or infrastructure.

## 5 Social and Community Facilities

### 5.1

#### *Overview*

This section covers education, health and recreation facilities, in so far as these sectors' strategic requirements impinge on national land use considerations. Generally speaking over the planning period CSO demographic projections indicate an ageing population profile which is likely to lead to reduced demand for new primary and secondary schools beyond the current construction programme, and correspondingly an increasing demand for facilities, including health facilities for the elderly.

### 5.2

#### *Education*

Previous policy anticipated that, despite a projected decline in birth rates over the 20-year period, there would be an increase in pre-primary and primary schools to cater for deficiencies in certain areas, an increase in secondary schools as secondary education was to become compulsory for all, and an increase in tertiary education.

There have been significant changes in Ministry of Education policy since this time. Pre-primary schools are no longer expected to be annexed to primary schools and secondary schools must now cater for a leaving age of 16. The latter has implications for land use as the site area for a secondary school needs to be increased: discussions with the Ministry of Education have revealed that the site area has now increased to 5 arpents. Some sites may be larger if they are to accommodate sports facilities for dual use by school children and the public.

**Table 6.1: Number of State Primary and Secondary Schools in Mauritius**

School	1991	1995	2000
Primary	277	269	278
Secondary	123	120	131

Source: Central Statistics Office, 2002

Table 6.1 shows the total number of primary and secondary schools in the past decade has increased by nine. Relevant projects include the ongoing construction of primary schools, secondary schools and expansion of the university. The secondary level facilities are among a larger total of 40 new secondary schools to be provided in the next 5 years, as indicated in the Ministry of Education's

programme, 'Ending the Rat Race'. Not included in the table are the private schools, about 100 in number.

The 'compulsory education for all' programme is now progressing. The 40 schools include 33 new build and the rest the conversion of existing schools. In addition, the Ministry of Education has a programme of providing 16 sixth form colleges in the next five years to address demand. There comprise 5 new build and the rest the conversion of existing sites.

Given the current major expansion programme and the forecast decline in the numbers of pupils beyond 2010, it is not anticipated there will be much further demand for land for new schools in the second half of the planning period, other than where significant new communities on greenfield sites are introduced.

In general there are, or will be, primary and secondary schools in each town depending on the availability of state-owned land. In the secondary education sector there is flexibility within each region whereby pupils can attend school not necessarily in their own town. Of the 16 sixth form colleges, half are in the Port Louis-Plaines Wilhems conurbation while the other half are distributed throughout the rural districts. These include Flacq, Rose Belle, Piton near Goodlands in the north, but none near the South Coast.

The University of Mauritius, with 5,000 students, has run out of room on its present site, which it shares with other smaller tertiary colleges and with the National Laboratories. A second university (the University of Technology – or UTM) has recently started at La Tour Koenig and has 1,500 students. There are proposals to double the number of University students by 2020. To this end the University has made a bid for 50 arpents on the former Illovo land while UTM has made a bid for 200 arpents. Other tertiary colleges such as the Mahatma Ghandi Institute and Mauritius College of Air, both based at Reduit, will also be expected to expand to meet demand for vocational training for example in relation to the growth of activities in the ICT sector.

#### **Policy ED1 – Pre-Primary Education**

*To encourage and facilitate the provision of pre-primary centres by means of the following measures in order of preference:*

- (a) *purpose built centres on separate suitable sites within residential areas;*



- (b) *the use of appropriate community buildings such as village halls, social/community centres, religious buildings;*
- (c) *the use of part of a private residential building or plot provided that:*
  - (i) *the premises are of a suitable size and design to accommodate the maximum number of children enrolled;*
  - (ii) *there is sufficient space for off-street car parking for staff;*
  - (iii) *no traffic hazards will be created by the parking of vehicles depositing and collecting children from the site; and*
  - (iv) *no environmental or other nuisance will be caused to detract from residential amenities of the area.*

*Justification:* It is the Government's aim to offer the opportunity of pre-primary education to all children in the 3 to 5 year age group. Ideally, such education facilities should be attached to all primary schools but financial constraints mean that for some time provision will have to continue to be made in other premises by both public and private sectors. A considerable contribution is made by small private pre-primary centres on residential plots and this will continue to be permitted provided that certain conditions are met.

#### **Policy ED2 – Primary Schools**

*To maximise opportunities and flexibility for the education authorities in the provision of primary education facilities both to cater for new areas of population growth and to rectify existing disparities in locational distribution, locations for new schools should be considered in relation to the designation of Urban Renaissance Zones, Rural Regeneration Zones and Tourism Zones as part of the National Development Strategy. In drawing up Action Area Plans within revised Local Plans, requirements for new primary schools to serve new growth areas should be considered.*

*Justification:* The National Development Strategy will seek to enable the education authorities to plan for new primary schools in areas of growth or deprivation consistent with its aims and development principles. Ideally, all primary school children should be able to walk to their nearest school and have access to a choice of travel modes including public transport.

#### **Policy ED3 – Secondary Education**

*In identifying sites for new secondary schools, (whether conventional secondary schools, basic secondary units or pre-vocational training centres)*

***consideration should be given to a school's relationship to Urban Renaissance Zones, Rural Regeneration Zones and Tourism Zones and to the proximity of highway and public transport networks.***

*Justification:* The National Development Strategy seeks to assist the education authorities and those responsible for vocational training in rectifying current deficiencies or in planning for new growth areas enabling land and sites for secondary education throughout Mauritius.

The Strategy seeks to assist authorities to rationalise the distribution of secondary facilities and to this end has designated strategic growth Zones to focus public and private sector investment programmes. Education and Planning Authorities should consider such Zones in the planning of new secondary schools, as part of the Action Area Planning process within revised Local Plans. Access to secondary schools by a variety of travel modes including the proposed LRT should be considered in planning sites for new facilities.

#### **Policy ED4 – Sixth Form Colleges**

***Planning for Sixth form colleges should take into consideration growth Zones identified in the National Development Strategy, when drawing up Action Area Plans as part of revised Local Plans.***

*Justification:* Sixth form colleges are limited in number and should be located in areas of maximum accessibility, i.e. within or adjoining strategic settlement clusters identified in the National Development Strategy, including Urban Renaissance Zones, Rural Regeneration Zones and Tourism Zones. Access to Sixth Form Colleges by a variety of travel modes including public transport and the proposed LRT service will be an important consideration.

#### **Policy ED5 – University Education**

***To provide for the continuing development and expansion of university facilities in and around the existing campus at Reduit subject to:***

- (a) maximising efficient and effective use of existing land resources;***
- (b) adequate and safe vehicular access, car parking and public transport provision;***
- (c) protection and enhancement of the environment of the area.***

*Justification:* National economic policy supports the growth of tertiary education in Mauritius and the university is endeavouring to meet demands by increasing the numbers of students and the types of courses on offer. Additional accommodation will continue to be required over the planning period, especially as the Government is committed to expansion in the high tech/ICT skills sector.

Priority should be given to utilising to the maximum the existing land and building resources before any extensions on to new land are contemplated. Reduit is a particularly attractive and environmentally sensitive area surrounded by high quality agricultural land and great care will need to be exercised in the design and location of any new development. The campus already straddles a busy distributor road which carries large volumes of through traffic and it is close to one of the busiest motorway junctions. This gives the university excellent accessibility but creates problems of local access, parking and public transport facilities.

Opportunities for further expansion beyond the existing campus will be afforded through the planning and integrated development of the Highlands/Illovo lands south of Moka/St. Pierre and east of Cybercity. Such development proposals should be considered in an area-wide context which takes account of the need for a variety of social and transport linkages and for which an Action Plan should be drawn up involving the University and other key stakeholders.

### 5.3

#### ***Health***

The Ministry of Health operates in five regions, each having a regional hospital supplemented by district hospitals. Previous policy identified the need for consolidation and expansion of these hospital facilities rather than building new hospitals on green field sites.

This policy has been consolidated and within the last ten years the Jeetoo Hospital (Port Louis) has been rebuilt, whilst the SSR Hospital (Northern Region) and the Flacq Hospital (Eastern Region) have been equipped with new facilities. The Victoria Hospital (Vacoas) was to have been upgraded and extended to provide for 700 beds; instead demolition and rebuild on site is now preferred. The Nehru Hospital serves the Southern Region and which is being provided with improved highway access to connect to the Motorway M1, while the Souillac District Hospital will be rebuilt as proposed in the PSIP.

Two new proposals have been identified by the Ministry of Health—a psychiatric hospital at Beau Bassin with 250 beds and a specialist hospital at Reduit for non-communicable diseases.

### **Policy HE1 – Hospital Consolidation**

***To consolidate and expand hospital facilities on existing sites in five regional centres.***

*Justification:* The Ministry of Health maintains a health planning strategy of five regional hospitals supplemented by district hospitals, and it is the Ministry's policy to ensure an improving health service by the consolidation and expansion of these existing hospital facilities, rather than by building new hospitals on green field sites.

The Ministry's strategy includes making available some of this provision to encourage further involvement of the private sector.

## **5.4**

### ***Community and Cultural Facilities***

Previous policy identifies three scales of social and cultural facilities – National, Regional and Local. It acknowledges the present distribution of such facilities to be fairly even but draws attention to over-representation/duplication in certain areas and inadequacies in certain types of facility (e.g. family counselling units) in other areas. It urges sufficient land and sites to be set aside for community facilities in new areas of residential development.

As part of current policy, it is understood that some national level facilities under the Arts and Culture Ministry are expected to relocate from Port Louis to Moka in order to be more central to the island and help relieve pressures in the capital. These include the Ministry itself, the National Archives, the National Library, the National Heritage Trust and the Natural History Museum. Cultural centres such as the Islamic and African Centres will remain in Port Louis.

At the regional and local levels, the Ministry of Youth and Sport has implemented a programme of youth centres in towns throughout the island. Their facilities include computer, drama, cookery, social, volleyball, basketball, etc. There are currently 23 centres and three more are proposed. Local authorities and the National Development Unit (NDU) also implement some small schemes and there is a degree of overlap with the Ministry in this regard.

In terms of recreation, previous policy identifies sports/recreational facilities and areas of deficiency where new facilities could be provided. The latter includes a stadium in the Southern Region and sports centres, gymnasia and swimming pools in every region where deficiencies occur. Relevant projects include the development of sports complexes, notably at Bambous in the Western Region and at Bon Accueil in the Eastern Region, and the long-term replacement of the George V Stadium at Curepipe.

Discussions with the Ministry of Youth and Sport revealed that deficiencies had been met over the last ten years largely through provision of sports facilities at schools for dual use by both pupils and the public. The most significant recently-provided facility is the sports complex at Bambous. This includes an 8-lane running track which will be used for the Indian Ocean Island Games in 2003. Although Bambous is well served by the main north-south west coast route the A3, east- west connections are less good. Road network proposals are made in the new Strategy to link Phoenix and the M1 with Beaux Songes and the B2. Combined with the A3, this will considerably improve strategic accessibility to the Bambous area.

The island's main stadium the George V at Curepipe, is in a more central location with good access. However it has a seating capacity of only 19,000 and has no room for expansion. One of the Ministry's priorities is to rebuild this stadium to accommodate 50,000 and to locate it centrally on land near Cybercity (this is included in the PSIP as a long term project). Other facilities include more playing fields.

#### **Policy SC1 – Sites for Community Facilities**

*The planning of community facilities at the local level should be integrated: relevant agencies include the Ministry of Youth and Sports, local councils and the NDU. Future proposals should be coordinated through the Local Plan revision process.*

*Sufficient land and sites will be set aside for community facilities in major new areas of residential development. These will normally be centrally located in or adjacent to local shopping and commercial areas within identified growth zones and other main settlement clusters. Provision will require collaboration with the private sector in many cases and the use of implementation mechanisms such as developer contribution plans should be considered.*

***Further advice on the provision and planning for these facilities can be found in Policy ENV10 – Open Space and the revised Policy and Planning Guidance Note on Residential Developments.***

*Justification:* Community facilities play an important part in the day to day life of Mauritians. They form the very basis of communal life. A lack of such services hinders the social and cultural life of the community. They must be conveniently and centrally located for the benefit of all residents and should be planned as an integral component of new residential schemes from the outset with collaboration of private developers and other private sector stakeholders in relevant cases.

Provision for such open space will be in accordance with guidelines set out in revised Local Plans and Action Area Plans and updated Policy and Planning Guidance on Residential Developments and will pay particular attention to implementation mechanisms such as developer contribution plans for provision and maintenance of the areas. In this connection, the potential use of the provisions of the National Environment Fund and the Community Development Fund should be explored.

#### **Policy SC2 – Location of Regional Sports Facilities**

***Future regional sports facilities will, wherever possible, be located close to schools lacking their own sports facilities and in association with designated strategic growth Zones, including Rural Regeneration Zones. A high level of accessibility should be available, which provides for a variety of travel modes including public transport.***

*Justification:* Many existing schools have insufficient space on site to accommodate sports facilities. The development of such facilities in strategic locations would enable school children to have adequate access to physical education. The new Strategy has identified growth clusters of land use activities, where the location of regional sports facilities requiring a high level of accessibility will be encouraged. Multiple use of facilities including for local community, education and specialist use should be considered when drawing up new proposals for major urban, rural and tourism development projects.

## 6 Industry and Commerce

### 6.1

#### *Overview*

This section covers industry including manufacturing, warehousing and wholesaling, and commerce, including offices and retailing. MAP 1 shows existing major industrial sites, container parks and business parks. Apart from agriculture which has shown a decline in employment terms, and other services which has been relatively stable, the secondary and tertiary sectors of the economy including industry and commerce have shown increases of 26% and 62% respectively since 1990. Construction (3.3% per annum), trade, hotels and restaurants (6.3% pa) and finance and insurance services (6.5% pa) all experienced significant increases over the period 1990-2000. Manufacturing employment accounted for 29% of the total in 2000, with trade, hotels and restaurants making up 18% and other services 21%.

Since 1990 some 515,000m<sup>2</sup> of manufacturing floorspace has been approved by local councils. This compares with 1,745,000m<sup>2</sup> for trade (including warehousing, hotels and restaurants) and 300,000 m<sup>2</sup> for offices (refer to Table 7.1). The background to the discussion of key policies in industry and commerce including retailing may be briefly summarized as follows:

#### 6.1.1

#### *Industry*

Textile manufacturing especially textiles, has grown through the development of Export Processing Zone (EPZ) policies (including tax and other incentives), inexpensive labour and preferential access to key export markets. The EPZ sector accounted for some 11.4% of Gross Domestic Product at basic prices in 2001 and for approximately 19% of total employment. Non-EPZ manufacturing, which largely caters to the needs of the domestic market, contributes a further 11.3% of GDP and 10% of employment. This includes sugar processing and milling, an export-oriented sub-sector, which on its own accounted for 0.8% of GDP in 2001.

Employment in manufacturing activities in 2000 has been estimated at 142,000 (76% of total secondary employment); within manufacturing, EPZ jobs made up 63%. Floorspace permissions for manufacturing since 1994 have shown a tendency to decline, particularly since 1998, and levels in 2000 (38,000m<sup>2</sup>) were below those of 1994 (48,000m<sup>2</sup>). Jobs in secondary activities in general, principally manufacturing and including Small and Medium Sized Enterprises (SME), are predicted to remain relatively constant over the Plan period showing a slight

reduction from 39% in 2000 to 36% in 2020, reflecting shifts from large scale manufacturing to smaller scale value-added activities coupled with growth in SMEs.

Future land use changes will come about due to a number of factors, primarily as a result of the loss of preferential access to the EU market.

- A reduction in textile production will lead to demand for less factory space and fewer workers, even if there is a change to value-added products (such as yarn-spinning). This is due to the need for increased levels of value-added per employee.
- The change to value-added products could, however, lead to demand for new types of factory unit.
- There is likely to be a growing demand for accommodation for the SME sector as Government continues to promote development of this sector by providing incentives and high quality floor space.

#### 6.1.2

##### *Offices and Retailing*

A potential for growth in the financial and ICT sectors of the economy could lead to demand for types of office space that are not currently available. It is common international practice, for the ICT sector in particular, to locate in office campus environments outside the Central Business Districts of towns and cities (Silicon Valley in the USA is a prime example of this trend).

The desire to develop outside town centre environments can already be seen in the increase in floor area in permits issued for non-residential building in rural areas. While the demand to build in urban areas is showing a slow decline, there has been a sharp increase in demand for building outside the conurbation (from 70,000m<sup>2</sup> in 1997 to 240,000m<sup>2</sup> in 2000).

Further trends are envisaged as follows:

- Government policy is to capture a share of the growing ICT sector and there is likely to be a demand for new types of office environment, and new types of office space. Greenfield campuses and highly serviced call centres are examples of new forms that will not fit comfortably into existing town centre office stock. The Cybercity project is the first example of this trend away from traditional office environments.



- Supporting these “edge of town” office environments there will be a need for housing, retail and community services (schools, hospitals, etc). It is likely that clusters will tend to develop at strategic transport nodes, and long term planning should anticipate this trend.

## 6.2

### 6.2.1

#### **Industry**

##### *Manufacturing, Warehousing and Wholesaling Industry*

In the case of industrial development under the new National Development Strategy, a balanced spatial distribution between workplace and homes in Port Louis and elsewhere in the conurbation, and in key rural regions is envisaged. Key principles include:

- Removing industrial traffic from the conurbation to help relieve road congestion
- Facilitating relocation of incompatible industrial land use types from other activities, especially in town centres
- Encouraging industry to re-locate which opens up opportunities for re-development – the waterfront in Port Louis is an example of this

However, it must be noted that demand for access to the port for exports remains, and additional capacity routes between the industrial hinterland, the harbour and the airport will need to be found in the longer term.

### 6.2.2

#### *Small and Medium Sized Enterprises (SMEs)*

SMEs play an important role in the economy. They provide significant employment and are the entry point into the economy for entrepreneurs. The Government including SMIDO-the Small and Medium Industries Development Organization and MIDA (Mauritius Industrial Development Authority) appreciates the role of SMEs and is undertaking a number of capital projects directed at this sector. Projects include nine 1,000 sq.m industrial buildings designed for SMEs; it is understood that these buildings, scheduled for construction over the next two fiscal years, are to be located at:

- Riviere du Rempart
- Flacq
- Beau Vallon
- Triolet
- Beau Bassin
- Riche Lieu

- Bamboos (MIDA)
- Cite La Cure (SMIDO)
- One other site to be finalised.

There are plans to encourage clustering of SMEs at these buildings, including a furniture and a textile cluster. The Government is also working to help SMEs to diversify product lines, enter export markets and partner with larger local and foreign firms.

### 6.2.3

#### *Industrial Policy*

The key policy objectives for industrial development are to:

- Encourage new enterprise and investment
- Provide development that is consistent with transport policies
- Ensure development that is compatible with the objectives for sustainable development.

Regarding an appropriate mix for land uses, it is important to note that:

- it is not always necessary to separate residential and commercial land uses, or these from rural areas
- protection of environmentally-sensitive natural habitat, natural resources and areas of recreational value is essential
- control of intensification of a permitted use helps to maintain a balance
- control of incompatible uses is possible on a demand-driven basis
- a positive approach to permitting re-use and changed usage in existing buildings will help preserve and activate existing centres:
  - (i) Inner city vacant or under-used/derelict sites are important in the regeneration of towns and cities
  - (ii) Use of planning gain obligation mechanisms and principles to encourage this (e.g. the UK system of Simplified Planning Zones (SPZ's))
  - (iii) Public and private sector to be encouraged to release under-utilised or degraded land for re-development.

## Policy I1 – Industrial Land

*Provision should be made for accessible serviced land for a wide range of manufacturing types and sizes at key locations, in accordance with the strategy for clustered development. To support this policy Special Use Zones have been designated at the Port/Roche Bois/Riche Terre, at Pointe aux Sables/La Tour Koenig/Coromandel, and at Pailles, and in the Airport/Plaine Magnien area in accordance with Policy SP6.*

*An area-wide approach to planning in these Zones will be promoted for which Action Area Plans should be drawn up with key stakeholders. In Special Use Zones there will be a general presumption in favour of a mix of industrial developments and including SMEs.*

*Justification:* There are three key factors that determine the suitability of land for industrial usage:

- The site must enjoy secure and direct access for delivery of raw materials and finished products
- There must be adequate levels of reliable infrastructure, or this must be capable of installation
- There must be an available labour force within a reasonable commuting distance.

These factors form a common thread through the following Policies, and all proposals for development should be assessed against these fundamental criteria.

This Policy, in conjunction with Policy I2, proposes a preference, where possible, for re-use and upgrading of existing industrial land. A range of types and sizes of sites provides flexibility for industrial growth and change. Land must be accessible and serviced if it is to attract investment in industrial buildings and plant. Clustering will encourage phased release of land for industry and a variety of support activities.

## **Policy I2 – Existing Industrial Sites**

***Where it is viable and consistent with integrated land use planning for an area, seek to improve the quality and accessibility of existing industrial locations so as to retain existing occupiers, and attract new development, including SMEs.***

*Justification:* The changing focus of manufacturing will generate a requirement for new forms of development which may not always be compatible with existing stock. Proposals for new projects (other than those on locations identified in revised Local Plans) should be encouraged first to consider sites and land in Special Use Zones and in Rural Regeneration Zones and other existing industrial clusters before examining new locations on greenfield sites.

It has been recognised that some existing locations at Plaine Lauzun and Coromandel required upgrading of the public environment and services to make them more attractive to investors. Measures include:

- Improving accessibility for freight (raw materials and finished products)
- Maintaining and improving the capacity and reliability of existing infrastructure
- Making improvements to the public realm (streets and open spaces) through hard and soft landscaping, street furniture, etc.
- Making improvements to the provision of ancillary services such as retail, banking, community support, etc.
- Ensuring proximity of, and easy access for, a suitable labour pool.

Light industry is also able to exist comfortably alongside other land use types, which is important in the case of SME's and the informal sector.

## **Policy I3 – Advance Factory Units**

***Ensure provision of a supply of pre-built industrial units to attract foreign and domestic manufacturers. The location of these facilities should be considered in the context of Special Use Zones and Rural Regeneration Zones, where strategic access improvements and the provision of adequate utilities will be promoted.***

*Justification:* There will continue to be demand for pre-built (advance factory) units and serviced land. Adequate provision of these in suitable locations will ensure Mauritius can meet the future needs of local and foreign investors. Policy I.4 makes provision for public funding to be used where appropriate to stimulate growth in priority locations. This could take the form of providing ready-built units such as the 1,000m<sup>2</sup> units currently under consideration by MIDA through its policy of decentralisation of industrial estates.

Subject to the provisions of Policy I.2 these could be located either at existing sites, or at newly developed locations, in connection for example with Special Use Zones and Rural Regeneration Zones.

#### **Policy I4 – Public Funding of Development Sites**

***Where appropriate the use of public funding should be considered to stimulate growth in specified locations, in accordance with the strategy of clustered development. In addition to Special Use Zones (Policy SP6), this Policy also applies to Rural Regeneration Zones where new development sites are being created for a variety of employment-generating uses including SMEs (Policy SP13).***

*Justification:* As noted above (Policies I.2 and I.3), public funding could be used either for upgrading of existing industrial environments, or for the creation of new factory units. This Policy therefore supports the current SMIDO programme for the encouragement of Small and Medium Sized Enterprises (SMEs).

In all cases, however, account should be taken that the location, size and type of unit is acceptable to industry, given typical demand for:

- Sites or premises that suit the processes under consideration
- An available labour force
- Accessibility for inward and outward movement of raw materials and finished products
- Adequate and reliable provision of infrastructure services
- An attractive environment
- Price – sale or lease.

### **Policy I5 – Industrial Waste Processing**

***Actively encourage industrialists, through a programme of incentives and penalties, to improve waste processing to internationally acceptable standards.***

*Justification:* It is desirable to concentrate or cluster polluting industries, on the basis that pollution can be managed more readily if emanating from a single source. It is imperative for long term sustainability of the environment that industry be encouraged to reduce pollutant production – incentives and penalties should be applied to achieve this. International buyers are demanding products from environmentally acceptable plant, produced by people with acceptable working conditions. Mauritius should, where necessary, continue to improve standards to meet this demand.

Prime concerns relate to air, noise and water pollution. Recently small and medium scale enterprises are reported as having been a cause for concern as many are located in residential areas and have outgrown their premises and/or have been surrounded by higher density residential development. The recently enacted Environment Protection Act 2002 gives the Ministry of Environment wider controls in regulating polluting industries and in many instances clean up of such industries should be achieved through the Department of Environment enforcement action.

It is acknowledged that it will take time and finance before some manufacturing activities, particularly the fabric processes that are currently one of the mainstays of Mauritian industry, are able to fully comply with this Policy. Government support, in the form of financial and technical assistance (as provided for in Policy I.4), should be considered.

Reference should also be made to Policy I7, Policy ST3 on Buffer Zones for bad neighbour developments, and Environmental Policies in the application of this Policy.

