VICTORIA FALLS COMBINATION MASTER PLAN

PREPARATION AUTHORITY

Victoria Falls Combination Master Plan

Mukuni ASI

REPORT OF STUDY

Second Draft: June 2001

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ABBREVIATIONS

BEAM	Basic Educational Assistance Module
BSAC	British South Africa Company
CA	Combination Authority
CAAZ	Civil Aviation Authority of Zimbabwe
CADEC	Catholic Development Commission
CAMPFIRE	Community Areas Management Programme for Indigenous Resources
CAP	Community Action Project
CBD	Central Business District
CDR	Crude Death Rate
CEDC	Children in Extremely Difficult Circumstances
CHOGM	Commonwealth Heads of Government Meeting
CIDA	Canadian International Development Agency
CPPA	Combination Plan Preparation Authority
CSO	Central Statistical Office
DA	District Administrator
DANIDA	Danish International Development Agency
DBSA	Development Bank of South Africa
DC	District Council
DDF	District Development Fund
DEAP	District Environmental Action Plan
DNMM	Department of National Museums and Monuments
DNPWLM	Department of National Parks and Wildlife Management
DNR	Department of Natural Resources
DPP	Department of Physical Planning
DRC	Democratic Republic of Congo
DRO	District Resources Officer
DSC	District Service Centre
DTT	District Training Team
DWD	Department of Water Development
EIA	Environmental Impact Assessment
EMS	Express Mail Service
ESAP	Economic Structural Adjustment Programme
ESP	Environmental Sector Programme Support
ESPS	Enhanced Social Protection Strategy
FC	Forestry Commission
FES	Forestry Extension Services
GDP	Gross Domestic Product
GE	Gender Equality
GoZ	Government of Zimbabwe
Ha	Hectares
HARAZ	Hotel and Restaurant Association of Zimbabwe
HIV/AIDS	Human Immuno Deficiency Virus / Acquired Immuno Deficiency Syndrome
HOD	Head of Department
HRDC	Hwange Rural District Council
ICA	Intensive Conservation Area
IRD	Indigenous Resources Department
IRWSS	Integrated Rural Water Supply and Sanitation
IUCN	International Union for Conservation of Nature

JICA	Japanese Development Agency
JPC	Joint Permanent Commission
KM	Kilometre
LAPF	Local Authority Pension Fund
LSCFA	Large Scale Commercial Farming Area
MARS	Multi Access Radio System
MET	Ministry of Environment and Tourism
MHA	Ministry of Home Affairs
MLG&PW	Ministry of Local Government and Public Works
MM	Millimetre
MOHCW	Ministry of Health and Child Welfare
MT&E	Ministry of Transport & Energy
NGO	Non Governmental Organisation
NHCC	National Heritage Conservation Commission
NRA	Natural Resources Act
NRZ	National Railways of Zimbabwe
PAAP	Poverty Alleviation Action Plan
PAC	Problem Animal Control
PHA	Professional Hunters Association
PPO	Provincial Planning Officer
PPTT	Plan Preparation Technical Team
PRO	Provincial Resources Officer
PTC	Posts and Telecommunication Corporation
PWLA	Parks and Wildlife Act
RAZZ	Rafting Association of Zimbabwe and Zambia
RDC	Rural District Council
RTCPA	Regional Town and Country Planning Act
SADC	Southern Africa Development Community
SDA	Social Dimensions of Adjustment
SDF	Social Development Fund
SEA	Strategic Environmental Assessment
SMEs	Small and Medium Size Enterprises
SOA	Safari Operators Association
SWU	Shallow Well Unit
TB	Tuberculosis
TRA	Traditional Leaders Act
TV	Television
UC	Urban Council
UDI	Unilateral Declaration of Independence
UK	United Kingdom
UNDP	United Nations Development Programme
UNESCO	United Nations Educational Scientific and Cultural Organisation
Urban EPM	Urban Environmental Planning and Management
USAID	United States Agency for International Development
USD	United States Dollar
VF	Victoria Falls
VFAPU	Victoria Falls Anti-Poaching Unit
VFECMP	Victoria Falls Enhancement Combination Master Plan
VFMC	Victoria Falls Municipal Council
VFMPCA	Victoria Falls Master Plan Combination Authority
VFNP	Victoria Falls National Park

VFSL	Victoria Falls Safari Lodge
VIDCO	Village Development Committee
VTC	Vocational Training Centre
WADCO	Ward Development Committee
WHS	World Heritage Site
WWF	World Wide Fund
WWW	World Wide Web
ZATSO	Zimbabwe Association of Travel and Safari Operators
ZCT	Zimbabwe Council of Tourism
ZDHS	Zimbabwe Demographic and Health Survey
ZESA	Zimbabwe Electricity Supply Authority
ZIE	Zimbabwe Institute of Engineers
ZIMPREST	Zimbabwe Programme for Economic and Social Transformation
ZIRUP	Zimbabwe Institute of Rural and Urban Planners
ZNP	Zambezi National Park
ZRA	Zambezi River Authority
ZTA	Zimbabwe Tourism Authority

PART A

BACKGROUND

1. INTRODUCTION

1.1 The Victoria Falls Combination Master Plan

This Report is the first stage in the preparation of a Master Plan prepared on behalf of the Victoria Falls Combination Master Plan Authority. This chapter describes the locality of the Plan Area, why it is necessary to prepare such a plan and the way this Report is structured.

1.2 The Plan Area

The Victoria Falls Combination Master Plan Area (subsequently referred to as the Plan Area) is situated in the north-west corner of Zimbabwe. Map 1 shows this in relation to the country and to southern Africa.

It was decided at the outset that the Victoria Falls Master Plan should cover a significant area around the Municipality. The IUCN study of 1995 adopted an approximate radius of 30 km and this was also chosen as the main basis for the Victoria Falls Master Plan Area.

This Plan Area is intended to reflect an area in which there is a close environmental, social and economic interaction between the urban and rural hinterland of Victoria Falls. In addition, the chosen Plan Area allows consideration of possible expansion zones in the future and the constraints acting upon all the adjacent areas of the town. The Plan Area is shown in Map 2. It comprises the following land areas:

- Victoria Falls Municipal Area
- Hwange RDC Wards: Chidobe and Kachecheti
- Zambezi National Park
- Victoria Falls National Park
- Fuller Forest
- Mvutu Forest
- State Land (Rural) adjacent to the Masuie River and the Bulawayo Road

Due consideration must also be given to possible impacts that the Master Plan may have on the land areas on the Zambian side of the border and cognisance taken of the Zambian situation and their future plans.

1.2.1 Mosi-oa-Tunya

The key feature of the Plan Area, which affects in various ways all the land areas, is the waterfall. The Victoria Falls (Mosi-oa-Tunya) is one of the great natural resource features of the world. It is situated on the River Zambezi and as such is a shared resource between Zimbabwe and Zambia. From the Zimbabwean perspective the Falls are located in the far north-west of the country some 340 km north-west of Bulawayo and 560 km due west of Harare. The Falls are, by any measure, truly awe-inspiring. The length of the Falls, at over 1,700 metres, makes it one of the widest in the world and the depth of the Falls, at over 100 metres provide a magnificent spectacle, especially when the river is in spate. In recognition of its special world position UNESCO declared the Victoria Falls and Gorges area a World Heritage site in 1989.

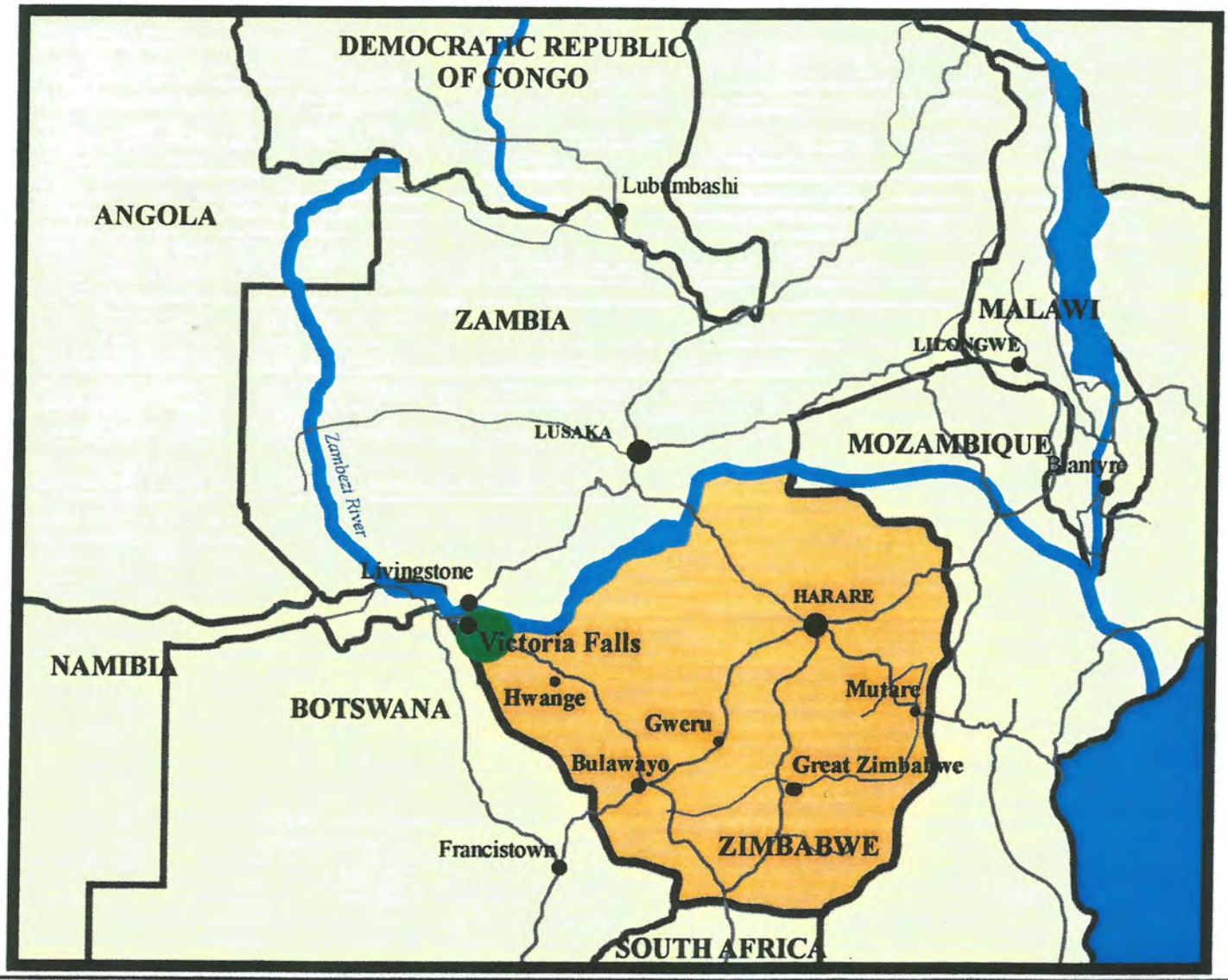
1.2.2 The Urban area

In all likelihood there would be no settlement at Victoria Falls if there were no magnificent waterfall. Once the presence of these waterfalls was made known to the wider world they have attracted increasing numbers of visitors. These visitors needed servicing and thus a small town grew up in the latter part of the nineteenth century, expanding slowly as communication by road and rail improved. Whilst added functions of administration, customs post and transport interchange grew up the fundamental *raison d'etre* of the town has always been the tourist attraction of the Falls.

Victoria Falls town, unlike its Zambian counterpart Livingstone, is situated very close to the Falls. It is, therefore, an ideal location to establish many tourist facilities. Growth of the town has been slow over most of its life, but suddenly accelerated in the 1990s to become the fastest growing urban centre in Zimbabwe and one of the fastest in sub-Saharan Africa. In 1969 the population of the town was 3,450. By 1982, some thirteen years later the population was just over 8,000. Ten years later this had doubled to 16,826. Now, some eight years later, the population is estimated at around 45,000. This rapid population increase has caused many problems and gives rise to many issues that will need to be addressed in the course of the Master Plan work.

1.2.3 The Rural Areas

Victoria Falls town is virtually encircled by National Parks administered by the Department of National Parks and Wildlife Management (DNPWLM). To the west of the town is the Zambezi National Park, while to the east and the north (along the river Zambezi) lies the Victoria Falls National Park. Only in a small 1 kilometre band to the south is the town bounded by non-national parks land. Here Rural State Land stretches along the Masuie River and the main Bulawayo road, abutting the town boundary by the railway. The northern boundary of the town is marked by the international boundary with Zambia and lies approximately half way across the River Zambezi.



VICTORIA FALLS MASTER PLAN COMBINATION AUTHORITY

Drawing Title:
Regional and National Context

Victoria Falls Environmental Capacity and Master Plan Project

Legend

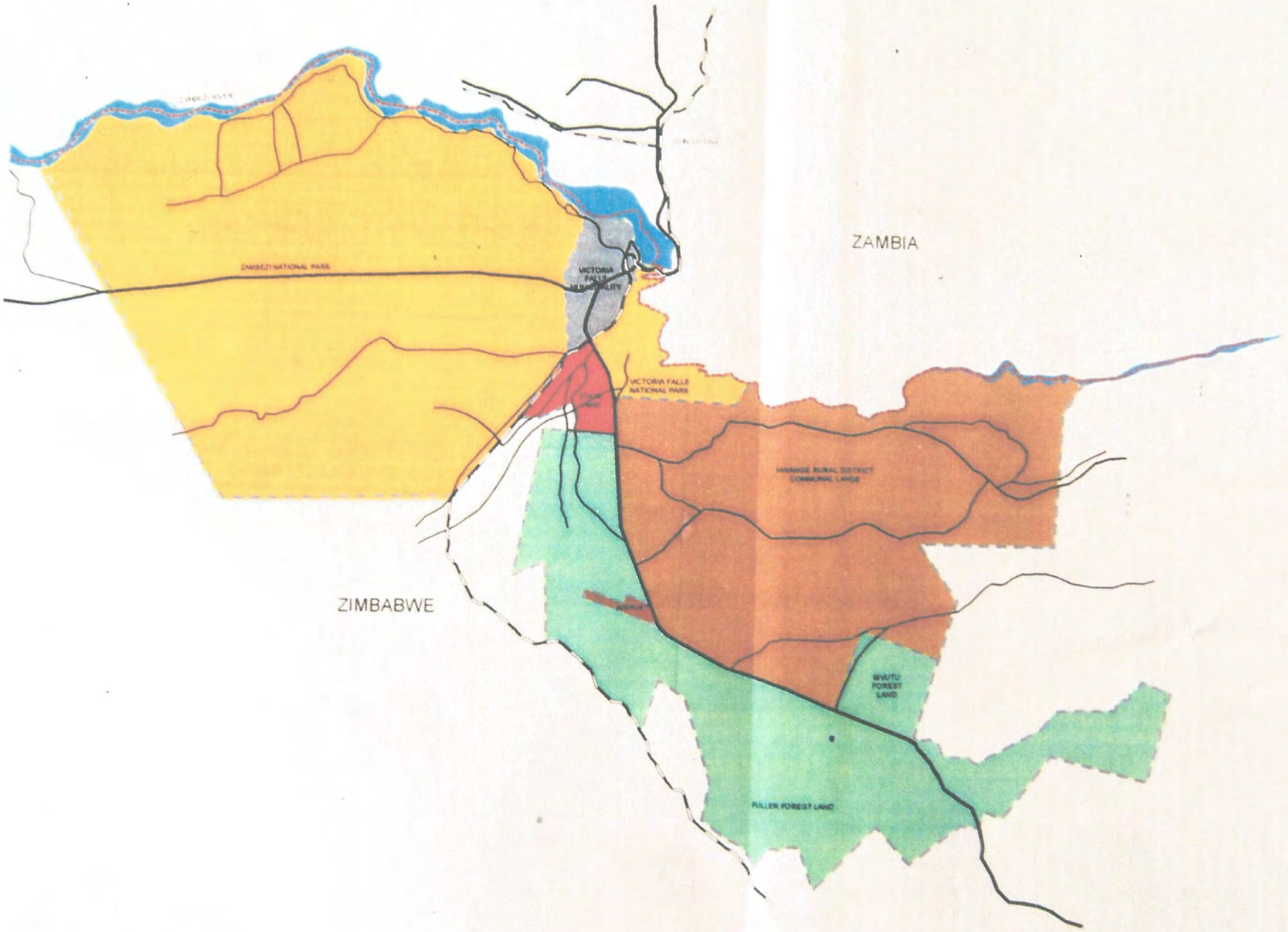
- Plan Area
- Settlements
- Rivers/Water bodies
- International Boundaries
- Major roads

Prepared by:
Zimbabwe Department of Physical Planning
Victoria Falls Consortium

Scale: Not to scale

Date:
February 2001

Map Number:
1



VICTORIA FALLS MASTER PLAN COMBINATION AUTHORITY

Drawing Title

The Plan Area

Legend

- Zambezi River
- Fuller Forest Land
- Airport
- Mvutu Forest Land
- Hwange
- State Land
- Vic Falls National Park
- Vic Falls Municipality
- Zambezi National Park
- Railway
- 4 x 4 Tracks
- Minor Regional Roads
- Regional Secondary Roads
- Main Roads
- International Boundary
- Plan Area Boundary

Victoria Falls Environmental Capacity and Master Plan Projec

Prepared by
Zimbabwe Department of Physical Planning
Victoria Falls Consortium

Scale 1:250 000

Date

Map No. 2

Hwange Rural District Council (RDC) is the adjacent local authority to Victoria Falls Municipal Council (VFMC). Whilst the lands referred to above fall within the gazetted area of Hwange District the RDC does not administer such land. The nearest land administered by the RDC is the Hwange Communal Land area, the closest part of which is situated some 4 to 5 kilometres to the south and south-west of the town.

Two Forest Areas, Fuller and Mvutu, administered by the Forestry Commission are located to the south of the town. Fuller Forest stretches to within two kilometres of the southern town boundary, whilst Mvutu is situated some 25 kilometres south-east.

1.3 The need for a new Master Plan

It has been acknowledged for some time that the Victoria Falls environs was in need of a strategic plan to control and guide development over the next 15 to 20 years. The current Victoria Falls statutory plan, called *The Outline Plan* only covers the urban area. It was approved in 1975 and has long since outlived its usefulness. Whilst that Plan provided an effective statutory control of development for much of its history it became apparent in the early 1990s that the fresh impetus to new development would overtake the plan. At the same time there was mounting concern among environmentalists and others that increased development and mounting visitor numbers could do irreparable damage to the natural environment, not just of the urban area, but to the wider surrounding land zones, unless there were improved mechanisms for effective management. Among these management tools a modern Master Plan undertaken in terms of the Regional, Town and Country Planning Act for a Combination Plan area was seen as critical component.

The IUCN study, *Strategic Environmental Assessment of Developments around Victoria Falls*, undertaken in 1995, again highlighted the problems facing Victoria Falls and its hinterland (defined as the area within 30 kilometres of the Falls). This study, which embraced the Zambian side of the River Zambezi, also called for a new Master Plan to be undertaken. This was endorsed by the Government of Zimbabwe.

A new Master Plan will need to establish a vision of the Plan Area that can meet the aspirations of the residents of the area, whilst at the same time protecting the environment for future generations. The Victoria Falls area is essentially a Tourist Area and its future is secure only so long as people are attracted to its beauty and wilderness. If the area is overdeveloped the environment may be destroyed or maimed and the area will lose its attraction and its status as a World Heritage Site. On the other hand the area is home to tens of thousands of impoverished citizens in both urban and rural contexts that have a right to expect a decent life. A major task of the Master Plan will be to provide for improved social and physical infrastructure to meet basic human needs that are currently not being met, whilst at the same time protecting the environment. The current population levels in both the urban and rural areas have stretched natural and physical resources to the utmost. The Master Plan will need to consider how to deal

with this situation and ensure that a sustainable future can be achieved for the whole Master Plan area.

1.4 A Combination Master Plan, its Authority and Technical Team

A Master Plan is undertaken by or on behalf of a Local Planning Authority, as defined in the RTCPA. The Act allows for the creation of a special planning authority, which combines two or more local planning authorities and such other members as may, in the opinion of the Minister, enable the authority to discharge its powers and duties properly. The Victoria Falls Master Plan is being undertaken by a Combination Authority, which comprises representatives from the following organisations:

- Victoria Falls Municipality (Chair: 2 representatives)
- The Department of National Parks and Wildlife Management Vice Chair: 2 representatives)
- Hwange Rural District Council 2 representatives)
- National Museums and Monuments of Zimbabwe
- Department of Natural Resources
- Forestry Commission
- Zimbabwe Tourism Authority
- Zimbabwe Council of Tourism

The duties and composition of the Combination Plan Preparation Authority (CPPA), as it is called, as well as a description of the Plan Area is contained in Statutory Instrument 30 of 1999. The CPPA is assisted by a technical team known as the Plan Preparation Technical Team (PPTT) led by the Department of Physical Planning (DPP). The role of the PTT is to:

- Assess and evaluate the technical and other outputs of the project;
- Assist the CPPA in making informed decisions;
- Guide the CPPA on procedures;
- Monitor the work of external and internal consultants; and
- Offer a platform for dialogue between the CPPA and the consultants.

1.5 The Environmental Capacity Enhancement and Master Plan Project

The Victoria Falls Combination Master Plan is being undertaken as part of a wider project called the Environmental Capacity Enhancement and Master Plan Project. This project is funded by the Canadian Government, through the Canadian International Development Agency (CIDA). The overall project is being conducted by a Consortium of Canadian Consulting Companies known as the Victoria Falls Consortium (VFC) who, in turn have contracted a number of local consultants to provide specific inputs.

1.6 The Master Plan Team

The Master Plan Team comprises the following Zimbabwean and Canadian members:

Project Management

Overall project management is provided by:

Combination Plan Preparation Authority (CPPA), Zimbabwe
Department of Physical Planning (DPP), Zimbabwe
Victoria Falls Consortium (VFC), Canada
Canadian Project Director, Rob Story, VFC
Project Field Manager, Art Hoole, VFC

Urban Planning
Derek Gunby, PlanAfric, (Zimbabwe)
Luke Mabvudza, PlanAfric, (Zimbabwe)
Tiisetso Dube, PlanAfric, (Zimbabwe)
Rob Story, VFC

Environment
Justin Wynn, EIA Shop, (Zimbabwe)
Sue Childes, EIA Shop, (Zimbabwe)
Fidelis Mkosana, EIA Shop, (Zimbabwe)
Clare Davies, EIA Shop, (Zimbabwe)
John Ambrose, VFC

Gender
Martha Gochera Mahonde, (Zimbabwe)
Adeline Sibanda, (Zimbabwe)
Barbara McCann, VFC

Municipal Infrastructure
Dave Hellard, VFC

Municipal Management Specialist
L. Zinyama, (Zimbabwe)
Mike McCandless, VFC

Human Resource Development
B. Chimbunde, (Zimbabwe)
Lyn Jones, VFC

Economics / Socio-Economics
Ramos Mabugu (Macro-economics), (Zimbabwe)
Fanuel Nangati (Socio-economics), (Zimbabwe)
Sam Nyapokoto (Tourism), (Zimbabwe)
Grant Milne, VFC

The reports prepared by the various consultants mentioned above have been made available to the Urban Planning Team and provide important inputs into the Report of Study. Where particular chapters of this Report of Study are drawn mainly from these specialist reports due acknowledgement is given.

1.7 Form and Content of the Master Plan

The Master Plan will be undertaken in concurrence with the relevant statutory provisions that are set out in Part IV of the Regional, Town and Country Planning Act (revised 1996) and the accompanying Town Planning Regulations (Master and Local Plans) 1977. In this case the Master Plan will be a Combination Master Plan in terms of Section 10 (2) of the Act

The preparation of a Master Plan involves two major stages. The first stage consists of a study of the planning area, analysing existing conditions, problems and issues. The Study is also aimed at understanding and analysing trends so that future issues can be identified. The Study acts as a background and leads into the second stage called the Written Statement. The Written Statement sets out a set of strategies, policies and programmes for the future of the area that will guide development, protect the environment and meet people's social and economic needs.

Traditionally Master plans have been used to establish a firm land-use plan to help and guide cities in managing growth. Thus land is allocated in appropriate locations to enable towns to develop in an efficient and harmonious way and proposals to control development are elaborated. Whilst that role will be pertinent to the Victoria Falls situation the management of growth may well be situated within the context of limiting growth and protecting the environment. In addition to the issue of land allocations a Master Plan also sets down a set of comprehensive policies on social and physical infrastructure and the management of the area. In general terms the Master Plan will provide the basis for galvanising all sections of the local community around a new vision for Victoria Falls that looks well into the 21st century

1.8 Gender

It is a matter of some concern that despite Government policy to create equal opportunities for all people, regardless of their sex and to involve all human resources in the struggle for social and economic development much imbalance, inequity and unfairness remain. To overcome the deeply ingrained social and cultural attitudes that give rise to gender inequities will take

considerable education and encouragement, which will take time. However, the process may be accelerated by ensuring that Government policies are followed through at all levels and in all matters connected to planning. Historically the physical planning process has not made an explicit effort to make planning policies gender sensitive. However, the Victoria Falls Combination Master Plan will seek to pioneer a new approach in this regard. In order to identify the important areas where Master Plan policies need to be gender sensitive and can make an impact in redressing imbalances this Report of Study will highlight current problems that have a gender issue. This will be especially relevant in matters concerning access to natural resources and infrastructure facilities and in the role people are allowed or encouraged to play in management and decision-making.

1.9 Aims of the Study

The study aims at examining the structure of the Plan Area in an effort to identify the following:

- Problems and issues involved in the natural, built and cultural environment;
- Current and potential future population levels;
- The manner in which gender imbalances affect the capacity of communities to overcome problems and impact upon access to and utilisation of resources;
- Land use, land needs and land availability;
- Problems and issues involved in current physical structure, transport, services and utilities together with capacities and constraints for future growth;
- Problems and issues involved in current housing, social and economic arrangements, together with capacities and constraints for future growth;
- Problems and issues related to the administration of the local authorities and other management agencies, including questions of financial resources and skill capacity;
- Taking all of these issues and considering the current and future needs of the people, to identify the key constraints and opportunities facing the area.

This Study establishes a set of issues, based upon thorough research and understanding of the situation, which will provide the basis for preparing proposals for the future in the second stage, the Written Statement.