### **Policy I6 – Mixed Use High Tech Sites**

***Identify sites in mixed use areas that will attract investment for high tech manufacture and scientific research. Outside the conurbation, Rural Regeneration Zones should be the focus for new investments.***

*Justification:* It is important to acknowledge the potential for a mixture of uses that can be achieved in a high quality environment that is required for this form of production. There are many international examples of high tech manufacture existing comfortably with office space, software design, retail and residential uses.

The Cybercity site is one such location that has met the requirements of this Policy, providing a range of land use types, so that a self-sustaining environment can be created. Elsewhere Rural Regeneration Zones have been identified where a mix of uses needing quality sites in strategically accessible locations will be provided.

#### **Policy I7 – Bad Neighbour Industries**

***Encourage, through a combination of incentives and penalties, the re-location of bad neighbour industrial activity. For new sites, consideration should be given to the establishment of buffer zones in accordance with Policy ST3.***

*Justification:* Bad neighbour industry still exists adjacent to residential or commercial areas, and priority should continue to be given to cleaning up or re-locating such industry if there are opportunities for redevelopment. Attention to the reduction of pollution as provided for in Policy I.5, rather than simple re-location is encouraged.

In identifying new sites for bad neighbour industrial developments, consideration should be given to the clustering of uses on a single well-accessed site and the establishment of a buffer zone up to 1km distant from sensitive land uses such as residential areas, schools and hospitals, where this is feasible. Reference should also be made in this connection to Infrastructure Policy ST3 for buffer zones around landfill sites, incinerators, civic amenity facilities and other bad neighbour uses. Buffer Zones should be identified in revised Local Plans in consultation with the Ministry of Environment.

#### **Policy I8 – Warehousing and Industrial Estates**

***Locate regional and local warehousing as a complementary component of industrial development nodes. Consideration should be given to new locations in Special Use Zones and Rural Regeneration Zones in this connection.***

*Justification:* Previous policy has suggested that warehousing should be displaced if land is required for industry, but the current operational principle of maintaining minimum stock levels (the JIT or “Just in Time” principle) demands quick turnaround time, meaning that warehousing for local distribution or wholesale uses should be located close to or within industrial estates and other clusters of industrial activity. These have been identified in Special Use Zones and potentially, Rural Regeneration Zones, as well as existing industrial sites.

### **Policy I9 – Relocation of Inappropriately-sited Warehouses**

***To actively encourage and facilitate the relocation of large warehouses and wholesale establishments out of congested town centres to more suitable sites and premises with adequate vehicular access.***

*Justification:* Many existing bulk stores are in cramped unsuitable premises in town centres with inadequate access for large delivery vehicles. Every opportunity should be taken to relocate such storage warehouses to more suitable sites and premises in Special Use Zones and Rural Regeneration Zones in accordance with Policy No I1. Some care will be needed to ensure that equally non-conforming or nuisance uses do not occupy the vacated premises in central areas where commercial uses and other forms of mixed use development should be encouraged. The appropriate replacement uses should be specified in revised Local Plans, Action Area Plans and Development Briefs.

### **Policy I10 – Storage of Hazardous Substances**

***To provide for environmentally sound management, including the safe storage of dangerous substances in appropriate locations away from residential or other sensitive land uses. Consideration should be given to the establishment of buffer zones around storage areas in conformity with Policy ST3.***

*Justification:* Mauritius has to import in bulk many essential basic materials such as petroleum products which, if not handled and stored correctly, could cause hazards to the population and the environment. It is therefore important that there be suitable areas for the storage and processing of such potentially dangerous materials, and that all the necessary measures are taken to store these in as safe a manner as possible. These areas should normally be located well away from sensitive land uses such as housing, schools, health facilities, etc, and away from



Environmentally Sensitive Areas, so as to minimise the impact of any accident concerning hazardous substances.

Consideration should be given to the identification of buffer zones around such storage areas in line with Policy ST3. In this connection, it is noted that the Mauritius Port Authority is considering long term relocation of the storage of some hazardous substances out of the Port area in central Port Louis to a more appropriate free-standing site to the south west of the conurbation in Albion, where establishment of a buffer zone should be undertaken as part of the area-wide planning process.

### **6.3**

#### ***Offices***

Market demand for offices in Port Louis continues, with increasing emphasis being placed on a requirement for tall buildings, a natural phenomenon of the growth of a national centre, and one that should not be discouraged if Port Louis is to retain its status.

The reasons for wanting to limit unfettered growth of the capital remain valid, and relate primarily to a concern regarding increased traffic congestion. However, it is believed that relocation of some central industrial uses including warehousing and its associated traffic, combined with the construction of the Ring Road and the provision of an LRT service, and the encouragement of residential development in the centre, would all aid in improving the present situation. Limiting car traffic can also be achieved using restrictions on parking standards for office buildings, and higher public parking tariffs, but it is essential for a fully operational and acceptable public transport system to be in place before such measures are likely to be effective.

Development outside the national capital must also be encouraged, and new forms of demand will have to be met. New types of mixed use environment are already being promoted (Cybercity for example), and these will create a demand for different types of sites and buildings. At the same time there is potential for opening up niche markets as Mauritius strives to secure a position in the international IT arena.

There is also a suggestion that decentralised office space (ie. outside the conurbation) is becoming more desirable as traffic pressures begin to build on the already congested highways. Decentralisation offers the possibility of live/work arrangements where employment is a local activity rather than something set in a

remote location. Essential to the success of such operations however, is achieving a balanced combination of office, residential and retail elements, in a mature mixed use environment.

### **Policy O1 – Offices and Town Centres**

***Encourage the development of office space in town centre environments as one of the components of a balanced sustainable mixed use settlement. Major new office developments should in the first instance consider available town centre and edge of centre locations in Urban Renaissance Zones in support of Policy SP1 and Policy SP10.***

*Justification:* Locating offices in detached/isolated business parks on out of town sites should be discouraged. It is more desirable to create office environments that are active components of self-contained settlements. Sustainable settlements and communities enjoy a comprehensive mix of land use types, which:

- encourage 24 hour vitality
- reduce demand for greenfield sites by concentrating development
- reduce demand for infrastructure by focusing supply and creating services that are used through a longer time period by more than one use
- improve viability of public transport systems by focussing demand and reducing the number and length of journeys
- protect the environment by reducing the demand for travel by car.

Where new locations for office space such as Cybercity are identified, they should be used as stimuli and planned as components of new settlements and regeneration zones. Action Area Plans as part of revised Local Plans should be prepared to create urban village clusters rather than isolated single use entities. Highly specialised projects such as Cybercity should also be carefully monitored in light of international competition for office use. It is worth noting that even Dubai Internet City, which is one of the success stories of this type of venture, has seen tremendous changes in the balance of office type demand.

### **Policy O2 – Specialised Office Uses**

***Seek opportunities for provision of sites for specialised office uses***

*Justification:* Consideration should be given to identifying the potential for new clustering opportunities – for example, the newly operational fibre optic cable links

and the multi-lingual ability of the Mauritian people offer potential for the development of Call Centres.

In these cases there would be a demand for a new type of office environment. Call centres are typically flexible shed-like structures filled with highly sophisticated electronic, fibre optics, and infra-red equipment. Their built form requirement resembles warehousing more than traditional office space, but the requirement is also for the landscaped environment of a business park, which could be provided in Rural Regeneration Zones.

#### 6.4

##### ***Retailing***

As the bulk of retail (and office) development is likely to be located in or close to town centres it is worth noting the key objectives for Urban Renaissance Zones and Central Business Districts (CBD), new development should:

- Sustain and enhance the vitality and viability of town centres
- Maintain an efficient, competitive and innovative retail sector
- Locate and focus retailing and other complementary development so as to encourage competition – this produces benefits to consumers, and reduces the use of the car as a means of transport
- Ensure the availability of, and easy access to, a wide range of shops, employment, services and facilities

In considering project proposals the planning authorities should adopt a sequential approach to site selection for major new office or retail development - existing centre, followed by edge of centre, followed by out of centre as promoted under Policy SP5.

##### **Policy SH1 – Retailing and the Capital City**

***Safeguard, expand and enhance the retailing function of the central area of the capital city of Port Louis and discourage any loss of shopping floorspace at street level in the prime shopping area. The role and function of Port Louis as the capital should be supported in line with Policy SP2.***

*Justification:* Other conurbation centres (such as Rose Hill) are expanding and improving faster than Port Louis, partly because of concentrations of residential population in these areas. For Port Louis to retain its status as the national retail centre it requires a major drive to encourage residential development in the CBD

in order to allow it to become a true 24 hour city, consistent with the intent of Policy SP2.

Deterioration of the pedestrian environment and congestion on the roads also reduce the attractiveness of the centre as a focus for national quality retail. The proposed LRT system and integrated with this, proposals to improve traffic and parking conditions in the central area and to make the pedestrian environment more friendly and accessible will be achieved through revised Local Plans and Action Area Plans. These should focus on:

- Rationalising traffic movement and public parking provision in order to create a pedestrian-friendly retail environment, including wider sidewalks and traffic-free zones; this to be achieved consistent with improvements to public transport provision and the LRT
- Investing public funds, and/or setting up public private partnerships (PPP's) to establish a programme of urban renewal, focusing on safety, cleanliness, security, renewal of hard and soft landscaping.

### **Policy SH2 – Hierarchy of Retail Facilities**

***Seek to establish a balanced hierarchy of retail facilities at national, conurbation and district/local levels that supports Port Louis as the capital city and confirms its strategic retail focus***

*Justification:* Retail provision should be promoted at national, conurbation and local level, in each instance focusing provision on maintaining an appropriate hierarchy in terms of goods and services provided. At all levels it is important to provide shopping as a component of development, rather than as an independent stand-alone entity. It is also important that public transport systems are designed to provide links between centres in order to make available the full range of goods and services to residents of all settlements.

### **Policy SH3 – High Street Shopping and Frontages**

***In town and village centres encourage the development of main/high street shopping and active building frontages***

*Justification:* Current practice has identified the traditional main “High Street” as a vital component of settlement life, and many new schemes focus on regenerating this element. The principle of creating attractive local shopping centres serviced by

public transport and other support infrastructure should be encouraged through developments which promote buildings to front streets so that the activity of the High Street is expanded.

Mauritius has a tradition of lively streets with shops that spill onto the sidewalks and open cafes. It is important to retain and enhance this tradition, whilst accepting that in some circumstances out of centre locations can also prove attractive, for example in reducing traffic and environmental pressures on tourism Zones and coastal resources by developing inland (such as the Super U development in Grand Baie).

The Policy requires the implementation of policy and planning guidance in respect of:

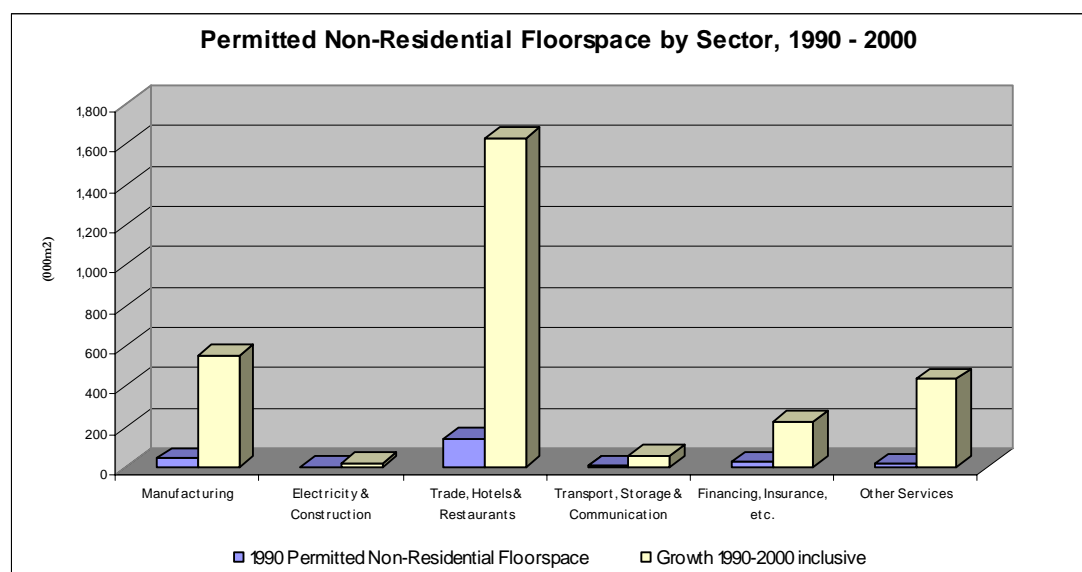
- The location and provision of parking
- The design of the pedestrian environment
- The design of active building facades at ground floor level.

Further guidance is provided in the Policy and Planning Guidance Note on Commercial Developments.

Table 7.1 Selected Employment Growth by Sector, 1990-2000

Sector of Activity	1990 Census	1990 % of Total	2000 Census	2000 % of Total	Intercensal Increase		
					No.	% of increase	Annual Growth Rate
<b>Island of Mauritius</b>	<b>420,800</b>	<b>100</b>	<b>483,600</b>	<b>100</b>	<b>62,800</b>	<b>100</b>	<b>1.4</b>
<b>Secondary Sector</b>							
Manufacturing	132,500	31	142,000	29	9,500	15	0.7
<i>of which – EPZ</i>	<i>88,800</i>	<i>21</i>	<i>89,800</i>	<i>19</i>	<i>1,000</i>	<i>2</i>	<i>0.1</i>
Electricity & Water	3,400	1	2,900	1	-500	-1	-1.6
Construction	31,000	7	42,800	9	11,800	19	3.3
<b>Total</b>	<b>166,900</b>	<b>40</b>	<b>187,700</b>	<b>39</b>	<b>20,800</b>	<b>33</b>	<b>1.2</b>
<b>Tertiary Sector</b>							
Trade, Hotels & Restaurants	47,000	11	86,400	18	39,400	63	6.3
Transport & Communication	26,700	6	30,800	6	4,100	7	1.4
Financing, Insurance, Other Services	11,400	3	21,400	4	10,000	16	6.5
<i>of which – Government</i>	<i>104,900</i>	<i>25</i>	<i>100,200</i>	<i>21</i>	<i>-4,700</i>	<i>-7</i>	<i>-0.5</i>
<i>of which – Government</i>	<i>59,200</i>	<i>14</i>	<i>61,700</i>	<i>13</i>	<i>2,500</i>	<i>4</i>	<i>0.4</i>
<b>Total</b>	<b>190,000</b>	<b>45</b>	<b>238,800</b>	<b>49</b>	<b>48,800</b>	<b>78</b>	<b>2.3</b>

Source: CSO; Mauritius in Figures 2001;



# 7

## Tourism

### 7.1

#### *Overview*

The tourism sector is characterised by the development of large, high quality resort hotels which have been sited almost exclusively in the coastal area of Mauritius, which is internationally famous. Comprising around 320 km of coastline the natural beauty, pristine beaches, fringing coral reefs and sparkling turquoise waters are attracting over 650,000 visitors a year. In 2001, tourism contributed around 6.4% of GDP and nearly 5% of direct employment in 2000. These estimates are considered conservative – indirect tourism related employment also adds significantly to the Mauritian economy (estimated at around Rs 18 bn in foreign exchange and 30,000 jobs in 2002). The coast is also home to Mauritians who have developed homes and local tourism establishments, as well as introduced new recreation activities to offset a declining fishing industry.

### 7.2

#### *Tourism Development and Growth*

According to the Tourism Development Plan for Mauritius (2002), tourism growth is predicted to expand from around 9,000 rooms in 2000 to 20,000 in 2020 contributing around Rs 30 billion to GDP and generating 63,000 new jobs (direct, indirect and induced). Whilst some limitations have been placed on development in the past through the channelling of new projects towards designated coastal tourism zones, recent Government policy supports the expansion from the three existing Tourism Zones to six in total.

A series of 27 Action Plans are also proposed to guide tourism and related development within these Zones. Not all areas are proposed to accommodate tourism development, with the South Coast Heritage Zone and the South West Natural Zone encouraging the protection of nature reserves, the National Park and forested areas (refer to PROPOSALS MAP and MAP 5).

Table 8.1 provides a summary of objectives for the tourism sector.

**Table 8.1 Quantitative Objectives for the Tourism Development Plan: Island of Mauritius**

Item	2000	2010	2020
Rooms – Hotels	8,700	14,700	19,700
Room equivalents – International use			
Others	4,400	6,400	8,400
Air Tourist Arrivals ('000)	657	1,000	1,450
Tourism Receipts (Rs bill.)	14.2	25.5	47.9
Local Incomes Generated Rs Billion	13.2	23.7	44.5
Local Employment (Full-Time Job Equivalents)	30,000	47,000	63,000

Source: Tourism Development Plan for Mauritius, 2002

The Plan envisages that each of the Tourism Zones will be developed and positioned with differentiated products and a different emphasis in each region.

Development foci for each of the Tourism Zones have been identified by the Ministry of Tourism as follows:

*The Northern Tourism Zone* (extending from Baie aux Tortues through to Grand Baie/Pereybere to Cap Malheureux and onto Grand Gaube):

- maintain and increase a broad range of accommodation types whilst upgrading quality through encouragement and license control of informal sector;
- improvement to public facilities especially at Grand Baie; and
- improvement to environmental quality by maintaining 'green wedges' and traffic calming measures.

*Eastern Tourism Zone* (from Roches Noire to Belle Mare, Trou d'Eau Douce to Grand Riviere Sud Est and including Ile Aux Cerfs and Ile de l'Est):

- maintain luxury and high quality hotel development through development control and integrated environmental protection and improvements;
- improve public beach facilities and access to sea; and
- better controlled water-based activities.



*South West Tourism Zone* (from Flic en Flac south to Wolmar and Tamarin, Les Salines, Grande Case Noyale, Coteau Raffin through to Le Mornes Brabant);

- maintain luxury and high quality hotel development (Wolmar and Le Morne);
- strengthen development control and maintain 'green wedges' between development;
- upgrade informal sector through license control to regulate and upgrade accommodation; and
- improve public beach facilities and access to the sea.

*Mahebourg Tourism Zone* (including the Mahebourg Waterfront, Grand Port Waterfront and Blue Bay areas);

- Maintain luxury hotels in Blue Bay area whilst making environmental protection a priority; and
- Encourage high quality small hotel developments in Mahebourg.

### **Policy TM1 – Tourism Zones**

*A sequential approach to tourism development should be followed. Preferred locations for new strategic developments will be limited to existing settlements, resorts and major campement sites within Tourism Zones as defined in the Tourism Development Plan for Mauritius, 2002. Priority for strategic developments will be accorded to the Northern, Eastern, South West and Mahebourg Tourism Zones, in accordance with Policy SP16.*

*Justification:* Policy TM1 outlines the concept of a sequential approach to tourism development which first focuses in existing settlements resorts and major campement sites within designated Tourism Zones. Outside of these clusters, but within Tourism Zones, only limited development should be permitted where it supports and complements strategic development or sustains local needs. Policy TM1 reinforces the provisions of Policy SP16 Coastal Developments and Tourism.

## **7.3**

### ***Integrated Resorts Schemes***

With available attractive coastal sites becoming more scarce for major developments, the tourism and real estate industry intend to introduce new development models which *inter alia* will retain a natural image whilst enabling new facilities to be included such as golf courses, within the overall complex. The clustering of such facilities has recently been endorsed by a study on the future

image of golf in Mauritius commissioned by the Ministry of Tourism– ten golf courses are currently proposed (not all but primarily in the coastal zone). Golf courses with demands on irrigated water and the need to treat water before it leaves the course grounds will place further pressure on scarce coastal zone land and a fragile marine ecosystem.

Current proposals received by the Ministry of Housing and Lands for Integrated Resort Schemes (IRS) may require around 2000 ha of land. There are 15 such resorts being discussed with Government officials, of which it is understood four have gained approval. The resorts have been a direct response to the Sugar Industry Efficiency Act (SIE Act) and the release of sugar cane lands from restructuring in that sector. It is the intent that these resorts will open up home ownership to foreign nationals which will require land beyond the level required to meet the needs of the Mauritian market.

The integrated resorts contain a mix of uses – a residential component, hotels, golf courses and other leisure facilities and commercial/retailing. They will generate employment across a range of skills including unskilled / semi-skilled workforce thus may be able to offer employment opportunities for those leaving the sugar industry.

Development pressure on the coast often impinges on the natural environment through a variety of impacts on Environmentally Sensitive Areas (ESAs). When land and sites were plentiful, such coastal areas were not considered suitable for development. With continued demand and increasing prices for land directly on the coast, Environmentally Sensitive Areas are coming under more direct and indirect pressure from development. Wetlands have been backfilled and continue to be developed in Flic en Flac for example. Urban run-off and blocking of wetlands' outlets to the sea has limited their ecological and hydrological functions and has contributed to flooding problems. Additionally residential development, particularly morcellements, is occurring on hillsides and there is increasing pressure to develop on mountain tops.

### **Policy TM2 – Integrated Resort Schemes**

*In proposing major new development schemes within Tourism Zones on the coast, community benefits should be sought via planning obligation and similar mechanisms to assist in the integration, maintenance and enhancement of nearby communities, as well as the surrounding natural*

***environment. The principles embodied in Strategic Policy SP16-Coastal Developments and Tourism are also relevant in this connection.***

*Justification:* Integrated resorts and coastal tourism establishments will be located in key coastal areas, will have an impact on the physical, economic and social environments within which they are located and should complement and support local tourism and settlement strategies to ensure natural environments are maintained and enhanced. Reference should also be made to SP16 in the application of this policy.

#### **7.4**

##### ***Heritage and Conservation***

The South Coast Heritage Zone (covering an extensive area from Blue Bay to Baie du Cap inclusive of Surinam, Souillac and Bel Ombre); and the South West Natural Zone which includes the Black River Gorges National Park and a buffer zone, incorporate strategies to protect the natural environment. It is proposed that within the South Coast Heritage Zone, the existing coastline is preserved and that only limited tourism development should be permitted in and around existing centres, where inward investment can contribute to development clustering and thereby sustain local economies.

The South West Natural Zone supports the natural scenery and beauty of the Black River Gorges National Park and the Savanne Mountains which both form a dramatic backdrop to the coastal scenery. Environment strategies outlined below reinforce development restraint.

Development in these Zones should generally be focused as follows:

##### *South Coast Heritage Zone*

- Protect coast from any development;
- Controlled development within Pas Geometriques, and
- Encourage high quality small hotel/guest house developments in village centres.

##### *South West Natural Zone*

- No development within protected areas and buffer zones other than where it can be shown to support local economies and meets key environmental and landscape criteria, for example the marketing of 'green' activities and opportunities; and
- Environmental improvements to leisure, recreational and educational facilities.

These themes should be incorporated within revised Local Plans to provide a focus and to facilitate appropriate tourism activities.

### **Policy TM3 – South Coast Heritage Zone and South West Natural Zone**

*Tourism development within the South Coast Heritage Zone should be limited to existing settlements. Development within Environmentally Sensitive Areas (ESAs), areas of moderate / high suitability for agriculture or areas of landscape significance in the South West Natural Zone should not be permitted, other than to sustain local economies. Such limited developments should be in accordance with Policy SP15 Development in the Open Countryside, environmental policies and include environmental improvements to recreational, leisure and educational facilities.*

*Justification:* Policy TM3 recognises that two Zones – the South Coast Heritage Zone and the South West Natural Zone are locations where only limited development should be encouraged. It is pertinent that strategic tourism development be confined to Tourism Zones to ensure that remaining coast line is retained in its natural state, that some protection to ESAs be provided (in the National Park and nature conservation areas as well as along the coast) and so that infrastructure provision can be more efficient by making best use of existing services and minimising demand for new infrastructure investment.

## **7.5**

### ***Tourism Action Area Plans***

To assist in the overall planning, management and promotion of the tourism product, 27 Action Areas have been identified in the Tourism Development Plan within the context of the six Tourism Zones. Three priority development projects have already moved to the implementation phase:

- Grand Baie Waterfront – development brief for a new promenade, La Cuvette beach improvements, inner bypass, community development programme and coastal walkway;
- Trou d’Eau Douce Community Action Plan – to define possible investment to optimise the potential that the area offers both to the local resident and visitor; and
- Flic en Flac Public Beach – to provide facilities, upgrade the beach environment, improve the image, increase recreational and business opportunities and increase public awareness of the coastal environment.

In addition, three product development and diversification projects have been identified in that Plan to add opportunities for visitors to experience heritage, culture and natural resources:

- The Discovery Experience - discovery route, heritage and nature based destination areas, speciality tours and implementation programme;
- Heritage Product Improvement Programme – Port Louis heritage trail and Pamplemousses garden restoration programme; and
- Nature Product Improvement Programme – National Park product improvement, south coast heritage trail, national trail system and interpretation trails.