1.10 Consultation and Local Participation

The preparation of this Report of Study has been undertaken in consultation with all the members of the Combination Authority, the community and its representative agencies and the various technical departments of central government, particularly the Department of Physical Planning (Matabeleland North). These agencies have provided key information and have acted as a reference panel to review progress. Consultations have also been undertaken with a wide range of public and private sector agencies in an effort to obtain opinions and views and up to

date and relevant information. These consultations include extensive fieldwork and stakeholder workshops conducted by the VFC and various members of the overall PlanTeam.

During the preparation of the Report of Study a strong emphasis has been placed on public awareness and involvement. To this end a number of workshops, publications and meetings have been held.

1.11 The Structure and arrangement of this Report

The Report of Study presents the basic findings in all aspects of the Plan Area. It is a combination of data, data analysis and issue highlighting. The Report of Study is structured into seven main Parts. Part A consists of Background matters and includes this introduction and chapters on the history of the area and its planning and administrative framework and the regional context. Part B reviews the Environment, both natural and man-made and analyses the changes being wrought, the capacity to withstand further pressure and highlights concerns for sustainability. Part C looks at the Socio-Economic Base, considering population, households and the local economy. Part D surveys the Physical Infrastructure, covering water and sewerage, roads and transportation, energy, telecommunications and waste disposal. Part E looks at the Social Infrastructure of the Plan Area, especially housing, health, education and recreation matters. Part F examines the Management of the area, looking at agency responsibility and structure, finance and manpower in those agencies that will be involved in implementing the Master Plan. The final Part G is concerned with identifying the Key Issues, opportunities and constraints facing the Plan Area and suggesting the principles that might underpin a future Vision for the Plan Area.

2. THE GENERAL HISTORY OF THE PLAN AREA

2.1 Introduction

This chapter illustrates the extraordinarily long and complex history of the Plan Area. The main epochs are established up to the present day.

2.2 The Stone Ages: 1 million years to 2,000 years ago

It is clear from the archaeological record that humans and their predecessors have lived in and around Victoria Falls for at least 1 million years, and possibly for two million. The river Zambezi provided early humans with a valuable resource for water and food, as the large number of stone implements found along its shores, or above the gorges, testifies.

There is some evidence to suggest that the earliest toolmaker, *Homo Habilis* roamed the area up to 2 million years ago. Certainly the successor species *Homo Erectus* was present in Victoria Falls from one million years ago and left a huge number of stone tools. Their stone tools, such as hand axes, were large and designed to crush bones and perform other heavy duty tasks. The development of smaller, more delicate tools heralds the arrival of our predecessors *Homo Sapiens* around 100,000 years ago. The first such humans are known in this area as the Sangoans. The Middle Stone Age lasted for 80,000 –90,000 years. From then on the Late Stone Age era began with much smaller and finely crafted tools.

The last Stone Age inhabitants of this area, the Khoisan Bushmen, were present up until relatively recently. They have left little mark upon the landscape, lacking appropriate granite surfaces on which to practice their art. They were gradually displaced by the arrival of Iron Age peoples, who first arrived some 2,000 years ago. Whilst the Stone Age peoples had been hunters and gatherers the Iron Age cultures were based upon crop cultivation and livestock herding. The Khoisan people, or Kwengo as they are known locally retreated to more isolated places, but small numbers remained within the Plan Area within the twentieth century.

2.3 The Iron Age: 2,000 years to 100 years ago

The first Iron Age settlers were Bantu people who are known as the Kalundu and they arrived about 1600 years ago from the south. They in turn were succeeded by the Kolomo culture about 1100 years ago. Two hundred years later Tonga and Leya people moved south across the Zambezi River. 300 years ago the area came to be dominated by the Nambian or Nanzwa people who are linguistically related to the Karanga people and trace their origins back to the Great Zimbabwe tradition.

The final movement of Iron Age peoples into area occurred in the mid-nineteenth century with the arrival of the Ndebele people. An Ndebele state was established in the Bulawayo area and warriors extracting cattle and other tributes from neighbouring tribes affected the Victoria Falls area, causing some flow of people northwards across the River Zambezi.

2.4 The Colonial period: 1896-1980

60 years prior to the colonial conquest of what is now Zimbabwe and Zambia the Victoria Falls area had been subject to the gradual incursion of European traders, hunters, explorers and missionaries. The opening up of the Victoria Falls area begins with the "discovery" of the waterfalls on the River Zambezi by David Livingstone, the missionary-explorer, in 1855. Although it was to be another 50 years or so before any permanent structure was established in the vicinity of the Falls the revelation of one of the great natural wonders of the world to the developed world marked the beginning of the site as a tourist destination. Livingstone returned to the Falls, which he had named Victoria Falls in honour of the Queen of England, again in 1860, this time with his brother and a Dr. J. Kirk. From that date onwards there was a slow but steady trickle of hardy European visitors, so that by 1897 some 44 people are known to have gazed on the magnificent falls, which the locals named Mosi-oa-Tunya, or, the "smoke that thunders".

The colonisation of Zimbabwe and Zambia was achieved by a mixture of conquest of arms and treaties with local chiefs and kings. The chosen instrument for this colonisation was the British South Africa Company (BSAC), granted a Royal Charter by Britain and dominated by the forceful Cecil Rhodes. By 1900 the power of the BSAC was secure throughout Zimbabwe, Zambia and Malawi. The BSAC and its Railway Company were responsible for all the early development in the Victoria Falls area and across the river at Livingstone. This involved the construction of a railway line to the Falls, a bridge spanning the gorge, the development of a Hotel at the Falls and a few trading leases.

From 1923 to 1965 Victoria Falls and the surrounding area was administered by the Colonial Government that succeeded the rule of the BSAC. During this time the urban settlement grew, but could still be described as a village. Its development was marked by clear racial divisions, with separate residential zones for whites and Africans, as were all colonial settlements. This same period also witnessed a massive appropriation of land from indigenous African to white settlers. In the first instance this involved removing people who were located in the area of the Victoria Falls Game Reserve (later the National Park) and in the line of the railway. After 1930 there were a series of Land Apportionment Acts which progressively removed local people from the best land and settled them in more marginal areas. Whilst this land appropriation did not directly affect any of the land areas within the Master Plan area it had a profound "knock-on" effect, especially in the 1950s when displaced people from Matabeleland South and the Midlands were forcibly resettled in the Chidobe and Kachecheti wards.

Following the Unilateral Declaration of Independence (UDI) in 1965 the area was governed by the white minority government of Rhodesia. The period of UDI from 1965 to 1979 witnessed considerable growth in Victoria Falls, especially in the late 1960s and early 1970s. But as the war for independence gathered momentum it became increasingly difficult to secure Victoria Falls and its transport links from attack or guerrilla incursion. By the end of the 1970s tourist visitor numbers to the area were drastically reduced.

2.5 Independence: 1980 to the present

In the short period of Independence the Plan Area has become a major world tourist destination and the area around the Falls has achieved World Heritage status. However, the impact of adverse internal social and political factors has depressed tourism in two periods: 1983-87 during the so-called "dissident war" in Matabeleland and 1999 to the present, with growing social, economic and political instability

2.6 The Key Issues

- Properly presented the long history of proto-human and human settlement in the area could act as an additional interest for tourists. However, there needs to be an increased investment in archaeological research and mechanisms put in place for protecting and presenting this important heritage.
- The rich cultural diversity of the area is a continuing factor that can be an enriching feature of life for residents and visitors alike. However, there is a need to protect minority social groups and seek ways of ensuring their traditions, language and culture are recorded, protected and understood.
- The colonial era has left a legacy of felt injustice regarding land. The forcible removal of people from areas where they had lived for generations and the resettling of people from outside the area into Hwange have created some complex social and cultural problems.

3. THE DEVELOPMENT AND PLANNING OF VICTORIA FALLS: AN HISTORICAL PERSPECTIVE

3.1 Introduction

This chapter places most of the emphasis on the historical development of the Victoria Falls settlement. For much of the period since 1900, when the colonial impact on the area began to be felt, the rural hinterland was relatively undeveloped and subject to little planning. Since independence the Communal Land areas have received more development and planning attention and this is dealt with to the end of this chapter.

3.2 The early years of Victoria Falls: Up to 1920

By 1898 a wagon road had been cut from Bulawayo to Kazungula and a new settlement of sorts established on the north side of the River Zambezi at Old Drift, which is situated some 11 km upstream of the Falls. This site had been opened up as the easiest crossing point of the river. It lasted only a short time owing to the prevalence of blackwater fever at this low-lying riverside site. By 1899 the British South African Company (BSAC) had decided to establish a settlement at Livingstone, a similar distance from the Falls also on the north side of the river, but on higher, healthier ground.

During the early 1900s Cecil Rhodes dreamt of building a railway line that would traverse the whole of the African continent from Cape Town to Cairo. The discovery of abundant coal reserves at Hwange ensured that this line would take place in the west of the country. The decision to cross the River Zambezi at the point of the Victoria Falls was largely due to the insistence of Rhodes. By 1901 the site for the bridge had been approved and surveyed. It was so designed that travellers would be able to glimpse the Falls and the boiling pot below. To achieve Rhodes' vision the railway was forced to make a large loop to the north, an important feature that affects the design and layout of the town to this day. The railway arrived in the town in 1904 and the bridge was opened the same year. A year earlier, in 1903, the railway company established a hotel that was later to become world famous. In that same year the first trading lease was granted to Percy Clark.

The need to protect the area around the Falls was recognised from the outset. In 1904 a large area, known as "The Park" was created and fenced. This is indicated in Map 3. It included the Rain Forest and a considerable area of land north along the River Zambezi. It was fenced and a Curator was appointed by the BSAC Administrator for North Western Rhodesia. Initially the Railway Company had proposed that no township be established within 15 kilometres of the Falls but this was later modified and a village was surveyed in 1908. In 1916 a Police Camp and

shooting range were surveyed. The Victoria Falls Hotel was substantially rebuilt between 1914 and 1916.

The population in the early 1900s was very small and consisted of a handful of Europeans and African employees of the hotel and railways. The Railway Company was the dominant force, organising water supply, and later electricity and sewage disposal.

3.3 The 1920s and 1930s

During the 1920s and 1930s there was some haphazard development, close to the railway, as more leases were granted. These included some commercial outlets and a few houses. The Sprayview aerodrome was opened as an airstrip in 1928 By E. Spencer and a Sprayview Restaurant established on the site of the present Ilala Lodge in the later 30s. A shooting range was also made to the west of the town south of the Sprayview Airport in this same period.

Access to Victoria Falls by road remained difficult throughout the period 1905 to 1928, after which a strip tar road was opened from Bulawayo. Most visitors came to the Falls by train. The South African Railways carried special excursions to Victoria Falls from as early as 1912.

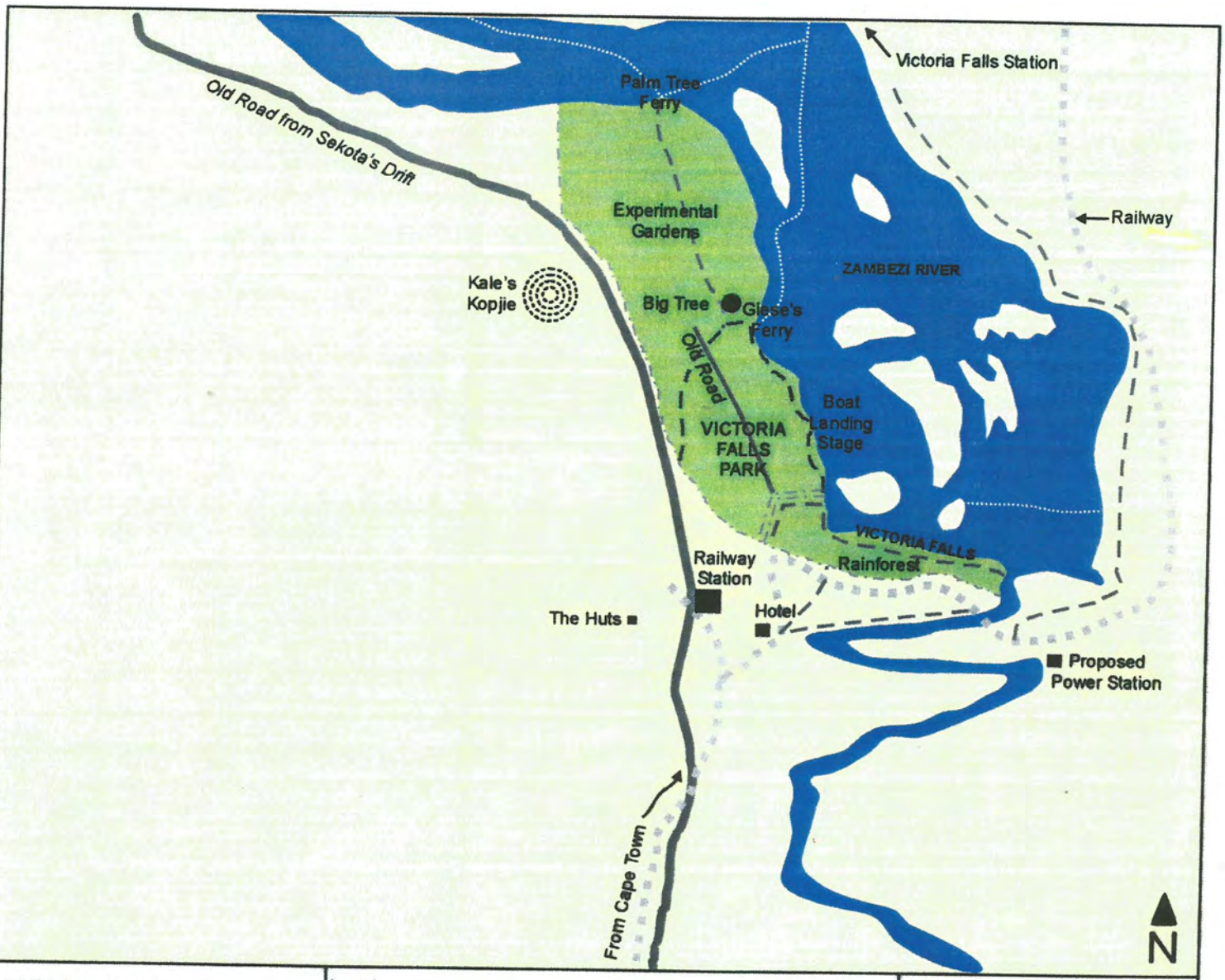
The Victoria Falls National Park was established by 1937 and administered by the Forestry Commission. It covered a similar area that is covered by combined areas of the Zambezi National Park and the Victoria Falls National Park. However, it was a little more extensive as the town had yet to expand and it also embraced the area to the south that is now partly State Land and partly Commercial Farming land. The new Natural Resources Act of 1939 led to the creation of a Natural Resources Board and the creation of a National Parks Department.

3.4 The 1940s and 1950s

The 1940s witnessed the beginnings of a more planned and orderly development in Victoria Falls. The shape of the present town began to take place. A Town Planning Department had been established in the mid-1930s following the enactment of the first town planning legislation. A new Town and Country Planning Act was passed in 1945.
An African township was designed and developed in the 1940s, as well as a European area. Given the racial attitudes of the time the two areas were well separated. A National Parks Rest Camp was also established in the 1940s, close to the European village. The size and structure of the urban area at the end of this period is shown on Map 4.

3.5 The 1960s and 1970s:

The 1960s marked a major upturn in the development of Victoria Falls and a rising interest in its future by Government. One of the main spurs to this was the dissolution of the Federation in



VICTORIA FALLS COMBINATION MASTER PLAN PRPARATION AUTHORITY

Drawing Title:

Victoria Falls and Environs: 1904

Victoria Falls Environmental Capacity and Master Plan Project

Legend

- Rivers/Water Bodies
- Roads
- Footpaths
- Railway
- Wire Fences
- Boat Course

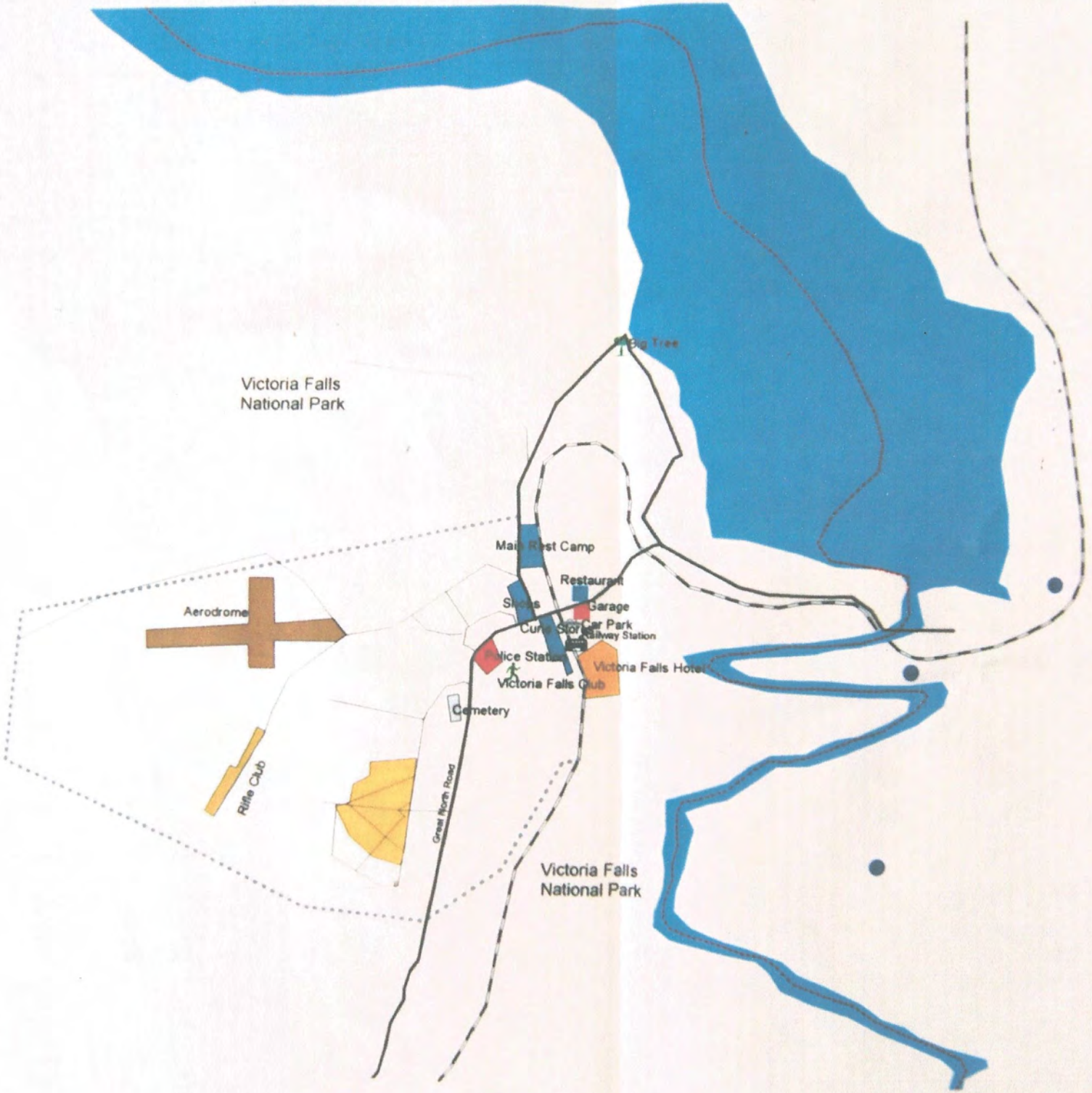
This map is derived from an original, drawn by Sir Douglas Fox & Partners

Prepared by:
Zimbabwe Department of Physical Planning
Victoria Falls Consortium

Scale:
1 0 1 kilometer

Date:
February 2001

Map Number:
3



VICTORIA FALLS
COMBINATION MASTER PLAN
PREPARATION AUTHORITY

Drawing Title:

Victoria Falls Development by 1950s

Legend

Victoria Falls
Environmental Capacity
and Master Plan Project

Prepared by:
Zimbabwe Department of
Physical Planning
Victoria Falls Consortium

Scale 1:25 000

1963 and the independence of Zambia in 1964. This meant that the northern side of the river was no longer freely accessible and many of the services and administrative functions based in Livingstone could not now be available to Victoria Falls. In 1964 permission was given to establish a Casino in the town and a site was also provided for a Motel. Another spur to development was the decision by Government to grant title to stand holders in the European village.

In recognition of the growing importance of tourism and the need for foreign currency (itself stimulated by the declaration of UDI in 1965) the Government established a Victoria Falls-Lake Kariba Development Planning Committee. This committee of Government Ministries was tasked with coming up with a development plan for the area. It commenced work in 1966 and produced a Report with a number of recommendations on Victoria Falls in 1967. There followed a large number of developments. A new Airport was opened in 1967 and the Sprayview Motel a year or two later. The National Parks Board was keen to see considerable development in the area at this time. They approved the construction of an Observation Tower with a restaurant, close to the river that would have been the tallest building in Rhodesia. There were also plans to redevelop the Country Club complex at the Dales Kopje site, with a high rise hotel. These, and other proposals, had led several agencies, including the Town Planning Department, to express growing concern over what was perceived to be the commercialisation of the Falls area and possible damage to the ecology. As a consequence it was agreed to place the area under stricter planning controls and to prepare a statutory plan under town planning legislation.

3.6 The First Master Plan: The 1975 Outline Plan

In October 1972 a Victoria Falls Planning Scheme Area was gazetted in terms of Rhodesia Notice 1622. The main objectives were:

1. to preserve the magnificent natural environment of the Falls;
2. to ensure that future development took place in a co-ordinated and harmonious manner;
3. to enhance the tourist potential of the area without detracting from the natural attractions;
4. to ensure the best use made of all land within the scheme area.

To administer the Scheme Area a Victoria Falls Planning Authority was established. This comprised 4 Town Councillors, 1 representative of the Rhodesia National Tourist Board, 1 representative of the Historic Monuments Commission and 1 representative of the National Parks Advisory Board. As a result of the declaration of the scheme area, no person could erect, alter or add to any building or alter the character of the land within the scheme area without obtaining the approval of the Victoria Falls Planning Authority. The key task of the Planning Authority was to produce an Outline Plan for the area. This was to be undertaken by the Town Planning Department. The Plan was prepared and placed on public deposit in January 1974. Modifications to the Outline Plan were made in 1975 following objections and a local inquiry. The

Outline Plan with modifications was approved by the President under Executive Council Minute No. 252/75 dated 2nd June 1975.

The key features of the Plan were as follows:

- A greatly increased area allocated for the African township;
- The Railway Reserve reduced in size;
- The original township area, which did not prove popular as residential land, designated as a light industrial zone;
- Government and local authority areas located around the police camp;
- Business areas allocated on old residential stands to the north of the police camp on what were formerly the north-eastern portion of the railway reserve;
- Enlargement of the northern residential area and eventual use of the Sprayview Aerodrome for residential purposes;
- Clear definition of land to be used for tourist purposes;
- Containment of areas allocated to tourist amenities on the banks of the Zambezi upstream from the Falls;
- Areas designated as public and private "open space" in the vicinity of the Falls and the Zambezi River are restricted permanently against building development, with the exception of buildings which are essential for the administration of these areas;
- Creation of an open space "buffer zone" of approximately 200 metres either side of the main road into the town, Livingstone Way;
- The designation of approximately 20% of the total scheme area as a Rural Zone.

Map 5 illustrates the Plan Proposals.

3.7 Development in the 1970s

Many new developments took place in the early 1970s, prior to the approval of the new statutory plan. The 'A' Zambezi Hotel was completed in 1971. At the same time the National Parks opened a new lodge development close to the River Zambezi. Rainbow Hotel opened in 1972. A new shopping complex with flats above was opened by 1974. The Sprayview Motel was also substantially redeveloped in these years.

The rising tide of the nationalist war for independence however stemmed the growth of the town. The Victoria Falls area became a war zone, with frequent incursions, a South African presence and the establishment of minefields. The missile attack on the Elephant Hills Hotel in 1978 led to a period of low tourist activity that was not fully resuscitated for another decade or so.



CTORIA FALLS
OMBINATION MASTER PLAN
REPARATION AUTHORITY

975 Outline Plan

Victoria Falls Environmental Capacity and Master Plan Project

Legend

- African Housing and Amenities
- Business
- Cemetery
- Electricity Supply Sub-Station
- Government&Local Authority Purposes
- Light Industrial
- Private Open Space
- Public Open Space
- Public Utility Sites
- Railway Operational Purposes
- Refuse Disposal
- Residential
- Sewage Disposal
- Special Residential (Hotel)
- Special Tourist Amenity
- Water Purification
- Water Storage
- Water Supply
- Zambezi River
- Railway
- Minor Regional Roads
- Regional Sec Roads
- Main Roads
- Plan Area Boundary

Prepared by
Zimbabwe Department of Physical Planning
Victoria Falls Consortium

Scale 1:25,000
0 1 Kilometers

Date
March 2001

Map Number
5

3.8 The 1980s and 1990s

The 1980s witnessed a slow but steady resumption of international tourism. The South African market did not resume, but those from further afield began to come back. However, the so-called "dissident war" between 1982 and 1987 led to another slump in tourism after a number of tourists were seized on the Bulawayo-Victoria Falls road and killed. After the 1987 peace accord conditions for tourism strengthened and a period of growth ensued.

The decision to hold the 1991 Commonwealth Heads of Government Meeting (CHOGM) in Victoria Falls gave a tremendous spur to hotel and other developments in the town. The Elephant Hills Hotel was redeveloped and a new hotel, the Victoria Falls Safari Lodge created close by. Ilala Lodge replaced the old Sprayview Restaurant. Extensions to the commercial centre were built. A new sewage works was constructed and the long planned re-alignment of Parkway put into effect, nearly twenty years after its adoption in the Outline Plan. The Victoria Falls Airport was also given a major re-fit. Chinotimba high density suburb was expanded but failed to keep pace with rapid in-migration. As a result large numbers of shacks were built within existing stands and eventually in the later 1990s a shanty village established near the new sewage works and rubbish dump. Social infrastructure also failed to keep pace with population growth, although a new hospital was built in the early 1990s.

The later 1990s saw renewed pressure to build new hotel and commercial projects. The Makasa Sun Hotel and Casino was totally redeveloped and a new camping site and motel established on the old National Parks compound. The curio selling area behind the post office was redeveloped and extended. In 2000 a major new shopping complex was developed on railway land.

The period 1990-2000 therefore witnessed a major transformation of the town. Concern was expressed during this period that the town was over-developing and it quickly became apparent that the Outline Plan of 1975 was no longer a suitable framework for development. A Strategic Environmental Assessment Study, supported by the Government and IUCN, warned about the increasing environmental stress being experienced in the area and called for a new Master Plan. The delay in putting a new Master Plan into effect led to a number of additions and extensions to the Outline Plan being made through approved layouts. Layouts were prepared by the Department of Physical Planning for new residential and commercial areas.

3.9 Planning and development in the other land areas of the Master Plan area

3.9.1 National Parks

The decision to establish large areas of land in and around Victoria Falls that would be protected from development and hunting was made during the early 1900s. But the formalisation of these areas into National Parks did not occur until the 1930s.

The earliest development in the Park areas were the two trolley lines built by the Victoria Falls Hotel to transport guests to the Falls and the boat landing stage above the Falls. By 1934 a small golf course had been established to the north of the small settlement and this was gradually expanded over the years. A camping area was also set up in the 1930s near the Big Tree. The National Park Rest Camp (currently under the control of the Municipality) was established as a National Park facility in the 1950s. During the 1960s significant developments were made in the area now referred to as the Zambezi National Park. Game viewing roads were improved, fishing camps established and new lodges built at Zambezi Camp. It is also in this same period that the Rain Forest area was fenced in and an entrance gate established with an interpretative centre. Within the Rain Forest area footpaths and toilets were provided.

In the more recent past the National Parks have aimed to produce a National Park Action Plan to guide the development and management of each Park. The World Bank have been supporting the Department of National Parks and Wildlife Management to implement these plans through a project called the *National Parks Rehabilitation Programme*

3.9.2 Forest Areas

The two Forest Areas in the Plan Area, Fuller and Mvutu were officially designated part of the Forest Estate in 1961. A Forest Act was promulgated in 1949 and the Forestry Commission (FC) was established in 1954, although a Forestry Department had been in place for several decades. In 1966 a portion of Fuller Forest was leased to the Civil Aviation Department for the development of the modern airport. There are current proposals to enlarge this lease area to allow for longer runways. This issue is discussed in the Environment Part of the Report. Planning for the Forest Areas has been on the basis of internal management plans. The Fuller Management Plan, which includes Mvutu Forest in its proposals, is to be updated. Fuller Forest houses the Northern Area offices of the Indigenous Resources Division of the FC. The Forestry Commission is not a Planning Authority for Fuller Forest in terms of the RTCPA, but it is for Mvutu Forest.

The two Forest Areas play an important role in sustaining the environment of the Plan Area. The forests are situated on fragile soils, that if developed would be quickly eroded into the Masuie and Zambezi river systems. They protect an important watershed in the area and contain valuable zones of bio-diversity, which are monitored by the Research Division. The forests contain important reserves of indigenous timber, especially teak and mukwa, which are harvested on a controlled and cyclical basis. Fuller Forest is also utilised for tourism. Ngamo Safaris, a commercial operation of the FC, operates a photographic safari lodge, called Jafuta Lodge. Hunting licenses are also offered for parts of Fuller Forest.

3.9.3 Hwange Communal Land Area

The Communal Land areas within the Master Plan area were largely undeveloped until the post-independence years. After 1980 major social and infrastructural programmes were initiated. New schools, clinics, water points and roads were built. To help guide and plan this development a new system of district development planning was introduced in 1985. Hwange District Council produced a Five Year District Development Plan and a number of Annual District Development Plans between 1986 and 1990. Thereafter the process lost momentum. The District Development Planning system was frequently criticised for lacking strategic focus and being simply a "wish list" of projects. With the tailing off of capital expenditure by central government in the 1990s such planning lost all relevance. A statutory Rural Master Plan, prepared under the RTCPA, covering the whole of the district is underway. There will be a need to ensure that the overlap between that Plan and the Victoria Falls Combination Master Plan is managed so that both plans are harmonious.

The 1990s also witnessed an increasing role of donor agencies in providing funds for rural development projects. The main problem for the rural local authority has been to co-ordinate and manage these several donor-led projects.

The RDC also offered a key site in above the Gorges as a joint venture tourist venture, and this was taken up and developed in 1996.

3.10 Key Issues

- Planning in Victoria Falls has tended to lag behind development pressures, causing difficulties in making it a plan led system.
- The 1975 Outline Plan has long since outlived its usefulness and a number of ad hoc planning decisions have been taken over the past 10 years.
- The Outline Plan was produced in a period of white minority government that cemented some of the racial divisions in the area through spatial separation and an inequitable access to facilities and resources.
- The planning of the other areas within the Master Plan area have not been integrated with the urban areas.
- Planning in the Communal Land areas has been increasingly fragmented due to the increase in donor projects. The RDC has sought to provide a strategic corporate plan to manage this process but has lacked the resources and expertise.
- A Hwange District Rural Master Plan will complement the Victoria Falls Combination Master Plan, provided that the proposals in both Plans are harmonious.

4. THE ADMINISTRATIVE HISTORY OF THE PLAN AREA

4.1 Introduction

The Victoria Falls Combination Master Plan Authority comprises four agencies that have direct administrative responsibility for the areas under their jurisdiction. In addition the National Railways of Zimbabwe (NRZ) also administers important land areas that have uses that go beyond simply railway operations. The final chapters of this Study will assess the way these, and other organisations, operate and assess their strengths and weaknesses and their likely roles in the future. This short chapter seeks to establish how these authorities grew and changed over the years.

4.2 Victoria Falls Municipal Council

The early administration of Victoria Falls settlement was conducted by the Railway Company and the BSAC. From the 1920s until the 1950s a good deal of administration was managed by government agencies from Livingstone, which until 1937 was the capital of Northern Rhodesia. The origins of urban local government in the area can be traced to the early-1960s when the small European community around Victoria Falls was granted a Village Management Board. The Board had very little power and couldn't levy rates, nor could it have any paid staff. It provided a limited amount of local control over such matters as public health, natural resources, prevention of trespass and water supply. Board members were nominated by the Governor.

In 1967 a Victoria Falls Town Management Board was established that gave a great deal more local autonomy and was a body corporate of from 6-12 elected members among owners or occupiers of immovable property. The Local Board (as it became known under new legislation) had responsibility for a wide range of services and in 1968 was given responsibility for the African Township in Chinotimba. However, the activities of the Local Board were still largely controlled by reference to central government. In 1972 the Board was upgraded to a Town Council under the new Urban Councils Act.

The Victoria Falls Town Council existed until the end of 1999 when it was replaced by a Municipality authority. During the long period of being a Town Council the government retained control of all the State Land within the Council area, which was redefined to its current boundary in 1974. In 1980 the electoral base of the Council was extended to all adults regardless of race or status.

The assumption of Municipal status under the Urban Councils Act allows for greater autonomy, especially in the case of State Land in the Municipal area, which becomes Municipal land and can be planned and disposed of without reference to central government. In practice, because of

a lack of skills and capacity in all areas, the Municipality still relies for advice from some technical departments of government, such as the Department of Physical Planning. The other significant feature of a Municipality is that the Mayor is an Executive Mayor, elected by the whole electorate and the Council establishes an Executive Committee and a Chamber Secretary. The post of Town Clerk is retained as the most senior official.

4.3 Hwange Rural District Council

Land within the Master Plan area that is currently administered by Hwange RDC has two main administrative histories that did not become finally amalgamated until 1994. The communal land areas lacked a fully representative form of local government until independence. Some limited and heavily controlled form of local rule was introduced in 1937 when Native Councils were created. These were replaced in 1957 with African Councils. African Councils were small authorities dominated by chiefs or sub-chiefs, with limited powers and under the overall management of the Native Affairs Department and then the Ministry of Internal Affairs. The key figures in this arrangement were the District and Provincial Commissioners. This system was replaced in 1980 with elected District Councils. Hwange District Council was based in Lukosi, some 10km south of Hwange.

Commercial Farming areas were always allowed considerable local autonomy and self-government. Prior to the 1960s Road Councils and Intensive Conservation Areas (ICAs) provided the main basis for local administration in such areas. The Gwaai Rural Council was established in 1966 with an office in Gwaai Valley. It was a white commercial farmer controlled Council with responsibility mainly for roads in commercial farming areas but also for the small urban settlement of Dete, with its range of housing, water, beerhall and other community services. Gwaai Rural Council was responsible for the large scale commercial farms between Fuller Forest and the railway line, but these lie outside the Plan Area.

Hwange DC and Gwaai RC were amalgamated in 1994 to form Hwange RDC. Hwange RDC is responsible for administering the Communal Land areas within the Plan Area. The Rural State Land by the Masuie River comes within the broad purview of Hwange RDC from a planning point of view but the land itself is controlled by the Rural State Land Office in the Ministry of Lands, Agriculture and Resettlement.

The main offices of Hwange RDC remain at Lukosi, which is the designated District Service Centre (DSC) for the district. The location of the DSC at Lukosi was the subject of some controversy in 1980 and has serious disadvantages for the communal areas of the Plan Area since it is so far away.

4.4 Department of National Parks and Wildlife Management

The genesis of the Victoria Falls National Park and the Zambezi National Park is long and complex. As noted above the area close to the Falls was created as a "Park" by the Railway Company and subsequent authorities endorsed that decision, establishing a fence and a curator. An area of 5km around Victoria Falls was designated a protected area and known as the Victoria Falls Reserve from the early 1900s. In 1931 all the land up river to the Bechuanaland border was declared a protected area in which no hunting was permitted.

The management and responsibility for the protected areas and reserves around Victoria Falls was under the Forestry Department from the 1920s until the early 1950s. In 1951 the creation of the Southern Rhodesia National Parks Board led to the establishment of a National Parks Department which began to administer the area known as the Victoria Falls National Park, which was proclaimed a National Park in 1952. In 1954 National Parks became a Federal subject and a Federal National Parks Board was established. The 1955 National Parks (Designated Areas) Act provided for a Local Committee to be established for each National Park. The 1975 Parks and Wildlife Act brought together several different parts of environmental legislation and set down the National Parks Estate. The division of the Victoria Falls National Park into Zambezi National Park and Victoria Falls National Park (areas A and B) was undertaken in 1983.

The DNPWLM has full authority in terms of managing the National Parks area and is also a planning authority in terms of the RTCPA. An additional aspect of National Parks legislation is that it is prohibited to dispose of more than 1% of National Parks lands and generally, if National Parks do cede any land they require a quid pro quo to restore the balance.

4.5 National Museums and Monuments of Zimbabwe

NMMZ was established by an Act of Parliament in 1972 through a merger of hitherto separate organisations, the National Museums (1936) and the Historical Monuments Commission (1937). NMMZ is a parastatal organisation under the Ministry of Home Affairs and is governed by a Board of Trustees. The day to day activities of this organisation are integrated and administered at its Head Office based in Harare, under the control of an Executive Director. For effective administration Zimbabwe is divided into regions with National Museums in those regions being the centre of regional administration. The Natural History Museum in Bulawayo is the administrative centre of the Western Region and is responsible for the relevant activities in the Master Plan area.

Victoria Falls and the associated Rain Forest was declared Zimbabwe's (then Rhodesia's) first national monument in 1937, a status that is based purely on its significant national attributes irrespective of land tenure. Although the Falls and associated Rain Forest is indisputably a declared national monument the administration of the area has remained with the DNPWLM since the 1950s, as part of the Parks estate. Recently the NMMZ Board of Trustees has sought

to assume its responsibility for the management of the area and this has been resisted by the DNPWLM. The dispute is currently before the Cabinet for a decision.

4.6 Forestry Commission

The Forestry Commission was created in 1954 but Forestry had been a state activity since 1920. Forest reserves were established in the 1920s and endorsed in the Land Apportionment Acts from 1941. The creation of Fuller Forest and Mvutu Forest as part of the Forest reserve was undertaken as part of a move designed to protect and exploit, on a sustainable basis, the timber in indigenous forests. Their administration falls under the Indigenous Resources Division of the FC, which is based In Bulawayo, with area offices in Gwaai and Fuller Forests.

The FC also operates a Forestry Extension Service that is closely involved in the conservation of indigenous forests in Communal Lands, where it focuses on halting deforestation, implements a viable programme of self sustained yield utilisation and rural tree planting programmes.

4.7 The National Railways of Zimbabwe (NRZ)

Railway land occupies a very strategic position within the town of Victoria Falls, as well as occupying a swathe of land through the southern part of the Plan area. The NRZ administer this land, although they are not a planning authority. The history of the railways tends to mirror the history of the colonial era. Initially the Railways were a wholly owned subsidiary of the BSAC and enjoyed considerable powers. Much of the early history of Victoria Falls is directed through the powers and control of the Railway Company. All the original services for the settlement, including water, electricity and sewage disposal were by courtesy of the Railway Company. In the 1920s the assets of the company were taken over by the state and the railway authority in Victoria Falls was gradually superseded by other government departments. Nevertheless the Railways continued to provide important services, including housing and a hotel.

In more recent times the railways have been organised as a parastatal with their own authority and Act. Under the Act railway land was to be used solely for railway operations and associated uses. In 1997 the NRZ obtained an amendment to their Act allowing them to broaden the range of activities allowed on railway land. With this power the NRZ has entered into a number of lease arrangements in Victoria Falls to develop their land for commercial and other uses. The planning and spatial development of railway land is the responsibility of the Corporate Planning Branch within NRZ working in close liaison and consultations and with approval of the respective local authorities and Government Departments especially the DPP.

The management, maintenance and development of railway infrastructure is the responsibility of the Civil Engineering Branch with other support services being provided by the Electrical, Mechanical, Signals and Telecommunications Branches with the Safety and Health Departments.

4.8 Key Issues

- There are several administrative bodies operating in the Master Plan area. Whilst the VFMPCA brings them together there is a longer term need to ensure co-operation and co-ordination between them.
- The complex history of the administration of the area has caused some conflict as evidenced by the challenge of the NMMZ for control over the rights to manage and receive income for the Rain Forest and Falls area of the Victoria Falls National Park, currently held by the DNPWLM.
- The responsibility for administering the Rural State Land of Masuie is split between the control of the land through lease arrangements by the Rural State Land Office and the RDC, which has general road and planning mandates.
- The NRZ has become empowered to lease its land for commercial and other purposes, but any proposed development is subject to planning permission by the relevant local planning authority.

5. THE INTERNATIONAL AND REGIONAL CONTEXT

5.1 Introduction

The Plan Area is an international tourist destination and this affects its economic position and makes it especially vulnerable to international perceptions of the safety and the political context of travelling and staying there. In geographical terms the Plan Area is situated on an international border and is close to four other countries.

Victoria Falls is the flagship of the Zimbabwe tourist industry and it therefore has a national importance. At the same time it is a regional centre that acts as a magnet and focus for the northern part of the Matabeleland North Province and especially Hwange district.

All of these different spatial levels have repercussions on the way the area operates and how this may change in the future. This chapter considers these three main spatial dimensions.

5.2 The International Dimension

It could be said that Victoria Falls was an international destination from the moment that David Livingstone reached it in 1855 and this feat was subsequently announced to the world. Certainly the attraction of such a monumental natural feature led to an early international set of visitors. The potential of the area as an international tourist destination was appreciated from the outset. In 1905 the BSAC reported, " In the Victoria Falls we possess a very valuable property, which is likely to promote materially the prosperity of the country". Also in the early 1900s some entrepreneurs were promoting visits to the Falls in the British press. By 1912 special rail excursions from South Africa were being organised on a regular basis. Once the Victoria Falls Hotel was rebuilt to international standards in 1916 there was a steady stream of famous and wealthy visitors. For some it became the romantic place to get married or have a honeymoon and this set a tradition that continued into the modern era with the well-publicised honeymoon of Elizabeth Taylor and Richard Burton.

A flying boat service became operational in the 1940s and other air travel from Europe via East Africa and Salisbury began to be extensively marketed in the 1950s. Once the new Victoria Falls airport was opened in the 1960s direct air travel increased considerably.

Today Victoria Falls is one of the key international tourist destinations and visitors come from all over the world from a wide range of backgrounds and incomes. They also arrive via other international airports such as Kasane in Botswana and Livingstone in Zambia (currently being upgraded). Plans to further develop Victoria Falls airport will also increase direct international air travel.

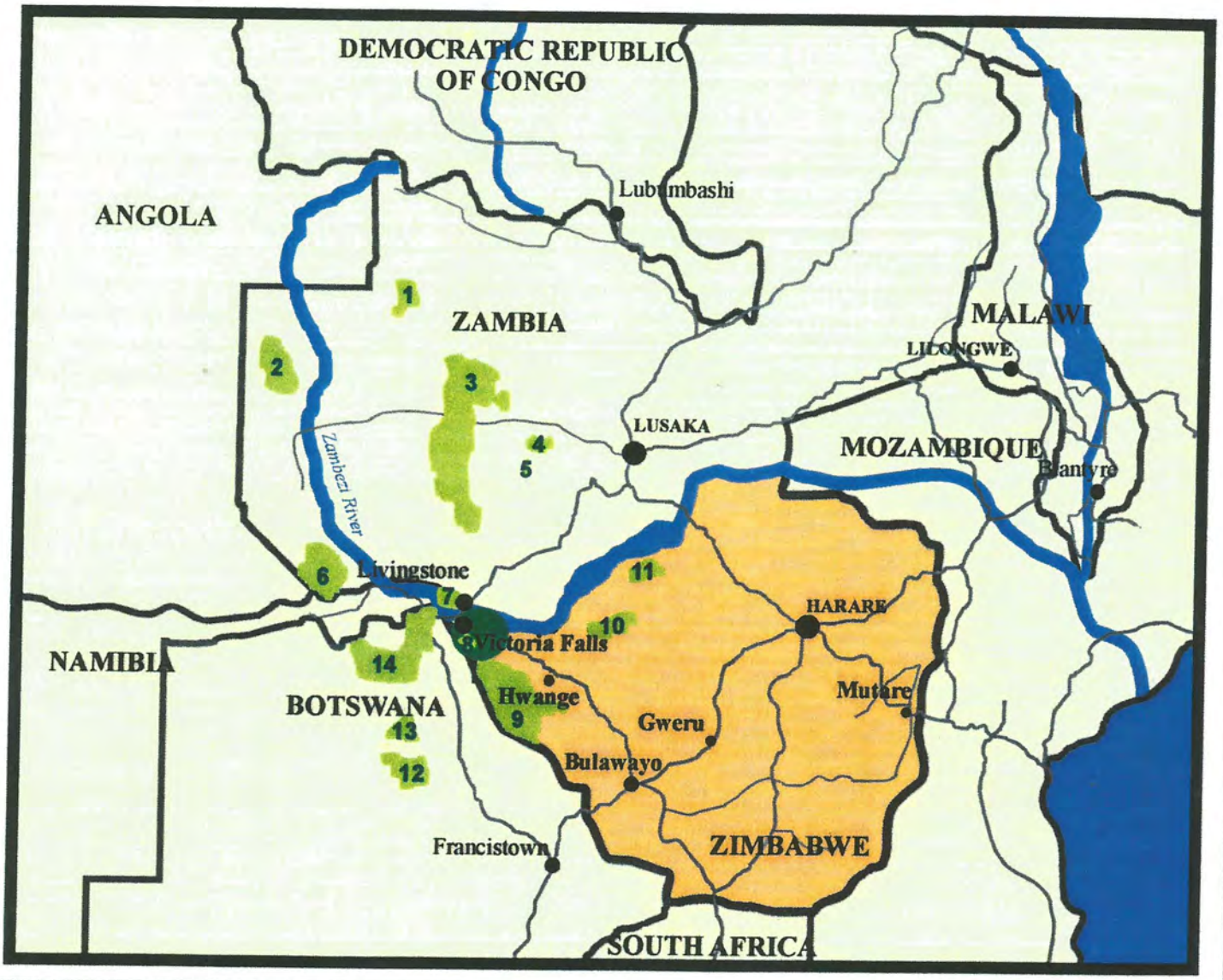
Map 6 illustrates the international position of Victoria Falls, especially in relation to tourist attractions. Whilst the Master Plan area has a common boundary only with Zambia, it is within 70 km of Botswana, Namibia via the Caprivi Strip and Angola. Taking a 100km radius from Victoria Falls there are 10 National Parks and a number of Safari areas and Recreational Parks. Among these attractions are the Okavango Delta area, Hwange National Park, Lake Kariba Recreational Park, Kapfue National Park and Chobe National Park. In recognising this important concentration of high-value natural attractions for tourism the Development Bank of South Africa has been developing a marketing strategy to promote this sub-region on the world tourist stage. The project is referred to as the Okavango-Upper Zambezi Regional Tourism Development Strategy.

The World Heritage status of the area around the Falls and the Gorges is a cross border zone that involves Zambia. Issues of joint management and planning have been discussed between the two countries.

Of all the neighbouring countries the closest links are with Zambia. This covers not only the cultural and social ties of peoples who knew no boundary in the past but also the fact that there are close economic relationships. In order to discuss issues of common concern the two countries have established a Commission.

For many years South Africans were the most important international tourist visitors to Victoria Falls. But from the 1960s onwards this market shrunk due to the increasing scale of the armed struggle for independence in Zimbabwe and then a fear of travelling in a black majority country after 1980. With the ending of apartheid this reluctance to travel north ceased and a considerable increase in South African tourists to Victoria Falls was experienced. This has since tailed off due to perceived problems in Zimbabwe such fuel shortages, political instability and violence.

The Plan Area is part of the Zambezi River system, embracing seven countries (see Map 7). These countries collaborate through a SADC arrangement to plan and manage the river system. Under international protocol it is also necessary to consult all the riparian countries downstream before embarking upon any project that affects the river and its basin. Additionally Zimbabwe is a partner in the joint Zambia/Zimbabwe Zambezi River Authority, which has responsibility for the river resource as it flows between the two countries. Whilst these contexts do not directly affect Victoria Falls they are a material consideration of the Master Plan and need to be recognised in the development of environmental and other policies affecting the Zambezi river and its catchment area.



VICTORIA FALLS MASTER PLAN COMBINATION AUTHORITY

Drawing Title:

Sub - Regional Tourism

Victoria Falls Environmental Capacity and Master Plan Project

Legend

- National Parks
- Plan Area
- Settlements
- Rivers/Water bodies
- International Boundaries
- Major roads

* National Park locations are approximate.

ZAMBIA
1 Lavushi Manda
2 Liuwa Plain
3 Kafue
4 Blue Lagoon
5 Lochinvar
6 Siona Ngwezi

ZIMBABWE
7 Zambezi/Vic Falls
8 Kazuma Pan
9 Hwange
10 Chizariria
11 Matusadona

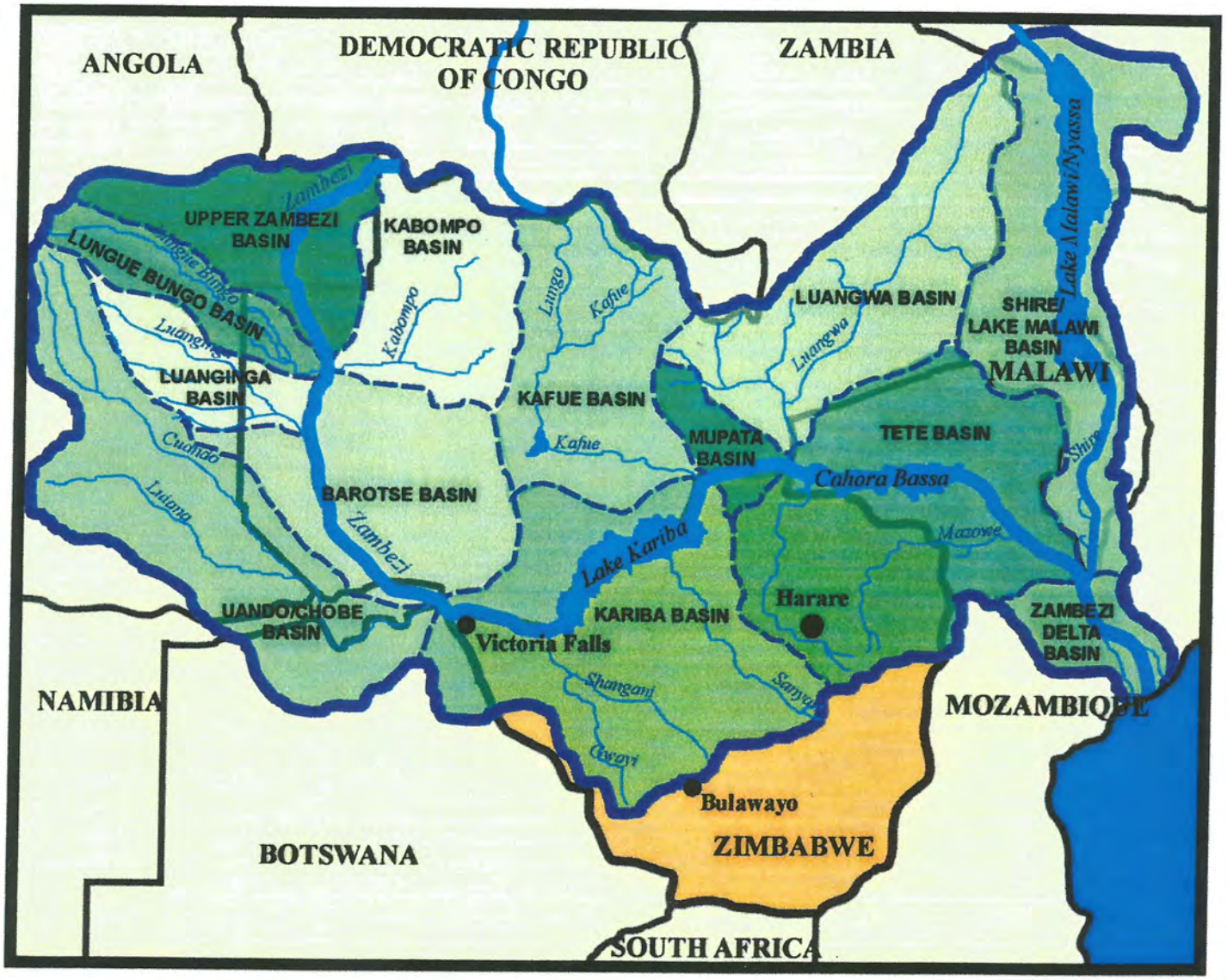
BOTSWANA
12 Makgadigadi
13 Nxai Pan
14 Chobe

Prepared by:
Zimbabwe Department of Physical Planning
Victoria Falls Consortium

Scale: Not to scale

Date:
February 2001

Map Number:
6



VICTORIA FALLS MASTER PLAN COMBINATION AUTHORITY

Dawing Title:
Zambezi Drainage Basins

Victoria Falls Environmental Capacity and Master Plan Project

Legend

- Settlements
- Zambezi Basin Boundary
- Sub-basin
- Rivers/Water bodies
- International Boundaries

Prepared by:
Zimbabwe Department of Physical Planning
Victoria Falls Consortium

Scale: Not to scale

Date:
February 2001

Map Number:
7

5.3 The National Context

Tourism in the Plan Area is of national economic importance. This issue is discussed further in the chapter on the Local Economy. As a border town it also has an important role in the customs and immigration operations of the country.