#### **Policy TM 4 – Tourism Action Area Plans**

*Development opportunities which facilitate the implementation of Tourism Action Area Plans as specified in the Tourism Development Plan 2002, should seek to incorporate planning obligation or similar implementation mechanisms (including negotiated community benefits) in relation to the design and function of the tourism facility itself. Where appropriate, linkages should be established with National Environment Fund objectives within the Environment Protection Act, 2002 to enable environmental improvements such as beach and open space enhancements to form part of the Action Area Plan outputs.*

*Justification:* This policy is designed to promote scheme implementation, provide focus for planning obligation or other similar development mechanisms obtained through tourism development, enable the regeneration of rural and coastal settlements and centres surrounding and comprising tourism developments and facilitate community and Government actions in implementing public realm/environmental improvement projects.

#### **7.6**

##### ***Pas Geometriques and Campement Sites***

The Pas Geometriques, an 80 metre strip (approximately) of state- owned land located around most of the coast, enables the Government to have an ownership and controlling mechanism for most coastline development.

The leasing system via campement leases has enabled the control of residential and tourism developments within the coastal zone, although it is understood that some of the rents obtained, particularly for residential development, are considered to be substantially below the value of the property and market values.

Government policy for campement sites is likely to permit further more intensive development including further subdivision of individual leases subject to conformity with updated Policy and Planning Guidance on Coastal Developments, and revised rental and leasing arrangements. Development of some campement sites has gone beyond that permitted in Local Plans with many instances of the final built form not being subject to enforcement action. This lack of enforcement of planning regulations is of concern to the tourism industry which seeks to maintain a natural and well-designed image in the coastal zone. Many campement leases expire in 2020 and thus there will be pressure to reassess and address future development on such sites.

#### **Policy TM5 – Campement Sites**

***Campement sites may be redeveloped for tourism uses (on large scale sites for high quality tourism establishments) within approved Tourism Zones and where Tourism Action Area Plans have been prepared by the Ministry of Tourism. Where proposed tourism development lies within or adjoins an ESA the proposed tourism use should be accompanied by an environmental management plan outlining responsibilities for the management and maintenance of the ESA. Any such development will be subject to an Environmental Impact Assessment under the Environment Protection Act, 2002.***

***Redevelopment of existing campement sites and extension of leases of campement sites outside of Tourism Zones shall be permitted for local needs for residential purposes and in accordance with Strategic Policy SP17 and revised Planning Policy Guidance. Campement sites within or adjoining Environmentally Sensitive Areas (ESAs) should be consolidated in situ so that future redevelopment can incorporate the management of the ESA; campements sites which could facilitate access to the coast should be identified where access considerations will form part of the lease renewal process.***

*Justification:* Redevelopment of campement sites within Tourism Zones and Tourism Action Area Plans would enable tourism activities on large scale coastal sites, provide a mechanism for the management of ESAs and enable the Government to obtain fair rents for such highly valued land.

## Policy TM6 – The Pas Geometriques

*Development on committed Pas Geometriques land may be intensified within the six Tourism Zones (where development is proposed) or where contiguous with existing settlements outside Tourism Zones subject to compliance with updated Planning Policy Guidance and the provisions of the Environment Protection Act, 2002. Adequate sewage treatment facilities should be provided. No intensification of development on Pas Geometriques land within Tourism Zones or adjoining existing settlements outside Tourism Zones which is likely to have significant environmental effects will be permitted in or adjoining Environmentally Sensitive Areas without first obtaining an Environmental Impact Assessment licence under the Environment Protection Act, 2002.*

*On uncommitted Pas Geometriques land, outside of Tourism Zones or existing settlements limits no major new development will be permitted, consistent with the provisions of Strategic Policy SP17. Small scale developments in these areas will generally be permitted, where they satisfy agricultural, environmental and landscape criteria and can be shown to sustain local needs.*

*Justification:* Coastal Zone redevelopment and intensification should be undertaken in accordance within the clustered growth approach to settlement strategy and tourism policies. Coastal ESAs should be protected from *ad hoc* tourism and residential development and other piecemeal activities where comprehensive management of ESAs by owners/occupiers would be difficult.

### 7.7

#### *Design in Tourism Zones*

It is important that all tourism development whether directly on the coast or inland complies with planning and design guidance to ensure consistency in quality of design, but this does not necessarily extend to architectural styles. Similarly protection and management of ESAs which have a direct influence on tourism activities and development are also of relevance to tourism strategies.

## Policy TM7 – Design in Tourism Zones

*The design, scale and locational characteristics of tourism developments should maintain the distinct character of the six Tourism Zones as contained in the Tourism Development Plan. Such developments should also respect policies regarding scale, density and design in revised Local*

*Plans as well as incorporate urban design parameters in updated Planning Policy Guidance.*

*Policy TM7 should be seen as an integral component of Policy SP13 Design Quality and Sustainable Developments, but with specific reference to Coastal Developments where environmental and landscape sensitivity are of paramount concern.*

*Justification:* Each of the Tourism Zones is envisaged to offer a different experience for tourists and can provide variety, make best use of the natural and physical environment in which the tourism activities and facilities are located, and not compete directly with one another in an internationally competitive market. The character and development focus outlined in the Tourism Development Plan provides for subtle differences between the Zones respecting existing development and the natural environment in which tourism activity will be located and this should be acknowledged in policy terms.

## 7.8

### ***Coastal Access***

With land becoming scarce in coastal locations pressure is being placed on the use and intensity of development on coasts. Tourism activities have developed and there is demand for further coastal tourism development including the concept of Integrated Resort Schemes (IRS) some of which are proposed in and around the six Tourism Zones outlined above.

Public beaches are under pressure as they represent some of the few locations left free from development. Whilst additional public beaches have been proclaimed they still only comprise around 10% of the coast. The pressure for land on the coast has also led to more intensive residential development within the Pas Geometriques often where inadequate infrastructure exists to cater for increases in density (for example sewage disposal problems in Grand Baie and Flic en Flac). It is important therefore to retain strategic access to the coast for the benefit of all Mauritians in line with the principles of sustainable development.

### **Policy TM8 – Coastal Access**

*To aim to establish incrementally over the planning period a continuous coastal footpath, where practical and feasible, above the highwater mark. Where access is obstructed, not feasible nor practicable, the footpath should be temporarily diverted on an alternative route. This coastal path should be established through negotiation with landowners, conditions in long term*



***leases and achieved and maintained via implementation mechanisms, such as planning obligations and developer contribution plans.***

*Justification:* To ensure that the coast and its public assets remain accessible to Mauritians whilst recognising that at some locations direct coastline access may neither be physically nor legally possible. Policy TM8 addresses the need for long term provision of a continuous coastal footpath above the high water mark. This issue of access around the coast (particularly through tourism resorts) is becoming increasingly relevant as more of the coastline is developed and hence policy support is needed to safeguard long term community interests.

## 8 **Agriculture, Forestry, and Natural Resources**

### 8.1

#### *Overview*

Although agricultural land has decreased from 91,000 ha in 1990 to 84,000 ha in 2000 agricultural employment still comprised 54,300 (10.9%) in 2000, of whom 54% were involved in sugar activities. The share of agriculture in the economy has reduced from 13% of GDP in 1990 to 7% in 2000.

The principal agricultural land use is sugar cane. This is estimated to have covered 84,000 ha in 1990 and 77,000 ha in 2000. 60% of this area is planted by miller planters and corporate planters (such as Mon Loisir, Sugar Investment Trust and State Land Development Corporation). The level of sugar cane jobs has fallen from 40,400 to 29,300 since 1990-representing a reduction of 27.5%. The tea sector occupies an area of 660ha exploited by some 1,380 planters. The four tea factories produced just over 1500 tonnes of tea in 2001 of which 41 tonnes were exported bringing foreign exchange earnings amounting to Rs 6.3m.

Around 57,000 ha of land are under forest cover of which some 34,500 ha are privately owned forest lands and 22,100 are state-owned; however only 6,550 ha of these private lands are protected by law as mountain or river reserves. Including Black River Gorges National Park and Pas Geometriques just over 8,000ha of state forest lands are protected as nature or islet reserves, whilst most of these lands are leased out as shooting and fishing rights. There are about 25,000 ha of forest land used for deer ranching and farming, producing 400 tons of venison annually for the Mauritian market.

### 8.2

#### *Agriculture*

The overall strategy with regard to the agricultural sector focuses on the protection of best quality agricultural land from an economic, social and environmental perspective: conservation of best quality land for a variety of uses including sugar cane, tea, tobacco, food crops and livestock should be pursued by all stakeholders. The recent Non-Sugar Sector Strategic Plan 2003-2007 also foresees a reorientation of the non-sugar agricultural sector. Given future market pressures and changes in production quota regimes that are to occur over the next ten years, a significant amount of land currently under sugar is likely to come under pressure for release to other uses.

### 8.2.1

#### *Policies*

Key policies relating to agricultural land cover the protection of such land from urban development and in particular best quality agricultural land, the continuous review of farming practices, the support of a rationalisation of sugar factories and agricultural diversification programmes, including the promotion of a transition from traditional practices. Policies also cover the use of pesticides and fertilisers and the protection of water from agricultural pollution.

MAP 3 identifies Areas of High/Moderate Agricultural Suitability and Forests.

### 8.2.2

#### *Best Quality Agricultural Land*

The FAO/MSIRI 1973 land suitability classification of sugar cane land was based on soil, climate and crop characteristics determining sustainable yields. In the light of changes that have taken place since 1973 with regard to new cane varieties, de-rocking operations and better irrigation methods, an MSIRI review of land suitability in terms of yield capacity of the various classes of sugar cane land in 1999 revealed that:

- the mean yield capacity of fields in the highly suitable S1 Class was 92.8 to 107.5 tonnes/ha
- in the moderately suitable S2 Class, it was 72.6 to 90.0 tonnes/ha
- in the S3 Class (marginally suitable) it was 62.3 to 71.3 tonnes/ha.

The above yields show significant productivity increases from a previous (1997) land suitability assessment by MSIRI which established the mean yield for S1, S2 and S3 classes as being 90 tonnes/ha, 70 tonnes/ha and 55 tonnes/ha respectively. It was further concluded that more efficient irrigation systems produced yields 20% higher than those under less efficient systems.

Changes in inputs (cane cultivars, irrigation and de-rocking) have increased yields by some 12 tonnes/ha and brought significant changes in the three land suitability classes. Of particular significance, is the shift in yield of the Class S3 lands from 55t/ha to 67.6/ha, which is nearer to the economic yield threshold of 70 tonnes/ha. The S3 classified lands could thus be profitably exploited if amenable to mechanization and irrigation (and subject to market conditions at the time).

Consequently a revised policy to conserve best quality agricultural lands will need to take into account the following criteria:

- Lands that are mechanisable
- Lands that have already been, and could potentially be derocked
- Lands under irrigation or with potential for irrigation.

#### **Policy AG 1 – Land of High or Moderate Suitability for Agriculture**

***Land classified as highly or moderately suitable for agriculture by the Ministry of Agriculture should be safeguarded from development wherever possible subject to cases of national interest where no alternative suitable sites exist. In such cases the full economic and social costs of the proposed development (and any alternatives) should be taken into account.***

*Justification:* The Ministry of Agriculture with the MSIRI is reviewing the classifications for suitability to assist in determining sugar cane lands that need to be meaningfully protected against conversion to other uses. Such ‘best quality’ agricultural lands as re-defined and approved by the Ministry of Agriculture should be protected against development unless it constitutes land to be devoted to schemes deemed to be development in accordance with the socio-economic policies of Government (Sec. 25 of the SIE Act 2001).

Where land conversions out of agriculture are important to the economy or in the national interest there may be exceptions. For example, the development of Cybercity on higher quality sugar cane lands has been justified as the policy of protection of best quality agricultural land was outweighed in this case by the national importance of the project to the economy and the site’s strategic and highly accessible location in the centre of the island including its proximity and synergy with the University. In such cases the full economic, social and environmental costs of the development and any alternatives should be taken into account.

#### **Policy AG2 – Development on Small Parcels of Agricultural Land**

***Development on high or moderately suitable agricultural land should not be permitted in accordance with Policy AG1. However, small schemes proposed on small pockets of agricultural land within or adjoining limits of permitted development should be allowed where they are classified by the Ministry of Agriculture as having marginal/low suitability for future productive agriculture and are required to sustain local needs.***

Please Refer to Map 3: Areas of Agricultural Suitability and Forests

***The Ministry of Agriculture fully supports the idea of swapping of land holdings with the Sugar Investment Trust (SIT) with a view to keeping agricultural land for agricultural use.***

*Justification:* Individual housing units and small *ad hoc* morcellements in agricultural areas and open countryside can jeopardise comprehensive irrigation and mechanisation projects. They are also costly to service with expensive utilities, and can disturb and fragment the landscape quality. Where such developments are proposed on pockets of marginal/low suitability agricultural lands within permitted settlements' limits, these can be serviced much more efficiently and can contribute to an enhanced settlement form and structure.

In relation to hardship cases relating to refusal of development on highly/moderately suitable agricultural lands, consideration should be given to the purchase/exchange of these lands (in particular, small planters' lands) by SIT with a view to keeping them in agricultural use as defined by the Ministry of Agriculture.

#### **Policy AG3 – Agricultural Land Needed for National Strategic Projects**

***With regard to the release and conversion of sites on land of high/moderate suitability for agriculture needed solely for specific projects of national importance (and for which no alternative sites are available) under policy AG1, the equivalent of land to be converted or to produce sugar to the quantity forgone by the conversion, should be planted***

*Justification:* This policy is partly stipulated in Section 29 of the SIE ACT 2001 in relation to instances where land conversion tax is not payable. The intent of this policy is to reinforce the Ministry of Agriculture's aim to give priority to the retention of as much of the highly/moderately suitable lands under agriculture as is possible. However where such lands are to be converted in the national interest, the area lost should be replaced by the Ministry of Agriculture by an equivalent of less suitable lands which can then be improved into lands to sustain economically viable production. Mechanisms involving public private partnering and other potential funding sources should be explored to effect implementation.

#### 8.2.3

##### *Rationalisation of Sugar Milling*

An important target set in the Sugar Sector Strategic Plan 2001-2005 involves the preparation of some 60,000 to 65,000ha of land for complete mechanisation by 2010. The Chamber of Agriculture expects that sugar production at 92t/ha on

such mechanised and irrigated lands would be around 550,000 to 600,000 tonnes. The implication here, from a land use point of view, is that some 12,000 to 17,000 ha of the present 77,000ha under sugar cane could be released for non-agricultural use or agricultural diversification by 2010.

During the second decade of the Plan period (2010-2020), the private sector has suggested that 450,000 to 550,000 tonnes of production may be a realistic planning target. This level would necessitate some 53,000ha of mechanized land under sugar, which could result in a further 7,000ha of land becoming available for conversion.

#### **Policy AG4 – Rationalisation of Sugar Milling**

##### ***To support the Sugar Sector Strategic Plan and the rationalisation of sugar milling.***

Justification: As part of this process and to keep the sugar industry efficient and viable, the rationalisation strategy contained in the Sugar Sector Strategic Plan recommends further reduction of factories over the first decade of the new Millennium, after the closure of Beau Plan and Bel Ombre sugar mills. So far, factory closures have been left at the choice of the owners. However, major mergers have taken place e.g FUEL in the east and Mon Loisir in the north have merged. In the south Riche-en-Eau, Mon Tresor Mon Desert, Savannah, Britannia and Union St. Aubin have formed the Southern Regional Milling Company. It is envisaged that there would be 7-8 sugar factories in Mauritius by the end of year 2006.

#### 8.2.4

##### *Marginal Sugar Cane Land*

In the first instance the use of marginal sugar cane lands should be considered in relation to sugar cane buffer requirements as defined by the Ministry of Agriculture for the following reasons:

- the less developed countries may not be able to meet their production targets for sugar in times of drought whereas Mauritius, with its efficiency in irrigation, can guarantee supplies;
- production of sugar from cane is cheaper than production from beet and, with the liberalisation of the market, beet grown in Europe may be phased out, while cane growers will stay in business;
- even if there is no additional demand for export, sugar can still be used for co-products such as alcohol and ethanol, and the waste can continue to be

- used for fuel supply (bagasse, which currently contributes 18% of the island's power supply);
- in land use terms sugar cane can provide an important visual and physical buffer around development clusters as well as Environmentally Sensitive Areas.

#### **Policy AG5 – Marginal Sugar Cane Land**

*On land currently under sugar cane, but which has been classified as marginal in the Ministry of Agriculture/MSIRI 2002 Land Suitability Map, and which is located within or adjoining major settlements, strategic growth clusters or existing village limits, consideration of the release of such lands for other uses should be subject to a sequential approach which takes into account:*

- (1) long term requirements for use as a sugar cane buffer stock to be determined by the Ministry of Agriculture/MSIRI and the private sector*
- (2) suitability for other non-sugar agricultural uses as defined by the Ministry of Agriculture*
- (3) forming part of or adjoining an Environmentally Sensitive Area (ESA) as defined by the Ministry of Environment*
- (4) forming part of or adjoining an area of special landscape importance as defined by the Ministry of Environment and included in revised Local Plans.*

*Justification:* Where sugar cane land has been classified as marginal in accordance with Ministry of Agriculture/MSIRI 2002 Land Suitability Map, and does not fall into one of the above categories and is located within or adjoining major settlements, strategic growth clusters or existing village limits, there will be a presumption in favour of development as part of area-wide developments and Action Plans to be prepared under revised Local Plans.

#### 8.2.5

##### *Farming Practices*

Since 1995, twelve cane varieties adaptable to the humid and superhumid zones have been released by MSIRI for commercial exploitation. It is known that irrigation especially in the dry lowlands can increase sugar cane yields of 40t/ha to 80t/ha. The centre-pivot system introduced in the 1990s and other irrigation systems later expanded irrigated areas, so that in year 2000, some 30% of total

sugar cane land was under some form of irrigation. Overall, a target of 32,000 ha to be brought under irrigation has been set.

With regard to better small planters' farming practices, twelve service centres operated by the Farmers' Service Corporation have been set up to improve efficiency and productivity. These are now servicing the 32,000 sugar cane (non-miller) planters grouped into Land Area Management Units (LAMUs) and Block Management Units (BMUs) which produce about 40% of total sugar on their 31,600 ha of land.

Future prospects in the agricultural sector relate essentially to measures contained in the Sugar Sector Strategic Plan to ensure the efficiency, productivity and viability of the sugar industry. The targets set by the Plan are:

- meeting export market commitments
- further centralization of factories by 2005. i.e. from the present 14 to 7 or 8
- reduction of cost of sugar from 18 ¢/lb to 14¢/lb and eventually to 10-12 ¢/lb
- generation of as much electricity as possible from bagasse and other renewable resources
- making more efficient and judicious use of land and water resources through total mechanization of mechanisable land and irrigation, where required to be fully provided accordingly
- substantial reduction of the labour force through a Voluntary Retirement Scheme (VRS) involving compensation in terms of cash payment as well as land.
- further democratization of the industry through sale of agricultural land
- further progress in research and development in the fields of biotechnology, biotics and cane biomass.

#### **Policy AG6 – Review of Farming Practices**

***Farming practices need to be continuously reviewed not only in the light of changing demands for agricultural products but also in the light of the need to improve the quality of life of all Mauritians***

*Justification:* This policy concerns enhancing agricultural productivity and continuous review of farming practices through, *inter alia*, more efficient irrigation



systems to improve productivity through higher yielding cane varieties, the development of irrigation and better small planters' farming practices.

Substantial investments have been and continue to be made into de-rocking, irrigation and mechanisation projects both by the public and private sectors, with a view to increasing productivity and optimising labour requirements. Labour accounts for 56% of sugar production costs. Labour costs optimisation is being achieved through the employees Voluntary Retirement Scheme which, so far, has seen the retirement of some 8,000 employees in return for cash and nine perches of land as compensation, which include seven perches of land and the balance for infrastructural requirements like roads, green spaces etc.

#### 8.2.6

##### *Agricultural Diversification*

Overall food crop production by small planters reached 86% in 1999 and the country has reached self-sufficiency in fresh vegetables though not in fruits. The increasing reliance of the country on imports for its food security is a matter for concern given that food imports have kept increasing over the years to reach Rs 7.5 billion in 1999 with 536,000 tonnes imported.

Agricultural diversification is also important with regard to job-generating activities which will increasingly be needed to replace employment opportunities lost in rural areas due to sugar factory closures. Bagasse production therefore offers potential new opportunities. The ten bagasse plants located at sugar factories are exporting electricity to the grid of which three export electricity year round using coal as the complementary fuel during the off-season. In 2001, 1,673,000 tonnes of bagasse were produced from which around 300 GWh of electricity were exported to the public grid.

While the country has reached self-sufficiency in pork, it is importing 90% of its beef, goat and mutton meat consumption; and 80% of the feed inputs needed in poultry. Local production costs are twice those obtaining in other countries such as South Africa or Zimbabwe. The major constraint to efficient and viable livestock production according to the Agricultural Research and Extension Unit (AREU) is land availability for pastures, fodder cultivation and other animal feed's derivatives (e.g. maize) to allow for medium to large scale commercial production of cattle and other animals. There is therefore a need to provide land for pastures and fodder to step up livestock production if the country is to cut down on its gross imports. Deer farming is a potential activity that could be further developed to contribute to the meat requirements of the country and for larger export. Deer

farms (ensuring permanent availability of venison) as opposed to deer ranches could be increased while deer ranches themselves could be converted into farms (feedlots) to optimise stocking capacity and maximise land resources as recommended by the Mauritius Chamber of Agriculture. Under the North Plains Irrigation Project 11, some 700ha of land are targetted under diversification crops (foodcrops and fruits mostly) with technical assistance from the European Union.

The recommendations of the Non-Sugar Sector Strategic Plan of the Ministry of Agriculture, Food Technology and Natural Resources 2003-2007 envisage a reorientation of the non-sugar sector towards a more technology-based approach to achieve a measure of self-sufficiency, to meet increased quality standards, to develop agro-processing, promote entrepreneurship, optimise export opportunities, ensure conformity to international food safety norms and maximise potential benefits from regionalisation. In revising Local Plans, relevant planning authorities should take into consideration the recommendations of this newly-approved Strategic Plan.

#### **Policy AG7 – Agricultural Diversification**

***Agricultural diversification programmes towards greater use of technology as defined and recommended in the Non-Sugar Sector Strategic Plan of the Ministry of Agriculture, Food Technology and Natural Resources should be taken into account in preparing revised Local Plans.***

*Justification:* The Ministry of Agriculture's Non-Sugar Sector Strategic Plan 2003-2007 is an important component in determining and locating agricultural/farming diversification projects within revised Local Plans in the context of the National Development Strategy, and national socio-economic priorities. The adoption of intensive cultivation practices based on modern practices has become essential in optimising agricultural productivity within available land resources and increasing urbanisation.

#### **Policy AG8 – Poultry and Livestock**

***Poultry and livestock rearing need to be defined in terms of their size and potential impact on Sensitive Land Uses and due environmental consideration should be given to their locations and requirements for buffer zones as appropriate, in accordance with Policy ST3.***

*Justification:* Bird and animal rearing is associated with problems of foul odours and inadequate waste disposal systems. Producers are concerned to minimise the adverse impact of their operations on local neighbourhoods while farmers should be allowed to continue animal rearing subject to appropriate environmental safeguards. Hence the location of such undertakings should be carefully controlled in relation to existing sensitive land uses, residential, health and education facilities, in accordance with Policy ST3 which seeks to establish buffer zones between 'bad neighbour' land uses and sensitive sites such as ESAs as defined by the Ministry of Environment, new housing schemes and tourist resorts.

#### **Policy AG9 – Pesticides and Fertilisers**

***To support the EIP project monitoring the long-term effects of the sustained use of pesticides and fertilisers in both the sugar and other sectors of agriculture on water quality and human health. Monitoring actions should be carried out by the Ministry of Environment in conjunction with the Water Resources Unit.***

*Justification:* The need for user knowledge and authority control on the use of pesticides, fertilisers and chemicals to protect and improve ground water quality is an essential factor in safeguarding underground supplies and reservoirs. Strict control should also be exercised on the use of pesticides on farms close to residential areas, schools, health facilities and other sensitive land uses, as foodcrop growers will still depend on pesticides for the foreseeable future.

On-going actions include training of farmers in rational use of pesticides and sensitisation campaign by officers of the AREU regarding use of pesticides on farms near schools, residential areas.

#### **Policy AG10 – Organic Farming**

***Specialised agricultural clusters devoted solely to the pursuit of organic production should be identified and planned for in revised Local Plans in consultation with the Ministry of Agriculture and the recommendations of the Non-Sugar Sector Strategic Plan 2003-2007.***

*Justification:* New opportunities may arise for organic produce which calls for special production practices avoiding the use of synthetic materials. Designation of specific areas or clusters for such production will provide the necessary

protection for farmers undertaking organic production from their immediate “non-organic” neighbours.

Special areas can be located close to or around residential areas and social services establishments. Existing farms using chemicals and pesticides near such areas should be encouraged to follow “organic” principles.