In terms of a settlement hierarchy Victoria Falls is the twelfth largest urban place in the country. It probably now surpasses Kariba as the largest tourist town.

However, despite its economic and cultural significance to the country as a whole Victoria Falls is a peripheral settlement, situated in the far north-west corner of the country. This lack of centrality means that to get to the area requires long journeys, especially by road or rail from most parts of the country. Due to the lack of good east-west routes in the country the links between Victoria Falls and Harare require people and goods to travel via Bulawayo. Even within the north-western province of Matabeleland North the area is peripheral. This factor has an impact in terms of the cost of food and goods that have to be imported into the town.

5.4 The Plan Area and its Hinterland

In provincial administrative terms the Plan Area comes under the general jurisdiction of the Matabeleland North Province which is headed by a Governor and a Provincial Administrator. The current provincial capital is located in Bulawayo although there are proposals to relocate this to Lupane, some 170km north of Bulawayo. Matabeleland North is a province that has a rich resource base but an extremely poor population. This is due partly to its peripheral position, which affects it politically and economically and partly to its semi-arid conditions. Efforts to create a major water pipeline from the Zambezi (initially from the Gwaai-Shangani dam) to Bulawayo may eventually help to develop the rural heartland of the province from basic subsistence to cash economies, utilising the water en-route.

At a lower administrative level the area falls under Hwange District, which from a government point of view is headed by a District Administrator (DA), who is located in Hwange town. The DA has little jurisdiction in the town but does play an important co-ordinating role in the Communal Land areas. From a resource point of view Hwange district is extremely rich. It has major coal deposits, which despite being exploited for close to 100 years, are far from depleted. On the basis of the coal mines and the allied electric power station a major settlement has grown up at Hwange, which at the last Census recorded 56,000 population. Despite the important industrial base at Hwange the town has failed to build a wider local economy, resulting in increasing unemployment. This has been exacerbated by the increasing reduction in the mining labour force as the coal company moves to open caste operations. The discovery of important methane gas deposits in Hwange and further south in Lupane may help to build a wider economic base, although investment has been slow to take off.

The presence of Hwange National Park, one of the richest wildlife parks in Africa, ensures that tourism is a major industry in the district. Large numbers of safari operations have grown up around the park area, which prior to the decline in tourism in 1999, made important foreign exchange earnings. Other Hunting concession areas in the district, such as at, Matetsi and Deka Game Reserves and those allowed on private farms provide additional important sources of income to local entrepreneurs.

Despite the rich economic base of Hwange district the area remains one of the poorest in the country on all the Poverty Indices. This has been recognised in that it has been targeted by the Poverty Alleviation Plan through the Community Action Project.

5.5 Key Issues

- International tourism is an important feature of the Plan Area. However, such a global market is prone to sudden and potentially devastating declines if the international perception is that the host country is not a safe or an acceptable place to visit.
- Future planning of the Plan Area needs to keep in mind that the area is an international zone and Zimbabwe has responsibilities to fulfil international agreements and protocols. This applies to both regular relations with Zambia through the Zambia/Zimbabwe Joint Commission as well as the environmental management commitments to the Zambezi River Basin and the Zambezi River Authority.
- The fact that the Victoria Falls area is a World Heritage site also involves international obligations to ensure that such a status is maintained.
- The national importance of Victoria Falls is felt in both economic and cultural terms. The economic importance lies in the fact that it is the number one earner of foreign exchange in the tourist industry and the country's flagship in its tourist portfolio. The Master Plan will need to recognise the national interest in drawing up its proposals.
- The location of the Plan Area in a relatively poor province may have been a factor in the rapid increase in in-migration to the town over the past 15 years. Although migrants have come from every part of the country and from neighbouring countries it is believed that the overwhelming majority come from Matabeleland North.
- The peripheral position of the Plan Area in national terms is a disadvantage politically and economically.
- The Plan Area is situated in Hwange District, which has many tourist attractions as well as an important industrial base in the Hwange coalfield. Despite this potentially rich base the area is characterised by a high level of poverty among the population. Much wealth has been generated in the district for many years but there appears to be very little trickle down effect to the ordinary citizen.

PART B

ENVIRONMENT
&
LAND-USE

6. THE ENVIRONMENTAL BASE

Acknowledgement: *This chapter relies heavily on the "Environmental Specialist Report" produced by the EIA Shop and VFC. Some sections are reproduced verbatim.*

6.1 Introduction to the Environment in the Plan Area

The Environment in the Plan Area is one of the most exciting in the world. It is also one of the most fragile and easily destructible environments. The Plan Area is hot, replete with wildlife, contains some singular and irreplaceable vegetation zones and, above all has a glorious river and magnificent waterfalls. This combination of attributes forms the basis for the tourist industry, which in turn forms the basis for almost every aspect of socio-economic life in the area. Without the outstanding quality of the environment Victoria Falls town would be reduced to a minor customs post. Where man has sought to impose himself upon the environment, to remove tree cover, grow crops and generally seek to wrest a living from the soil the result has been dangerously close to disaster. The Communal Lands of Hwange within the Plan Area can hardly sustain a livelihood for the peasant farmers and as populations grow and pressure is placed upon the fragile and poor soils so yields decline and people become poorer. At the same time erosion of soils increase, thus further worsening the environment.

This Part of the Report places the spotlight upon this environment and takes stock of the strengths and weaknesses that are evident. This chapter represents an audit of the state of the environment in all its aspects and begins with a review of the basic physical elements of the environment. The next chapter charts the pressures and threats that are being increasingly placed upon the environment.

6.2 Geology and Soils

Two hundred million years ago, volcanic action produced lava flows over much of southern Africa, which formed the basalt plate underlying the rocks and soils in the area. Later uplifting in the Makgadikgadi Pan area in present day Botswana, caused the Zambezi River to change its course to flow across the ancient basalt. For two million years the river has exploited weak features in the basalt to cut a series of retreating gorges and falls. Seven previous water falls occupied the seven gorges below the present Falls and the present Devil's cataract is the starting point for cutting back to a new water fall and gorge.

The underlying basalt comes very near the surface in the Plan Area between Katambora rapids and the junction with the Matetsi River. Apart from those areas where its is exposed the basalt is overlain by a layer of chalcedony of about one to two metres thick. This is followed by a layer of sandstone of about the same thickness. Above the sandstone there is a thick mass of unconsolidated wind-blown sand deposits known as the Kalahari Sands. These form the low

scarps, which flank the Zambezi valley on both sides and lead up to the mainly level surface of the surrounding country.

Thus there are two main soil types in the Plan Area. Their distribution is shown on Map 8 and a brief description follows:

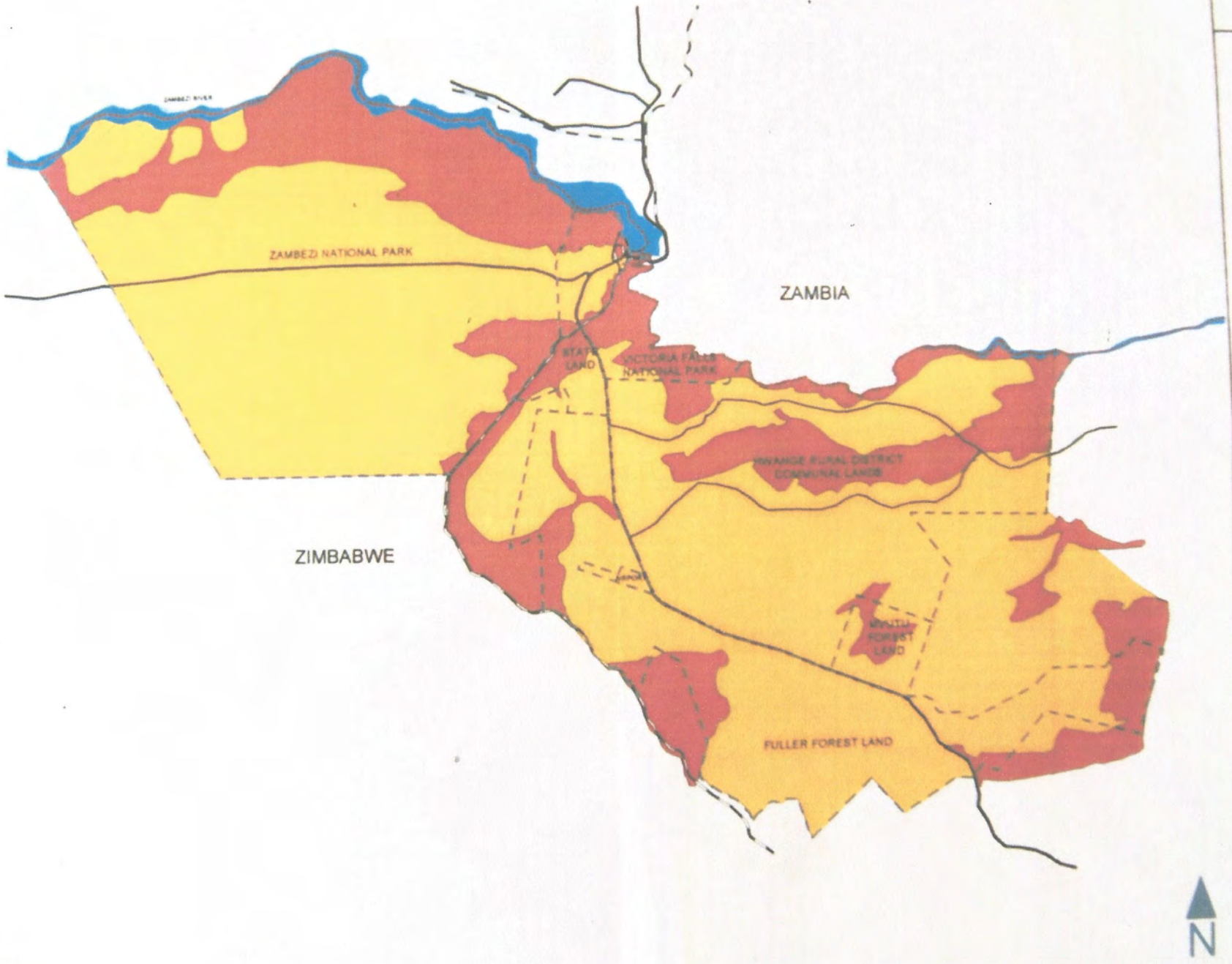
6.2.1 The Basalt derived soils

Soils derived from basalt are generally very shallow lithosols with pockets of dark brown/black vertisols. These clays are expansive and have a high water-holding capacity, becoming seasonally waterlogged. This poses potential problems for road and building construction. Although relatively high in exchangeable cations (nutrients for plant growth), the expansion and contraction of the clays during wet and dry periods makes them largely unsuitable for agriculture, (except along contact zones where clays mix with sands). The Basalt areas have a high heat absorbency, so are hotter during the day and remain warmer during the night than the sands. This has implications for human settlement and housing. The shallow nature of the lithosols means that any action (overgrazing, fires) which removes the thin layer of topsoil will result in bare, exposed rock and a loss of productivity.

6.2.2 The Kalahari Sands

In complete contrast to the basaltic soils, these are regosols; deep, yellowish/ brown or reddish sands with a very low water-holding capacity and very little nutrient for plant growth. For these reasons they are unsuitable for agriculture unless irrigation is available and soil nutrients are enhanced with natural or artificial fertilisers. The sands are loose and very easily eroded, particularly on hill slopes and contact zones with the lower lying basalt. Gully erosion caused by poor road design and insensitive alignment of drains is quite clear at Chinotimba and also in Chidobe Ward. Maps 9 and 10 illustrate areas that are especially prone to soil erosion in both the urban and rural contexts.

The Kalahari Sands are bisected by four drainage lines that flow from west to east, ultimately entering the Zambezi: Chamabonda, Kalisosa, Dibudibu and Lunkunkuni vleis. These vleis contain colluvial grey clay soils, often high in salts and sulphates. The vleis are seasonally inundated, but in the dry season provide a vital source of grazing for both wildlife and livestock. Poor road alignment, frequent fires and grazing pressure have resulted in nickpoint erosion forming in the Chamabonda Vlei (Worsley, 1989). Similarly hoof pressure and severe overgrazing has caused erosion in the Lunkunkuni Vlei where some rehabilitation efforts have been made by the community.



VICTORIA FALLS
COMBINATION MASTER PLAN
PREPARATION AUTHORITY

Drawing Title

Geology and Soils

Legend

- International Boundary
- Plan Area Boundaries
- Zambezi River
- Railway
- Regional Secondary Roads
- Main Roads
- Basalt
- Kalahari Sands

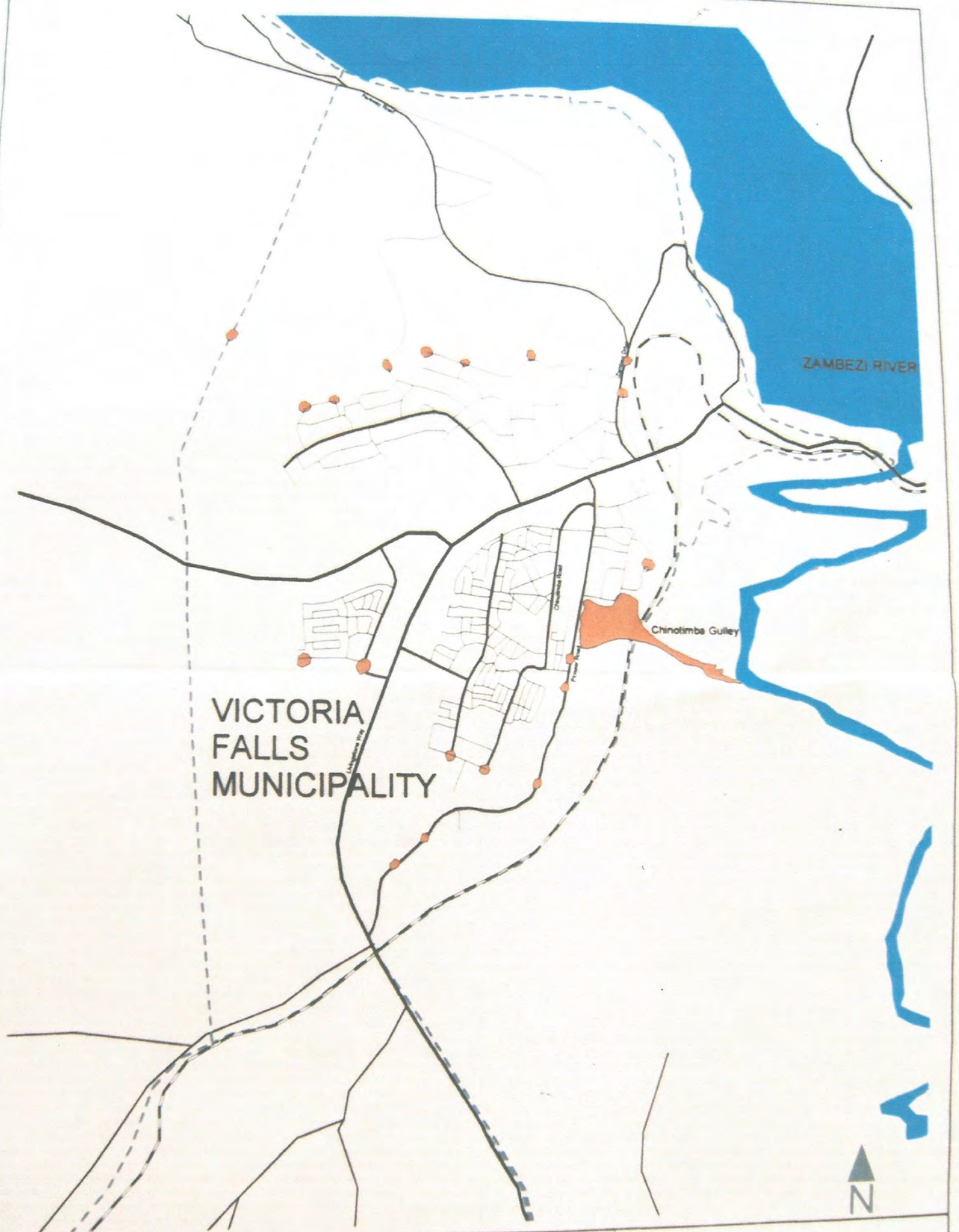
Victoria Falls
Environmental Capacity
and Master Plan Project

Prepared by
Zimbabwe Department of
Physical Planning
Victoria Falls Consortium

Scale 1:250 000

Date:
March 2001

Map Number
8



VICTORIA FALLS COMBINATION MASTER PLAN PREPARATION AUTHORITY

Drawing Title:
Soil Erosion and Riparian Woodland in the Municipal Area

Victoria Falls Environmental Capacity and Master Plan Project

Legend

- Sites of potential or existing soil erosion (roads on edges of sandy slopes and drains/ditches on edges of sandy slopes)
- Riparian Woodland
- Rainforest
- Plan Area Boundery
- Main Roads
- Railway
- Regional Secondary Roads
- Islands
- Zambezi River
- Minor Regional Roads
- Municipal Roads
- Minor municipal roads

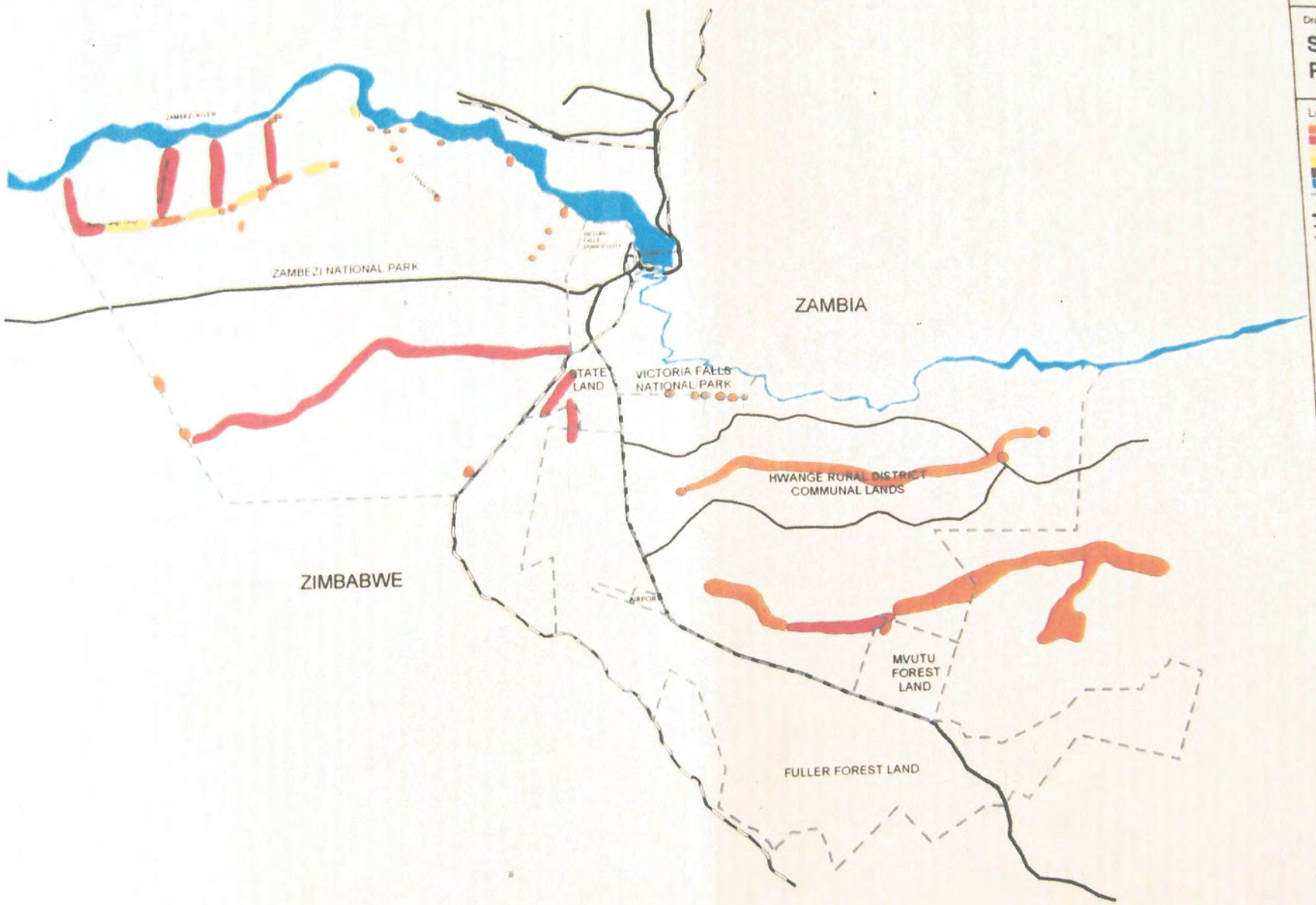
Prepared by
Zimbabwe Department of Physical Planning
Victoria Falls Consortium

Scale 1:30 000

0.2 0 0.2 0.4 Kilometers

Date
March 2001

Map Number
9



VICTORIA FALLS COMBINATION MASTER PLAN PREPARATION AUTHORITY

Drawing Title:

Soil Erosion Sites in Plan Area

Legend

- Overgrazing and cultivation in drainage lines/vlei
- Roads in drainage lines
- Roads on ecotones between basalts and sands
- Roads on slopes at edge of sands
- Where roads cross rivers and drainage lines
- Zambezi River
- Plan Area Boundary
- Rivers and Streams
- Main Roads
- Regional Secondary Roads
- Railway
- Minor Regional Roads
- 4x4 Tracks

Victoria Falls Environmental Capacity and Master Plan Project

Prepared by:
Zimbabwe Department of Physical Planning
Victoria Falls Consortium

Scale 1:250 000

5 0 5 Kilometers

Date:
March 2001

Map No.
1

6.3 Land Forms and Landscapes

The relief of the Plan Area is dominated by the Zambezi River with its shallow braided valley above the Falls, the Victoria Falls themselves, and the downstream gorges. Without the River and the Falls, the area would otherwise be described as rather featureless with apparently endless expanses of woodland. This rather flat topography covered with woodland is broken only in a few points where marshes occur along seasonal streams formed in the Kalahari Sands such as in the Zambezi National Park and the Matetsi Safari Area. Map 11 illustrates these points and other aspects of the topography and hydrology.

The islands in the river upstream of the Falls result either from an outcropping of the basalt, producing a stable island thinly covered with soil and vegetation, or from alluvial deposits which produce islands which are often thickly covered with vegetation including reeds, grasses and mature trees. These alluvial islands shift over time as the silt carried by the river is deposited and eroded according to the changing nature of the channel.

The Falls themselves are the principal landscape feature. The high water flows of over 8000 cubic metres, create a spray cloud rising into the air characteristic of the views of the area, which can be seen from at least 30 km around.

The gorges are dramatic landscape features themselves forming a darker zigzag scar when viewed from the top of the scarp, but which can become impressive when viewed from the edge or looking up from the river.

6.4 Hydrology

The Zambezi River is 2700 km long and drops 1585 m from its source in North Western Zambia to the Indian Ocean in Mozambique. The Upper Zambezi flows through gently undulating terrain. The gentle floodplains of Barotse and the Chobe swamps in Botswana regulate river flows significantly. Despite high rainfalls in the head water region, the floodplain and swamps allow huge evaporation losses each year. Silt becomes trapped in these floodplain areas and this reduces the sediment load on the downstream sections. After the Victoria Falls, the initial stretches of the Middle Zambezi pass through the deep gorges ending in the broad Gwembe valley at the eastern end of which is the Kariba Dam.

Flows on the Zambezi River have been measured since 1907 and show a sequence of dry and wet periods. The period from 1907 to the 1920s was a dry period followed from the mid-1920s to 1947/8 by a normal period. From 1947/8 to 1979/80 there was a wet period (when mean annual flows were double those recorded in the initial dry period). The most recent period from 1980/1 to recent times has been a dry period. It would appear from the last two years that we might now have entered another wet sequence.

The main river running into the Zambezi in the Plan Area is the Masuie. In addition, there are a series of nine springs that occur at the junction of the Kalahari Sands and the underlying basalts in the northern part of Zambezi Park. They in turn lead into a series of vleis and short rivers that drain north into the Zambezi. Since much of the Park road network passes through the basalt soils and crosses these vleis, any increase in tourist traffic will have to take into account increased road maintenance and the impact of road development on these wetlands. Any upgrading of these roads should include a re-alignment of roads away from sensitive wetland areas and eco-zones (World Bank project).

6.5 Climate

The climate in and around Victoria Falls can be described as hot and sub-tropical with a degree of variation in the four seasons. The four seasons are:

a) Hot Season - This is the period beginning September to the beginning of the rainy season in November, when temperatures rarely go below 30°C.

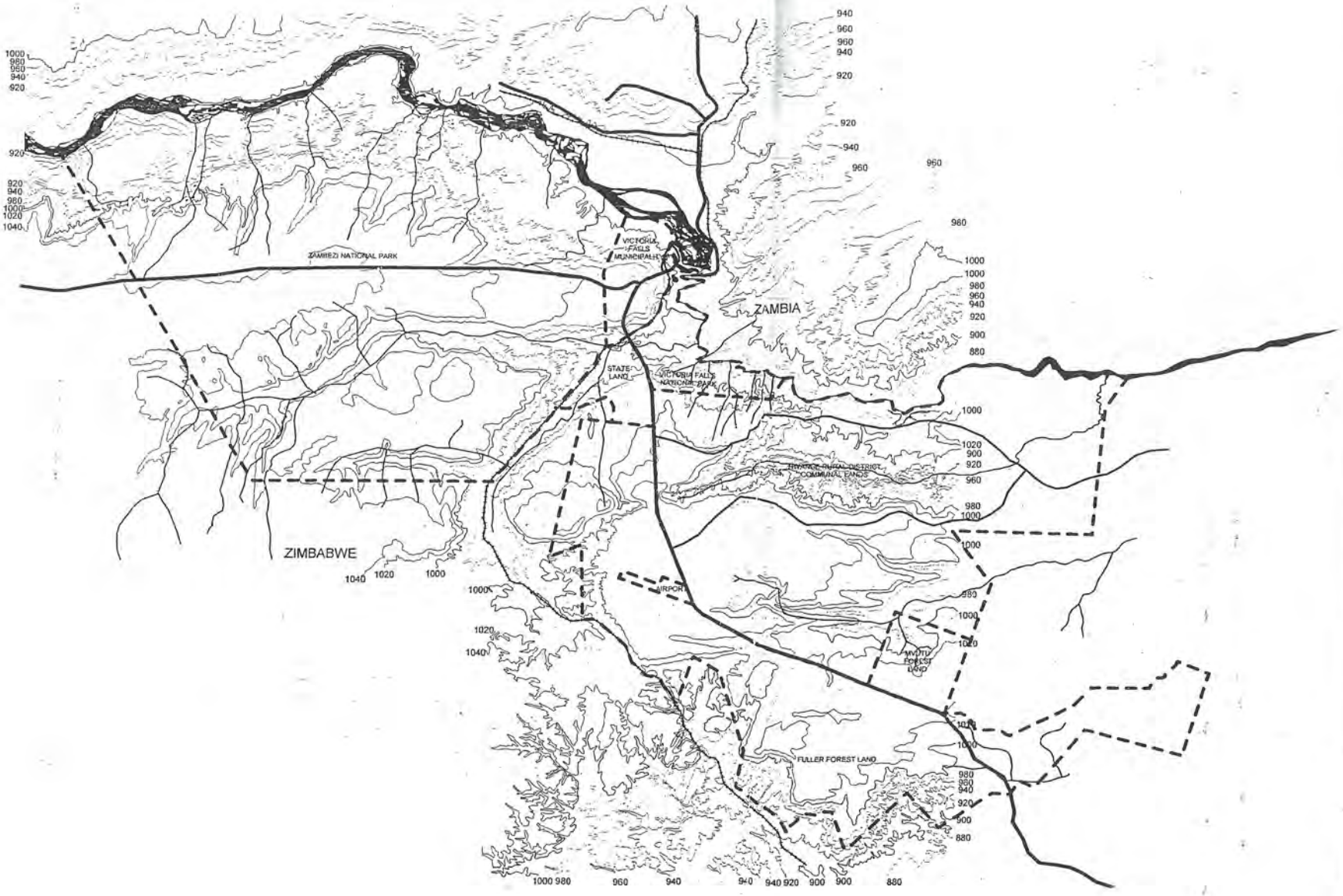
b) The Rain Season - This usually begins at the end of October, through November, to the end of March, although the season sometimes stretches into April.

c) Post Rainy Season - This is the period during the months of April and May. Although some rainfall occurs, this amount is low and far between. By the end of May, all signs of rain usually disappear, giving way to

d) The dry season which sets in at the beginning of June up to August and has temperatures ranging between 17C and 27C although this is occasionally exceeded in either direction.

The long term annual average rainfall for Victoria Falls is around 600 mm. But there is considerable year to year variation, such that in some drought years the total falls to 400mm and in high rain years goes above 800mm. There is some evidence to suggest that rainfall variations around the norm are increasing.

In terms of ecological zoning the whole of the Plan Area lies in Natural Regions IV and V, which are characterised by low fertility soils, rainfall between 450-650 mm and with periodic seasonal drought and severe dry spells in the rainy season. Optimum agricultural production should be limited to livestock production and drought resistant crops. Nevertheless maize is quite commonly produced in the Communal Lands, despite its unsuitability. Natural Region V is suitable also for Game Ranching.



VICTORIA FALLS
COMBINATION MASTER PLAN
PREPARATION AUTHORITY

Drawing Title:

Topography

Legend

Contour Lines (in meters)

- 800
- 820
- 840
- 860
- 880
- 900
- 920
- 940
- 960
- 980
- 1000
- 1020
- 1040
- 1060

- Plan Area Boundaries
- Main Roads
- Railway
- Regional Secondary Roads
- Islands
- Zambezi River
- Rivers and Streams

Victoria Falls
Environmental Capacity
and Master Plan Project

Prepared by:
Zimbabwe Department of
Physical Planning
Victoria Falls Consortium

Scale:
1:250 000

5 0 5 Kilometers

Date:
March 2001

Map Number:
11

6.6 Woody Cover

The woody cover (see Map 12) is based on thematic information derived from visual interpretation of Landsat TM imagery dated 1992 with extensive field checks in 1994. The different land use categories; national parks, forestry reserve, and communal land are dealt with together as one entity below.

An analysis of the map indicates that 82.5% of the Plan Area is covered by woodland, the bulk of which is found in the National Parks and Fuller Forest. Bush land constitutes 6.4% of the area and is found in Zambezi Park, Fuller and Mvutu Forests. Grassland covers 0.7% - the only area being Chamabonda Vlei in Zambezi National Park. In 1992 the cultivation in the Communal Lands was measured at 11 549 ha, forming 9.7% of the total Plan Area. Urban settlement in Victoria Falls town was 0.7% of the total Plan Area.

It is important to realise that although on a map the settlement and urban areas represent only 10.4% of the total Plan Area, the impact of these land uses is much further reaching.

Table 1: Woody Cover (1992)

TYPE	DESCRIPTION	AREA (Ha)	%
Woodland	20-80% canopy cover; tree height >5-15m	97 849	82.5
Bush land	20-80% canopy cover; tree height 1-5m	7 568	6.4
Grassland	Tree cover of less than 2%	800	0.7
Cultivation	Includes cultivated areas and homesteads	11 549	9.7
Settlement	Urban areas	811	0.7
	Total	118 577	

Source: The EIA Shop

Recent (September 1999) Landsat imagery for the Plan Area was compared to the Forestry Commission's woody cover map prepared from the earlier 1992 Landsat imagery. At this scale of mapping micro, or small scale, changes in woody cover cannot be perceived. However the reflectance values for cultivation and settlement are sufficiently distinct for these areas to be clearly distinguished and mapped. The desk interpretation of the Landsat image was followed by limited ground checking.

The comparison revealed large changes in woody cover in the Communal Areas and in Victoria Falls town that have occurred in just seven years, as indicated by the figures in Table 2. Although superficially the vegetation remaining in the Communal Lands is mostly *Baikiaea* woodland, it is a very depauperate type. Many of the commercially valuable trees have been felled and the under storey has been thinned by cutting out poles. This type is therefore shown as a paler shade of green on the Landsat map (see below). The Landsat images also reveal the

pattern of settlement and cultivation: the areas along the drainage lines (Lunkunkuni and Dibudibu vleis) are cultivated first as these are the better soils (contact zone between Kalahari Sands and clays). Clearing then proceeds up into the woodlands on the sands. Settlements also follow the road network and distribution of boreholes and wells.

Table 2 : Comparison Landsat images, 1992 and 1999

COVER TYPE	AREA (Ha) 1992	AREA (Ha) 1999	% CHANGE
Cultivation	11 549	14 672	+27.04
Urban settlement	811	1 104	+36.13

Source: The EIA Shop

6.7 Vegetation Types and Descriptions

The woody cover referred to above simply concerns vegetation cover. It does not distinguish between the different types of woodland, bush land or grassland. Floristic maps, on the other hand, illustrate different vegetation types that have characteristic species and this is shown in Map 13.

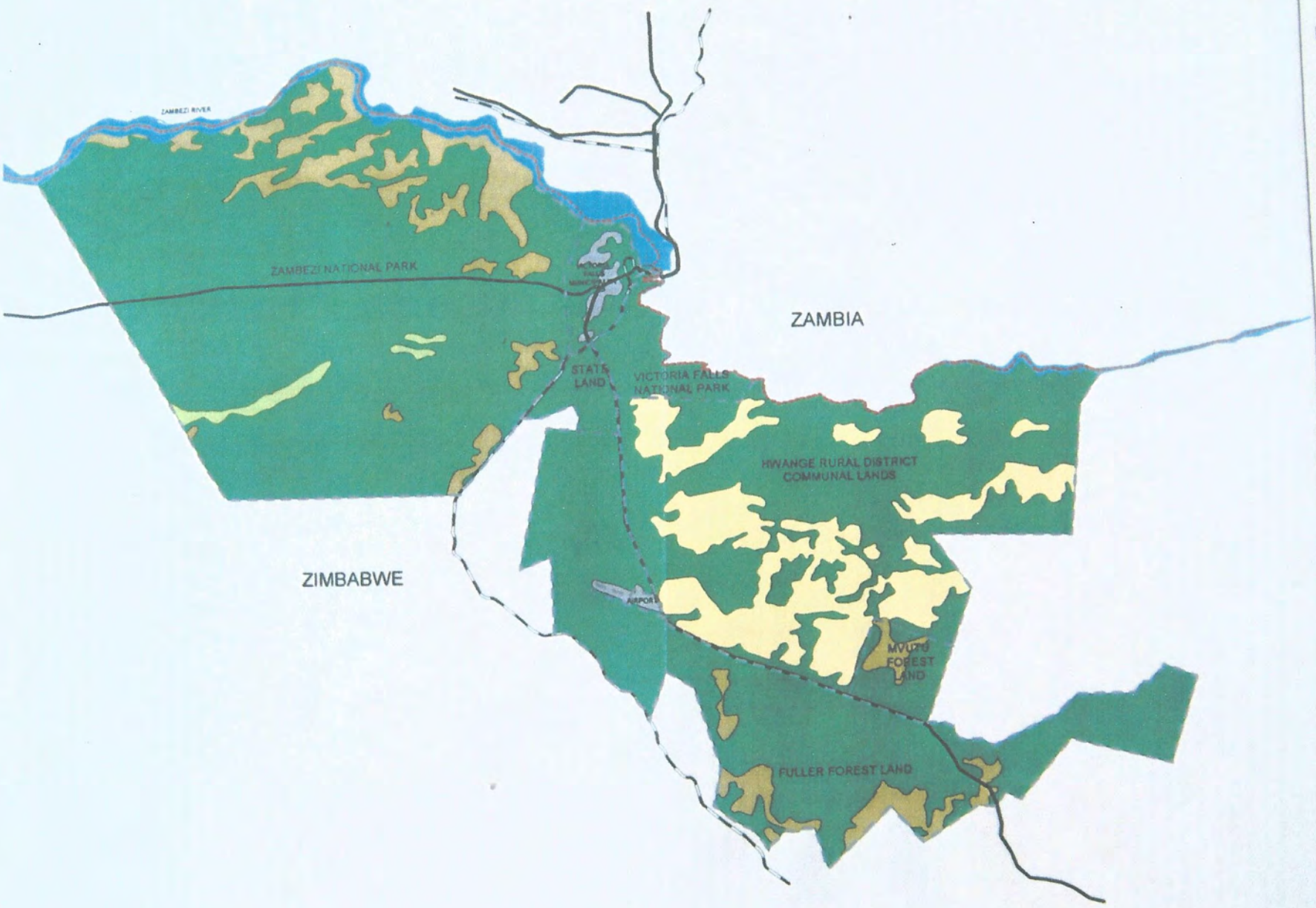
The permeability and depth of the Kalahari Sands results in rapid infiltration and deep penetration of soil moisture. This favours deeper rooted woody species over shallow rooted ones. The dominant vegetation type on the sands comprises deciduous teak (*Baikiaea*) woodlands, which are the main timber producing areas.

In contrast, the shallow soils of basalt areas favour those tree species that are shallow rooted and able to withstand long, hot, dry periods when the moisture has evaporated.

There are two main vegetation types in the Plan Area; *Baikiaea plurijuga* (teak) woodland and *Colophospermum mopane* (mopane) bush land. These are further subdivided and described below according to the dominant or common species. The data are interpreted from a planning, rather than the purely botanical, perspective. Map13 was compiled from 1999 Landsat imagery with some ground checking and knowledge of the area. Only the larger areas of the following types were mapped: more detailed mapping was not possible without extensive ground surveying.

6.7.1 Dry Deciduous Woodlands on Kalahari Sands

These woodlands are found on deep sands and consist of *Baikiaea plurijuga* (Zambezi teak or umkusi) trees in association with *Guibourtia coloesperma* (umchibi), *Brachystegia spiciformis*, *Schinziophyton (Ricinodendendron) rautenenii* (umgoma). Other trees are *Pterocarpus angolensis* (mukwa), *Afzelia quanzensis* (pod mahogany). All of these slow growing species are



VICTORIA FALLS COMBINATION MASTER PLAN PREPARATION AUTHORITY

Drawing Title:

Woody Cover

Legend

- Bushland
- Cultivation
- Grassland
- Settlement/Built Up Area
- Woodland
- Plan Area Boundaries
- Railway
- Main Roads
- Zambezi River

N

Victoria Falls Environmental Capacity and Master Plan Project

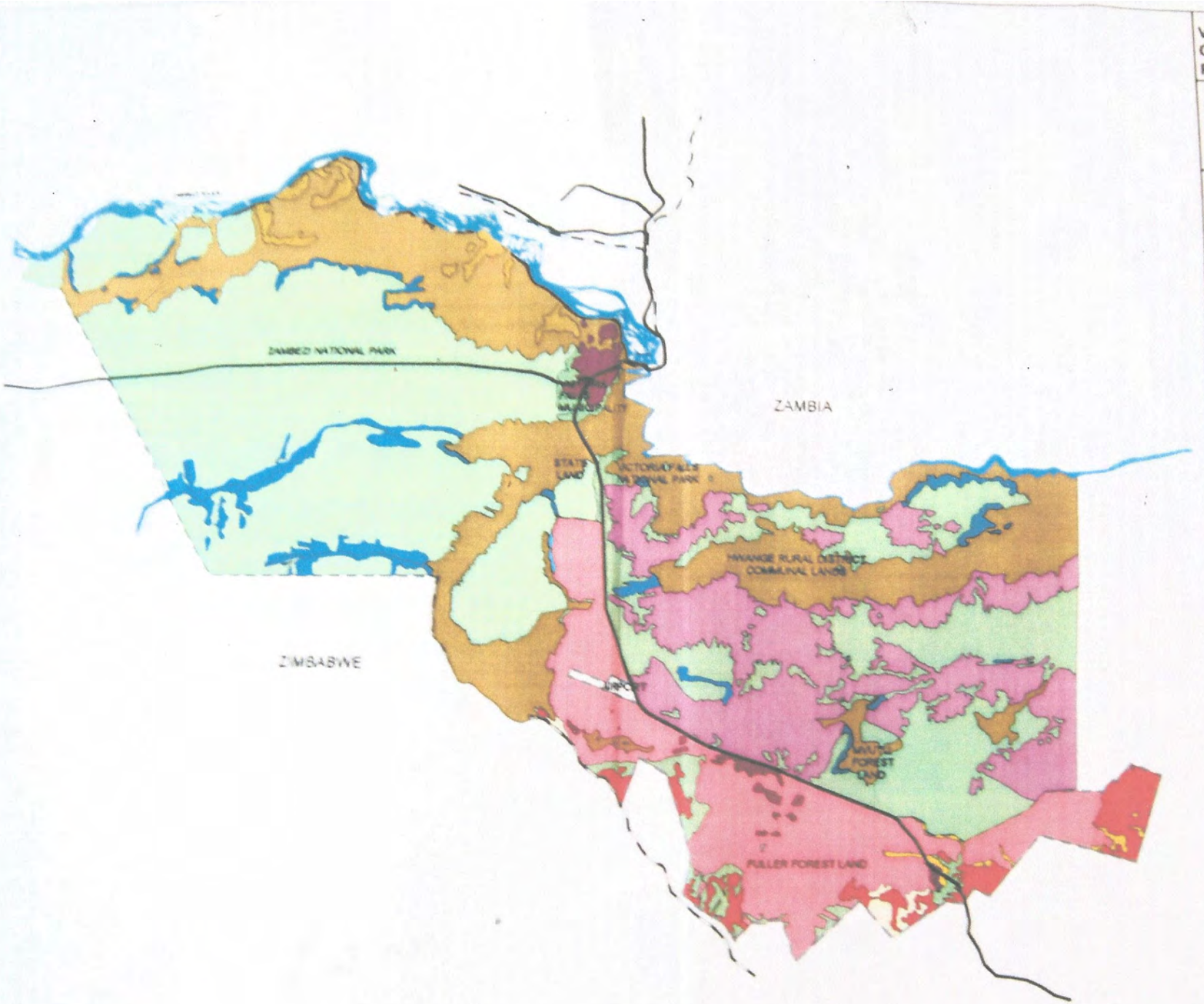
Prepared by:
Zimbabwe Department of Physical Planning
Victoria Falls Consortium

Scale 1:250 000

5 0 5 Kilometres

Date:
March 2001

Map No.
12



VICTORIA FALLS
COMBINATION MASTER PLAN
PREPARATION AUTHORITY

Drawing Title

Vegetation Types, Settlement, and Urban Areas

Legend

Fuller Forest Vegetation

- Burkea Woodland
- Combretum Bushland
- Grassland
- Kirkia Woodland
- Mopane Bushland
- Mopane Woodland
- Pan
- Teak Bushland
- Teak Woodland
- Terminalia Bushland
- Trial Site

Vegetation Types, Settlement, and Urban Areas

- Deciduous open woodland along drainage lines
- Deciduous open woodland and bushland
- Deciduous open woodland on shallow soils
- Sesquipedalis form of dry deciduous woodland
- Drainage line grassland
- Dry deciduous woodland
- Hydromorphic grassland (sidaga)
- Riparian woodlands and islands
- Settlement/Cultivation
- Urban development
- Zambezi River
- Main Roads
- Regional Secondary Roads
- Railway
- Plan Area Boundary

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Scale 1:250,000

Date
March 2001

Map Number
13

used for wood carving and furniture making. The shrub under storey is commonly *Baphia massaiensis, Grewia flavescens, Bauhinia petersiana* and *Croton gratissimus*. Many of the shrub species produce edible fruits (for humans), as does the tree *S. rautenenii*.

Grass cover varies according to the degree of canopy cover and in the more open woodlands, reaches 10-30%. The grass species are perennial with low forage value (for wildlife or cattle) except during the rainy season. Although the woodlands are deciduous (i.e. loose their leaves), the deeper rooted species such as *B. plurijuga* and *G.coleosperma* retain their leaves for a long period into the late dry season (Childes, 1988) and are a vital shady refuge for wildlife (and livestock) in the very hot months. This vegetation type is very susceptible to fire damage, particularly if the canopy cover is removed through logging (Childes, 1984). Elephant can cause serious damage through browsing and stripping the bark of *P. angolensis, A. quanzensis, B. spiciformis* but tend to largely ignore *B. plurijuga* and *G. coleosperma*.

The sands have an extremely low nutrient status and most of the nutrients present are held in the woody plant biomass. Consequently, the recycling of nutrients from organic matter in the top layer of soil is critical for the maintenance of the woodlands which in turn prevent wind and water erosion of the soil. Any action that removes plant material on a large scale e.g. felling for timber and carvings, frequent fires, extensive firewood collection, will ultimately lead to a diminished quality of woodland, poor regeneration and potential erosion.

The teak or *Baikiaea* woodlands are the main vegetation type in Fuller and Mvutu Forests and in the Zambezi National Park. It is alarming to note the absence of regeneration of *Pterocarpus, Afzelia, Kirkia* – all trees sought after by curio carvers.

6.7.2 Deciduous Open Woodland on shallow soils

This open woodland type occurs as a narrow strip along the base of the Kalahari Sands at the contact zone with the basalts. The shallow soils have gravel or pebbles on the surface or very close to the surface. Good examples of this type are found in the northern part of Zambezi Park where the old course of the Zambezi river has scoured away the Kalahari Sands and left a gravel deposit. The dominant trees are *Kirkia acuminata* (umvumila) and *Brachystegia boehmii* (itshabela), with *Combretum apiculatum, C. imberbe* (umtswili) and *Sclerocarya birrea* (umganu or marula).
K. acuminata, B. boehmii and *S. birrea* are damaged by elephant who strip off the bark, especially in the late dry season when there is little browse available and the sap is rising in the trees. Once the bark is removed the tree becomes susceptible to fungal attack and fire. *K. acuminata* and *C. imberbe* are used for wood carving and marula produces edible fruits. The grass cover (up to 40%) is a mixture of annuals and perennials with a low forage value. This is an ecologically important type as it provides shade and shelter for the variety of wildlife that feed in the adjacent basalt grasslands.

6.7.3 Deciduous Open Woodland bordering drainage line

This vegetation type is found on yellow – greyish, compact, colluvial soils, as a narrow strip at the base of the Kalahari Sand ridges, bordering the drainage lines or vleis. It consists of scattered *Burkea africana, Pterocarpus angolensis* and *Terminalia sericea* trees with a high (50-70%) cover of perennial grasses of low forage value. All of these trees are prone to damage by elephant and fire. *P. angolensis* (mukwa) is the most popular species for wood carving.

6.7.4 Drainage Line or Hydromorphic Grassland

This grassland extends from the *Burkea africana* open woodland down into the grey sandy clay soils of the drainage lines e.g. Chamabonda and Kalisosa. The grasses are perennial: *Andropogon gayanus., Heteropogon contortus, Cynodon dactylon* and heavily grazed, particularly during the dry season when the higher clay, and hence moisture content of the soils, means the grass remains green. The soils are high in sulphates and salts that attract wild animals who scrape and dig up soil to eat. This creates hollows that accumulate rainwater and ultimately form mud wallows and pans (Weir, 1960). Fire is obviously an important factor in these grasslands, but too-frequent fires, coupled with the increased grazing pressure from animals attracted to the "green bite", and poor road alignment in some places has lead to soil erosion in Chamabonda. The vlei is drying out and *Terminalia sericea* trees are encroaching reducing the available grazing area.

6.7.5 Deciduous Open Woodland and Bush land on basalt derived soils

This open woodland is dominated by *Colophospermum mopane* (mopane), which can occur in pure stands or mixed with several *Combretum, Acacia* and *Commiphora* species. It is found on the shallow dark brown – black clay soils. Grass cover varies from sparse up to 40% and is a mixture of short annuals and perennials with medium-good forage value. This type is heavily utilised by wildlife and serious elephant damage can be seen near Chundu Loop. Overgrazing and excessive hoof pressure can result in a breakdown of soil surface cover and sheet erosion.

Baobabs (*Adansonia digitata*) are charismatic trees that occur in this vegetation type. Elephants frequently strip the trees of their fibrous bark, especially in the late dry season. Baobabs are capable of regrowing the bark, but extensive and continual bark removal will ultimately result in the tree dying. Several prominent baobabs have disappeared from Zambezi Park following elephant damage. The Big Tree is a well known tourist attraction within the town environs that has so far escaped the depredations of elephant.

Mopane and *Combretum* trees are also used for building huts and as firewood. Tree cutting by local residents of the Communal Lands was seen in the southern part of the Victoria Falls National Park.

6.7.6 Vegetation in the Gorges.

This is essentially an extension of the Deciduous Open Woodland / Bush land type. Down the sides of the gorges plants are adapted to hot, dry conditions (=xeric). *Commiphora sp., Albizia tanganyikensis* and *Sterculia quinqueloba* are common trees. Succulents such as *Aloe chabaudii, A. cryptopoda* and *Euphorbia fortissima* cling to rock walls. At the bottom of the scree slopes near the high water level, there are scattered *Ficus* and *Diospyros mespiliformis* trees.

6.7.7 Hydromorphic Grasslands on Basalt Clay Soils

In the basalt areas the vleis contain deeper pockets of clay soils that support tall, perennial grassland, dominated by *Ischaemum afrum* and *Hyparrhenia sp.* The grasslands are important feeding areas for grazers such as buffalo, waterbuck, warthog and reedbuck. Because of the self churning nature of the clay soils, the grasslands become too wet to be utilised during the rains and this resting period enables a recovery from grazing pressure.

6.7.8 Evergreen Riparian Woodlands / Forests on alluvial soils

This vegetation type occurs along the upper Zambezi river, with some outliers (often only a few species) around the springs. Although very limited in extent, the riverine woodlands are the most attractive to tourists, both for their aesthetic value and their diversity. The riparian vegetation is also vital to riverbank stability. The type is characterised by tall, evergreen trees forming a discontinuous canopy on loamy alluvial soils of the old river terraces, a strip 20-100m wide. The fertile soils and proximity to water give rise to a diverse of plant and animal species. *Diospyros mespiliformis, Garcinia livingstonei, Trichilia emetica, Acacia nigrescens and Syzigium guineense* ssp. B*arotsense* and *S. cordatum* are the common tree species. *Syzygium* is one of the key stabilisers of the riverbank. The shrub under storey is well developed and climbers such as *Artabotrys brachypetala* are common. There are also scattered clumps of the ilala palms *Hyphaene ventricosa* and *Phoenix reclinata* palms. Grasses are short-medium height perennials with high forage value and many riparian tree species produce fruits that are eaten by birds and animals; the area is consequently heavily utilised by wildlife. Regeneration of this type appears to be very slow.

The riparian woodlands are seriously threatened by elephant damage, particularly the section from the Rain Forest upstream to the "A" Zambezi. A field check revealed numerous tall trees pushed over by elephants, and according to Mr T. Muller (botanist), at least two shrub species are no longer found in this area because of elephant pressure; *Croton leuconeurus* and *Homalium abdessammadii.* Also *Garcinia livingstonei,* once a common riverine tree, is now rare.

It is worth noting that as early as 1969 Hill found severe deterioration of the riparian woodlands through elephant damage and was alarmed by the lack of regeneration of targeted species.

Although no data were available, given the increase in elephant populations since 1969, the present situation must be considerably worse.