### **8.3**

#### ***Irrigation***

Irrigation, together with mechanisation, de-rocking and high-yielding cane varieties would be the main determinants of best quality agricultural lands in future and one of the key factors in the classification and maintenance of land under agriculture.

Around 22% of the total 77,000 ha. of land under sugar cane in 2000 was irrigated under different systems. Some 28% of miller/corporate planters lands were under high-pressure overhead (6,000 ha) medium-pressure overhead (6,000 ha), drip (1,000 ha) and surface (1,000 ha) systems. The corresponding areas for large planters were 250 ha, 600 ha, 90 ha and 1200 ha respectively, and for small planters 800 ha, 175 ha, 300 ha and nil respectively i.e. more that 50% of large planters' lands, and 13% of total areas irrigated are still under surface irrigation which is inefficient in water usage.

Drip and overhead irrigation systems have increased water usage efficiency since the 1980s and have expanded irrigated areas from 16,000ha in 1991 to 19,500ha in 2000. Water for irrigation which is limited, is obtained from rivers, impounding reservoirs and boreholes in the Curepipe, Northern and Southern aquifers.

The tendency of the Irrigation Authority is to lay much emphasis on efficiency and effective use of available water resources. To this effect, the Authority is concentrating efforts to modernise and consolidate its existing irrigation schemes. Overall a target of 32,000ha to be brought under irrigation has been set.

Systems of irrigation commonly adopted are drip, centre-pivot and solid and/or semi solid sets. These systems have efficiencies of 95% and 85% and are highly performing in terms of water usage. The actions of the Irrigation Authority are now more geared towards the increase in production per m<sup>3</sup> of water used. Moreso lowering of operation and maintenance costs are envisaged through use of low pressure irrigation systems.

With the coming into operation of the Midlands dam, some 3500ha of land will be provided with irrigation facilities in the Northern Plains under NPIP –Phase 11. The project comprises 2,100ha of land owned by some 4000 small planters cultivating mainly sugar cane, vegetables, foodcrops and fruits and 1,400ha belonging to large planters cultivating mainly sugar cane. Out of the 3,500ha some 20% will be under diversified crops namely fruits and foodcrops. The systems of irrigation will be as far as possible centre-pivot and semi solid sets.

The Irrigation Authority is also proposing to use treated wastewater for irrigation purposes. This action will reduce pressure on demand for raw water for irrigation. The Authority will also provide services for the investigation of new ground water sources to be exploited for irrigation purposes, made possible through the acquisition of a drilling rig under the Indo-Mauritian line of credit. This service will support the implementation of micro-irrigation schemes and other individual agricultural schemes requiring high technology.

#### **Policy IR1 – Irrigation and Urban Development**

***To protect existing and committed irrigation areas from urban development and to direct development away from the areas with potential for future irrigation wherever possible as defined by the Ministry of Agriculture, the Irrigation Authority and the proposed Irrigation Liaison Committee.***

*Justification:* Irrigation areas are statutorily designated by the Minister of Agriculture and managed by the Irrigation Authority to increase production on small planters' lands. The recent Ministry of Agriculture Non-Sugar Sector Strategic Plan has recommended the setting up of an Irrigation Liaison Committee to closely monitor irrigation-related issues island-wide which could contribute to defining and ensuring protection against any non-agricultural development.

Where potential irrigation areas or parts thereof conflict with sites for strategic growth projects (such as employment-generating activities), irrigation scheme boundaries should be identified in consultation with the Irrigation Liaison Committee, the Irrigation Authority and the Ministry of Agriculture within revised Local Plans.

## 8.4

### ***Forestry***

Forest plantations account for some 8,000ha of pine out of some 12,000ha of planted forests which provide 30% of the country's timber needs, the rest being imported largely from Malaysia. About 40ha of former tea lands have recently been reforested.

Funding from new development or redevelopment (for example via the National Environment Fund) could be used to increase and enhance tree cover and offer a financial incentive for owners to maintain natural assets which would benefit all Mauritians. It may be that State control of forests is the best management mechanism to ensure forest longevity and protection of particular rare and endangered species. Wider planning obligation mechanisms should be used particularly if new developments benefit from a backdrop of tree cover or utilise tree cover as part of the ambience of a leisure or recreational experience (for example in the hunting and shooting reserves).

### **Policy FO1 – Forests**

***Protect and enhance planting schemes and tree cover in mountain and river reserves, private forest lands and degraded forest lands via implementation mechanisms such as planning obligations where a nexus exists between development proposed to be undertaken and the need for improvements to forests. Acquisition of significant private forest lands should be pursued when in the national interest. This Policy should be seen as an important instrument of Policy AG7 on Agricultural Diversification.***

*Justification:* Only around 57,000ha of land is under forest cover with 34,540ha being privately owned forest of which 6,540ha are protected by law as mountain or river reserves. Forests play an important role in soil conservation, protection of water catchments as well as conserving flora and fauna. Wood exploitation from forests has declined in recent years given cheaper imports of pine timber from abroad. The economic use of forests for non-wood purposes eg. eco-tourism, recreation, deer ranching, wild fruits has increased. Policy needs to support sustainable management to enhance the social, environmental and economic functions of the forests. Potential sites for re-forestation should be identified in revised Local Plans in consultation with the Ministry of Agriculture and Conservator of Forests.

## 8.5

### ***Natural Resources***

With the expansion of urban areas, industries previously isolated from development (for example bad neighbour development such as stone crushing plants), are now causing increasing concern. The juxtaposition of incompatible land use activities is also occurring in existing urban areas and generating complaints.

Noise, solid waste, air and waste water pollution generated around 85% of complaints received by the Department of Environment in 2000. Many of these complaints were against natural resource-related industries in urban areas including stonewashing and crushing plants and smaller scale enterprises operating legally and illegally in residential areas, as well as animal rearing farms. MIDA and other agencies have been under pressure to accommodate traditional industries in new industrial estates which offer environmental protection measures such as on-site waste water treatment works. Existing estates continue to generate complaints and will require on-going environmental improvements.

#### **Policy NR1 – Rock Quarrying**

***The development of new rock quarries will not be permitted except where it can be clearly demonstrated both that there is a need which cannot be met from other sources within Mauritius and also that effective environmental protection and restoration measures can be taken, as required by the Environment Protection Act 2002 and as will be contained in the EIA licence granted. Full EIAs should be carried out by promoters of schemes as part of the development permit process.***

*Justification:* Rock quarries can be unsightly, noisy, generate dust and traffic. The intent of Policy NR1 is to ensure that where development is permitted, environmental impacts are minimised and that demand and supply of scarce mineral resources are managed. Following working out of quarries, restoration plans should be implemented in accordance with the environmental licence conditions as regulated under the EPA 2002. Restoration plans should incorporate planning obligation mechanisms to effect efficient implementation, after care and use.

## **Policy NR2 – Buffer Zones around Rock Quarries and Crushing Plants**

***To identify buffer zones around existing and proposed rock quarries and crushing plants up to 1km within which the location of new sensitive land use development will be discouraged in accordance with Policy ST3.***

*Justification:* The Technical Advisory Committee on Rock Quarrying (October 2001) has recommended that: ‘The distance from the boundaries of a quarry site shall be at least 1km from the limits of permitted development or the nearest residential building, whichever is closer.’

This should also apply to new crushing plants in the interests of both the plant operators and of those proposing development in the vicinity of the crushing plant. These measures, together with better enforcement of existing legislation, will contribute to the improved control of the effects of noise and air pollution emanating from crushing plants. Reference should also be made to Policy ST3 in this regard.

The precise extent and shape of such buffer zones will be determined in revised Local Plans and Action Area Plans in consultation with the Ministry of Environment.

## **Policy NR3 – Transport Aspects of Rock Quarries and Crushing Plants**

***In the siting of future rock quarries and crushing plants, consideration should be given to transport problems related to these operations.***

*Justification:* The adequacy of existing and proposed access roads should be an important factor in determining applications for future quarries and plants. Very heavy loads in conjunction with steep gradients can cause dangerous conditions due to disparities in speed between fast and slow vehicles. Road capacities may also be severely reduced where numbers of heavy vehicles are high. Where feasible, heavy goods vehicles should utilise designated strategic HGV routes within the conurbation when transporting rocks and crushed stone products, and should be discouraged from using residential and town centre road networks through enforcement of existing legislation which prohibits heavy goods vehicle movements in prescribed locations and at certain times of day.



## 9

# Environment and Fisheries

### 9.1

#### *Natural Environment*

#### 9.1.1

##### *Existing Characteristics*

The natural environment can be broadly grouped as follows:

- the coastal area, including the lagoon, offshore islets and outer islands
- mountain ranges and forest reserves
- groundwater aquifers and surface water catchment areas.

These areas and ecosystems are interrelated. For example development and agricultural activities which occur inland may have an effect downstream by lowering water quality in the lagoon. Given the island environment of Mauritius, Environmentally Sensitive Areas (ESAs), which are often identified “singularly”, should be considered in their entirety so their symbiotic relationship can be fully acknowledged.

The coastal area includes the various types of foreshore such as wetlands, marshes, mangroves, the coastal strip including beaches and sand dunes, fringing coral reefs, the lagoon and the offshore islets and outer islands. It is in part the transition zone between the land and the sea which provides natural defences against storms and tidal surges. It is arguably the most sensitive environmental area given its vulnerability to irreversible environmental degradation and its importance to the Mauritian environment and economy. Inappropriate development within the coastal zone could disrupt the biological and hydrological function of the coastal ecosystem which protects the lagoon and reefs from siltation, sedimentation and water pollution.

Inland, mountain ranges and forests are sensitive because they form part of water catchment areas, contain remnants of endemic flora and fauna, are mostly tree-covered which assists in the conservation of soil and water resources and in improving air quality. They are also important components of the landscape creating internationally unique vistas and containing distinct scenic topographical features. Inappropriate development on the mountain ranges and hillsides may lead to erosion and loss of sensitive habitat as well as degrade the natural landscape.

Development in surface water catchments must be controlled to ensure surface water quality is improved and siltation of rivers does not occur. Surface waters such as rivers are an important source of potable water supply whilst over 40% of potable water is sourced from groundwater reserves. Protection of aquifers which facilitate replenishment of groundwater supplies is thus vital. Protection of natural geological features such as pits, caves and lava tubes which form part of aquifer systems is also important.

## 9.2

### ***Environmental Plans, Programmes and Policies***

The Ministry of Environment is currently implementing a range of initiatives to address environmental concerns. Under the National Environmental Action Plan II (NEAP II) an Environmental Investment Programme II (EIP II) has been established to address a range of issues including those which specifically address the identification and delineation of ESAs. The most relevant to the National Strategy involves compiling information and data on baseline situations. It is understood that three projects have been identified: compilation of the Environmental Information System (EIS); studies to identify and quantify ESAs (notably a wetlands study); and the establishment of Integrated Coastal Zone Management (ICZM) mechanisms.

The Environment Protection Act 2002 reinforces environmental protection, improved management and monitoring measures and facilitates the establishment of an National Environment Fund which can assist in gaining environmental improvements and undertaking remedial measures.

NEAP2 sets out an environmental strategy for Mauritius for the next 10 year period which is .."To follow the principles of sustainable development by providing environmental services, encouraging responsible environmental practices and enforcing appropriate environmental standards in order to safeguard the health and welfare, conserve the heritage, and enhance the quality of life of all the people of Mauritius." Both NEAP2 and EIP II are being used to implement a range of management and information gathering exercises to enable the elements of this strategy to be achieved.

The National Development Strategy for the environment seeks:

- to safeguard valued elements of the natural and built environments
- to use natural resources in a sensitive and sustainable manner

- to promote land and property development and management practices which will benefit the environment and all Mauritians, and
- to ensure that development makes a positive contribution to the environment.

This overall strategy is considered relevant and appropriate and should be the overall guiding strategy for environmental policies.

### 9.3

#### *Environmental Management*

Many environmental management measures are currently unsustainable. Whilst a range of mechanisms exists to protect the environment there is growing concern that development and environmental protection have not always been compatible. The prime concern is that a true baseline of the existing natural environmental assets is unknown or at least not comprehensively quantified. MAP 4 gives an understanding of current Environmentally Sensitive Areas (ESA) based on consultations and information from a variety of sources including the Ministry of Environment; MAP 5 shows the proposed ESAs for use in the National Development Strategy. The need for validating ESAs is being tackled by the Ministry of Environment through the programmes and projects outlined above.

Many of the policies involve environmental protection of ESAs rather than the environmental management of ESAs. Consequently Government has been burdened in most, but not all instances, with managing, maintaining and monitoring ESAs. With limited financial and human resources the Government has struggled to fulfil all these roles. Environmental stewardship, where environmental protection and enhancement becomes a community and cross-sectoral responsibility is beginning to emerge in Mauritius. This management mechanism should be supported and enhanced at national policy level.

Management of the ESA forms part of the EIA licence and development permit conditions (and leasing conditions if on the Pas Geometriques) and has offered the Government assistance in managing and maintaining ESAs. Development pressures impacting ESAs near the south coast around Bel Ombre, in the west along Le Morne peninsula and again in the east, north and south of Mahebourg have embraced the environmental stewardship principle as an integral part of the development schemes.

## Policy ENV1 – Environmental Management

*In advance of the identification, mapping and verification of Environmentally Sensitive Areas (ESAs) and including Coastal Zone Management studies within EIP II, and in addition to any requirements under the Environment Protection Act 2002, the natural functions, biodiversity, habitat and amenity of ESAs will be protected from adverse effects of development. An initial area of search for designation of ESAs is provided in MAP 5 – which should provide an interim locational designation for ESAs in revised Local Plans.*

*Within the interim area of search locations there will be a general presumption against major development other than for educational or environmental management purposes or in order to sustain existing local economies or where development is deemed to be in the national interest. Any development proposed to adjoin ESAs (or within ESAs as specified above) will be required to first obtain an Environmental Impact Assessment licence under the Environment Protection Act 2002, prior to seeking a development permit. Opportunities for the sustained management of ESAs which may form part of developments should be pursued through planning obligation mechanisms. For the purposes of Policy ENV 1, ESAs are defined as follows:*

- *State Lands including the Black River Gorges National Park, Nature Reserves, State Forest Lands, Pas Geometriques and privately-owned Mountain Reserves;*
- *Habitat for Endemic Flora and Fauna - which have strong links to the above Reserves and include the Port Louis and Calebasses Mountain Range, Bambou Mountains, and the Black River Gorges, Corps de Garde and Savanne Mountains;*
- *Mountain Slopes and Range Peaks – for moderately steep to steep/very steep hillsides and mountain slopes;*
- *Coastal Features - including parts of the coastline and coastal wetlands;*

Please Refer to Map 4: Environmentally Sensitive Areas

Please Refer to Map 5: Proposed Environmentally Sensitive Areas

- ***Water Resources - major aquifers, surface water catchment areas, existing, proposed and identified reservoirs and boreholes, existing weirs and designations for River Reserves; and***
- ***Geological Features - the location of lava tubes which are associated with cave networks;***

*Justification:* The intent of policy ENV1 is to reinforce a general presumption against major development in identified ESAs and to introduce a sequential approach to the identification of new sites in those areas where restricted forms of development would be permitted. The adoption of a precautionary approach to development is considered appropriate: the policy also incorporates the principles of Policy ENV2 requiring additional environmental information for developments when considered necessary to inform the decision-making process.

The management of ESAs is possible within this policy through permitting environmental management measures in sensitive locations. This should enable private sector management of ESAs, some good examples of which currently exist in tourism developments on the East Coast.

ESAs represent natural and environmental assets of the nation and their on-going management and protection is vital if sustainable development goals are to be achieved. The interim locational map will allow protection while more detailed studies are completed. These ESAs have been partly mapped in the ESAs Mapping Study undertaken by the Ministry of Housing and Lands. As the boundaries of ESAs become clearer Policy ENV1 and supporting mapping base should be adjusted.

#### **9.4**

##### ***Wetlands and Lagoons***

Very little endemic forest remains in Mauritius. Within the Ministry of Agriculture, the National Parks and Conservation Service and the Forestry Service, as well as numerous NGOs are involved in protecting Nature Reserves and Conservation Areas and undertaking habitat restoration - many islets in the lagoon have been the subject of conservation efforts in recent years. The Black River Gorges National Park is now well established.

Whilst legal and actual protection of Nature Reserves has been observed for many years, protection of ESAs such as wetlands, the lagoon, mountains and natural areas is becoming a major issue. There are no incentives for owners of private

mountain or river reserves to implement good management practices, wetlands have not been adequately protected and Conservation Areas and green wedges within Local Plans are being pressured for built development. There is growing concern that EIAs alone are not adequate to protect Environmentally Sensitive Areas from development.

Flooding in coastal areas such as Grand Baie and Flic en Flac has been exacerbated by wetlands being infilled. This infilling has hampered or blocked mainland runoff through such natural filters to the sea. On-site sewage treatment facilities (such as septic tanks or pit latrines) are degrading water quality particularly during flooding instances with raw sewage entering the lagoon. Limited lagoon water quality testing undertaken by the Ministry of Fisheries has identified lowering water quality over the last 10 year period.

#### **Policy ENV2 – Wetlands**

*In advance of the identification and mapping of coastal wetlands and Environmentally Sensitive Areas within EIP2 and acknowledging the requirements of the Environment Protection Act 2002, the natural functions, biodiversity, habitat and amenity of individual wetlands should be protected from adverse effects of development. An initial area of search for designation of wetlands is provided in MAP 5 – which should be used to provide an interim locational wetlands designation in revised Local Plans.*

*Within the interim area of search locations there will be a general presumption against major development in wetlands other than for educational or environmental management purposes, or on small parcels of land or infill sites in order to sustain existing local economies. Any development proposed to adjoin wetlands (or within wetlands as specified above) will be required to first obtain an Environmental Impact Assessment licence under the Environment Protection Act 2002, prior to seeking a development permit. For the purposes of Policy ENV2, wetlands are defined in accordance with the Ramsar Convention which is “.. areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water which is static or flowing, fresh or brackish or salt including areas of marine water, the depth of which at low tide does not exceed six metres.”*

*Justification:* Wetlands are a water-based ecosystem – they provide a transition zone between terrestrial systems which are mostly dry and aquatic systems which are

permanently wet. Being the interface between the two systems they share characteristics of both. Wetlands have both an environmental and an economic function – they are reservoirs of biodiversity, assist in flood control by gradually releasing rainfall and stormwater, enable vegetation to grow which assists in bank and coastline stabilisation and act with mangroves to trap sediment before it enters the marine system where it could adversely affect coral reefs, and filter runoff to remove contaminants before they enter groundwater reserves.

The policy thus provides a precautionary approach to development including identifying buffer areas around wetlands to ensure their on-going protection. In cases of small scale developments proposed on small parcels of land or infill sites identified as wetlands, where these can be shown to have minimal adverse environmental impact and which are needed to sustain local economies, there will be a general presumption in favour of such schemes.

#### **Policy ENV3 – Restoration of Wetlands**

***In view of the valuable functions they serve, the opportunity should be taken to implement wetland restoration and creation projects which are expertly designed to be self-sustaining and persistent features of the landscape. Opportunities which link with the Tourism Action Plans specified in the Tourism Development Plan 2002, and which acknowledge the National Environment Fund objectives within the Environment Protection Act 2002, should also be considered when identifying wetland restoration and creation projects.***

*Justification:* A cross-sectoral approach to wetland protection and restoration/creation would enable the Government to more effectively and efficiently manage the nations' environmental resources.

Wetlands have already been destroyed in some coastal locations and problems with flooding, lowering water quality and loss of biodiversity have been widely noted including in NEAP1. Wetlands can to be restored and recreated to a certain extent. Careful development in coastal locations offers the opportunity to recreate wetlands (through introduction of golf courses, integrated resort schemes for example) and thus opportunities to restore wetlands should be taken so long as the overall effects of the development are environmentally beneficial.

## 9.5

### ***Coastal Zone Management***

The very attributes of the coastal zone which contribute to its international unique reputation and create a demand for local residential development, are also its weakness. The coast consists of important ecosystems protecting land from erosion and providing an interface between freshwater and saltwater environments. If over-development and inappropriate development occurs and continues, particularly in sensitive locations, the very essence of the coasts' unique environment could be detrimentally affected. Coastal management is thus vital from an environment, economic and social perspective.

Global warming resulting in rising sea levels and higher seawater temperatures will have an impact on the coastal zone over the long term. Such impacts could cause coastal erosion, loss of beaches, damage to beachfront property, bleaching and denuding of coral reefs (as has recently occurred in The Seychelles due to a rise in sea temperatures linked to the EL Nino effect) and decreasing marine life dependant on coral ecosystems. This area, which includes the lagoon, has an important role in protecting land from ocean forces. The lagoon is used for fishing and recreation activities; it is being degraded and experiencing lowering water quality caused by land-based activities such as sewage disposal, use of agrochemicals and urban runoff. Some water-based activities such as fishing industries and leisure are also creating negative impacts. Concerns relate to beach erosion partly caused by construction of groynes and by coastal development, the cumulative effects of which have not been fully investigated or monitored. Islets within the lagoon are also coming under pressure for development.

There is a growing realisation that Environmental Impact Assessments (EIAs) have been unable to divert development away from ESAs nor comprehensively predict and manage the long term effects of coastal development. Beach erosion (and accretion) has occurred and remedial measures are now required in some locations (for example Grand Baie and the northern end at Flic en Flac) to protect tourism and residential developments along the coast.

### **Policy ENV4 – Coastal Zone Management**

***In advance of the outputs from EIP2 Marine Conservation projects including Coastal Zone Management studies, Lagoon Recreational Uses study and the studies identifying Environmentally Sensitive Areas, there will be a presumption against major development in the marine areas unless for educational, environmental management purposes or which is in the national interest.***



***Development in the marine areas (lagoon, offshore islands and outer islets) within the coastal zone will not be permitted (unless for uses specified above) where it is considered that rare species and vulnerable habitats would be destroyed or adversely affected. Any development that is for educational purposes, environment management or in the national interest must seek an Environmental Impact Assessment licence within the terms of the Environment Protection Act 2002, prior to seeking a development permit.***

*Justification:* The Ministry of Environment proposes to carry out a Coastal Zone Management Study and a Recreation Uses study for the lagoon to identify and resolve conflicts with water-based uses in key tourism areas (ski lanes, protection areas etc). These studies will have an important influence on medium and long term policies for the lagoon, offshore islands and the outer islets.

As tourism developments on the coast are likely to intensify, development pressure for the islets and islands will become stronger and careful scrutiny of such developments is necessary if the environmental integrity of these national assets is to be protected. Only Ile aux Aigrettes currently benefits from a conservation management plan, whilst that for Round Island is being reviewed as it is now considered out of date. However this situation is likely to be improved through the commissioning of a consultancy to draft a strategic plan for 16 islets and management plans for 6 islets under EIP2.

## **9.6**

### ***Landward Coastal Area***

The coastal zone covers more than the coastline. Both the Ministry of Housing and Lands and the Ministry of Environment consider the coastal zone to include land 1 km inland of the mean high water mark (HWM) as well as the coral reef and lagoon. Increasing land values on the coast and within urban areas has placed pressure on ESAs located inland – particularly land known as Portion II land – i.e. that located directly behind coastal roads. Higher rise development has already started to occur, again intensifying development on the coast.

Thus many of the pressures that currently exist could, if unplanned, utilise a significant proportion of the coast and intensify development within the coastal zone. Tourism development will exert more pressure on the coastal zone and lagoon itself, particularly with demands for water-based recreation and leisure activities. Related to coastal area developments, effluent, if untreated, could further exacerbate water quality.

## Policy ENV5 – Landward Coastal Area

*In advance of the outcomes of the proposed EIP2 Environmental Sensitive Areas and Coastal Zone Management studies, and in addition to any requirements under the Environment Protection Act 2002, planning authorities will require an applicant to submit with a development permit for projects within the landward coastal zone such information relating to compliance with the updated Policy and Planning Guidance Note on Coastal Developments. Policies regarding the environment, tourism and housing should also be considered in any development proposed in the coastal zone.*

*Justification:* Policy ENV5 will allow the planning authorities to better manage development in the coastal zone and ensure design aspects and environmental impacts form part of the decision-making planning process. Planning proposals on sites within the landward coastal area should also acknowledge all relevant development policies which could impact on managing development in the coastal zone.

### 9.7

#### ***National Parks and Reserves***

Natural mainland resources constitute approximately 56,500 ha of land including mountains, natural and planted forests, Nature Reserves and the Black River Gorges National Park. Some 34,500 ha of this total are privately owned, of which 6,500ha are protected mountain and river reserves, and nearly 28,000ha forest, scrub and grazing land. Designated Nature, Mountain and River Reserves and the National Park, including newly-proclaimed Rivulet Terre Rouge Estuary Bird Sanctuary and Bras D'Eau are protected from development by a range of legislation and guidelines. As such the National Strategy endorses the on-going protection of these natural areas, which are recognised for their national significance.