The Rain Forest is included in this type as it is simply an extension of riparian woodland. Here *Syzygium* and *P. reclinata* are the most common species, with *Mimusops zeyheri, Ficus sur* and *F. thonningii*. Langman (1978) found that *Syzygium* tends to dominate the area because of it shallow rooting and its ability to reproduce vegetatively through coppicing. This obviously has implications for any planned replanting of trees. Botanically the herbaceous plants in the Rain Forest are the most important as several are possibly endemic (Fanshawe, 1990). Since there is no up to date checklist available, nor an extant herbarium, it was not possible to check which of the plants listed by Wild (1964) are still present. Tourist pressure (trampling, picking plants) may have lead to the loss of some species and this needs to be checked.

Several stakeholders expressed concern about the invasion of the Rain Forest and riparian woodlands by *Lantana camara*. This noxious, highly invasive shrub colonises disturbed ground and is spread by frugivorous animals. It is out-competing indigenous shrubs and leading to a loss of wildlife habitat. Although National Parks have a control programme, the weed has continued to spread as the vegetation becomes more and more disturbed by elephant and human development.

The islands in the Zambezi river are either sandbanks with clumps of *Phragmites mauritianus* reeds and *Cyperus papyrus*, with *Salix subserrata* and *Syzygium* trees, or basaltic rocky islands with deposits of sand and alluvium which support riparian forest and thicket. The islands are now an important refuge for birds and other animals that have been disturbed by human interference or destruction of their riparian habitat.

6.8 Wildlife

As discussed in the introduction to this report wildlife is one of the attributes which has brought about, and continues to contribute to, Victoria Falls' tourism and economic growth. Wildlife resources are an asset of the area's economic base. It is also an important traditional natural resource for rural communities. This section of the report describes the wildlife resources. The next chapter will consider the status of the wildlife in the light of increasing population and development.

6.8.1 Birds

Birds are useful indicators of the state of the environment as they are a well known group, and relatively easy to identify and count. Changes in relative abundance of bird species indicates changes in environmental functioning and biodiversity (Childes, 1998).

From a bird conservation perspective, the most important habitats are the upstream riverine areas, including the islands, and the downstream gorges. Discussions with local ornithologists indicate that there have been significant changes in populations of sensitive and threatened species. Along the upstream section of the river these changes are linked to a loss of riparian thicket caused by elephant damage and the development of hotel and jetty gardens on the river front. Sensitive species such as Pel's Fishing Owl (*Scotopelia peli*), Half-collared Kingfisher (*Alcedo semitorquata*), African Finfoot (*Podica sengalensis*) , Brown Firefinch (*Lagnosticta nitidula*) are now rare or no longer found along the riparian strip, and have moved across to the islands. White backed Night Heron (*Gorsachius leuconotus*) and Pel's Fishing Owl were regularly seen on Kandahar Island but have now moved off because of human disturbance.

African Skimmers (*Rhynchops flavirostris*) breed on the sandbanks in the river. The nests are sometimes flooded by the waves from passing boats. In addition, visitors to the islands disturb the parent birds off the nests, leaving the eggs and chicks to overheat in the hot sun. Map 14 shows the preferred sites for Skimmers (and Pels Fishing Owl) Rock Pratincoles (*Glareola nuchalis*) nest on the exposed rocks in the rapids and are disturbed by boats and canoeists.

The Batoka Gorge has qualified as an Important Bird Area (Childes & Mundy 1997) on the basis of the high density of raptors: 36 species, 14 of which are Specially Protected under the Parks & Wild Life Act, 1982. (See Appendix 6 of IUCN SEA report for the full list). The raptors of the Batoka Gorge are the subject of a current research project (Hartley, pers.comm.) Map 15 identifies the breeding sites of the Taita Falcon and other Raptors.

6.8.2 Mammals: Numbers and Distribution

Zambezi National Park and Victoria Falls National Park are important for two reasons. Firstly they form the tourism hinterland of the Falls where most visitors experience African wilderness and game. There are 58 mammal species recorded in the parks; 28 of which are large mammals with photographic safari appeal.

Secondly the parks are important as core breeding areas for several migratory animals that are draw-card trophy species in neighbouring hunting areas – Hwange, Matetsi, Fuller Forest, Panda-Masuie Forest and adjacent private game farms.

As photographic safaris and hunting are the predominant tourism activities away from the Falls themselves, and generate large foreign currency inflows to Zimbabwe as well as local economic multiplier effects; maintaining the parks' integrity makes good sense from an economic point of view.

Table 3 : Population estimates for large animal species in the National Parks and Fuller Forest

	National Parks				Fuller Forest
Species	**Number estimated (1998 or 1999)**	**% confidence limit**	**Density per km2**	**Trends**	**Estimated population**
Elephant	1072	82.2	1.97	Increasing	267
Buffalo	1375	135.5	2.53		150
Eland	22	225.6	0.04	Decreasing?	0
Giraffe	22	152.1	0.04		0
Sable	227	191.1	0.42		150
Waterbuck	119	211.5	0.22	Decreasing	50
Zebra	99	109.9	0.18	Decreasing?	20
Kudu	11	235.4	0.02		267
Tsessebe	0		0		25
Impala	167	214.5	0.39	Increasing?	134
Duiker	-	-	-		40
Warthog	-	-	-		140
Klipspringer	-	-	-		30
Reedbuck	-	-	-	Decreasing	-
Bushbuck	-	-	-	Decreasing	-
Hippo	220	-	-	Stable?	0
Lion	-	-	-		38
Leopard	-	-			20

Data from 1998 and 1999 Aerial Survey Census (National Parks), 24 hour waterhole count (1996) and road strip counts (Fuller). The estimate for hippo is based on discussions with canoe safari guides during October 2000.

Source: The EIA Shop

Elephant (*Loxodonta africana*) are widespread throughout the Plan Area, with concentrations in the protected areas. The removal of the minefield, coupled with the increase in numbers has meant that elephants have become much more frequent in the Municipal area and groups of 6-30 bulls have been seen. Map 16 illustrates the movement of Elephants in the town area. The bulls now regularly cross the river to feed on the islands.

As grazers, buffalo (*Syncerus caffer*) have the greatest impact on the basalt grasslands and on Chamabonda Vlei. They can be highly migratory; an animal collared in the southern part of Matetsi was later seen at the VFSL waterhole. There is a resident herd of about 20 buffalo in the town area and numbers are reported to be declining through poaching.



VICTORIA FALLS
COMBINATION MASTER PLAN
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Drawing Title
African Skimmer Sites and Pels Fishing Owl Preferred Areas

Victoria Falls Environmental Capacity and Master Plan Project

Legend
- African skimmer
- Pels fishing owl
- Islands
- Zambezi River
- Minor municipal roads
- Main Roads
- Regional Secondary Roads
- Railway
- Plan Area Boundary
- Municipal Roads
- Minor Regional Roads

Prepared for
Zimbabwe Department of Physical Planning
Victoria Falls Consortium

Scale 1:50 000
0 Kilometers

Date
March 2001

Map Number
14



VICTORIA FALLS COMBINATION MASTER PLAN PREPARATION AUTHORITY

Taita Falcon and Raptor Breeding Areas in Batoka Gorge

Victoria Falls Environmental Capacity and Master Plan Project

March 2001



VICTORIA FALLS COMBINATION MASTER PLAN PREPARATION AUTHORITY

Drawing Title:
Elephant Location and Movement in Town Area

Victoria Falls Environmental Capacity and Master Plan Project

Legend:
- Elephant Locations
- Elephant conflict zones
- Elephant Movements
- Rivers
- Zambezi River
- Main Roads
- Regional Secondary Roads
- Railway
- Plan Area Boundary

Prepared by:
Zimbabwe Department of Physical Planning
Victoria Falls Consortium

Scale: 1:30,000

Date: March 2001

Map Number: 16

Bushbuck numbers have decreased in the Plan Area. This is attributed to the destruction of their riverine habitat by elephants and humans, and to poaching. Their favoured habitat is shown on Map 17. This species is very sedentary and sensitive to disturbance. The only significant populations remaining are those in the Rain Forest and on Chundu Island.

The hippo (*Hippopotamus amphibius*) population in the Zambezi River from Kazangula to Victoria Falls appears to be fairly static. However hippo are hunted and harassed on the Zambian side and this is likely to result in a decrease in their numbers. Hippo and buffalo compete for grazing along the river. Hippo occur mainly in the section of the river adjacent to the Zambezi National Park and are found near the Princess Christian, Kandahar, Cataract and Livingstone Islands. This is illustrated in Map18. Herds move according to water levels, grazing availability, harassment and hunting.

Crocodile (*Crocodylus niloticus*) are found all the way along the river, but are especially concentrated in the stretch that runs from Sansimba Fishing Camp to Chundu Island. They are also found at the VF sewerage ponds.

Cape Clawless Otters (*Aonyx capensis*) are found in two main areas along the river: half way between Tsowa Camp and Sansimba Fishing Camp, and in the part of the river adjacent to Thorn Tree Lodge in Zambia. This is shown on Map19. It is not known whether the Spotted-necked Otter (*Lutra maculicollis*) occurs in this section of the upper Zambezi but it has been sighted further upstream in the past.

Reedbuck and Waterbuck favour grasslands and are closely associated with water. Their favoured habitat is illustrated on Map 20.

African Wild Dogs or Painted Hunting Dogs (*Lycaon pictus*) are listed by IUCN (1996) as an endangered species. This nomadic predator covers vast areas, and moves throughout these national parks, forests and safari areas. A dog apparently collared in Botswana was seen near the VFSL waterhole (A. Baker, pers. Comm.). Population estimates in 1988 were around 10-15 adult animals for this north west corner of Matabeleland (Childes, 1988b). Woodroffe & Ginsberg (1999) discuss the causes of decline of Wild Dog populations in Africa. Because packs often range beyond the borders of reserves, even nominally protected populations are subject to persecution by farmers, road accidents, snaring and diseases contracted from domestic dogs. The highest priority for Wild Dog conservation is to maintain and promote the contiguity of areas available to wildlife. The Zambezi National Park, Matetsi Safari Area and adjacent forest areas are thus vital refuges for this endangered carnivore.

Lion (*Panthera leo*) and leopard (*Panthera pardus*) occasionally move through the town but their occurrence there is decreasing. According to the Park Management Plan (1999), these large carnivores are thought to be declining in the national parks.

Spotted Hyena (*Crocuta crocuta*), Baboon (*Papio cynocephalus*)and Vervet Monkeys (*Cercopithecus aethiops*) frequent the rubbish dump.

From a park management and ecological perspective it is alarming to note the decline in some of the specialist herbivores: waterbuck (*Kobus ellipsiprymnus*), reedbuck (*Redunca arundinum*), bushbuck (*Tragelaphus scriptus*). This indicates a decline in habitat quality and a loss of biodiversity. The simultaneous increase in a generalist species such as impala supports this hypothesis.

6.8.3 Wildlife Movement

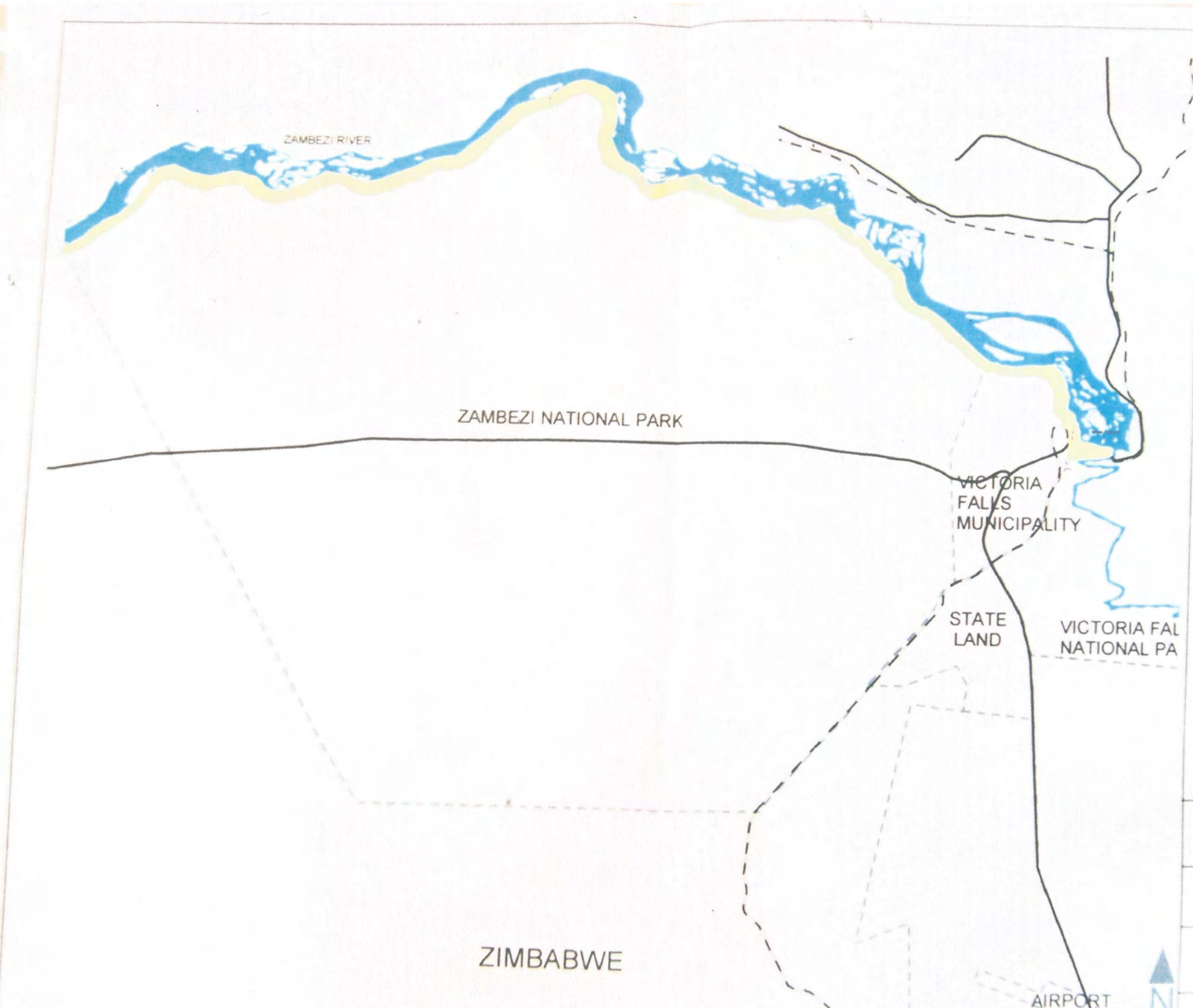
Wildlife movements are largely dictated by changes in the availability of water and food. During the rains the herds break up into smaller groups and disperse throughout the area. In the dry season, the animals congregate into larger herds and become much more dependent on water sources. The Zambezi and Masuie rivers, the springs in Zambezi Park, and the pumped pans in Chamabonda Vlei are vital water points in the dry season.

The seasonal movement of wildlife, especially elephant, covers extensive distances. Towards the end of the dry season, some of the animals move into Zimbabwe from areas in the north east of Botswana. They return to Botswana when the rains begin.

There is also daily movement of the larger mammalian species (mainly elephant and buffalo) during the dry season. They spend the day feeding inland and then move near the Zambezi River during the night. Elephants also wade across from Zimbabwe to the islands in the Zambezi River and on to the Zambian mainland.

The main watering points for wildlife in the Victoria Falls town area are along the Zambezi River banks upstream from the Falls. In recent years developments along the river shoreline have reduced the access to water and the riverine habitat available to wildlife. Despite recognising the importance of wildlife "corridors" these zones have not been demarcated clearly and wildlife movements are becoming more and more restricted by development in the town. Disturbance of traditional migration routes has resulted in animals moving into unsuitable or marginal areas and changing their drinking and feeding habits, which leads to an increase in stress and the likelihood of animal-human conflict.

The borehole pump in Chamabonda is not always operational and this creates a problem for animals, forcing them to move down to the Zambezi. To do this they have to pass through developed areas. The removal of the minefield around Victoria Falls National Park means that animals (and poachers) can now re-establish their routes down to the Masuie river, except that this movement is being restricted by increasing traffic on the main road and increasing development near the rubbish dump.



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Drawing Title

Chobe Bushbuck: Favoured Habitat

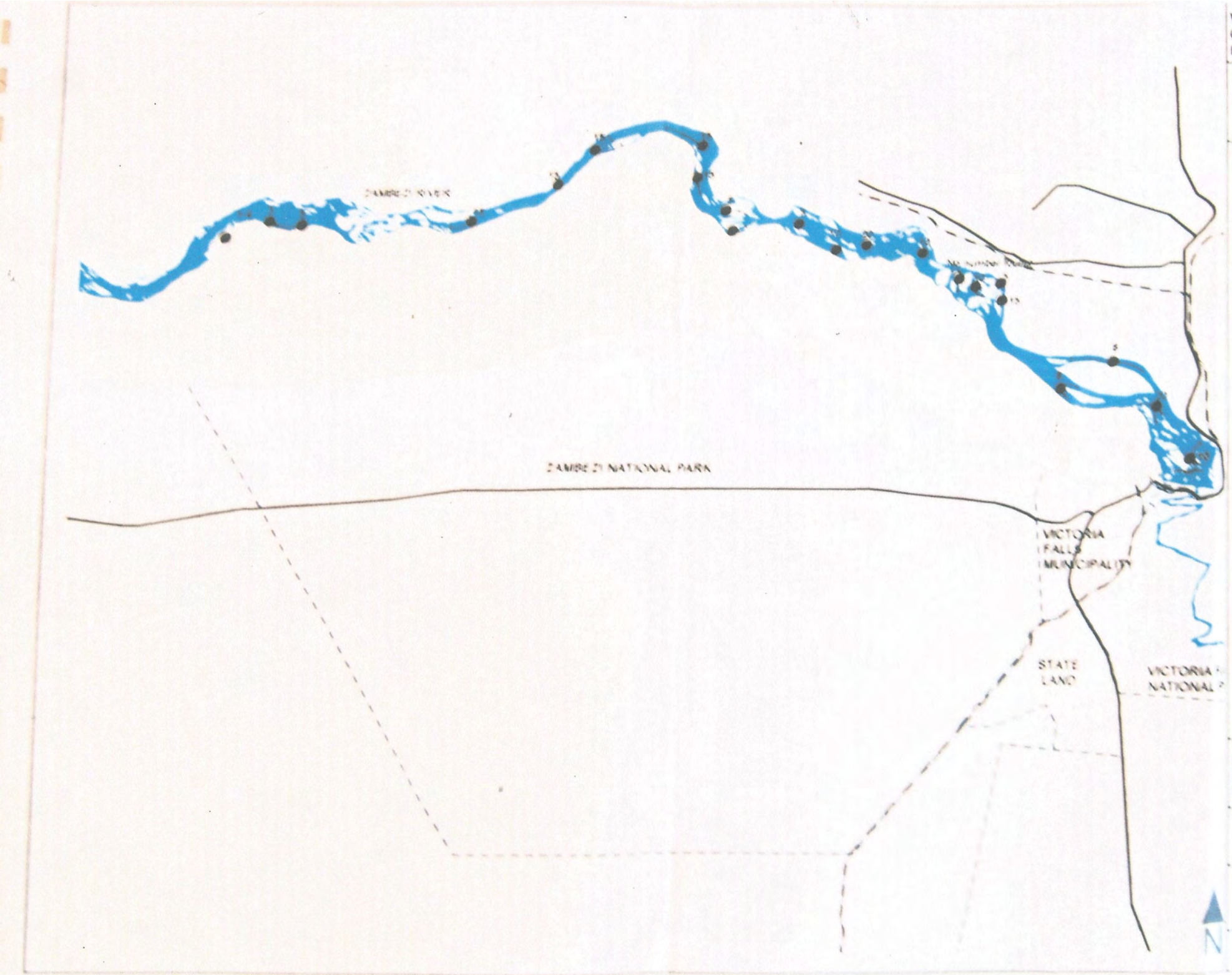
Legend

- Chobe Bushbuck Favoured Habitat
- Riverine Thicket and Woodland Islands
- Main Roads
- Zambezi River
- Railway
- Plan Area Boundary

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Scale 1:125 000



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Hippo Numbers an
Distribution (day) a
Feeding Areas (nig

Legend

Hippo Groups and Numbers in
Hippo Feeding Areas
Hippo Distribution
Islands
Rivers and Streams
Main Roads
Zambezi River
Railway
Plan Area Boundary

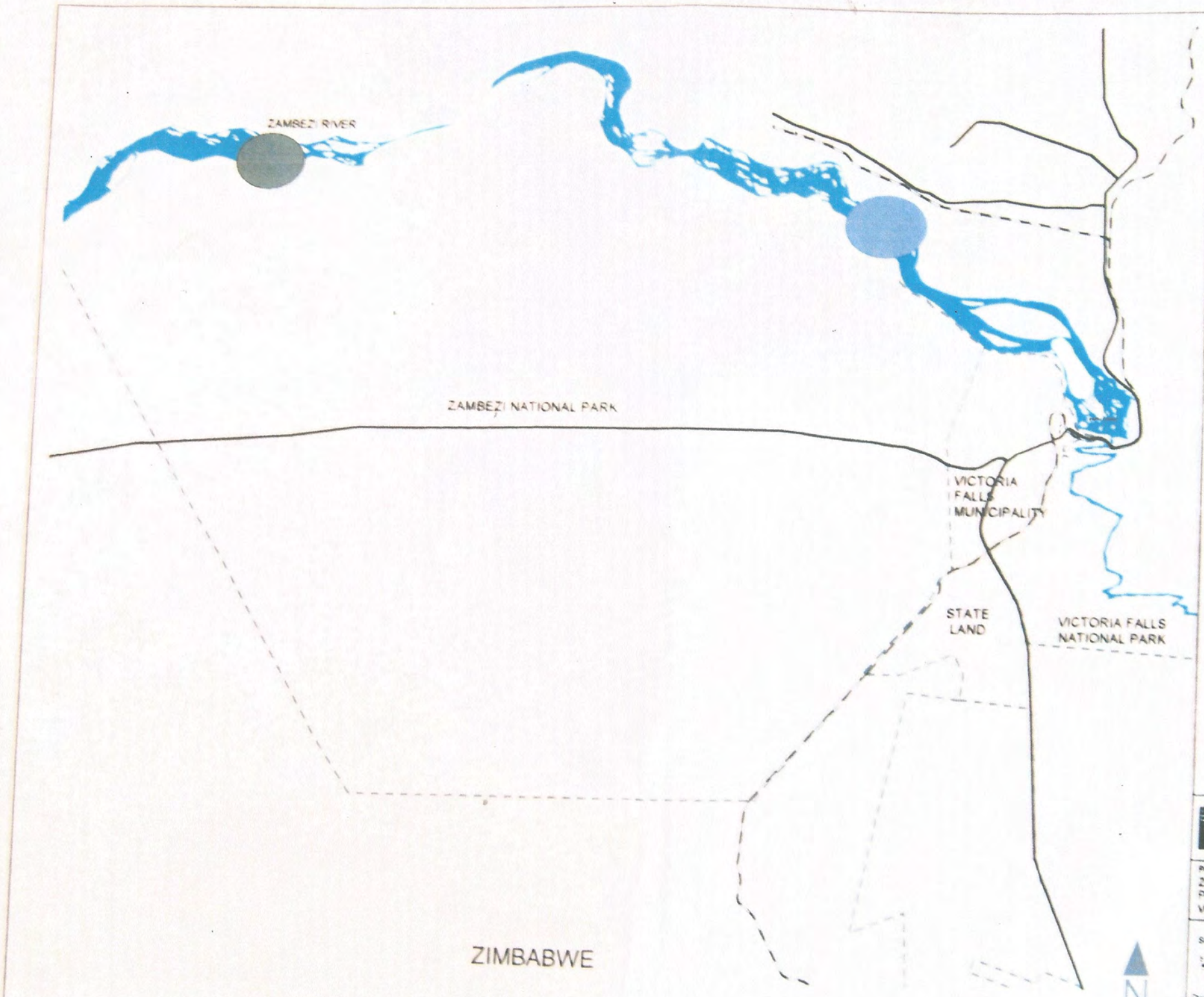
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Date
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Map No.
15



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Drawing Title

Distribution of Cape Clawless Otter and Crocodile

Legend

- Cape Clawless Otter - Favoured A (well vegetated islands and riparia river banks that are undisturbed)
- Crocodile Areas (quiet waters, no disturbance)
- High Diversity of Fish
- Rivers and Streams
- Islands
- Zambezi River
- Main Roads
- Regional Secondary Roads
- Railway
- Plan Area Boundary

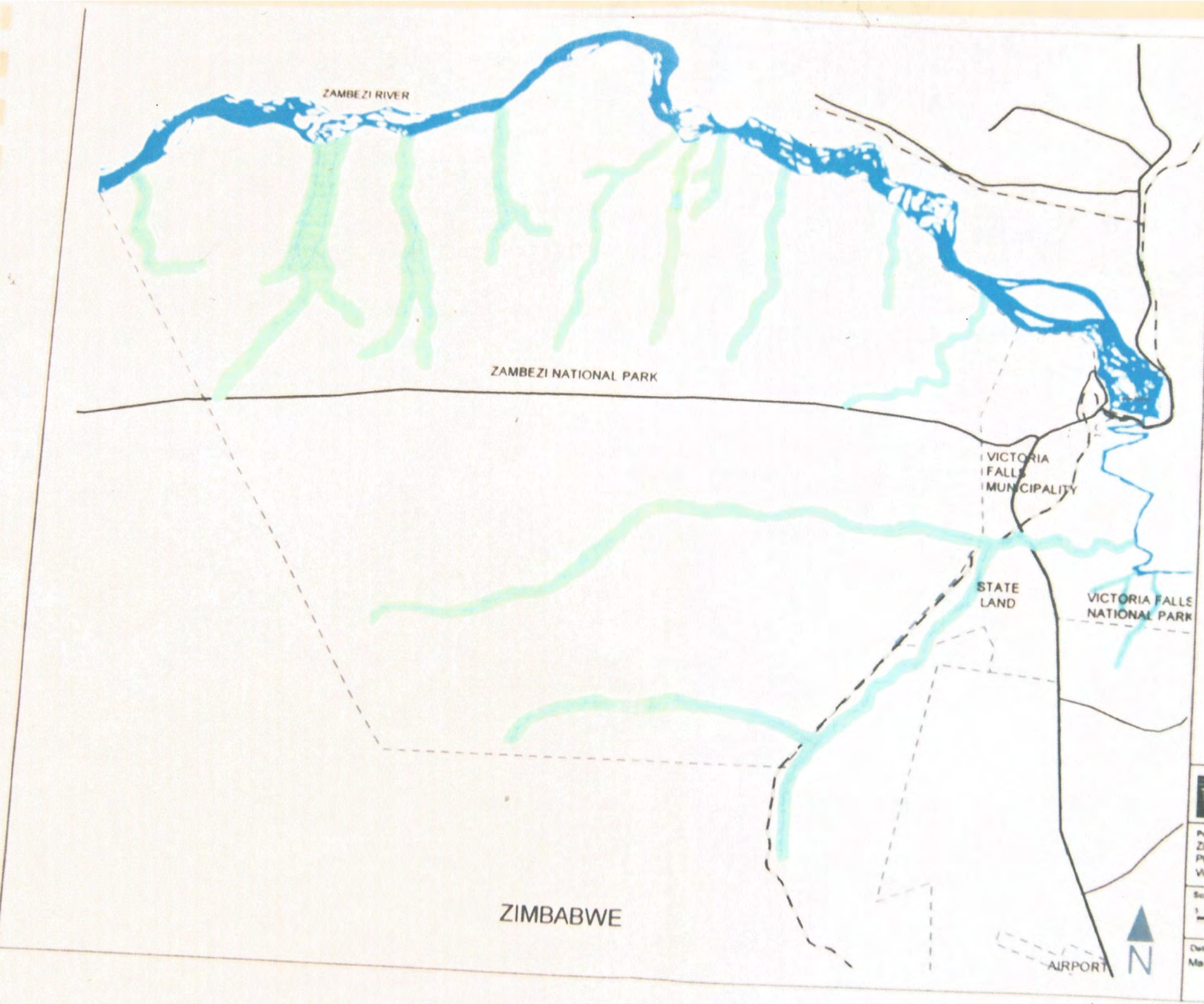
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Date:

Map Number: 19



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Drawing Title

Reedbuck and Waterbuck: Favoured Habitat

Legend

- Grassland/Vlei habitat (Reedbuck) Waterbuck are more widespread, b are associated with water/vlei areas Islands
- Plan Area Boundary
- Main Roads
- Regional Secondary Roads
- Railway
- Rivers and Streams
- Zambezi River

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Scale 1:25 000

Date
March 2001

Map Number
20

Wildlife viewing in the vicinity of the town is marketed as part of the 'wilderness experience' for the tourists visiting the Falls. However there are several barriers to wildlife movement in the Victoria Falls town and its surrounds, particularly for the larger species such as elephant and buffalo. Hippo, waterbuck, kudu (*Tragelaphus strepsiceros*), impala (*Aepyceros melampus*) and warthog (*Phacochoerus aethiopicus*) are also affected, but to a lesser extent.

The Elephant Hills Hotel, Victoria Falls Safari Lodge (VFSL), the "A" Zambezi Hotel and the Crocodile Farm are the main developments blocking the animal corridors. The Elephant Hills hotel and golf course and the VFSL have perimeter fences that are barriers to wildlife movement in the area. The urban residential stands to the south of VFSL are also a barrier to wildlife movements. The Elephant Hills golf course fence was originally intended only for the construction phase and not as a permanent fixture. Along the river bank the boat cruise operations also form barriers to wildlife movements.

The Rain Forest fence was constructed in 1986 to protect tourists from dangerous wildlife such as lion, buffalo and elephant. Elephants now regularly break down the fence, often during the night, to feed on the lush vegetation. The fence would need to be electrified to avoid this.

The Kazungula road runs through the middle of Zambezi National Park, and the Hwange road runs between the two national parks. Both roads act as partial barriers to the movement of wildlife. There is a temporary construction camp (Gardini construction company) in the middle of the bush between the tar road and Elephant Hills hotel. This is also a barrier to wildlife movements. These various points are illustrated in Map 21.

6.9 Aquatic Ecosystems

6.9.1 Fish

The Zambezi River in the Victoria Falls area provides a number of aquatic habitats that contrast strikingly over a relatively short stretch of the river. These contrasting sections of the river are critical in maintaining diverse habitats that are in turn responsible for outstanding biodiversity of the region. Apart from the spectacle offered by the falls themselves, visitors are attracted by the wide variety of animal and plant life that can be seen around them. This includes some excellent sport fishing, primarily for cichlid fishes of the genera *Serranochromis*, *Sargochromis* and *Oreochromis*, but also tiger fish and African pike.

Above the falls, the river is wide and flows relatively slowly between the numerous islands to found here. The river is fringed with gallery forest and there are extensive beds of submerged macrophytes in some places. A small floodplain occurs in the Kazangula area, and this is the southernmost extension of the vast Chobe-Linyati and Barotse floodplains that occur along the river upstream. This section of the Zambezi has been referred to as a "reservoir river" because its flow is relatively stable enabling submerged vegetation to become established and provide a

habitat and shelter for fish, especially small species and the juveniles of larger ones (Jackson, 1986). The upper Zambezi as a whole has a considerable diversity of fishes (about 90 species), of which about 74 species have been taken in the river above Victoria Falls along the Zimbabwe/Zambia border. Among the most important are members of the family Cichlidae with 16 species, many of which are very important commercially and much sought after by anglers.

Below the falls, the river flows through a narrow rocky gorge; the current is powerful and there is little aquatic vegetation. Little is known about the fishes in this section of the river but they are typical of those found in the middle Zambezi, which has fewer species (about 65) but a number of distinctive ones that are popular with anglers (e.g. the Vundu, *Heterobranchus longifilis*). The Cichlidae are much less important, with only seven native species. The Batoka Gorge below the falls is also of interest because a number of species normally found only in the upper Zambezi have been found there and occasionally in Lake Kariba. It is possible that these fish have been able to migrate downstream via the Victoria Falls power station, as at least two species are known to have escaped from Lake Kariba through the turbines of the Kariba dam. On the other hand, one species, *Barbus poechii*, is relatively widely distributed in the Batoka Gorge and some tributaries, including the Kalomo (Zambia), and Deka and Matetsi Rivers (Zimbabwe). This raises the possibility that the Batoka Gorge is a transitional area between the upper and middle Zambezi and these fishes may represent relict populations and emphasises the importance of conserving these populations until this question can be answered.

6.9.2 Water hyacinth

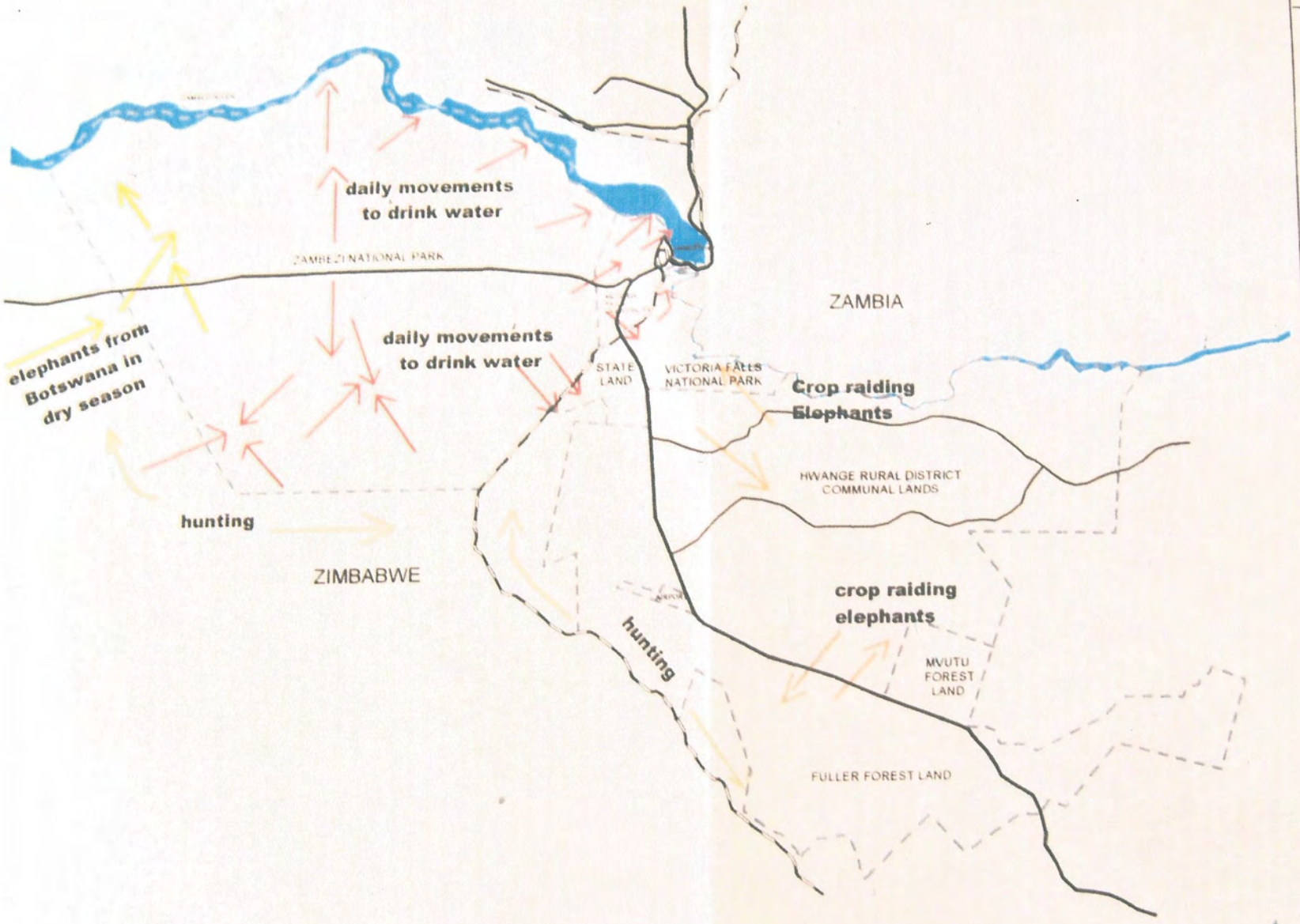
The water hyacinth, *Eichhornia crassipes*, has become a major problem throughout tropical Africa. It has not so far been documented in the upper Zambezi system, although it is present in the Kafue and the middle Zambezi. This plant can form mats in lagoons and backwaters on floodplain systems, which are crucially important to breeding fish. These mats prevent light penetration to the water below and therefore eliminate submerged rooted plants and cause the water to become deoxygenated and so fish are unable to live or breed there. Every effort should be made to ensure this plant pest does not enter the system.

6.10 Archaeological and Cultural features in the Environment

Acknowledgement: *This section is taken from a "Report on the Cultural Resources on the Zimbabwean Side" compiled by Joseph Muringaniza of the Natural History Museum for the Strategic Environmental Assessment of Developments Around Victoria Falls (November 1995). Note that Chapter 8 contains references to Historic Buildings and Cemeteries.*

6.10.1 Stone Age Sites

Stone Age archaeology is well represented in the Zambezi Valley on both the Zambian and Zimbabwean sides. Glazed and patinated flakes, cores and retouched stone tools characteristic



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Drawing Title

Wildlife Movements in Project Area

Legend

- Daily movements to drink water
- Elephants from Botswana
- Hunting
- Crop raiding
- Zambezi River
- Rivers and Streams
- Main Roads
- Regional Secondary Roads
- Railway
- Plan Area Boundary

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Scale 1:250 000

5 0 5 Kilometers

Date
17 July 2000

Map N
2

on the Zambian side are evident in Zimbabwe albeit in relatively smaller quantities. At least that is the impression one gets when examining those sites which have been spared disturbance. A good number of sites have disappeared due to building operations. Amongst the reasons for this disturbance is perhaps ignorance on the part of the developer or lack of appreciation for the cultural value of stone tools.

Two areas with clusters of stone age sites with corresponding clusters on the Zambian side were identified. Several other discrete sites were also identified.

6.10.1.1 The Victoria Falls Cluster.

Located east and north east of the built-up area, this cluster comprises the Early, Middle and Later Stone Age sequences. Interestingly, east of the Zimbabwean cluster is a corresponding cluster on the Zambian side with similar characterisation. Unlike their Zambian counterparts Early Stone Age sites on the Zimbabwean side have fewer hand axes and cleavers representing the Acheulian Technocomplex, (Clark, 1990). The raw materials used by their manufacturers however are the same and these are basalt. chalcedony and agates.

It is worthy noting that the Middle Stone Age sites indicated in the NMMZ Archaeological Survey in Harare as being part of the cluster could not be confirmed. The surface scatters observed were not characteristic Middle Stone Age blades, points, spheroids, scrapers etc, which are evident on the Zambian side (ZESCO Site, Field Museum etc).

Microlithic stone tools were easily identified and their distribution pattern and density are in no way different from that alluded to above with respect to Early Stone Age tools. There are very few varieties comprising mainly bladelets and crescents.

6.10.1.2 The Masuie/Zambezi Confluence Cluster.

Stone Age sites have been identified on the spurs opposite and flanking the Masuie river. On the Zambian side the sites were observed on the spur adjacent Songwe gorge while the Archaeological Survey in Harare indicated the presence of such sites on both sides of the Masuie River especially at its confluence with the Zambezi River. During fieldwork it was only possible to visit the sites on the southern spur since the northern is inaccessible due to the land mines planted there during the 1966-79 War of Liberation.

In the search for the sites in the Masuie/Zambezi confluence only a few tools were observed. This contrasts sharply with the situation on the Zambian side where concentrations of stone tools are evident. The Zimbabwean situation is likely to have resulted from human interference as well as natural processes. The Masuie/Zambezi confluence is an important stopover point for rafters. Some exit the river at this point and others start their journey down the river again at this point. A parking area was created at the spur south of Masuie river and three sheds have since been built to provide temporary shelter to the rafters. Tourism related activities have caused

relentless damage to archaeological sites as well as inducing soil erosion on the south bank of the Masuie river.

Generally the Stone Age sequence and site location and distribution is better known on the Zambian than on the Zimbabwean side. Whereas archaeological investigations of the Victoria Falls area started on the Zambian side as far back as 1938 under the leadership of Desmond Clark, no similar systematic study is recorded on the Zimbabwean side of the Victoria Falls area. Any damage on the Zimbabwean side to archaeological sites, however slight, will deprive pre-historians of an invaluable record necessary for the reconstruction and understanding of past lifestyles, climatic changes and how its past inhabitants responded to such changes. Examination of geological deposits in the Zambezi valley and deposits on the sand slopes revealed that the Zambezi river has deposited greater quantities of its alluvial materials on the Zambian side while eroding its southern, Zimbabwe side hence the apparent differences in stone tool distribution between the two sides of River Zambezi. What this means is that, the Zambian prehistory is incomplete without being complemented with the Zimbabwean prehistory which unfortunately is already threatened by *ad hoc* developments in the resort town itself as well as its environs.

6.10.2 Iron Age Archaeology

Iron age sites have a wider spatial distribution than their Stone Age counterparts due perhaps to the fact that Iron Age people were livestock herders as well as crop growers and these activities could not be practices within the confines of the Zambezi valley, which is characterised by a rugged terrain. Most of the sites are therefore located a distance from the river on higher and level ground. Two types of Iron Age sites could however be identified in the Plan Area.

6.10.2.1 Habitation Sites.

Most of these were identified on the basis of cultural remains and their location away from the Zambezi river. Heaps of iron slag and several potsherds provided the evidence of human habitation. The graphite burnished pottery observed at all the Iron Age sites surveyed is characteristic to the Zimbabwe Traditional Culture associated with the famous stone walled settlement near Masvingo, Great Zimbabwe. The sites are essentially Late Iron Age settlements whose establishment is attributed to the Mfecane period during which Nguni ethnic groups from the south invaded the indigenous people to the north causing massive involuntary migrations. The Nambiya or Nanzwa people who are linguistically related to the Karanga and whose oral tradition trace their origins to Great Zimbabwe, moved north and settled in the Hwange/Victoria Falls area. This was probably in the mid-19th century and the Nambiya have lived in this area ever since. Iron Age sites were recorded in Chisume, Kasikili, Lambezi and Masuku areas.

6.10.2.2 Religious/Sacred Sites.

The Zambezi river has always been regarded by the locals, especially the Nambiya people as their spiritual home. Their gods and goddesses have always resided in the river and because they play a significant role in providing for their people, propitiation, rainmaking and thanksgiving ceremonies are held at specific sites on the Zambezi river. The sacred sites, such as the island of Chamapato, where complete pots can still be seen today, were never inhabited by people. Because of changes in land-use and land ownership the locals have been denied access to some of these sacred sites. Examples abound in the Victoria Falls area.

According to the local leadership, including Chief Shana and his herdmen Malikwe, Kabani Mpofu and Mpinami every island or pool in the Zambezi river is in current use for expiation or rainmaking ceremonies and has a corresponding baobab tree on the land for the same purpose. The Big Tree whose sacredness is acknowledged by the DNPWLM and is one of the tourist attractions in the Victoria Falls area, is a typical example of such trees in the communal areas. The locals still regard the Big Tree as "the sacred tree" but due to its despoilment by the parks officials they were forced to seek alternative trees. But the locals doubt their effectiveness or acceptability by the ancestral spirits. As evidence, they point to the persistent drought in the area. The War of Liberation, they claim, also led to the desecration of some of these substitute trees by unscrupulous individuals who converted the land around them into fields. The historical communication between the living and the dead, according to the Nambiya people, has recently suffered yet another blow from some of the rafters who have resorted to carrying away some of the clay pots from these sacred sites on the Zambezi river. The locals blame their suffering and droughts on the unbecoming behaviour of the tourists and the opportunists who have showed no respect for their traditional sites.

The various Stone Age and Iron Age sites are shown on Map 22. It might be noted that the distribution of sites on the map is a reflection of the problems of access to the mined and predator-infested Forest and Parks areas. The habitation preferences of the prehistoric communities are not realistically represented on the map.

6.11 Key Issues

- The two dominant soils in the Plan Area pose potential problems of erosion either because the basalt derived ones are thin or the Kalahari Sands are loose.
- There is a need to protect the existing wetlands/vleis in the Plan Area as they appear to be drying out.
- The ecological zones of the Plan Area, IV and V are unsuitable for agriculture and periodic drought can affect vegetation.
- The area is also prone to heavy rain, which can cause rapid erosion if the ground is bare.
- Whilst the Plan Area has substantial woody cover (82.5%) it is declining quite fast in some areas (especially the urban and communal land areas) and the quality is also deteriorating.

- Some tree species are in decline and failing to regenerate, due in part to the increase in the use of certain trees for wood carving.
- There has been a long term decline in the quality and quantity of the riparian vegetation belt, including the Rain Forest. This is affecting biodiversity and has an impact on wildlife.
- There is a decline in some bird species due to a loss of habitat, especially along the Zambezi.
- Elephant numbers continue to grow at 5% per annum, which is adding to stress on vegetation in certain areas.
- There is a decline in bushbuck, reedbuck and waterbuck due to a loss of habitat.
- The free movement of wildlife, especially to the Zambezi River, has been prevented by new developments in the Municipal area.
- The cultural heritage of the area is rich but lack of research and protective mechanisms mean that there has undoubtedly been a loss of archaeological sites.
- The River Zambezi is a sacred area but tourist operators and others all too often fail to respect this fact.



VICTORIA FALLS COMBINATION MASTER PL PREPARATION AUTHORIT

Drawing Title:

Archeological Locations

Legend

- Archeological Sites
- Iron Age
- Stone Age
- Zambezi River
- Railway
- Minor Regional Roads
- Regional Sec Roads
- Plan Area Boundaries
- Main Roads

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Prepared by:
Zimbabwe Department of Physical Planning
Victoria Falls Consortium

Scale 1:100 000

5 0 5 Kilometers

Date:
March 2001

Map Number
22

7. ENVIRONMENTAL THREATS AND MANAGEMENT

Acknowledgement: *This chapter relies heavily on the "Environmental Specialist Report" produced by the EIA Shop and VFC. Some sections are reproduced verbatim.*

7.1 Introduction

This chapter considers the main aspects of the environment, as described and quantified in Chapter 6 and analyses the extent to which they are under pressure or threat from various types of human activity and considers some planning and management issues.

7.2 Impact of Human Activities on Vegetation

7.2.1 Logging / Exploitation.

Logging of the *Baikiaea* woodlands started in north western Matabeleland in 1904 along the line of rail between Victoria Falls and Bulawayo. Though the woodlands have a diversity of species, commercial harvesting has concentrated on just three main species: *Baikiaea plurijuga* (teak), *Guibourtia coleosperma* (mchibi) and *Pterocarpus angolensis* (mukwa). As early as 1909 the railway and mining industry were using a lot of teak for railway sleepers. It was because of the popularity of teak that the saw milling industry was founded. Mchibi has long been recognised as having similar properties to teak. Mukwa was largely ignored in the early days in favour of teak and Mchibi. Its popularity has been a much more recent development, arising when Mukwa started being used to produce veneers and solid furniture. More recently all three species have been used for parquet flooring and increasingly teak and Mchibi are being used for furniture for the domestic and export market. Mukwa is now one of the prime species for wood carving and furniture.

Logging was done in the present Victoria Falls (Zambezi) National Park prior to its demarcation and elevation to national parks status. It is now illegal to remove any timber from the national parks. Fuller and Mvutu have not yet undergone their 2nd cutting cycle and tenders have been invited this year. The concessionaire who wins the bid enters into an agreement with the Forestry Commission (FC) to harvest. The concessionaire pays the FC royalty at agreed rates for all timber harvested. The FC encourages that the primary processing of timber be done locally so as to create local employment opportunities. Excess timber would be sold to other timber merchants for primary and secondary processing. Victoria Falls Town has a single timber saw milling firm but has numerous small scale or cottage furniture-manufacturing entrepreneurs.

(Hwange Communal Land Block A (5930 ha) and Block B (2190 ha) are protected forest blocks within the communal area. These are owned by the local authority (Hwange Rural District

Council) and managed with advice from Forestry Commission. These blocks do not fall within the Plan Area).

7.2.2 Impacts of Logging on the Vegetation.

Harvesting involves selective removal of mature stems of the commercial timber species. This has two effects on the forest structure. It results in the direct opening up of the forest canopy which permit the smaller sub-canopy saplings to grow up in the light and space (a positive effect). The second effect (negative) is the disturbance to the forest from the extraction network of tracks and roads. These effects combined result in increased grass, shrub and herbaceous production, which in turn leads to increased fire risk. Large and frequent fires have the potential to reduce a forest structure to a bush land structure. These changes were noticeable and were of concern to foresters as long ago as the 1st cutting cycle.

Some indigenous tree species are more resistant to fire than others, and particular fire regimes will favour certain species at the expense of others. Burning trials done in Gwaai Forest indicate that fire results in a shift in species composition from *B.pluirjuga* and *G.coleosperma* towards non-commercial species. The result of frequent late fires include loss of diversity (mainly of the fire sensitive species), an increase in multi-stem coppicing and increased below-canopy production.

Causes of fires in the Forest Reserves (and National Parks) have changed little over the past 75 years and are:

- Annual burning of grass by neighbouring villagers to improve grazing with no precautions against the fire spreading into the forest.
- Honey hunters making fires to smoke out bees and then leaving the fires burning.
- Poachers setting fires in order to flush out game.
- Steam locomotives on the Bulawayo/Victoria Falls railway line.
- Lightning
- Passers by negligently discarding matches or cigarette stubs, or leaving unattended fires by the roadside at lay-bys
- Arsonists with a score to settle with the Forestry Commission on one issue or another especially eviction of illegal settlers or arrest of poachers.
- Elephants pushing down electricity pylons which then start fires

7.2.3 Decline in Timber Resources

It has repeatedly been expressed that commercial timber harvesting is taking place at unsustainable rate resulting in a decline in the timber resource. The mining of timber that took place during the 1st cutting cycle left the forests with small sized stems that have taken 70 instead of 40 years to reach harvestable sizes. Harvesting in the 1st cutting cycle also removed

the bulk of the best timber specimens leaving behind inferior stems to provide the seed crop for subsequent generations. This has probably led to the decline in quality of trees in Fuller and Mvutu. Mvutu Forest has been over exploited to such an extent that what remains today is a teak bush land.

7.2.4 Wood Poaching in National Parks and Victoria Falls Municipal Area.

Wood gathering from the forests has been a sustainable activity for thousands of years. People need building material and fuel, but in the past decade the rising population density in the Plan Area has placed the forests in the Plan Area under threat. The level of wood poaching in Victoria Falls town vicinity is now occurring at a rate that far outstrips natural regeneration, making it unsustainable. It is a very serious issue that has major environmental implications.

According to town residents, the level of tree cutting has increased dramatically with the recent increase in paraffin (cooking fuel) costs and the general deterioration of the economy during 2000. In October 2000 alone, the VF Anti-Poaching Unit caught 239 people chopping live trees. Mukwa trees are reported to have almost disappeared in the area, and the poachers are now targeting *Baikiaea* (teak). These species are removed for carving. Other species e.g. mopane, are used for poles in hut building. The penalty (if any is paid) is a paltry fine of Z$12 – less than the cost of a loaf of bread. This is ridiculously low and makes a mockery of any law enforcement. The extremely high level of wood poaching has had, and will continue to have, a devastating effect on wildlife habitats, biodiversity and the aesthetic and wilderness appearance of the area.

7.2.5 Timber / Wood Poaching in Forest Reserves.

Poaching of forest products in Fuller and Mvutu is an ongoing problem and is likely to remain so as long as the harvesting of minor forest products by local communities remains strongly discouraged by the FC. Forest margin communities do not have a stake in what goes on in the forests and they take the forest and forest products to belong to the FC. Poaching covers all types of forest products commercial timber, wildlife and minor forest products. A significant proportion of the current wood poaching is commercial (particularly timber for furniture and curios), unlike in the past when poaching was done for own use (i.e. subsistence).

7.2.6 Use of Minor Forest Products.

Communities abutting Fuller and Mvutu forests make extensive use of forest products. Minor forest products used by local the communities include grazing, firewood, poles for construction, thatching grass, branches for fencing, medicines, wild fruits, grass for brooms, wood for utensils, wood for carving, honey and fibre.

Men seem to place higher priority than women on the use of these forest resources, as it is men who are mainly found in the forests harvesting the resources. Women normally enter the forests to harvest thatching grass, grass for brooms and fruits.