## Policy ENV6 – Natural Environment

*All formally and newly proclaimed Nature Reserves, Mountain and River Reserves and the Black River Gorges National Park which are protected by law, should be clearly demarcated on the ground and their boundaries shown in revised Local Plans. Development in these areas which would destroy or adversely affect the area's natural environment should not be permitted.*

*Justification:* To protect nationally significant natural green areas and to assist in preserving natural environmental heritage.

9.8

### ***Areas of Outstanding Natural Beauty (AONBs)***

The dramatic scenery offered by the Le Morne peninsula, the Black River Gorges and surrounding Savanne Mountain Range, Tamarin Mountain, Mt St Pierre/ Corps De Garde, Anse Courtois, the Moka Mountain Range behind Port Louis, Long Mountain, Nicoliere Mountains, Fayences Mountain, Blanche Mountain, Bambou Mountain Range, Creole Mountain Range and from Mount Table A Perrot through to Mount Dhauvillard provides a natural and distinctive backdrop to many urban and rural settlements on the island.

The mountain ranges represent the interaction of physical and ecological features (particularly geology, landform, soil and wildlife). In most instances the sheer scale of mountain areas and their steep sides have left them undeveloped. Sugar cane in providing a green buffer between settlements and the mountain ranges has added to the natural beauty of the central core of the island. While a variety of mechanisms exist to protect some mountain reserves and hillsides for their ecological and natural environment value, remaining mountain tops and hillsides could be vulnerable to inappropriate development (although policies are proposed to manage hillside development). The concept of conserving areas for their natural landscape beauty is a new concept for Mauritius. Defining Areas of Outstanding Natural Beauty (AONB) would enable such areas to be more carefully managed so that conservation of their scenic landscape could occur.

It is appreciated that hillsides and the countryside have an economic and social role – for example for agriculture and rural settlements. Conservation of the scenic landscape should not be at the expense of excluding all development, rather the setting and preservation of the landscape to absorb sustainable levels of development become important factors. As an initial area of search has identified hillsides and mountain tops as environmentally sensitive, these areas should form an area of more detailed search for AONBs. Studies to identify AONBs should form part of the ESA identification exercise currently being undertaken by the Ministry of Environment.

### **Policy ENV7 – AONBs**

***In assessing development proposals within a potential AONB (indicated as mountain areas in the Proposed ESA MAP 5), information will be required to be submitted with a development permit application which addresses:***

- *Acceptability – the capacity of a landscape to absorb and contain a proposed development without damage to the existing landscape’s qualities and defined assets. This will address amenity elements including views, tree cover, topography and water and historic character;*
- *Impact – the ability of the proposed development to acknowledge the context and setting in which it is proposed to be located including the interrelationship of features such as woodlands, important buildings and topography;*

*No development, unless such development is in the national interest, should be permitted on mountain tops; developments should not be permitted on hill sides where the highest portion of the structure would puncture the ridge line.*

*Justification:* The natural beauty and scenic landscape setting of the countryside, particularly the mountain ranges, should be protected for their special character and their ecological value. They form unique landscape features and provide a dramatic and distinctive backdrop to most settlements on the island, which is an integral component of the country’s overall quality tourism image.

## **9.9**

### **9.9.1**

#### ***Built Environment***

##### *National Monuments and Conservation Areas*

The wealth of buildings of special architectural, cultural and historic interest in Mauritius plays a large part in maintaining and creating the locally distinctive character of the island’s historic landscape. There are some 161 National Monuments on the statutory schedule (National Monuments (Designations) Regulations 1985), including some 78 in the City of Port Louis and a further 17 within the Plaines Wilhems district. The continued maintenance and repair of this built heritage is essential to maintaining and enhancing the unique character of the island.

#### **Policy ENV8 – National Monuments and Conservation Areas**

*The quality and local distinctiveness of the historic urban and rural built environment shall be maintained and improved by:*

- *Protecting all National Monuments, their settings and historic landscapes against demolition and inappropriate alteration or*

*development. There is a presumption in favour of the preservation of National Monuments;*

- *Proposals for external or internal alterations or additions to National Monuments should respect the integrity of the buildings or structures, and harmonise with their special architectural, cultural or historic features and character;*
- *Encouraging conversion of appropriate redundant National Monuments to new uses that do not adversely affect their special architectural, cultural or historic value and as a means of securing their economic viability;*
- *The setting of a National Monument is a material consideration in the determination of development proposals.*

*In applying this policy, consideration should also be given to the provisions of Strategic Policy SP13 when altering, adding to or converting National Monuments.*

*Justification:* Policy ENV 8 relates to National Monuments and their protection and designation intent of this policy. Proposals to merge the National Monuments Act to protect the setting of National Monuments with the National Heritage Trust Fund Act are supported under the New Development Strategy. It is recommended that in designating National Monuments, a full and precise description is given of the Monument and the important qualities regarding its designation including its setting.

The preparation of specific development guidance for National Monuments and Conservation Areas is fully supported. Mechanisms for the acquisition, management and maintenance of National Monuments should be explored through the use of existing statutory devices such as the National Environment Fund (by the Ministry of Environment) and the Community Development Fund (by the Ministry of Tourism).

#### 9.9.2

*Urban Nature Conservation and Open Space*

#### **Policy ENV9 – Urban Nature Conservation**

*To identify in all settlements, areas of open space for gardens, informal landscaped areas, new tree planting areas, and spaces beside watercourses.*

***Further guidance on local green space provision is provided in the revised Policy and Planning Guidance Note on Residential Developments.***

*Justification:* This will contribute to improvements in the quality of the built environment and will require incorporation into revised Local Plans and for growth zones where Action Area Plans including Tourism Action Plans are to be prepared. The involvement of the public and private sectors and partnering arrangements will be actively encouraged in the implementation of such schemes through planning obligations and other similar mechanisms, including utilisation of the provisions of the National Environment Fund and the Community Development Fund in appropriate cases

#### **Policy ENV10 – Open Space**

***To ensure that all new proposals for settlement development include provision for passive and active recreational space. Further guidance on local open space provision is provided in Policy SC1 - Sites for Community Facilities and the revised Policy and Planning Guidance Note on Residential Developments.***

*Justification:* Provision for such open space will be in accordance with guidelines set out in Policy SC1 on Sites for Community Facilities, revised Local Plans and Action Area Plans and updated Policy and Planning Guidance on Residential Developments. Particular attention will be paid to provision and maintenance of such areas through the application of implementation mechanisms such as developer contribution plans. In this connection, the potential use of the provisions of the National Environment Fund and the Community Development Fund should be explored.

#### **Policy ENV11 – Pedestrian Blue/ Green Corridors**

***To encourage the identification and creation of a network of linear parks in the conurbation's main urban areas and village settlements which link green landscape and water features. In the conurbation, linking of urban open spaces should be considered. Along the coast, consideration of the provision of a linear coastal access route should be in accordance with Policy TM8.***

*Justification:* The provision of blue/ green corridors should be in accordance with revised Local Plans for each council area and Action Area Plans for key growth

Zones. In coastal areas, reference should also be made to Policy TM8-Coastal Access.

#### **9.10**

##### ***Energy Conservation***

Employment and urban development has concentrated in the Port Louis/ Plaines Wilhems conurbation and has generated traffic congestion and deteriorating air quality. A permanent air quality monitoring station has been established by the Ministry of Environment in Port Louis to examine the temporal situation. Whilst Trade Winds enable a rapid dispersal of air pollutants, emissions are causing localised problems particularly due to irregular maintenance of trucks and buses, lack of regular monitoring of air emissions in industry, and lack of policies to redress poor air quality. Integrated land use and transport policies can assist in reducing unnecessary car travel and proposals for improving public transport may solve localised traffic generated emissions in the medium term. Reference should also be made to relevant policies in the Industry and Transport sections of this document.

#### **9.11**

##### ***Fisheries and Marine Parks***

Key issues in the coastal zone have been referred to earlier and include an increasing number of built development, water-based recreation and leisure and environmental conflicts and also relate to the lack of data and difficulty in accessing information. Co-ordinated decision-making is being addressed through a proposed Ministry of Environment study to establish Integrated Coastal Zone Management (ICZM). Discussions with the Ministries of Fisheries, Environment and Housing and Lands indicated support for the establishment of the ICZM programme.

The establishment of two Marine Parks and the six Fishing Reserves are aimed at the conservation of significant marine reserves. The Marine Parks identified at Balaclava Marine Park (485 ha) and Blue Bay Marine Park (353 ha) have now been proclaimed under the Fisheries Act and the National Park and Wildlife Act. In addition to the creation of the Marine Parks, six Fishing Reserves were proclaimed under the Fisheries Act in 2000. Within these Fishing Reserves restrictions are placed on activities to protect fish stock, breeding grounds and sensitive marine ecosystems. These Fishing Reserves are as follows:

- Port Louis Fishing Reserve – 331 ha;
- Poudre d’Or Fishing Reserve – 2,542 ha;
- Poste Lafayette Fishing Reserve – 280 ha;

- Trou d'Eau Douce Fishing Reserve – 574 ha;
- Grand Port Fishing Reserve – Zone A – 1,716 ha and Zone B –112 ha;
- Black River Fishing Reserve – 787 ha.

#### **Policy F1 – Marine Parks**

***In addition to the requirements under the Environment Protection Act 2002, the aims and objectives of the Balaclava Marine Park, Blue Bay Marine Park and the six Fishing Reserves (Port Louis Fishing Reserve, Poudre d'Or Fishing Reserve, Poste Lafayette Fishing Reserve, Trou d'Eau Douce Fishing Reserve, Grand Port Fishing Reserve – Zone A and Zone B and the Black River Fishing Reserve) should be acknowledged in the assessment of any development which may affect the operations and environmental functions of such Parks and Reserves.***

*Justification:* To ensure land and water- based development does not adversely affect nationally-protected sensitive marine environments. The Fishing Reserves not only protect the livelihood of local fishermen but assist in replenishing fish stocks within the marine ecosystem. The intent of Policy F1 is to address the issue of development adjoining or within the Marine Parks and assist in the on-going protection of the Fishing Reserves.



# 10 Transport

## 10.1

### *Overview*

This sector covers highways and public transport, ports and airports. Planning for strategic transport improvements needs to be seen in the overall context for national development planning and many of the policies described in other sectors are directly linked to the provision and improvement of transport facilities.

Continued consolidation of urban development in the Port Louis/Plaines Wilhems conurbation and tourism development on the coast give rise to particular transport requirements for residents, commuters and tourists including transport and traffic to and from the port and airport. Recent structural changes in the rural economy, particularly the release of lands out of sugar cane for other uses, are likely to have potentially far-reaching and different effects on the future capacity and operations of highways and public transport services.

## 10.2

### *Highways and Public Transport*

### 10.2.1

#### *Traffic Problems*

The Integrated National Transport Sector Strategy (INTSS) study summarised strategic transport conditions and major problems as follows:

- Congestion in the conurbation, including town centre parking
- The role and quality of public transport, buses and taxis
- Transport and the environment, and
- Safety.

There is general agreement in Mauritius that the dominant transport problem is the severe traffic congestion within the conurbation and particularly entering Port Louis, from both directions but especially from the south, during the morning and evening peaks. The congestion occurs over long sections of the two main roads (A1 and M1) and affects virtually all corridor movement between Port Louis and Curepipe and all traffic entering the conurbation from the south, west and north. Journeys to work by car typically take one hour during peak periods; journeys by bus one and a half hours. MAP 6 shows the existing strategic network.

The predominant reason for the congestion is the growing use of cars and dual-purpose vehicles (pick-ups) - and to a lesser extent motor cycles - instead of buses

for travelling to and from work. The problem of traffic congestion has become acute in the last five years as more people have had access to private cars and started to use them to get to work. This is leading to a deterioration in safety and environmental conditions, and as one consequence, decentralisation of some land uses out of Port Louis city centre to edge of centre sites.

Traffic problems in the countryside and on the coast tend to be related to localised and periodic congestion along village shopping streets at peak market times including weekends at tourist locations, and concerns about road safety. To a large extent these issues are best dealt with by area-wide traffic management measures and enforcement of parking and loading restrictions, together with integrated environmental improvements, rather than by the provision of major new highways.

#### 10.2.2

##### *Rise in Vehicle Ownership*

Table 11.1 shows the growth in vehicle registrations since 1990/1. Cars have been growing at a rate of nearly 5% per annum, (around 50% in ten years), whilst dual purpose vehicles (pick-ups) and vans have been growing even faster (nearly 10% pa. and 11% pa. respectively). In total there were some 108,000 registered cars, vans and dual-purpose vehicles in year 2000, of which cars made up just over half, an increase of around 64% since the time of the 1994 NPDP.

**Table 11.1 Motor Vehicles Registered, 1990 – 2000**

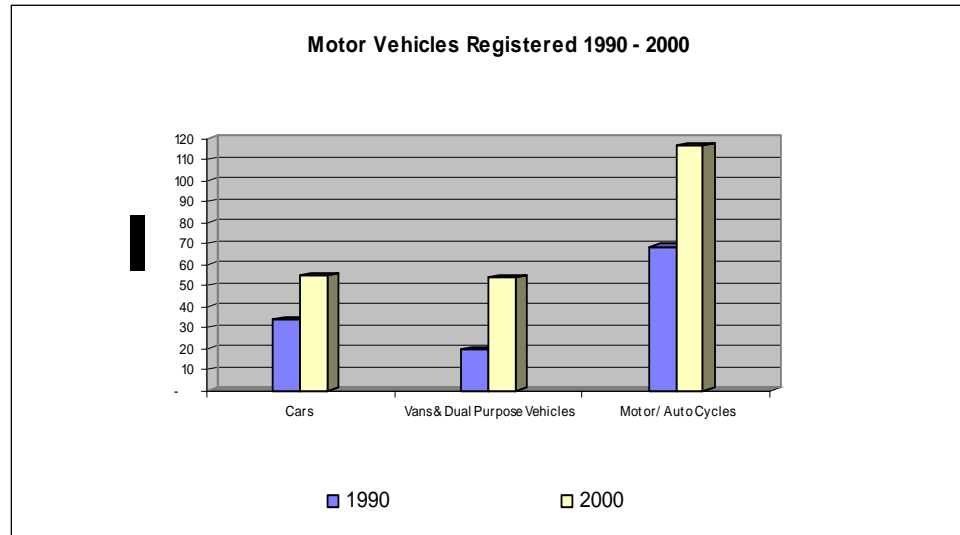
Type of Vehicles	1990	1995	2000	Per 1000 Population		Per Capita	
				1990	2000	1990	2000
Cars	33,900	43,288	54,911	33	48	0.03	0.05
Vans & Dual Purpose	19,500	32,937	53,719	19	47	0.02	0.05
Motor/ Auto Cycles	68,574	97,809	116,478	67	102	0.07	0.10
<b>Total</b>	<b>123,500</b>	<b>190,867</b>	<b>244,018</b>	<b>121</b>	<b>213</b>	<b>0.12</b>	<b>0.21</b>

Source: Mauritius in Figures, CSO 2001 Mauritius, the Economy in Figures, MCCI 2000

Please Refer to Map 6: Strategic Transport Network

Please Refer to Map 7: Proposed Strategic Transport Network

Please Refer to Map : Inset Transport



Current CSO data show that in year 2000 there were some 48 cars registered per 1000 population, but if dual-purpose vehicles and vans are also added, the ratio reaches 95 per 1000 population, ie. 1 in 10 of the national population have access to some form of private transport. In more advanced economies such as United States and Germany, car ownership levels have now reached 400-500 per 1000 population as more family members come to own or have the use of a motor vehicle. The potential for much more significant car ownership and use in Mauritius, as incomes rise in line with Government's economic goals, can therefore be envisaged. Given trends, such increases will inevitably add to existing traffic pressures and congestion in the conurbation.

A combination of optimising use of existing and planned transport infrastructure together with support for more sustainable modes of travel is thus a cornerstone of future transport policy. Complementary land use and transport strategies are required to sustain urban and coastal tourism growth in the future, as well as help to provide new opportunities for employment in rural areas which can reduce the need to travel.

### 10.2.3

#### *Future Demand for Travel*

Much of the clustered growth in the short to medium term is expected to take place in the conurbation and in and around the key settlements in transport corridors. In 2000, these clusters accounted for some 76% of the island's housing and 80% of all jobs. Based on these significant trends and existing financial and social investments, it is forecast that about half of all new housing and jobs in the

island (about 70,000 new housing units and some 60,000 new jobs) could be attracted to the conurbation over the next 20 years.

In consolidating this growth pattern, preliminary estimates from Business Parks of Mauritius Ltd (BPML) suggest that some 10,000 people could be living and working in Cybercity in the next 5 or 6 years ie, by around 2008/9. In addition, there could be a further 5,000-7,500 people working and living in the Highlands/Illovo area over the medium term. By the end of 2020 therefore, there is likely to be the accretion of a major new growth cluster on the east side of the conurbation, comprising Cybercity, Highlands/Illovo and Moka/St Pierre effectively extending the conurbation eastwards, providing jobs and homes for around 50,000 people and covering an area of some 50km<sup>2</sup> – the size of Vacoas/Phoenix Municipality.

In the long term beyond 2020, given the current and potential high level of strategic accessibility this central growth cluster offers to most parts of the island, a much larger population and workforce can be envisaged, and with it a redistribution in the demand for travel to work and for other purposes. This strategy is seen as being complementary to the objectives of improving conditions for public transport and reducing congestion into Port Louis and enhancing the role and status of the capital city.

Much of the balance of future growth (ie another 70,000 housing units and 60,000 jobs) is anticipated to cluster around existing major settlements in the countryside and on the coast, where new sites for mixed use developments will be promoted to sustain local economies, especially those vulnerable to change in the agricultural sector. This is equivalent to adding about 2,500 houses and jobs to each of 20-30 main settlements over the next 20 years, ie 100 or so houses and jobs per annum. In transport demand terms this level of increase is small compared with the demands likely to be generated by the expanded conurbation over the same period.

#### 10.2.4

##### *Transport Strategy and Policy*

To provide the basis for future transport investment the Government commissioned the Integrated National Transport Sector Strategy study (INTSS), which was a major step forward in the planning and management of the transport sector in Mauritius. The study objectives were to formulate an integrated strategy from which action plans, policy statements and an investment programme could be devised.

The main elements of the INTSS are:

- Implementation of an Alternative Mode of Transport (AMT) between Port Louis and Curepipe in order to relieve the chronic traffic congestion in this corridor
- Discouraging car trips to the town centres along the Port Louis - Curepipe corridor through controls on the supply of parking spaces
- Improving the quality of bus services by restructuring the bus industry, letting fares rise in line with costs, and revising the regulatory framework so as to encourage operators to be more demand-responsive
- Increasing efforts to improve amenity and traffic circulation in town centres by means of traffic management schemes
- Emphasising maintenance and management of the road network, and relatively less provision of major new roads
- Building some new roads to improve access to economically important areas and take through traffic out of towns and villages.

The new National Development Strategy endorses this approach, but has introduced a supplementary thrust to transport policy and proposals to provide and sustain the expected growth of Cybercity and the development of Highlands/Illovo sites over the next 20 years and beyond, which was not envisaged at the time of the INTSS.

To support the expected clustering of commercial, industrial and residential growth and to assist in resolving current congestion in the conurbation the emphasis in terms of strategic transport investments should remain focused on the upgrading of a range of public transport options and traffic management measures supported by complementary highway schemes serving existing and new growth areas. In this connection the provision of the proposed LRT system will be a key ingredient in improving north-south movements and facilitating park and ride to the north and south of the capital, where car parks and bus feeder services will be integrated. New link roads will also be needed to assist in redistributing some traffic to Special Use Zones around the northern and southern parts of the capital, as well as in the west, east (in the Cybercity – Moka/St Pierre, Illovo/Highlands growth cluster) and in the south west and south east of the conurbation (refer to MAP 7 Proposed Strategic Transport Network).

In the countryside, there is a different requirement: here there is a need to sustain local economies in the face of significant changes in the sugar sector, especially

where closure of sugar factories is proposed, and thus where new employment opportunities need to be created. Here new homes and jobs should be directed to strategic Rural Regeneration growth clusters where a mix of existing and new employment opportunities will be supported by housing, social and other facilities including planned improvements to highways, public transport and utilities. In these cases selected upgrading of existing highways and provision of new bypasses as part of the strategic network can provide opportunities for growth. Complementing these new schemes will be integrated bus facility/traffic centre and priority traffic management measures in existing town and village centres where localised congestion, environmental and safety conditions need to be improved. In the longer term these measures can also assist in reducing pressures on conurbation growth. Private sector involvement in provision of new facilities linked to development opportunities should be encouraged.

On the coast and in coastal settlements, traffic management and improved public transport rather than new highway construction will be the main policy thrusts. In Tourism Zone locations a balance needs to be struck between improvements in accessibility for residents and businesses including for deliveries, loading and unloading, and the requirements of tourists, day visitors, pedestrians and cyclists especially at weekends and during holiday periods. In these locations policy intent is to manage traffic pressures through a variety of measures including park and ride, shuttle bus, off-street car parking away from the coast and improved provision for pedestrians and cyclists as part of wider traffic and environmental improvement programmes such as is proposed for the Grand Baie Waterfront Tourism Action Area Plan.

The potential for private sector participation in such schemes should be considered at the planning stage to build on mechanisms already available through for example the Community Development Fund within the Tourism Act 2002 and the National Environment Fund under the Environment Protection Act 2002.

### **Policy T1 – Transport Strategy**

*Transport strategy should complement land use strategy which aims to minimise the distance people need to travel, especially for work purposes, whilst enhancing choice and ease of access to a range of activities, taking into account the needs of all transport users.*

*Justification:* Transport policy and proposals should support sustainable growth and development, regeneration and renaissance and economy in the use of land in the conurbation, the countryside and the coast - the core elements of the National Development Strategy. Policy T1 endorses the general thrust of the INTSS within the wider objectives of the revised National Development Strategy. In this regard:

- Development should be planned so that wherever possible it minimises the need to travel and facilitates safe and convenient movement on foot, by cycle and by public transport
- Development that generates large numbers of passenger movements should be located close to sites including Urban Renaissance Zones which provide or have the potential to provide for convenient access by public transport, by cycle and on foot
- Development which generates large numbers of freight and goods movements should be encouraged to locate or relocate at or close to sites including in Special Use Zones which are well-served by the strategic transport network
- Development should be planned so as to make best use of existing transportation networks and have regard to strategic priorities
- Development should be planned to enhance the viability of existing and proposed public transport services including services in the countryside and on the coast, especially within Rural Regeneration Zones and Tourism Zones.

#### 10.2.5

##### *Public Transport and LRT*

In the face of expanding private car ownership and use, and with this increasing congestion, policies are needed to support the use and development of strategic and urban public transport facilities and networks, especially for those sections of the population unable to access private transport. Policy support for the spatial strategy and the clustered growth principles set out in the core strategy, for example by locating higher trip generating uses close to proposed LRT stations and traffic centres, will assist in maximising employment and leisure opportunities to a wide section of the community and promote social inclusion. To this end. Policy SP1 promotes urban regeneration and growth and the designation of Urban Renaissance Zones to focus public and private sector development initiatives at major transport interchanges, proposed LRT stations and town centres.

The centrepiece of the approved National Transport Strategy is the proposal for an alternative public transit system between Curepipe and Port Louis. After further

study and a World Bank- led multi-criteria analysis, the Government has decided in principle to pursue the Light Rail Transit (LRT) option.

The INTSS proposed 13 access points (stations) along the 25km route, most of which are in town centres. The locations are as follows:

- Port Louis Immigration Square
- Port Louis Victoria Square/Caudan
- St. Louis
- Richelieu
- Chebel
- Beau Bassin
- Rose Hill
- Remy Ollier
- Quatre Bornes
- Phoenix/Cora
- Vacoas
- Floreal
- Curepipe

The aim is to provide a fast, comfortable service which will be attractive to car users. Access to stations will be by an integrated system of efficient feeder buses and pedestrian networks. In this regard particular emphasis should be placed on ensuring the intra-conurbation and strategic public transport network provides for linkages to the proposed LRT, as well as to the port and airport from adjacent regions. The INTSS states:

"The LRT strategy affirms a consolidation of the existing pattern of development on the island, with approximately half the population congregated in a single conurbation, which is effectively a linear city. A key part of this pattern is the role of Port Louis as capital city, port, financial centre and cultural hub of the nation.

It is obviously desirable that large numbers of people should use the LRT when it comes into service. The provision of LRT is expensive and large volumes of passengers are needed to contribute to system viability, which in turn will reduce some pressures on the use of the highway network.



It is therefore reasonable to expect strategic planning to contribute to the promotion of the scheme through such mechanisms as encouraging the location of high-density housing and large office blocks near stations.”

If Mauritius attains its economic growth objectives over the next 10 years or so and the current levels of private vehicle ownership correspondingly increase, at least in some parts of the island, then traffic levels are likely to double within the next 10 years, unless a variety of attractive public transport services is offered for journeys to work and for other purposes, or there is a radical shift in the disposition of homes and jobs, which reduces the need to travel.

Such traffic growth pressures are likely to become particularly acute where public transport services may not be effective enough to compete successfully. For example in the north (Pamplemousses/Riviere du Rempart), the number of housing units has grown by over 38% over the period 1990-2000. If car ownership levels are set to increase in these areas and in the absence of alternative transit options such as LRT extensions, journeys to work to downtown Port Louis and the Plaines Wilhems conurbation will have to continue to be made by car and bus on the M1, A5 and A4 thereby exacerbating the already time-consuming and frustrating travel conditions of commuters, especially on the outskirts of the city from Terre Rouge.

#### **Policy T2 – Public Transport and LRT Provision**

***Public transport will be encouraged to enable it to compete more effectively with the private car, to increase its share of total travel and to support and enhance the role of Port Louis CBD and conurbation town centres. Disused railway land which has a reasonable prospect of re-use for transport services in the foreseeable future, for example for the purposes of LRT extensions, should not be severed by new development.***

*Justification:* The intent of Policy T2 seeks to support public transport as part of an integrated land use/transport system within the overall strategy objectives of facilitating economic growth whilst maintaining and enhancing the natural and built environment. It is particularly supportive of strategic policies SP1 Urban Renaissance and Growth, SP2 The Role of Port Louis, SP3 Higher Density Developments and SP4 Sustainable Travel Modes in this context.

Both the Integrated Transport Strategy and the new National Development Strategy foresee that there will be further consolidation of development in the

conurbation and that in time it becomes in effect a single linear agglomeration. This form of more intensive and higher density development is conducive to LRT operations (compared with more dispersed forms of development), and will help regenerate existing town centres, and provide new opportunities for living, working and enjoyment. The designation of Urban Renaissance Zones at each of the proposed LRT stations and park and ride sites as shown on MAP7 will assist in focussing public and private sector transport initiatives and actions.

In this connection and to serve the fast growing north district of Pamplemousses/Riviere du Rempart it is recommended that consideration be given in the longer term to extension of the proposed LRT service from the Port Louis CBD towards Pamplemousses as shown on MAP 7, and that further studies are carried out in this regard as part of the LRT detailed programme. Park and ride sites south of Arsenal and adjacent to Pamplemousses off the M2 Motorway are also proposed in this connection. Similarly, consideration should be given to extension of the LRT to the southern distributor/M1 link road at Forest Side, where a park and ride site and associated mixed use development scheme could be integrated.

Transport policy should also give appropriate weight to environmental considerations and how the inter-relationship of land use and transport planning can minimise environmental impact. The provision of attractive and safe public transport and LRT services, by reducing the need to use private cars, can assist in improving environmental conditions and thereby contribute to sustainable development objectives.

#### 10.2.6

##### *Public Transport and Provision for Buses*

The INTSS observed that the bus industry has been unsatisfactory for many years. The Government has tried to keep bus fares as low as possible, but the result has been, in general, an unsatisfactory level of service, although there are exceptions. In some ways the bus services are better than in many countries: there is no shortage of buses, they are seldom over crowded, they are moderately clean, the route coverage is extensive, and waiting times are reasonable. The fares are reasonable and operators are clearly managing to make some profit.

On the other hand, most of the buses are unsuited to urban conditions and many of the narrow routes they operate on, some are poorly maintained, driving behaviour takes little account of passenger comfort, there is little information about routes and times, and bus stations are often unattractive and unpleasant,

though a new traffic centre construction programme has provided new facilities at eg. Riviere du Rampart, Trou aux Biches, Rose Belle, Mahebourg and the NTC has recently introduced a commuter park and ride service into Port Louis city centre. On the whole however, the public image of the bus industry is generally poor and most people aspire to escape the bus as soon as they can acquire their own private transport.

Delivery of the overall National Development Strategy will require relevant authorities to encourage a greater proportion of journeys to be made by bus. Particular attention needs to be given to ensuring that the inter-urban bus network provides for linkages with adjacent districts and to the airport and port. To achieve this, the range of services and the quality of the experience need to be significantly improved to make it a more acceptable option for the travelling public. Relevant factors are notably reliability, frequency, cost, travel time, comfort, cleanliness, safety, evening and weekend provision, information and co-ordination between services.

The role of bus transport within overall transport provision should also seek to improve accessibility to and within settlement clusters in Rural Regeneration Zones and Tourism Zones in order to sustain local economies and thereby reduce 'overheating' transport conditions in the main urban areas. Transport policies should therefore recognise the different needs and character of the countryside and the coast, and be consistent with the wider aims for rural and coastal development and regeneration: the introduction of mini/ midi buses in suburban and rural areas should be examined, as larger buses come up for replacement.

### **Policy T3 – Public Transport and Provision for Buses**

***Encourage provision of special bus facilities in urban areas, through the reallocation and priority use of road space for example, and more appropriate bus types on suburban and rural routes, to support a viable public transport system.***

*Justification:* Within the conurbation, and in particular in and around town centres, proposed LRT stations and park and ride sites, Policy T3 promotes the concept of bus priority measures. Special bus facilities along congested roads and at junctions should be considered where space permits: few such initiatives on existing roads appear to have been implemented. As part of a comprehensive transportation and traffic management plan for the conurbation, to be prepared as part of further LRT detailed studies, consideration needs to be given to the introduction of:

- Bus lanes at critical sections and times of day eg peak periods
- Priority for buses at controlled junctions
- Improved access at bus terminals (traffic centres).

Revised Local Plans and Action Area Plans, in particular those with a focus on Urban Renaissance Zones and Rural Regeneration Zones should:

- include proposals to develop the inter-urban public transport network, including the development of inter-modal interchange facilities, (e.g LRT stations, park and ride sites and traffic centres), such that it supports the spatial strategy and locational policies (for example, locating higher trip generating development close to public transport services);
- in suburban and rural areas identify opportunities to secure and promote integrated networks of high quality local bus services and other public transport services that complement the strategic inter-urban public transport network; the use of mini and midi sized buses should be considered as bigger buses are due for replacement, in keeping with available road space and prevailing safety and socio-environmental conditions; and
- include a strategy for sustaining travel choice in rural areas. Funding sources including public private partnering agreements should be considered by the Ministry of Public Infrastructure, Land Transport and Shipping, the NTA, bus operators and local councils, to support rural economies.

#### 10.2.7

##### *Parking in Town Centres*

An important aspect of urban congestion relates to parking in town centres and the policies adopted for its management. Motorists continue to find convenient parking space in Port Louis at a premium, and this acts as a deterrent for some users to travel into the capital city during peak periods. The environment of the whole city centre is also under siege, since cars are often found covering every possible available space, including pedestrian footpaths.

Convenient parking is essential to the life of a city, especially for residents, businessmen and shoppers, and yet at the same time, the supply of parking must be restricted and controlled if the city is to continue to function at all efficiently and the quality of life of its citizens and workers is to be sustained. This calls for a sophisticated parking policy which is complex to implement but which Government has already taken some initiatives by, for example, raising parking tariffs in the central area of the capital. Similar actions will be required in other parts of the conurbation as traffic levels increase. There now appears appreciation

that parking control offers an important and probably indispensable tool for the eventual solution of urban traffic congestion.

The overall approach on parking needs to complement and reinforce the National Development Strategy. In particular it needs to support the commitment to urban renaissance where development is concentrated in locations which are highly accessible, or have the potential to be highly accessible, by non-car modes.

In revising Local Plans, municipal councils should bring forward proposals for managing demand in consultation with central Government authorities, based on a comprehensive parking strategy which co-ordinates policies on parking standards with those on parking provision, controls, charges and enforcement. Where local authorities and private companies operate public on-and off-street car parks, their supply and pricing policies can influence commuter parking and help to encourage the use of public transport.

As alternative modes of travel are developed over the planning period including the LRT, consideration needs to be given to the introduction of levies for the use of parking provision at places of work. In those areas where access by non-car modes provides a convenient and ready alternative, or where car-based travel has an adverse impact on the quality of life and the environment, car use and parking should be discouraged as part of conurbation-wide LRT proposals and revised Local Plans' land use/transport planning process.

It is essential that there is a consistent approach to the determination of parking standards within the conurbation to avoid the destructive potential for competitive provision of parking between different locations to the detriment of sustainable development and the introduction of the LRT service. In considering parking provision, attention needs to be paid to safety issues and also to the mobility needs of people with disabilities who rely on the private car for independent mobility. Designated parking for disabled motorists needs to be provided.

Parking considerations include:

- relationship with adjoining authorities – local councils should take into consideration the context set by the standards adopted in adjoining and competing areas and the spatial and physical relationship between adjoining urban areas, especially where higher density development has the potential to encourage and support a viable public transport system;

- level of activity – in those parts of the conurbation where traffic congestion is a key concern, councils should consider the role that more rigorous parking standards might play as part of an integrated transport system. In those areas which are currently less economically successful, careful consideration may need to be given to the impact that a more rigorous parking standard may have on the prospects of achieving economic regeneration. Councils in such areas will need to balance carefully the issues associated with managing congestion, promoting wider choice in travel mode and realising economic growth in determining the appropriate maximum parking standard. This may require authorities to adopt a phased approach to the provision of parking whereby parking provision is reduced over time as economic growth occurs and public transport accessibility is improved; and
- size of settlement – larger urban areas are more likely to be capable of supporting an attractive and viable public transport service. Local authorities should take into consideration the likely level and availability of public transport in determining the appropriate maximum parking standard. In particular they should consider opportunities which emerge through the spatial strategy for growth to optimise the potential for public transport. Areas which already or potentially have a high level of public transport accessibility would normally be expected to adopt more rigorous parking standards.

Such strategies should support a more integrated transport system (for example, managing parking provision at public transport interchanges) and encourage co-operation with businesses and the development sector to seek to reduce parking provision where appropriate and manage commercial activities in ways which reduce the length and number of generated movements (both passenger and freight).

In preparing parking strategies, local councils should be mindful of the need to ensure that in adopting more rigorous maximum parking standards they do not create perverse incentives which encourage development to be located away from town centres or that threaten future levels of investment in town centres.

#### **Policy T4 – Parking in Town Centres**

*Local Councils, in consultation with adjoining authorities, the NTA, Ministry of Public Infrastructure, Land Transport and Shipping, should devise parking strategies which take account of conurbation-wide public transport initiatives as identified in the INTSS, including the provision of*

***LRT and park and ride facilities and the designation of Urban Renaissance Zones where mixed use schemes and higher densities will be encouraged.***

***In the short term priority should be given to enforcement of parking regulations, and preference for on-site rather than off-site parking, especially in areas where public transport accessibility is not convenient. In the medium term, and when public transport improvements have been initiated, consideration should be given to converting levels of parking to commercial, residential and other appropriate town centre uses.***

*Justification:* In the current absence of substantive improvements to public transport, pressure for on-site car parking provision remains strong. Promoters are unlikely to develop sites within the city and other town centres without adequate on-site parking, as it will be difficult if not impossible to find occupiers for floorspace where car parking is deficient.

In the interim, and until public transport systems are upgraded to provide an alternative viable, attractive and efficient service (e.g LRT) alongside other complementary measures (such as city centre park and ride, public city centre car parks, traffic management schemes and bus priority measures), on-site parking remains the predominant option. However, levels of car parking provided within schemes should be designed such that they can be converted to valuable usable retail/commercial/residential floorspace when future public transport and traffic management initiatives make other options (that allow reduced levels of on-site car parking provision) more attractive and practical.

As part of more detailed LRT feasibility work and Port Louis Local Plan preparation, it is envisaged that studies will be carried out to determine whether parking will be restricted (as proposed within the Port Louis Central Area Inset Plan ie. operational spaces on-site only), or whether full on-site provision should continue to be provided.

#### 10.2.8

##### *Traffic Management in Towns and Villages*

In combination with improvements to public transport provision and in appropriate cases, local highway improvements including village bypasses, traffic management offers a cost effective approach to improving traffic, safety and environmental conditions. Traffic management schemes can also increase highway capacities through for example enforcement of parking loading/unloading and bus

priority measures such as red routes where a 'tow-away' principle operates in designated no parking/stopping lanes.

Traffic Management will therefore form an important and complementary part of strategic proposals for public transport and highway improvements, especially in and around town centres in the conurbation, but also in strategic growth clusters in the countryside and in Tourism Zones on the coast. As part of the LRT proposals, and as part of Action Area Plans for Urban Renaissance Zones, Rural Regeneration Zones and Tourism Zones within revised Local Plans, integrated traffic management schemes will need to be prepared in order to maximise benefits and assist in reducing dependency on the private car. The locations of these schemes are shown on MAP7.

In the conurbation, schemes will need to be integrated with the LRT proposals which focus on stations, town centres and park and ride sites within Urban Renaissance Zones.

In the countryside, traffic management should be integrated with proposals for upgraded highway links and in appropriate locations new bypasses which will allow for public transport and environmental improvements to be made on busy high streets relieved of some though traffic. These schemes should form part of wider Action Area Plans prepared for Rural Regeneration Zones within revised Local Plans. Potential for public private partnerships in implementing traffic and environmental improvement programmes linked to development opportunities should be explored.

On the coast, within Tourism Zones, traffic management will play an important role in balancing the accessibility needs of local residents and businesses with those of day visitors and tourists. In these areas major new highway construction is unlikely to be economically or environmentally sustainable, especially close to areas of landscape or environmental sensitivity. Traffic management schemes incorporating capacity, parking and loading/unloading adjustments integrated with innovative public transport provision and selected highway improvements can effect environmental and landscape improvements in coastal areas to enhance the quality and image for a variety of users.



## Policy T5A - Traffic Management Outside Port Louis

***Consistent with the policies in INTSS, and through the sensitive integration of public transport, local highway improvements and parking policies, traffic management schemes should be implemented within growth Zones as part of area wide land use/transport schemes. Action Area Plans prepared with local councils as part of the Local Plan updating process should incorporate traffic management schemes at key strategic locations shown on MAP7.***

*Justification:* Traffic management is an important and cost-effective component of area-wide land use/transport Action Plans. Its importance needs to be recognised within the new National Development Strategy. Table 11.2 identifies a range of possible measures for implementation at:

- Plaines Wilhems Conurbation including Cybercity<sup>(1)</sup>,
- Moka/St. Pierre
- Baie du Tombeau
- Triolet/Trou Aux Biches (2)
- Grand Baie (2)
- Goodlands (3)
- Riviere du Rempart
- Quartier Militaire (3)
- Mahebourg (2)
- Chemin Grenier
- Flic en Flac/Wolmar (2)
- Pamplemousses (3)
- Bon Accueil (3)
- Centre de Flacq (3)
- Bel Air Riviere Seche/Trou d'Eau Douce (2) (3)
- Surinam/Souillac (3)
- Bambous (3)

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Notes: (1) in association with LRT/Parking policies and studies for Urban Renaissance Zones

(2) in association with Tourism Zone Action Area Plans

(3) in association with bypass proposals in Rural Regeneration Zones

*Justification:* The implementation of these measures is currently vested in the National Transport Authority (NTA). This agency will need further strengthening in the light of proposed measures; earmarking of revenues from parking and road fund taxes could be considered for use by Government both to strengthen the institution and to implement new projects. It is expected that local councils will have an increasingly important role to play in supporting the NTA in implementing local traffic management schemes through provisions in the proposed new Local Government Bill.

### 10.2.9

#### *Traffic Management in Port Louis*

The transport strategy for Port Louis is at the heart of what needs to be done to ensure that the proposed LRT achieves its objectives. It will involve:

- Maximising the use of public transport, rather than private cars, to access the City Centre/CBD: this will require higher quality buses, buses of a more appropriate size for the city's streets, bus priority (wherever appropriate), improved terminals and interchange facilities, an improved pedestrian environment, and improved passenger information and customer care;
- Management of on-street and off-street parking capacity within the CBD and surrounding areas: this will involve the enforcement of the re-introduced paid parking scheme, removal (or partial removal) of parking from bus routes and other streets designated for circulation (and application of 'red routes'/tow-away zones), creation of residents' parking schemes, and limitations on the availability of new private off-street spaces to commuters
- Creation of environmental traffic 'cells' within the CBD, designed to give essential vehicular access while minimising vehicle/pedestrian conflicts: a detailed study will be undertaken within the LRT further work of the precise treatment of each street, to optimise circulation patterns and environmental conditions; incremental implementation is envisaged, as soon as a plan can be confirmed;
- Creation of an Inner Distributor Road to enable convenient access to premises within the CBD: capacity will need to be balanced with the overall level of parking restraint, and as far as possible frontage access onto this road needs to be controlled;
- Implementation of the Outer Ring Road to allow port-related trucks and other by-passable traffic to be diverted from the Caudan/Waterfront  
Please Refer to Table 11.2 : Managing Traffic in Urban Centres

- Road, which can then be dedicated to public transport access and local traffic; and
- Eventual implementation of the AMT/LRT, with stations at Caudan/Victoria and Immigration Square being integrated into the CBD environment.

This will need a determined, multi-ministerial and multi-disciplinary effort probably spread over at least 5 years and the Port Louis Municipality will need to be actively involved in this initiative. This part of the strategy will also need to be accompanied by a major policy change in the provision and management of private off-street parking spaces in the CBD.

#### **Policy T5B – Traffic Management in Port Louis**

*In line with the recommendations of the INTSS, traffic management in Central Port Louis should aim to provide a better balance between pedestrians and vehicles, whilst providing adequate access for public transport vehicles, parking and loading/unloading. The strategy comprises the following principal components:*

- *The channelling of traffic along an inner distribution road;*
- *The pedestrianisation of Place d'Armes, and the creation of safe, convenient pedestrian access to the main public transport terminals (including the proposed LRT stations at Caudan/Victoria Square and Immigration Square);*
- *Restriction of traffic circulation and the introduction of traffic calming measures within the inner distribution road;*
- *Return of all other signalised junctions to automatic, co-ordinated control.*

*Justification:* In Port Louis, the strategy addresses the central area and the approach corridors to the city separately. In both cases, it would be difficult to implement the proposals with the present high levels of traffic. Rather, the strategy is envisaged as an integral part of a sustainable transport system that relies more heavily on the use of public transport (particularly the proposed LRT system). The strategy also relies to some extent on construction of the Outer Ring Road, which will assist in removing through traffic and will allow environmental improvements to be made to the area between the City Centre and the Caudan Waterfront.

Urban Renaissance and Action Area planning for Port Louis within the wider Local Plan preparation and detailed LRT studies will be an integral component in formulating a comprehensive response to land use/traffic management issues in the Capital City.

#### 10.2.10

##### *New and Improved Highways*

Outside the conurbation, the network of existing main highways is well-maintained and provides a reasonable basis for private and public transport movements for most of the time. Within the conurbation however, traffic congestion and environmental conditions are deteriorating and as such, complementary traffic management, town centre parking and public transport improvements will need to be synchronised with selected highway improvements to effect significant improvements.

Support will need to be provided to consolidate growth in the conurbation, to complement public transport improvements and to safeguard long term access to the wider port and airport growth areas consistent with proposals contained in the Port and Airport Master Plans, and to other Special Use Zones identified at Pointe aux Sables/La Tour Koenig and Pailles, where consolidation and expansion of mixed industrial uses including some relocated storage, distribution and warehousing uses out of the capital is anticipated.

In comparison with transport along the north-south axis from the airport through the conurbation to the north and Grand Baie, which focuses on the M1/M2 corridor, and to a lesser extent along the A3 from the south west coast, movements east-west are constrained to relatively few routes. The main routes into Port Louis include the A6 from Riviere du Rempart via Pamplemousses, the A2 from Centre de Flacq and Bon Accueil and the A7 also from Flacq, via Quartier Militaire and Moka/St. Pierre. It can be expected that with the growth of the Cybercity/Highlands cluster, east-west movements will become more important in the future and links to and within the central conurbation will need to be strengthened to sustain future long term growth.

Finally, over the longer term there is a need to provide for alternative strategic highway access between the port and airport and to open up new development sites in the countryside where strategic growth clusters and Rural Regeneration Zones have been identified. This will assist in taking some pressure off the conurbation network for longer distance north-south journeys as well as facilitate rural regeneration and growth in line with the overall Development Strategy.

Key aims of the revised highway-based transport strategy therefore include:

- identifying a national strategic highway and freight transport network to and from the port and airport and between the conurbation and adjacent regions, to assist in determining priorities for future investment and upgrading
- making better use of existing passenger transport infrastructure through improved traffic management, control and enforcement in urban areas
- encouraging the siting and relocation out of congested areas, of major freight, export-oriented and employment- generating uses at or close to existing and planned strategic transport networks, interchanges and Special Use Zones as part of the overall spatial strategy and policies contained in the revised Development Strategy
- seeking to reduce the environmental impact of freight and goods transport operations, through considering time-sensitive loading/unloading at non-peak periods for example.

#### **Policy T6 – New and Improved Highways**

*As part of the overall complementary National Development Strategy and the Integrated National Transport Strategy, which seek to facilitate growth whilst maintaining and enhancing the environment, new roads and improvements to existing highways will be considered:*

- *In or between areas of severe and prolonged traffic congestion within the conurbation as part of the upgrading programme of the strategic transport network and provision of improved public transport facilities*
- *To provide strategic access to the port and airport and to sustain longer term growth in Special Use Zones where a mix of industrial uses including relocated storage, distribution and warehousing, as well as SMEs will be encouraged*
- *To support the development of clusters of employment-generating activities adjoining major settlements in the countryside including Rural Regeneration Zones where proposals for a mix of uses, including commercial and industrial uses in appropriate cases, is being promoted to assist in supporting rural growth and regeneration, especially in areas of economic vulnerability and social isolation.*

*Justification:* An efficient and effective passenger and freight distribution system is essential to sustain economic growth in urban and rural areas, and to facilitate public and private partnering agreements to stimulate major new commercial and industrial investments in Special Use Zones and Rural Regenerations Zones. However the system's continued development should not be at the expense of the wider community and the environment.

The proposed strategic road network is shown on MAP 7 and for the conurbation on INSET PLAN 1, which should provide the focus for strategic highway investment. The network includes new and existing routes which should be periodically upgraded as part of routine maintenance programmes, in response to traffic demand and in relation to new development schemes, where opportunities for public private partnership arrangements should be considered. Proposed new routes and by passes are listed in table 11.3 below; Appendix 3 provides a description and status comment for each scheme.

**Table 11.3 Strategic Highway Projects and Proposals**

**New Highways:**

1. Vandermeerch – Ebene – Trianon Link Road
2. South Eastern Highway (3)(5)
3. Port Louis Outer Ring Road (5)
4. Moka/St Pierre/Illovo – Port Louis Link Road
5. A3 Petite Riviere – M1Pailles Link Road
6. Pointe aux Sables – A3 Link
7. Phoenix – Beaux Songes Link Road
8. Illovo/Highlands Link Roads<sup>(1)</sup>:
  - (i) Redit/M1 – Highlands/M1
  - (ii) Cybercity/M1 – Valetta/B6
  - (iii) Phoenix/Valentina/M1 – Cote D'Or/B48
9. Conurbation Distributor Phase I (Quatre Bornes – A3 link)
10. Conurbation Distributor Phase II (Palma – Curepipe)
11. Glen Park Link
12. Forest Side Southern Distributor (4)
13. Malenga – Creve Coeur Link
14. Baie du Tombeau Distributor
15. A4/Arsenal Park and Ride Link (4)
16. Port Louis Inner Distributor/Ring Road
17. Caudan/ M1 Junction

**New Bypasses:**

18. Grand Baie Inner Relief Road (2) (5)
19. Pamplémousses Bypass (3) (4) (5)
20. Centre de Flacq Bypass (3) (5)
21. Bon Accueil Bypass (3) (5)
22. Bel Air Rivière Seche/Trou d'Eau Douce Bypass (3) (5)
23. Mahebourg Bypass (2) (5)
24. Souillac/Surinam Bypass(2) (5)
25. Bambous Bypass (5)
26. Triolet Bypass/Trou aux Biches Link(5)
27. Goodlands Bypass(5)
28. Northern Tourism Zone Coastal Distributor Road (2) (5)
29. East Coast Trunk Road (3) (5).

**Other Strategic Network Routes:**

- B71/B48/B60 (Highlands/Illovo Internal Roads) (1)
- B6 (Wooton – Quartier Militaire) (1)
- A7 (Moka – Quartier Militaire – Centre de Flacq) (1)
- A2 (Terre Rouge – Pamplémousses – Bon Accueil –Centre de Flacq) (3)
- A4 (M2 – Triolet)
- A5 (M2 – Goodlands)
- M2 (Pamplémousses – Grand Baie – to dual carriage way)
- M1 (Reduit – Wooton) (1) (6)
- A6 (A2 – Rivière du Rempart)
- A9 (Souillac – Nouvelle France)
- A10 (Curepipe – Rose Belle, Plaine Magnien – Mahebourg) (6)
- A3 (Grand Rivière Noire – Tamarind – Bambous – Petite Rivière)
- B3/B4/B5 (Conurbation roads)
- B31 (Pointe aux Sables – Petite Rivière) (6)
- B29/B33 (Baie du Tombeau distributor roads)
- B27 (Quartier Militaire – SE Highway)
- B2 (Quatre Bornes – Beau –Songes Flic en Flac)
- B64/B70 (Southern/La Marie)

- (1) Subject to further feasibility in relation to development of Highlands/Illovo growth cluster (refer to Policy SP11);
  - (2) In association with Northern Tourism Zone Action Area Plan and proposals for Mahebourg Tourism Zone and South Coast Heritage Zone (refer to Policies TM1, TM3 and TM4);
  - (3) Local component of Strategic Eastern Highway (refer to Policy T7);
  - (4) To enable access to Park and Ride site (refer to Policy T2)
  - (5) To facilitate traffic management environmental and safety improvements on existing town/village centre roads (refer to Policy T5A)
  - (6) In association with proposed Strategic Surface Access Study/Special Use Zone (refer to Policy T7)
- 

### **Proposal T1 – Strategic Access Study – Highlands/Illovo**

***Proposal to carry out a feasibility study into the long term requirements of strategic access from the M1 Motorway into the Highlands/Illovo growth cluster to serve proposed mixed use developments. The section of the M1 from Reduit to Wooton should be examined and long term requirements for further M1 capacity should also be investigated along this section. Potential junctions are located at Reduit, Cybercity/Ebene, Valentina/Phoenix and Highlands. Internal road access upgrading will also need to be undertaken (i.e B71, B48, B60).***

***This study should be integrated with highway/land use planning being undertaken by BPML at Cybercity and in association with other key stakeholders including SLDC, SIT and the local council. A Land Use/Transport Action Area Plan should be drawn up as a matter of priority for the area, within which the strategic access proposals can be integrated.***

#### 10.2.11

##### *Highway Investment and Rural Regeneration*

The quality of life in all the main towns is marred by the excessive intrusion of motor traffic: parked vehicles and moving vehicles make conditions for pedestrians uncomfortable, disagreeable and dangerous. To a lesser extent, the same applies to villages in the countryside and in some Tourism Zones because of the ill-disciplined and unconstrained use and parking of motor vehicles. Settlements such as Triolet, Goodlands, Pamplemousses, Bon Accueil, Bel Air Riviere Seche, Surinam and Souillac have tended to grow alongside main roads, following the widespread practice of ribbon development, which leads eventually to localised congestion in town centres and poor environmental conditions for the people who



live and work there. This is the result of ineffective land use and transport planning in the past.

In the countryside there is an additional need to sustain local economies in the light of significant changes in the sugar cane industry, as well as to reduce pressures on the conurbation by providing new sites for activities which can locate in more rural surroundings. To facilitate clustering on new sites in Rural Regeneration Zones and where for example traffic congestion, safety and environmental conditions in adjacent town and village centres are all worsening, consideration should be given to construction of new bypasses, especially where partnering agreements with local landowners and the private sector can bring forward implementation.

The significance of regional accessibility to industrial processes is acknowledged. At a strategic level, the most critical aspect of accessibility for an island economy is the ability of manufacturers to take delivery of imported raw materials, and to deliver finished products for export. In the case of Mauritius this means access to the port in Port Louis, and to the airport, each of which is served by a road network that is subject to high levels of congestion at certain times of the day. At the local level, access and the quality of roads are important to improvements in movement, and enhancement of the environment. In terms of improvements to accessibility:

- A new corridor would serve to strengthen accessibility for incoming and outgoing raw materials and finished products
- It would also open up new possibilities for self-sustaining clustered settlements
- It could offer potential for public/private sector partnering opportunities and funding.

Over the period of the new National Development Strategy an upgraded Strategic Eastern Highway is therefore proposed to link Rural Regeneration Zones at Pamplemousses, Bon Accueil, Centre de Flacq and Bel Air Riviere Seche with Mahebourg and the airport and provide, through improved regional access to the port and capital city, potential for the location of new commercial, industrial and SME clusters. Such a highway can also function as an alternative strategic link for emergency planning purposes. An optional link from the proposed Highway at

Bon Accueil via Riviere du Rempart to link with the M2 and thereby improve access to the Northern Tourism Zone should also be considered.

#### **Policy T7 – Strategic Eastern Highway**

*In the countryside the National Development Strategy will promote rural regeneration and growth; in the longer term this will be facilitated by a Strategic Eastern Highway linking the airport and port with Greater Port Louis and its hinterland. Links to the Northern Tourism Zone should also be considered.*

*The scheme's alignment would utilise existing committed projects such as the South Eastern Highway and other local bypass alignments already identified by the Road Development Authority. Individual bypass projects would be identified and brought forward over the planning period through public private partnering agreements and other similar mechanisms as part of rural regeneration initiatives and demand for new sites for development.*

*Justification:* Transport policies support the introduction over the longer term of a new/upgraded highway linking the port of Port Louis with the Airport. It is intended that this should serve as a regional collector/distributor for nodal or cluster development at Rural Regeneration Zones where new commercial and industrial enterprises would be offered attractive and well-accessed sites, including for high tech and value-added products.

It is envisaged the proposed Strategic Eastern Highway would therefore offer the following benefits over the planning period:

- Stimulating the provision of new highly-accessible and clustered sites for value-added industries, business parks for ICT/financial services etc at Rural Regeneration Zones and other major settlements including Pamplemousses, Centre de Flacq, Bon Accueil and Bel Air Riviere Seche
- Providing an alternative good standard strategic route between the airport at Plaisance, the port and capital city Port Louis
- Helping reduce development and traffic pressures on the conurbation
- Providing a focus for the strategic upgrading of highway and public transport facility investments including strategic highway and bus links to Cybercity Highlands via the A7 upgraded link to Quartier Militaire and Moka/St Pierre

- Offering the possibility of future improved connections from the airport towards the Northern Tourism Zone, the Eastern Tourism Zone, and Mahebourg Tourism Zone
- Providing the impetus for further growth in connection with Government waterfront/upgrading schemes at Grand Baie/Pereybere, Mahebourg and Trou d'Eau Douce
- Stimulating clustered growth at other major settlements and towns including Goodlands and Riviere du Rempart
- Assisting long term accessibility to a possible second airport at Plaine des Roches and an alternative access between the port, capital city and airport for emergency vehicles in the event of national disasters/emergencies.

As these rural bypass schemes are unlikely to be justified in terms of traffic benefits alone, a key aspect of implementation will be the potential for private sector involvement and funding through the public private partnership initiative, developer contributions plans and other similar mechanisms. Individual components of the strategic highway can be brought forward and implemented incrementally in relation to demand for new employment-generating development in Rural Regeneration Zones. The alignment of each by pass should be selected through the Action Area Plan process with local councils and key stakeholders, and respond to the need to open up new sites for a mix of uses at strategic growth cluster locations.

## **10.3**

### **10.3.1**

#### ***Ports***

##### *Existing Conditions*

The Mauritius Ports Authority (MPA) operates the port which lies within the city limits of Port Louis, north west of the CBD, but from which it is effectively severed by the dual carriageway north-south M1 motorway running along the Caudan Waterfront. The MPA is a major land owner and the port plays a vital role in the economy of Port Louis and the country as a whole, since it handles 99% of the country's imports and exports. The number of vessels entering and leaving Port Louis has been increasing at over 4% per annum. Goods unloaded at the port in year 2000 (3.4m tonnes) have been increasing at around 7% per annum, whilst goods loaded (1.1m tonnes) were expanding at about 10.5%.

Over a twenty year period the port facilities have been extensively upgraded and it is now one of the most modern in the region. Cargo traffic is forecast to grow steadily but the present facilities should be broadly adequate to cope with this demand. Current land use transport problems tend to be site area-related and

invariably involve road traffic increases reflecting the growth in the movement of goods into and out of the port. Road traffic generated by the port is expected to more than double by the year 2015 (from 645,000 vehicle movements to 1,400,000). This will add to the existing congestion within central Port Louis and on the roads serving the port, unless major improvements are made.

### 10.3.2

#### *Port Master Plan*

In 2002, the MPA adopted a revised Port Master Plan which covers the period up to 2025. The main improvements proposed in the Master Plan include:

- Relocation of all tankage facilities for class A product including petroleum and LPG to Mer Rouge nearer to the jetty - this will be much safer than offloading them in the inner port as at present
- Expansion of Container Terminal facilities at Mer Rouge adjacent to the existing Mauritius Container Terminal
- Construction of a dedicated cruise terminal and associated commercial development ("Les Salines Waterfront Village") at the Les Salines reclaimed area, near Fort William.

The port is a high-risk area and there have been calls to remove some of the more hazardous activities. The MPA have indicated that the construction of a jetty where all petroleum products could be handled, would reduce risk. On the other hand, measures to reduce the risk associated with existing tankage facilities which are close to residential/industrial areas also need to be addressed. In this respect MPA propose to relocate all tankage facilities for Class A product including LPG to Mer Rouge nearer to the jetty.

The proposal for Les Salines Waterfront Village will need to be reviewed when the Local Plan for Port Louis is prepared and the LRT detailed studies are commenced - a Traffic Impact Assessment will be needed, as the development will add to the pressure on the M1 junction at Caudan. However such a development proposal would contribute to retaining and enhancing the vitality of downtown Port Louis and the proposed Urban Renaissance Zone, another important development principle of the overall strategy.

The Port Master Plan also proposes that technical studies be carried out into the feasibility of developing a port at Fort William adjacent to Les Salines, with an entrance channel in the Grand River North West (GRNW) Estuary. The navigation channel will be created in the estuary which is already deep enough to

accommodate ocean-going vessels. The sites identified for berthing are located in shallow waters and would need major dredging works. It has been estimated that the volume of material to be dredged would be adequate to reclaim 50ha of low lying land.

In the long term, the Port Master Plan proposes that a section of coast between Pointe aux Sables and Albion lighthouse south west of Port Louis be reserved for port-related projects, such as the handling and storage of hazardous liquid products, when the current port area reaches saturation. This proposal would require significant investment in infrastructure, including major improvements to road access, and with these, there are likely to be some environmental concerns.

### **Policy P1 – Ports**

***Long term sustainable development of the port (including strategic road access) should be supported for international deep sea and short sea shipping.***

*Justification:* Development strategies should identify and safeguard interchange facilities and access improvements to ports, together with appropriate sites for port and wharf use needed to meet changing market requirements. Although it is understood from the Mauritius Ports Authority that current and foreseeable future spatial needs for the port are likely to be provided for under the current Port Master Plan to 2025, the need to maintain and enhance road access to this vital link in the distribution chain needs to be supported and safeguarded. A Special Use Zone is proposed to include the port area and adjacent estuaryside/Roche Bois/Baie de Tombeau/Motorway in order to plan for the orderly growth of the port and its environs over the long term, including demand for future port-related industries and storage, warehousing and distribution activities.

In this connection proposals are made for a Strategic Surface Access Study to investigate longer term options for improvements to Motorway junctions between Riche Terre, the port entrances, and within the Port Louis CBD in the vicinity of the Caudan/Waterfront/Les Salines and Fort William, which are likely to be needed over the planning period.

Integration with the country's strategic transport network is essential in order to facilitate economic growth and in particular export-oriented primary and secondary sector industries such as sugar and textile and apparel manufacturing. In the longer term, consideration should be given to the provision of alternative highway

access to the port (and the airport) which can support new industrial and commercial growth and help sustain rural regeneration development opportunities in strategic locations outside the conurbation. Policy T7 should be considered in this regard.

#### **Proposal P1 – Strategic Surface Access Study – Port and Environs**

*Proposal to carry out a feasibility study into the long term requirements of surface access to the port from the strategic and local highway network, including requirements to serve proposed future developments at Les Salines and Fort William. The study should build on work already carried out for the Port Master Plan and Les Salines Waterfront Village proposals. It will also need to take into account the introduction of an LRT system into Port Louis from Plaines Wilhems and the preparation of the Local Plan for Port Louis incorporating the Action Area Plan for the CBD/Waterfront Urban Renaissance Zone.*

#### **Proposal P2 – Leisure Harbours**

*In revising the Local Plan for Grand Port/Savanne, consideration should be given to the creation of a leisure harbour at Vieux Grand Port, consistent with the overall development principle of clustered growth and rural regeneration.*

*Justification:* In the past there has been interest in developing a small harbour at Vieux Grand Port and technical and economic studies were completed in 2000. The conclusions were:

- It is technically feasible to build a port at Vieux Grand Port
- There would be considerable damage to a valuable environment
- The entrance to the Grand Port lagoon is dangerous for ships over 5000 DWT and would have to be modified for regular commercial use
- There is no economic gain to Mauritius in having a second port
- There is ample capacity for cargo handling in Port Louis for the foreseeable future and hence there is no pressing requirement for a second port
- There is a possible opportunity for the creation of a leisure harbour with minimum local environmental impact.

**10.4**  
**10.4.1**

***Airports and Air Transportation***

*Existing Conditions*

The SSRIA airport is located near Plaine Magnien at Plaisance in the south east of the island, south west of Mahebourg. It is connected to the capital and to the Plaines Wilhems conurbation by the M1 Motorway which is currently being upgraded to dual carriageway standard around Rose Belle. SSRIA is operated, managed and maintained by Airports of Mauritius Ltd (AML) which is a public company incorporated under the Company Act.

Air transport has been expanding rapidly in line with GDP growth and growth in tourism. Aircraft movements have been expanding by an average of 6.5% per annum. Freight moved by air has expanded even more rapidly (between 6%-8% per annum), though tonnages are much lower than by sea (0.5% unloaded and 1.4% loaded).

Current land use transport problems tend to be site area-related and involve some issues of residential land use around the boundaries as well as road traffic increases reflecting the growth in the movement of passengers into and out of the airport. Approximately 70% of air passengers are foreign tourists; growth prospects of the tourism industry combined with international GDP trends therefore contribute significantly to demand for air travel.

**10.4.2**

*Master Plan for Airports*

Current airport planning is based on the "New Master Plan for Airports in Mauritius"; the Plan has a horizon date of 2025. The medium scenario forecast in the Master Plan envisages the annual number of passengers handled by SSRIA growing from 1.7 million in 2000 to 6.5 million by 2025—with 5 million under the low scenario and 8 million under the high. In order to accommodate this growth the Master Plan proposes the following major improvements:

- Construction of a new Emergency Runway parallel to the existing runway, plus improvements to taxiways, or alternatively, possibility of a replacement runway
- Additional Parking stands etc
- Expansion of the existing passenger terminal building to the south and west, together with new piers, etc.
- Construction of a new cargo terminal to the north of the passenger terminal

- Future improvements include the relocation of the existing fuel depot to a new site to accommodate greater fuel reserve capacity to meet increased number of aircraft movements and area dedicated to Hangar and Maintenance.

The current Master Plan is being updated to respond to changes in aviation activities and to take account of the dynamics of the industry.

The layout of the airport complex will be re-oriented if all the Master Plan proposals are implemented, but it is understood that they can be accommodated predominantly within the present site. The development is being phased so that investment cost is evenly spread and closely monitored, and to ensure that development is carried out in line with market demands, economies of scale and sound financial planning.

The main implications of expansion of the airport for physical planning include:

- Plaisance Airport (Building Restrictions) Act 1964 requires amendments to impose height restrictions to buildings on the south easterly parts of the airport i.e. at Runway 32. As it stands, height restriction concerns only Runway 14 (north westerly areas)
- Presently, there is inadequate planning and control of development of residential areas along the fringe of the airport. This most specifically applies to north west parts of the airport curtilage. If effective mechanisms are not developed and implemented (by the Ministry of Local Government), the 'wild' development will most likely impede future airport expansion in accordance with the Master Plan.
- SSRIA will continue to generate an increasing volume of road traffic in and around the airport curtilage and onto the adjacent highway system.
- To reinforce environmental regulations so as to constrain airport operations to acceptable noise tolerance (especially over Blue Bay residential areas).

#### 10.4.3

##### *Post Master Plan Development*

###### (i) Review of Development Plan by Key Players

There has been a major shift in development orientation since the release of the Airport Master Plan; the major one being the decision of the National Carrier to expand its maintenance activities at the current location, extending with the site to be vacated by the Oil companies. The Oil companies have opted in agreement



between the Government and Airports of Mauritius, to relocate into a new area presently outside the current airport boundary. These developments necessitate a new look at the Airport Master Plan. Airports of Mauritius has undertaken to carry out the review and to accordingly advise Government.

(ii) Removal of Constraints on Land Use following transfer of Illovo land to Govt  
The acquisition by Government of a sizeable parcel of land from the private sector sugar industry along with the transfer of additional land from ex-Illovo to Government has to a large extent removed land constraints to development. It is considered that the additional land availability will provide for the air transport and infrastructure needs of Mauritius to be met at SSR International Airport, thereby obviating the need for a second airport.

Air transport has played a vital role in the development of Mauritius. Over the years Mauritius has adopted a pragmatic approach to air access. The policy has so far enabled Mauritius to establish regular air links with the outside world and has fostered the development of the national airline. It has also promoted Mauritius as an upmarket tourist destination and provided necessary air cargo facilities for the manufacturing sector.

Government is conscious that an efficient transport system is fundamental for the sustained development and prosperity of the country and the air transport policy of Government has so far served its purpose reasonably well. However with the emergence of trading blocs on the African, Asian and American continents and the sustained interest of the US with the region, the US-Africa economic relationship is undergoing profound changes. These have been supplemented on the local front with investments in airport infrastructure and the privatisation of the airport operations which have given new impetus to the air transport industry. It is felt that a parallel review of the institutional and regulatory framework in the sector is now overdue to respond to the economic imperatives of the country.

#### **Policy A1 – Airports**

***Surface access facilities and services to cater for long term airport growth either within planned limits or for further expansion should be sustainable.***

*Justification:* Airports have become major transport interchanges and traffic generators and attract a range of related and non-related developments. A key issue concerns surface access in the context of future planned development of the airport, under the Airports Master Plan to 2025. This expansion needs to be seen

within the wider development and transport strategy for the area between Plaine Magnien, Beau Vallon and Mahebourg.

In this latter connection it is noted that a new South East Highway is to be constructed which will link the M1 Motorway at Plaine Magnien, near to SSRIA Airport and then connect via Beau Vallon and Mahebourg to Ferney and Bel Air/Riviere Seche. Improvements in accessibility to the South East and East Coast Tourism Zones will thus be afforded, and in the longer term connections further north may be considered.

The National Development Strategy and revised Local Development Plan should:

1. Ensure that any development of airport surface access takes account of the wider transport strategy for the local area and provides for a wider choice of mode of travel;
2. Identify and safeguard land for access improvements to the airport, especially for public transport modes;
3. Consider the extent to which development is related to the operation of the airport and is sustainable given the prevailing levels, and potential for enhancement of public transport, and in time other sustainable modes of transport; and
4. Consider factors like air route development, helicopter operations, environmental impact etc.

A Special Use Zone is therefore proposed to include the airport area and adjacent Plaine Magnien and the M1 junction in order to plan for the orderly growth of the airport and its environs over the longer term, including demand for future storage, warehousing and distribution activities. Proposal A1 also provides for this requirement.

#### **Proposal A1 – Strategic Surface Access Study – Airport and Environs**

*Proposal to carry out a feasibility study into the long term requirements of surface access to the airport from the strategic and local highway network including the proposed South Eastern Highway and the M1 junction at Plaine Magnien. The study should be coordinated within the wider framework of the preparation of the revised Local Plan for Grand Port/Savanne incorporating the findings of the Airport Master Plan and focussing on the airport/future developments and the Plaine Magnien area.*

## Policy A2 – Second Airport

***Land for a possible second airport at Plaine des Roches south east of Riviere du Rempart should be reviewed in the light of lesser constraints on long term development of SSR International Airport.***

*Justification:* A proposal to build a replacement airport at Plaine des Roches south east of Riviere du Rempart has in the past been made. The case for this rests on:

- The belief that the approach at Runway 14 SSRIA was unsafe (the Instrument Landing System had not yet been installed at that time).
- SSRIA could not sustain growth beyond year 2000 and cater for more development.

The 1982-1983 Plan proposed that the Plaine des Roches site should continue to be reserved awaiting the outcome of a proper technical study into need and feasibility. The Plan had assumed that Plaisance could only be expected to sustain growth up to horizon 2000 and an expected annual traffic flow of 1.4 million. This proposal was carried forward into the Local Plan (Outline Planning Scheme for the North). In 1998 Government commissioned a new feasibility study on the proposed Plaine des Roches airport and the conclusion was that it was technically possible to construct a new airport at Plaine des Roches.

In contrast, the year 2000 Airport Master Plan of Mauritius has determined that SSRIA Airport can be extended up to year 2025 and beyond and suggests it can cater for up to 10 million passengers (6.5 million as medium scenario for year 2025). In its evaluation of the two sites, the Master Plan concluded in favour of further development of the present airport (ie. SSRIA).

However, considering the availability of additional land at SSRIA the decision to continue to safeguard the Plaine des Roches site needs to be reviewed in the light of the new study that Airports of Mauritius expects to commission during 2003. Pending the outcome of the study, it is recommended that land continue to be safeguarded for possible long term airport or airfield development in the revised Local Plan, in particular in relation to long term growth in the tourism industry, especially in the Northern and Eastern Tourism Zones and for emergency planning purposes.

# 11 Physical Infrastructure

## 11.1

### *Overview*

The overall objective for this sector within the revised National Development Strategy is:

“To provide strategic guidance and context to Government in the improvement and provision of new infrastructure to enable the planned development to be achieved.”

This sector covers water supply, sewerage, drainage, solid waste disposal, electricity supply and telecommunications. The accompanying maps illustrate the Strategic Infrastructure Network (MAP 8) and the Proposed Strategic Infrastructure Network (MAP 9). Appendix 4 gives an outline of current/planned major projects in the infrastructure sector.

It will be important for the relevant utility providers to work in partnership with the central and local Government planning authorities to ensure that land for essential infrastructure facilities and networks is identified in revised Local Plans and protected from development.

## 11.2

### *Water Supply*

### 11.2.1

#### *Dams and Catchment Areas*

There has been a considerable improvement in potable water supply over the last decade. The Central Water Authority (CWA) has stated that the networks have been extensively upgraded and extended and that generally speaking the majority of the island's population has access to piped potable water.

According to figures obtained from the 2000 Census 98.7% of the population of the island of Mauritius obtain water from individual connections to their property with 85.5% having piped water within their premises. Just 0.4% of the population still obtains water from public standposts or water tanker, whilst the remaining 0.9% obtain their water from sources other than the piped network, generally from their own shallow wells or water courses although many of these could obtain a supply from CWA standposts or tankers.

Please Refer to Map 8: Strategic Infrastructure Network

Please Refer to Map 9: Proposed Strategic Infrastructure Network

The efficiency of the water supply network varies from system to system and unaccounted for water which includes administrative losses and losses from connections, meter tampering and under registration is high in certain areas.

The actual Unaccounted for Water (UFW) is estimated to vary between 45 to 50% of input. CWA has embarked on an aggressive project for the reduction of UFW and aims to reduce the level of non-revenue water to 25% of the volume throughput by 2007. Various mains replacement projects are planned for implementation in the near future together with programmes for leak detections, replacement of subscriber meters and the identification of illegal connections. The CWA has submitted a project dossier to the European Investment Bank (EIB) for financing consideration for various projects aimed at sustaining improvements in level and quality of service to all sectors.

There are currently ten impounding reservoirs in Mauritius but only three of these supply water for potable uses; Mare aux Vacoas, Nicoliere and Piton du Milieu dams. Midlands Dam will also provide additional potable water, via Nicoliere dam. Current surface water use is divided between potable, hydro-electric and irrigation in the ration 21:31:48 according to the Water Resources Unit (WRU) but approximately half of the hydro-electric water is subsequently used for irrigation, the remainder is lost to the sea. Other surface water sources used for potable water consist of direct offtakes from rivers, usually upstream of a small diversion dyke. There are six main water treatment works that process the water from the above sources and send it into distribution.

It is expected that the Midlands Dam and the extensions to the La Nicoliere Water Treatment Works (WTW) will meet immediate and likely medium term needs in the north of Mauritius. Future development in Greater Port Louis is however likely to be hampered through a shortage of water until the proposed Bagatelle Dam is constructed, or an alternative source of water is located and brought on-stream. The Feasibility Study of the Bagatelle Dam is in progress and is scheduled to be completed by September 2003.

The WRU is taking steps to protect the impounding reservoirs against pollution and a surveillance and monitoring programme is being put in place. The WRU has a programme of works designed to meet the water needs in Mauritius up to 2040 and in addition to the Bagatelle Dam there are proposals to construct an additional three dams: Callebasses (by 2010 mainly for irrigation, to solve longer-term anticipated shortages in the north until 2040); Mon Vallon and Cascade will come

later and are also primarily intended for irrigation. Other sites have also been identified and the areas for all potential dams need to be protected from development.

**Policy WS1 – Protection of Potential Dam Sites and Associated Catchment Areas**

***Land for dam sites should be identified in revised Local Plans: development within approved sites should not be permitted. The associated catchment areas should be identified and safeguarded against pollution, erosion and deforestation.***

*Justification:* Although water supply networks have been extended they are not expected to fully meet the forecast increasing demands for water and the desire to improve the levels of service received by customers in some parts of the island. There will be a need for substantial investment in the rehabilitation and renewal of old distribution mains in towns and for some provision of new resources, treatment capacity, storage facilities and water mains to provide an acceptable year-round service to all of the population over the Plan period, particularly those at the extremities of the current system, in the east and west of the island and to properties on higher ground.

The Midlands Dam and recent extensions to the La Nicoliere Water Treatment Works and construction of major water distribution pipelines will allow for the water needs in the north of the island. Similarly, the water needs for development in the central part of the island are expected to be met with the doubling of the treatment capacity at La Marie Treatment Works scheduled for 2004. The proposed Bagatelle Dam will cater for the water needs of Port Louis and its peripheral areas.

The CWA has completed a feasibility study for the rationalisation, upgrading and extension of water distribution in the east. The objective is to study and assess (a) the potential for additional water resources and (b) the condition and the carrying capacity of the water transmission system in the east, with a view to satisfying the immediate and at term demands for water from proposed development projects such as hotels, integrated resorts and residential housing units in the region. CWA has advised that the only long term alternative for the provision of additional water resources to the south western coast would be the construction of an impounding reservoir; however this is likely to be costly.

There are relatively few sites where it will be viable to construct impounding reservoirs and it is important that sites identified and approved by the Water Resources Unit (WRU) are shown on revised Local Plans and protected from development in order to meet forecast demand. The associated catchment areas need to be identified and environmental clearances obtained from the Ministry of Environment to ensure that any major development permitted within these areas is non-polluting and is properly sewerage and monitored.

### 11.2.2

#### *Boreholes and Aquifers*

The major source of water for potable purposes is from boreholes: this resource has been developed in recent years and now contributes some 55% of the total volume of treated water produced i.e. about (264Mld on average). However, groundwater abstraction is very costly and an expensive source to use for potable purposes. There are about 350 boreholes in use in Mauritius of which 110 are used for potable water, 112 by industries and 128 for agricultural purposes. The present groundwater utilization is of the order of 145 Mm<sup>3</sup> against an estimated utilizable potential of 160Mm<sup>3</sup>.

Unfortunately both the run-of-river and groundwater sources have a reduced yield during the dry season and the level of service received by consumers also deteriorates during this period. Although the current volume of groundwater extracted is believed to be close to the limit of the economically exploitable quantity, there are plans to construct additional water treatment facilities to take advantage of the additional surface water resources that will be available shortly.

Groundwater and surface waters are under threat from industrial pollution from the textile industries, agricultural runoff and sewage pollution caused by dumping sludge including into wetland areas. There is still a need to ensure that water treatment plants form part of industrial development and that boreholes and aquifers are protected from urban run-off, agricultural run-off and development.

Much of the soil overlaying the aquifers from which water is abstracted is very or moderately permeable and any contamination in the immediate vicinity of a well would quickly in-migrate. As a long term goal, all major development in the permeable or semi-permeable soils would be connected to a centralised sewerage system that would carry effluent away to a safe treatment and disposal site. Such a goal will not be realised in the short term but all major development proposals and plans should be informed by the existence and importance of the aquifers and the need to take measures to protect them from pollution in the national interest.

## **Policy WS2 – Development Close to Boreholes**

***Notwithstanding the requirements of the Environment Protection Act 2002 the natural functions and habitat of water resources including rivers, riverlettes, aquifers, boreholes, ground water, surface water and marine water resources, will be protected from adverse effects of development either through incorporation of environmental mitigation measures in development schemes, prohibition of development in buffer zones, and/or the protection and maintenance of natural habitat adjoining such resources.***

***No development should be permitted within a 200m radius of a borehole or spring without consultation and approval of the WRU.***

*Justification:* Protection of ground water from contamination is recognised as being very important. The Mauritius Vision 2020 report states that the risk of ground water contamination is perhaps the greatest potential threat that Mauritius faces. The WRU is commencing a programme of borehole protection works and seeks to establish development exclusion zones up to 200m around all new boreholes, and around as many existing boreholes as is practicable. The National Development Strategy endorses this protection programme.

## **Policy WS3 – Development Above Aquifers**

***Extensive development should not be permitted in areas where rainwater or river flows recharge the groundwater aquifers directly, unless the development is served by a comprehensive wastewater collection system connected to an appropriately designed and sited wastewater treatment works.***

*Justification:* The greatest potential risk to groundwater aquifers is in the north of the island where there continue to be considerable pressures to develop but where there are no defined river systems. Rainfall in this area quickly percolates into the ground and will carry with it any pollutants that are on or near to the surface. Major expansion of settlements in this area (outside Grand Baie which is currently being sewered), such as Goodlands and Riviere du Rempart should not be permitted until centralised sewerage systems are introduced.



### 11.3

#### ***Sewerage***

The original sewerage systems were installed in Port Louis at the beginning of the 1900s and in the Curepipe, Beau Bassin and Rose Hill areas during the 1960s. Since then there has been little expansion, development or maintenance of the infrastructure and it was not until the late 1990s that work commenced on the construction of additional sewers and treatment works. The lack of progress is reflected in the Census results that show that in 1990 19.9% of the population was connected to a sewer, yet by 2000 the proportion had only increased to 20.6%, an increase of just 16,500 properties over 10 years.

The revised National Development Strategy endorses the proposals of the new National Sewerage Master Plan: implementation of the Plan seeks to effect improvements to public health and the environment. There has been a considerable increase in the provision of sewers and sewage treatment facilities in the last few years and four major schemes are currently under construction. Longer term projects include the construction of sewerage systems in the major settlements and expanding the coverage in the main conurbation and around Grand Baie.

Two of the new sewage treatment works will provide full tertiary treatment and enable the resulting effluent to be used for irrigation, initially for sugar cane but potentially for other crops and recreational facilities, subject to social acceptability. The other plants provide only primary treatment prior to discharge to sea but there is provision within their designs for the addition of secondary and tertiary treatment in the future if it becomes economically viable to distribute the effluent for irrigation.

#### **Policy ST1 – Sewerage Systems**

***Densely populated urban areas within the conurbation and major settlements in the countryside and on the coast should be served by central sewerage systems and associated treatment works.***

*Justification:* Currently only about 20% of the population of Mauritius is served by a sewerage system. However, the Wastewater Management Act (2000) has resulted in a transformation of the Wastewater Management Authority (WMA) into a corporate autonomous body and this reorganisation has given a real impetus to the implementation of sewerage projects. The WMA is currently installing new sewerage systems and constructing new sewage treatment facilities in the Port Louis, Baie du Tombeau, Plaines Wilhems and Grand Baie areas.

Contamination of groundwater resources is recognised as being the greatest threat to the water supply of Mauritius and it is imperative that this resource is afforded the maximum protection possible.

#### **Policy ST2 – Sites for Sewage Treatment Works**

***Sites for sewage treatment works close to urban areas in the conurbation and major settlements in the countryside and on the coast need to be identified in revised Local Plans and safeguarded from future development.***

*Justification:* The Wastewater Management Authority has a target of connecting at least 80% of the population of Mauritius to a sewerage system and sewage treatment works by 2020 with an intermediate target of connecting 50% of the population by 2010. There are relatively few sites where it will be economically viable to construct sewage treatment facilities. Such sites identified by the WMA need to be identified in revised Local Plans and safeguarded from development. Also such facilities are considered to be “bad neighbour” developments and new works need to be located away from residential and other sensitive land uses. Buffer zones up to 1 km from such sensitive land uses should be established as part of area-wide planning within revised Local Plans.

#### **Policy ST3 – Sites for Buffer Zones around Bad Neighbour Developments**

***In considering the location of new bad neighbour developments, including sewage treatment works, landfill sites and civic amenity sites and scrap yards, buffer zones up to 1km from sensitive land uses should be identified in conjunction with the Ministry of Environment and shown in revised Local Plans. Acceptable uses within identified buffer zones can include agriculture, forestry, animal-rearing, grazing and pastures.***

*Justification:* It is generally accepted that for environmental and social reasons sewage treatment works, landfill sites, civic amenity sites and major scrap yards constitute ‘bad neighbour’ development. Bad neighbour industries as considered in Policy I7 should also be included in this context. In selecting new sites such developments should, where practicable, be planned up to 1km distant from sensitive land uses which include residential areas, hospitals and schools. Advice should also be sought from the Ministry of Environment when considering such schemes. Where sufficient land is available the clustering of bad neighbour developments on a single, well-accessed site should be considered in order to reduce adverse environmental effects.

#### **Policy ST4 – Polluting Industries**

***All major polluting industries should be connected to a properly designed and maintained sewerage system connected to a sewage treatment plant. In applying the principles of this policy, consideration should also be given to the intent of Policy I5-Industrial Waste Processing.***

*Justification:* Industrial development should be located in areas served by sewerage systems. It is important that the effluent from industries is pre-treated to ensure that noxious elements are removed by the industry itself and to ensure that the effluent is capable of being treated by the conventional treatment processes that will be employed by the Wastewater Management Authority. If in the national interest it is essential that potentially polluting industries be located in areas not served by centralised sewerage systems, then the industry itself should provide and maintain a full effluent treatment works. Septic tank systems would not be acceptable in these circumstances.

In support of Policies I5, WS2, WS3, and ST5 the WRU and the Ministry of Agriculture should jointly prepare a map showing areas of soil suitability for the use of septic tanks or soakaways to inform planning authorities of the potential high risk areas.

#### **Policy ST5 – Septic Tanks and Soakaways**

***In smaller settlements outside the conurbation and major settlements, and where centralised systems are not viable, the construction of septic tanks and soakaways needs to be rigorously controlled to ensure that they are properly designed, constructed and maintained.***

*Justification:* Properties in the un-sewered areas are generally served by on-plot septic tanks and soakaways, as are many properties that could actually be connected to the formal sewerage systems. Currently there is no system of building regulation inspection and many of the installed septic tanks have been poorly designed and constructed and consequently contribute to pollution of adjacent properties, water courses and potentially the important groundwater resources. In many instances it is likely that the constructed facilities are little better than pit-latrines.

Septic tank systems can treat sewage to a reasonable standard and they are appropriate means of treatment in low density and scattered developments where

the soil conditions are suitable. It is important that they are properly designed, constructed and maintained if the environment, and groundwater resources in particular, are to be protected.

To facilitate this process a building control/inspections capability needs to be developed within local authorities under guidance from the WMA. Provision for strengthening local councils' resources in order to provide this capability should be made under the provisions of the forthcoming Local Government Bill.

### **Policy ST6 – Reuse of Effluent**

***The acceptability of treated sludge (stabilized) for agricultural uses needs to be promoted for selected crops and subject to established use criteria.***

*Justification:* An overriding objective of the revised National Development Strategy is the efficient use of infrastructure facilities and networks. By making the most efficient use of effluent for irrigation it will be possible to utilise ground and surface water resources currently used for irrigation, for potable use and thereby defer some of the need to develop expensive new sources including new dam sites.

#### **11.3.1**

##### *Drainage*

The catchment areas for the rivers in Mauritius are generally small, only two are over 100km<sup>2</sup>, river gradients are steep and the courses are deep. Consequently there appears to be ample hydraulic capacity in the rivers to discharge large flows, such as occur during cyclone events, without difficulty.

According to studies being carried out for the WRU, there are localised flooding issues in developed areas but it appears that these result from minor deficiencies in the drainage systems (i.e inadequate culvert sizes, lack of maintenance) or a lack of capacity of the main drainage channels. Some of the flooding problems that have been identified result from inappropriate development in depressions (low-lying regions) and marshy areas and also from inappropriately designed bridges. However extreme weather events such as might occur during a cyclone have not been considered during these studies and it is apparent that flooding might occur under these conditions.

Deforestation of some upland areas and the high incidence of intensive rainfall events have meant that soil erosion has been high and silt load down the rivers and into the lagoon is a concern. However, this problem cannot be addressed by making changes to the drainage system (except by constructing silt trap dams,

which is not considered to be appropriate as it treats the symptom and not the cause), and changes to agricultural and forestry practices are required.

Relief from many of the flooding problems can be obtained by improving the capacity of the drainage systems, so that rainwater escapes to the main river courses more quickly. However, this is not an optimum general solution, particularly in the upper reaches of the catchments, as it will cause an increase in the peak flow rates in the river, reduce dry season flow rates, increase the risk of flooding downstream and reduce the opportunity for groundwater recharge. It would be preferable to try and retain flood waters and control the flow rate in the rivers.

Currently within major development proposals there is no overall consideration of the effects that a particular scheme could have on neighbouring and downstream developments, both existing and future. As part of the planning process, consideration should be given to how site proposals interact with the drainage issues of the wider catchment basin in which they lie. It should not be “standard practice”, particularly for major developments, to simply channel surface water into the nearest watercourse and dispose of it to the sea as quickly as possible.

#### **Policy DR1 – Design of Drainage Systems**

***All major developments should provide appropriate systems to ensure that they are adequately drained, that neighbouring developments are not adversely affected and the implications for the catchment area are taken into account in the planning of new schemes.***

*Justification:* The National Development Strategy recognises that it would be prohibitively expensive to provide drainage systems capable of coping with surface water discharges that would occur during a cyclone. The Strategy endorses the following land use principles:

- Catchment areas susceptible to erosion should be re-afforested
- Agricultural practices with regard to drainage need to be improved
- Properly designed and maintained drainage systems should be provided in urban areas
- Regular street cleaning is needed
- Disposal of refuse should be to sanitary landfills.

In order to improve overall land use and development planning, a single authority should be made responsible for planning and regulating all drainage issues in the country; in this connection consideration should be given to mechanisms such as planning obligations and developer contribution plans when larger, basin-wide, flood alleviation and control works are being proposed. It is anticipated that implementation of remedial measures as a result of the WRU's Land Drainage Study will result in achieving a better control over run-off.

#### **Policy DR2 – Development in Wetlands**

***Development in wetlands and marshes should not be permitted other than as provided for under Policy ENV 2. In this regard the existing provisions of the Rivers and Canals Act, 1863 that prohibits the construction of a building within 33m (100ft) of a river, stream or canal should be enforced.***

*Justification:* There is an urgent need to identify areas along river courses, low-lying areas and depressions that will flood during an extreme weather event so as to be able to inform planning authorities and developers of the potential risks. Wetlands and river courses are important ecological areas; rivers are also significant sources of water supply. As a consequence, all such Environmentally Sensitive Areas (ESA) as defined by the Ministry of Environment should be protected from development other than as provided for under Policy ENV2 when considering small schemes on small infill plots in existing built-up areas.

Measures to protect current settlements in high risk areas could be developed if appropriate or emergency procedures could be established. Catchment hydrology and watershed management are currently being studied by Government, including the need to establish a Land Drainage Agency and it is expected that the outputs from these studies will inform long term strategy on wetland and river course planning and protection.

#### **11.4**

##### ***Solid Waste***

The responsibility for waste disposal in Mauritius rests with the Ministry of Local Government and Rodrigues although the actual collection of refuse is generally the responsibility of the local authorities. Government takes responsibility for the collection of waste from the public sector housing estates, public beaches and two villages. The National Solid Waste Management Plan proposed establishing sanitary landfill sites at Mare de Australia and Mare Chicose. Due to local objections and land acquisition problems the former site was never developed.

All solid waste is disposed of at the Mare Chicose managed landfill site, generally via one of the four waste transfer stations at St Martin, La Brasserie, Roche Bois or Poudre d'Or. The Mare Chicose site was originally intended to receive only 20% of the solid waste generated in Mauritius and is consequently already close to capacity. There is little evidence of local pollution or littering but there is an obvious odour problem local to the site and considerable impact from the numerous lorries that deliver 800-1,000 tonnes of waste per day.

The National Solid Waste Management Strategy has been reviewed by Government in April, 2002. Projects approved under this Strategy include:

- (i) Construction of Incinerator/Landfill/Hazardous Waste Complex at Plaine St. Pierre, Medine
- (ii) Feasibility Study for extension of Mare Chicose Landfill
  - (i) Geotechnical Investigation
  - (ii) EIA
- (iii) Construction of Civic Amenity Centres for bulky wastes
- (iv) Construction of Composting Plants in the North and in the South
- (v) Construction of Scrap Yards
- (vi) Identification of a Landfill Site in the North/North East.

For the future, Government options include proposals for a small-scale incinerator on a Build-Own-Operate basis (BOO) to reduce the volume of waste that needs to be disposed to landfill and also to generate electricity. The Government is proceeding cautiously with this matter as the capital and operating costs are known to be high. The identification of suitable plots for the construction of new landfill facilities is also being considered, including a 50ha site at Plaine St. Pierre, Medine for the clustered landfill, hazardous waste, incinerator complex. The Ministry is going ahead with the implementation of a project for the construction of a new Transfer Station at La Laura, Caroline which is expected to become operational by next year.

#### **Policy SW1 – Sites for Landfill**

***Sites for new landfill and other solid waste disposal sites should be identified in revised Local Plans and protected from development. In respect of buffer zones for such bad neighbour developments, reference should also be made to Policy ST3.***

*Justification:* As for sewage treatment works, landfill facilities are considered to be “bad neighbour” developments and need to be located away from residential and other sensitive land uses including schools and health facilities. Proposed new landfill sites need to be identified within the context of an area-wide planning process and included in revised Local Plans. In this context, wherever possible, such sites together with other ‘bad neighbour’ developments such as hazardous waste, civic amenity sites and scrap yards should be clustered within an industrial/utility park on a single, well-accessed site where buffer zones up to 1 km can be established from sensitive land uses.

### **Policy SW2 – Sites for Civic Amenity Facilities and Scrap Yards**

***Sites for civic amenity facilities and scrap yards need to be established in revised Local Plans. In respect of buffer zones for such bad neighbour developments, reference should also be made to Policy ST3 and Policy SW1.***

*Justification:* The Government proposes to establish a pilot plant in the north of the island to compost green (garden/yard) waste for ultimate use as fertiliser. Studies have indicated that there will be a demand for the compost and by establishing the plant in the north, which is close to the main demand centres for compost, the volume of waste that needs to be transported to the Mare Chicose landfill site will be reduced. It is intended that the compost plant will be established in 2003 and will be operated by a private contractor.

There are currently no sites where the population can dispose of bulky waste such as refrigerators, furniture, vehicles that are not collected by the municipalities. In conjunction with public awareness campaigns to encourage waste reduction and anti-littering, such facilities will reduce the amount of litter that is dumped and fly-tipped in the countryside and in watercourses.

Where large sites are available, consideration should be given to clustering a number of bad neighbour developments such as landfill, civic amenity sites and scrap yards on a single, well-accessed site surrounded by a 1km buffer zone.

## **11.5**

### ***Electricity***

Electricity in Mauritius is generated at four Central Electricity Board (CEB) operated thermal power stations (308MW) and eight CEB operated hydroelectric stations (54.2MW) plus ten private thermal (bagasse) stations (approx. 115MW) and two private hydroelectric stations (0.3MW). The ten bagasse plants located at sugar factories around the island are exporting electricity to the national grid, of



which three export electricity year round using coal as the complementary fuel during the off-season.

In 2001, 1,673,000 tonnes of bagasse were produced from which around 300 GWh of electricity were exported to the public grid. This represents an average of 52kWh/tonne cane. However only one of these plants is most efficient in that it exports more than 110 KWh/tonne cane by using the latest state-of-the-art bagasse energy cogeneration technology (at Centrale Thermique de Belle Vue (CTBV)). The bagasse/coal electricity cogeneration represented around 44% of total national electricity generation in 2001; the share of bagasse in this 44% is 42%. If all the bagasse was burnt in plants operating at an efficiency comparable to that of CTBV, the potential export of electricity from bagasse as a whole would be more than 600 GWh or double the current amount.

Electricity is distributed through a network of high voltage transmission lines operating at 66kV, although CEB has recently completed the construction of new lines that can be operated at 132kV in the future to improve distribution efficiency. Step-down transformers reduce the voltage to 22kV and the island is served by ring mains and feeders at this voltage.

The electrical system in Mauritius is reported by the CEB to be comprehensive (ie. service is available island-wide) and capable of meeting current demand. However peak demand is becoming a serious problem and general public awareness of the implications of energy consumption needs to be raised. CEB believes that there would be no significant difficulty, in terms of the distribution network, in meeting potential new demand.

It would be preferable if cables in urban areas could be laid underground as this would avoid them being damaged during cyclones and also remove some of the unsightly wire-scape that currently exists. However, the cost of laying cables underground is some three to four times that of constructing overhead lines and it is unlikely to be affordable in all cases. Outside urban areas, the CEB has indicated that whenever a transmission line is required to cross over a hill or mountain, it is imperative that the structure is placed on the crest.

A constraint to land development close to transmission lines is the need to maintain 13m clearance either side of HV cables and 6m to MV (22kV) ones, although the land beneath and adjacent to such cables can be utilised for other uses, such as road, cycle and pedestrian ways or parkland. The difficulty of

obtaining rights-of-way for transmission and distribution mains presents a constraint to CEB extending their network in some cases.

### **Policy E1 – Sites for New Power Stations**

***Sites for new power stations need to be identified in revised Local Plans and protected from development. In respect of buffer zones for such bad neighbour developments, reference should also be made to Policy ST3.***

*Justification:* CEB's existing power stations have been fully developed and there is no available spare land adjacent to them as a consequence of other neighbouring developments. Although energy from renewable sources (wind and solar) is under consideration these are not yet viable for base-load generation.

There are no major new planned developments but the Ministry of Public Utilities (MPU) has commissioned a study to investigate the future power generation requirements of Mauritius. Although the outcome of this planning study is not yet available, CEB anticipates that additional generating capacity will be required in the near future to meet peak demand, and at some time between 2006 and 2008 to meet energy demand growth.

Land for potential sites is however constrained by such factors as the need to import fuel, the need to be reasonably close to major demand centres, and environmental bad neighbour considerations. Potential sites need to be identified by CEB in conjunction with the MPU and the planning authorities within revised Local Plans and safeguarded from development. A study has suggested either Fort William or Montagne Jacquot as potential future sites. Development proposals close to these sites need to be planned in an integrated area-wide approach with suitable buffer areas up to 1km from sensitive land uses being established.

### **Policy E2 – Service Corridors**

***The need for service corridors and rights of way for power cable networks must be considered during the planning stage for major development projects.***

*Justification:* It is essential that corridors for the erection of overhead lines and for laying underground cables are identified during the planning stage of major new development. Generally it is preferable to install the medium and low voltage lines along road reserves and these should be sufficiently wide, with buildings set back

from the side of the road reserves to allow adequate clearance to cables. High voltage lines will generally need to cross over third party land and permission for major developments should be conditional upon CEB being able to obtain necessary wayleaves. The CEB has indicated that whenever a transmission line is required to cross over a hill or mountain, it is imperative that the structure is placed on the crest. It is therefore essential that Rights of Way for new high voltage lines should be considered in revised Local Plans.

## 11.6

### *Telecommunications*

Within the physical infrastructure sector, telecommunications has seen the greatest changes in technology in recent years. The majority of the island is served by a hard-wired telephone network and it is understood from Mauritius Telecom there is ample capacity to serve potential new customers. In areas that cannot currently be connected with a wired line Mauritius Telecom (MT) uses a wireless loop connection. Currently there are some 310,000 customers with about 90% of all households having a connection.

Mobile communications have become common and the two operators have approximately 300,000 customers between them. The existing network of masts and base stations covers the majority of the island and all built-up areas. The system is being further strengthened to improve the coverage and standard of service. A new optic fibre communications system exists and is designed to ensure high speed global communications in support of Government policy and its drive for new forms of business and industry based on ICT and related knowledge-driven activities.

The copper line plant and fixed wireless network cover most of the built-up areas. Due to the high cost involved in line plant development, MT will deploy wireless loop solution for proposed new residential areas and a mix of wireless, copper and fibre for business areas. For the few areas to be covered by copper line plant, site developers will be required to provide the underground ducting system for running telecommunication cables.

Mauritius Telecom operates a modern data network, which provides services to business in particular. The backbone network nodes are located not only in urban areas but also have been strategically situated in Flacq, Grand Baie, Bambous and in Rose Belle. The capacity of the network is being continuously upgraded to meet growing requirements of business customers.

ADSL service for residential and business customers has been commercially launched in 2002. This technology makes use of the existing copper line to provide one telephone line and a high-speed Internet access. ADSL service is presently available only in urban areas, but coverage will be extended to major rural areas and country-wide.

On the above basis, it is considered there are no significant constraints in meeting the country's future communications needs. As such there are no specific planning policies proposed for this sub-sector.