More than 50% of the households in the adjacent communities use forest resources such as grazing, firewood, building poles, thatching grass, branches for fencing, grass for brooms and wood for carving utensils. The bulk of harvesting and utilisation of forest products is for personal use rather than for sale. It is believed that firewood is also being shipped to Victoria Falls and Hwange town for sale.

7.2.7 Grazing in Fuller Forest

Grazing of livestock by communal farmers in Fuller Forest is allowed on a 'gentlemen's agreement' basis. The grazing is restricted to the dry season and to some parts of the forests. Cattle are not allowed to stray as far as the photographic safari area near Jafuta Lodge or the Hunting Camp at Mubiya even during the off-hunting season. There are no restrictions on grazing in Mvutu Forest although management is proposing to lease grazing on a commercial scale. This arrangement is meant to be mutually beneficial in that the farmers get much-needed grazing for their cattle and at the same time reduce fuel loads in the forest which are a fire hazard. In comparison to other forest areas, Fuller has the lowest fire incidence, but whether this can be attributed to this arrangement is debatable.

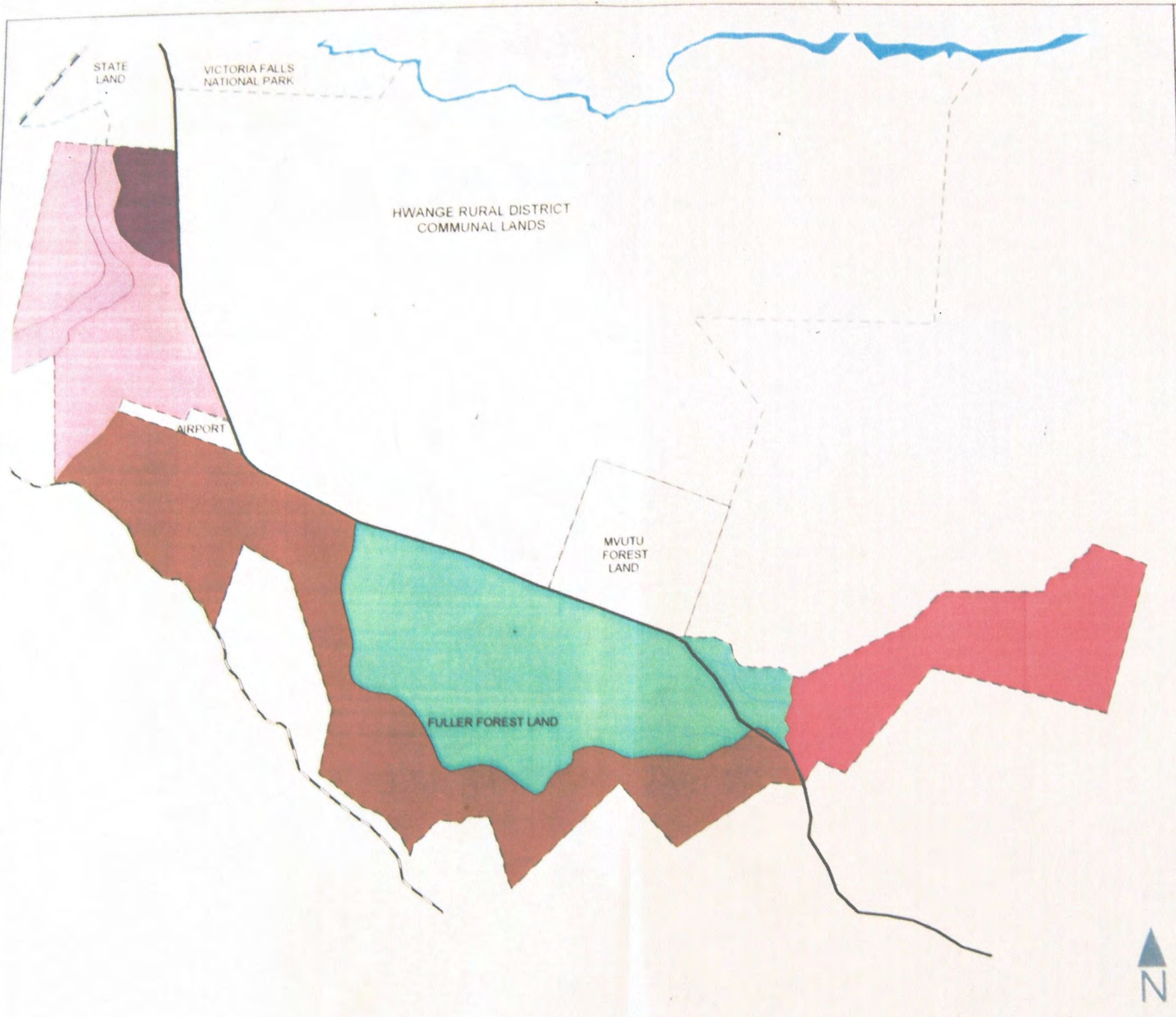
7.2.8 Fuller Forest Management Plan

Fuller Forest Management Plan divides the forest into seven zones as shown on Map 23 and in Table 4 below:

Table 4 : Fuller Forest Management Plan Zones

ZONE	AREA (ha)	DESCRIPTION OF RESOURCES AVAILABLE
A	3 655	Poor stocking of *B.plurijuga, P.angolensis* and G.coleosperma
B	9 455	Good *B.plurijuga* population; some *P.angolensis*
C	6 570	Good population of most timber species; good wildlife population
C1	2 000	Good wildlife area; some good *B.plurijuga* population
D	20	Vlei area where thatch grass is harvested
E	1 600	Good woodland
F	2 125	Mvutu forest, previously heavily exploited

Source: The EIA Shop



VICTORIA FALLS COMBINATION MASTER PLAN PREPARATION AUTHORITY

Drawing Title

Fuller Forest Management Zones

Legend

- Commercial Grazing Lease
- Hunting Area
- Hunting Lease
- Photographic
- Rest Camp
- Thatching Grass Collection(Seasona
- Timber Production
- Main Roads
- Railway
- Zambezi River
- Plan Area Boundary

Victoria Falls Environmental Capacit and Master Plan Proje

Prepared by
Zimbabwe Department of Physical Planning
Victoria Falls Consortium

Scale 1:125 000

Date

The Management Plan proposes a five-year management regime for each zone (Fuller Management Plan). The Management Plan was produced in 1994 and is being reviewed this year 2000. Fuller Forest is further divided into the following blocks, mainly for fire management purposes.

7.2.9 Elephant Damage in Fuller Forest

Incidences of elephant damage are particularly high in *Afzelia quanzensis, Shinziophyton rautenenii* and *Pterocarpus angolensis. Shinziophyton (= Ricinodendron)* fruit is a delicacy for the elephants and they reach it by shaking the tree or pushing the whole tree over. Damage to *Afzelia* and *Pterocarpus* is mainly through debarking and also pushing the trees over.

7.2.10 Impact of Development: Airport Expansion

The Civil Aviation Authority (CAAZ) has made a formal request to the Forestry Commission for land adjacent to the Victoria Falls airport for the purposes of expansion. In such circumstances the Civil Aviation Act overrides the Forest Act and the Forestry Commission has little choice but to grant the request. The expansion area has so far been demarcated although there have not been any infrastructural developments as yet. The land has to be de-gazetted first before any development is done. The process to de-gazette the land has been initiated. The area involved is 173 ha of mixed forest with teak being the predominant species. A contractor identified by the Forestry Commission prior to any developments will carry out a timber salvage operation. The revenue realised from the salvage operation will accrue to the Forestry Commission. The area cuts across the 100ha strict natural reserve which was established in 1993 for the purposes of in-situ gene conservation of *Pterocarpus angolensis*.

The Forestry Commission has indicated that it would like to be compensated for the land lost to the expansion with the same size of land from a state land neighbouring Sikumi Forest Area in Dete. All indications are that the proposed land swap will be successful.

7.2.11 Clearing for Cultivation in Communal Lands.

Population growth in Hwange communal land together with the associated need for cultivation has meant rapid erosion of communal land forest in the past decade. The extent of woodland removal is indicated in Map 13.

As previously stated, the Kalahari Sands are inherently very low in nutrients. After clearing the land of all but the most resistant and sturdy tree stumps, the branches and trash are usually burnt (releasing valuable nutrients into the atmosphere). Crops such as maize, sorghum and millet are planted and if the rains are favourable, a crop is harvested. The extremely limited nutrient reserves in the soil are taken up in this first crop, and from then onwards crop yields decline sharply. This necessitates the clearing of more woodland for cultivation. The absence of

nutrients, combined with the harsh dry exposed soil in the abandoned fields makes regeneration of all but the hardiest woody plants very difficult. Whilst there is some immediate short term gain from the sale of carvings from felled trees, firewood, and the reaping of a first crop, in the long term this model of conventional agriculture is not generally sustainable in the Victoria Falls area.

The loss of woodland in the communal areas particularly affect women who are mainly responsible for the collection of wood fuel. In Monde women walk 5 km to fetch firewood from Forest Land.

The DNR has undertaken some restoration work on wetlands in the Communal Lands within the Plan Area, notable the Lukunguni Vlei.

7.3 Impact of Human Activities on Birdlife

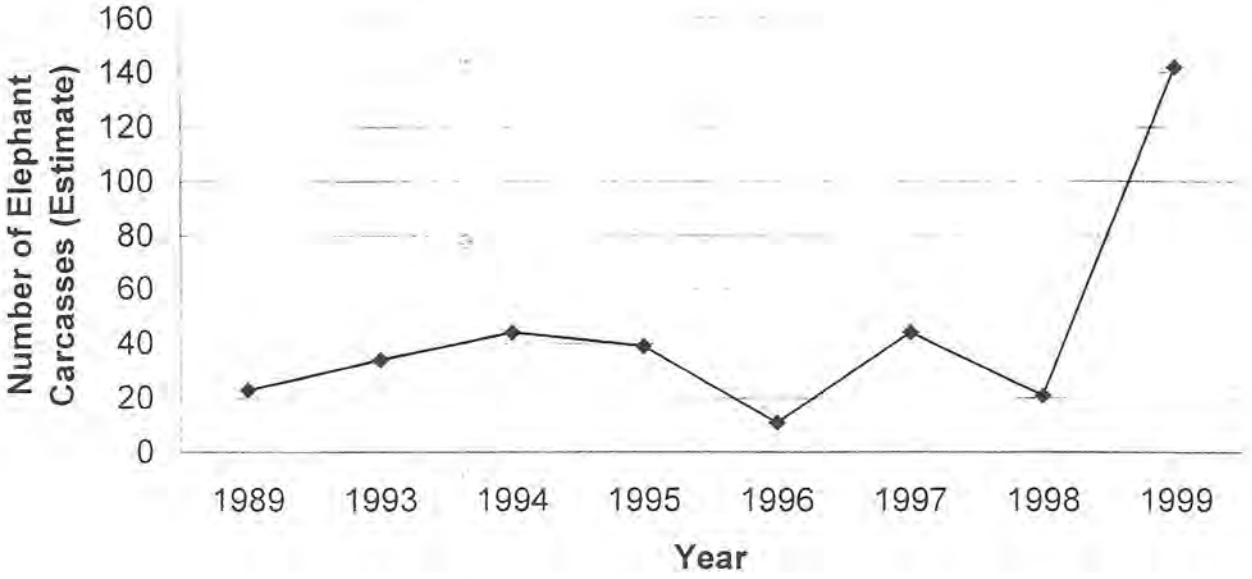
The most alarming and critical change has been the disappearance of at least one, and probably more, pairs of Taita Falcons. A pair was regularly seen in the fourth gorge and attracted birdwatchers from all over the world. Their departure is attributed to disturbance from aircraft, especially helicopters, flying in the gorges. The young (non-flying) chicks are frightened by the noise and shadows of the aircraft and leap out of the nest, plummeting to their death on the rocks below. Incidences of this nature have been recorded with Black Eagles (*Aquila verrauxii*), another spectacular raptor of the gorges (Hartley, pers. Comm.).

7.4 Impact of Human Activities on Wildlife

7.4.1 Poaching of Wildlife

Wildlife is an important traditional natural resource harvested freely by communities in the area until colonisation in the 1900s. The designation of national parks, forestry areas and private commercial land restricted this activity to the communal areas, but recently poaching of wildlife in the Victoria Falls area has increased significantly. As the number of people living in the area increases and poverty increases so will the amount of poaching. The escalation in illegal hunting is not restricted to the town but is occurring throughout the northwestern region. The aerial survey data reveal a sharp increase in fresh (Category 1 & 2) elephant carcasses in north-west Matabeleland in the past 10 years (Figure 3).

Fig 1: Number of Elephant Carcasses (Category 1 & 2): North West Matabeleland: 1989 to 1999



Source: The EIA Shop

It is believed that the elephant poaching in Zambezi National Park is carried out by armed poachers from Zambia. One elephant was recorded poached in the Zambezi National Park between 1 January 2000 and 25th August 2000.

Poaching of all species, particularly buffalo, takes place at night from vehicles along the Kazangula road using spotlights and rifles. Buffalo are also snared on the islands and on the outer edges of the town and into the national parks.

Hippo are shot and harassed when they cross onto the Zambian mainland. Crocodile eggs are collected and eaten by locals on both sides of the river.

Poaching by local Zimbabweans is done on both a commercial and subsistence scale. Species regularly snared include impala, kudu, warthog, eland, sable (*Hippotragus niger*), and hyena (for 'medicine'). Even some elephant have been found with snares on them. The poachers based in Chinotimba and the 'DRC' squatter camp hunt in gangs, using cable snares to poach buffalo. They also poach waterbuck, kudu, warthog and other species using spears and dogs. The meat is sold in Victoria Falls town. Poaching from Hwange Communal Land is thought to be mainly subsistence and targeted at the smaller game: impala, kudu etc. Poaching is reported to have recently increased in the Matetsi Safari Area and on the private game farms.

National Parks carry out anti-poaching patrols in the area, but they are severely under-staffed and under-funded. A Victoria Falls Anti-Poaching Unit (VFAPU) was set up voluntarily by local tour operators and has been working with National Parks since January 1999. The unit has caught many poachers, most of them from Chinotimba, and recovered 3000 snares in the last 22 months. One of the big contributing factors towards the snaring problem was the ready supply of wire from the fence along the minefield in the area. The wire has now been removed which has helped to reduce the amount of snaring

7.4.2 Aircraft

The Civil Aviation Authority of Zimbabwe is responsible for issuing aircraft operating permits and policing the flight restrictions. At present, 5-6 operating permits have been issued. The height control limit is presently 3500 ft (500m) above the ground. The plane operators want this lowered to 1500 ft.

Apart from the obvious flying tours above the Falls, aircraft operators take game viewing trips over the Zambezi National Park. This involves low flying - frequently well below the flight height limit. Aircraft are also reported to fly in the Gorges – once they have dropped into the gorges the aircraft are below radar coverage and cannot be detected by CAAZ.

Elephants have grown used to the planes and helicopters to a certain extent, but other species such as lion have not and are obviously stressed by it. The helicopters and fixed-wing aircraft are both disturbing to wildlife, but the helicopters more so. The noise of the aircraft causes stress to the wildlife which may affect their breeding and/or territorial behaviour and may result in animals moving into less suitable habitats.

In addition to disturbing wildlife, the noise from the planes is disturbing to the town residents and tourists. According to the IUCN SEA the noise from aircraft is the biggest generally perceived tourism issue. This was confirmed by the Zambezi Society's research in 1998 (Wynn, 2000) in which aircraft noise was recorded as one of the principal detractions from the Falls feeling truly wild.

Rules for operation need to be set-up and enforced and penalties need to be given to rule offenders. It should be noted that it is very difficult to control and police the plane heights above the ground. The number of operator permits, the number of flights allowed per day, and the timing of flights, need to be limited and controlled.

7.4.3 Road and Rail traffic.

There are a significant number of conflicts between wildlife and road and rail traffic in the Victoria Falls area. In August 2000 a car and elephant collided on the Kazungula road. One person was killed and the elephant had to be shot. In the past year two elephants have been hit by trains.

7.4.4 Litter.

Litter affects wildlife directly - animals eat plastic bags and cut themselves on tin cans - and indirectly - by polluting their habitats. Litter does not enhance tourism and the visitors' 'wilderness experience'. The municipal rubbish dump is badly positioned and poorly planned but this matter is being addressed by Environment 2000's urban programme, which is tackling both source and landfill disposal of the town's solid waste.

But at the present time waste facilities, being situated just off the main Hwange road, can be both seen and smelt from the road. The rubbish is dumped straight onto the ground: there is no pit/hole for it to go into. It therefore blows around and spreading out over a large area. The pit is lit by the municipal workers and the stench from the burning rubbish is unpleasant, and worse during the rainy season. Hyenas and baboons visit the site as do people from the DRC 'squatter' camp and Hwange Communal Land. The 'squatters' carry some of the rubbish down to the Masuie River and leave it there. There is an urgent need to fence the town's municipal rubbish dump and preferably electrify it.

The litter problem in Victoria Falls town and surrounds seems to be caused largely by the local population. Visitors to the town are generally environmentally aware and usually put their litter in the bins provided. The bulk of the litter comes from hotels, big businesses, the supermarket and urban households. There are also substantial amounts of litter along the Kazangula road and in the bush around the town. The three garages throw their batteries in the rubbish dump rather than dispose of them properly. Rubble from construction sites and garden waste are often dumped on vacant land in the town centre – adding to the unsightly appearance.

As indicated above litter is also a problem along the river. This comes mainly from the sunset cruise employees using the bush as a rubbish dumping ground and as a toilet. National Parks have sent scouts to the jetties to educate the operators about the litter problem, but this seems to have had little impact. Litter in the Rain Forest is not considered a problem as most tourists are conscientious about rubbish disposal.

7.5 Impact of Human Activities on the River Zambezi

7.5.1 Boats and Canoes

There are presently 36 'booze cruise' boats registered to operate along the river in Victoria Falls, although the maximum number that have operated at any one time is 22. The jetties for these cruise boats are physical barriers to wildlife movement especially elephant, buffalo, hippo and crocodile. There are also several powerboat and jet boats for fishing safaris or private use. Powerboats operate from the islands just above the Falls up to around Kandahar Island. Jet boats have a shallower draught and can go much further upstream, as far as Chundu Island.

Both types of boat are very noisy and disturb both the wildlife and the tourists at the picnic site and fishing camps in the Zambezi Park.

Being quiet, canoes cause less disturbance to wildlife but they may be targets of aggression fo hippo and/or crocodile.

There needs to be a limit on the size of boat allowed and its appearance. Many of the boats ar painted white or other pale colours and this makes boats unnecessarily conspicuous. Thi enhances disturbance to wildlife not to mention taking-away from the tourists' 'wilderness experience'. Boats are noisy and cause wave action that causes shoreline erosion and affects the breeding of some birds (e.g. skimmers, see bird section). The size of the boat propellers and the depth of the motor in the water are important factors contributing towards the noise of the boats and the wave action they create and limits need to be enforced. Boat engines need to be inspected regularly for oil leaks. When servicing boat engines, the mechanics have been disposing of the oil into the river. This practice should be banned.

It is suspected that some of the boats still dispose of their toilet waste directly into the river. Boats should all have chemical toilets on board with holding tanks that are emptied into soakaways on land and not straight into the river. Although there are rubbish bins on most boats and the tourists are generally conscientious about disposing of their litter, when the boat docks, the staff simply throw the litter out onto the land near their jetties, creating a serious 'eyesore'. National Parks have tried to introduce and enforce a code of conduct to all boat operators. This has been partly effective, but needs to be re-enforced, policed and offenders need to be fined heavily. The boat operators are difficult to police especially since National Parks do not currently have an operational boat.

7.5.2 White Water Rafting

Seven safaris companies have permits from National Parks to conduct white-water rafting down the Zambezi River below the Falls. Impacts of the rafting include litter and erosion of pathways along the entry and exit pathways to the gorge. Rafters have also disturbed traditional sacred sites along the river. However the negative environmental impacts of rafting are minimal compared with boating upstream.

7.5.3 Fishing

The potential for conflict between commercial fishing and angling above Victoria Falls is quite considerable because of different policies on the Zimbabwean and Zambian sides. The entire length of the Zimbabwean section lies within the National Parks and Wild Life estate and commercial fishing is not permitted. In contrast, only a small portion of the Zambian section is protected and extensive commercial fishing takes place along the rest of the Zambian shore. There appears to be no regulation of commercial fishing in Zambia, except for some control of

gillnet mesh sizes (e.g. Cowx & Kapasa, 1995) and Zambian fishermen venture into Zimbabwean waters on a regular basis. Two steps that need to be taken to minimise the potential conflicts between anglers and commercial fishermen are (1) some kind of joint management system and (2) effective control of cross-border fishing to back it up.

Once more development takes place in the Zambezi basin the likelihood of exotics invading the Zambezi in the Plan Area will increase. Species that pose the most immediate problems include: *Nile tilapia, Oreochromis niloticus* This species is favoured by fish farmers because of its rapid growth rate and it is well able to compete against the indigenous tilapias. Fish farmers and anglers have introduced it into the middle Zambezi where it is spreading very rapidly and displacing native species. It is also established in the Kafue, having escaped from fish farms (Thys van den Audenaerde, 1994) and there is a very real danger that fish farmers in Zambia will spread it to the upper Zambezi.

Anglers and commercial fishermen are unlikely to view this fish with disfavour since it is prolific and grows to a large size. But this should make it less attractive in the upper Zambezi where the indigenous Three-spotted Tilapia, *Oreochromis andersonii*, also grows to a large size and is a popular angling species. If Nile tilapia were to invade the upper Zambezi this fish is one of the species that would be adversely affected and its numbers would decrease through competition and hybridisation. The major threat of the Nile tilapia is therefore to the biodiversity of the river basin.

The Louisiana Red Crawfish, *Procambarus clarkii*, has been reared on a farm at Livingstone for some years, and there is a continual desire to promote the farming and culture of this and other freshwater crayfish species (see Mikkola, 1996). So far, these animals have not escaped into the system but it is always possible that they might do so, especially if more farmers begin to grow them. They have a tremendous destructive capability through the destruction of vegetation and burrowing in riverbanks; in Lake Naivasha, Kenya, they contributed to the reduction of the fish stocks, and the elimination of various invertebrate groups, by destroying submerged vegetation (Harper *et al.*, 1990). This could be a particularly serious problem in the upper Zambezi where submerged vegetation is so important in maintaining the diversity and abundance of fish species.

7.6 Impact of Human Activities on the Cultural Environment

There are three main, potentially adverse, impacts on the cultural environment that are currently being experienced and may increase during the plan period. They are all associated with development of one kind or another

The first impact occurs as a result of physical development that disturbs the ground. Unwittingly valuable archaeological remains can be lost in this process. Moreover, intense use can also cause considerable damage, even if the ground is not dug for buildings or other structures. The

lack of detailed archaeological research in the Plan Area means that it is likely that there are many valuable stone age and iron age sites in the Plan Area that are unrecorded. There may even be unknown evidence of very early man. It is not therefore possible to protect such areas. The only safeguard is to have an expert attend the initial commencement of development to ensure a valuable part of our heritage is not destroyed.

The second type of impact is the prevention, through development, or through over-use, of access by local people to traditional and ritual sites. Within the plan area it is possible to identify these areas. The River Zambezi has many such sites and as the tourist activities increase such sites can become despoiled or used so as to prevent the local ceremonies being carried out. In some cases tourist operators encourage visitors to take away ritual pots as souvenirs. In general, a lack of respect for the cultural value of local sites and features, such as rivers, springs and trees, by visitors and tourist operators, diminishes the life of local people.

The third type of impact is the lack of knowledge or concern for local Nambiyan custom by local people with different backgrounds who have settled the area more recently. This too can result in the despoliation of sites.

7.7 Planning and Management Issues

7.7.1 Wilderness Value

Recent research carried out by the Zambezi Society (Wynn, 2000) focuses on the nature and value of 'wilderness' in the Zambezi valley. It defines wilderness as *"...a natural, undeveloped and unpopulated landscape, which is scenically attractive or unusual, contains indigenous species, and induces an emotional state of mind in which the visitor may feel any or all of the following: in harmony with nature, freed from "civilisation", inspired, refreshed, invigorated, challenged, stimulated, humbled, or spiritually fulfilled."*

In interviews with visitors the study found that the top five reasons for visiting the Zambezi River were:

- scenic beauty
- to visit a new part of the world
- game viewing / bird watching
- presence of large wild animals
- wilderness experience

An overwhelming 98% of visitors to Victoria Falls felt that the presence of wilderness was important to them and 68% said that the possibility of a wilderness experience affected their decision to come to the Falls.

This underlines the importance of wilderness as a key attribute of the Falls from tourists' perspective, and the challenge planners face in retaining it as an asset of the local tourism economy.

7.7.2 World Heritage Site

Zimbabwe is a signatory to the UNESCO World Heritage Convention of 1972, which is a convention concerning the protection of the world cultural and natural heritage of "international outstanding value". Victoria Falls was presented to the World Heritage Committee for enlisting jointly by Zimbabwe and Zambia. The dossier for the nomination of Victoria Falls was prepared by the appropriate government agencies on both sides of the Zambezi on behalf of their respective Governments, or "State Party" in convention terms. In the nomination dossier for Zimbabwe it was indicated that the DNPWLM would be responsible for the natural component and NMMZ would be responsible for the conservation of the cultural aspects.

In 1989 Victoria Falls and Batoka Gorges were inscribed by the United Nations Educational Scientific and Cultural Organisation (UNESCO) as a World Heritage Site because of its superlative natural features and as an example of significant on-going geological processes. The boundaries of the site are shown on Map 24. In 1996 the IUCN SEA, sensing the threat posed by development to these qualities, recommended no further development within the riparian zone, the islands or the gorges within the WHS. It also recommended buffer zones at the WHS boundaries.

UNESCO has guidelines for implementing the World Heritage Convention (UNESCO, 1995) which set out, *inter alia*, monitoring and reporting obligations of states parties. Among these obligations are on-site monitoring, recording the condition of the site annually, and reactive monitoring of events which may have an effect on the state of conservation of the site. It also specifies the creation and maintenance of buffer zones.

It is apparent that the obligations to meet UNESCO requirements for a World Heritage site have not been met and a warning has been issued from the relevant international authorities that the Victoria Falls area may be de-listed. In response to this it has been agreed by the two State Parties to constitute a World Heritage Management Committee, which should comprise the various stakeholders from Zimbabwe and Zambia.

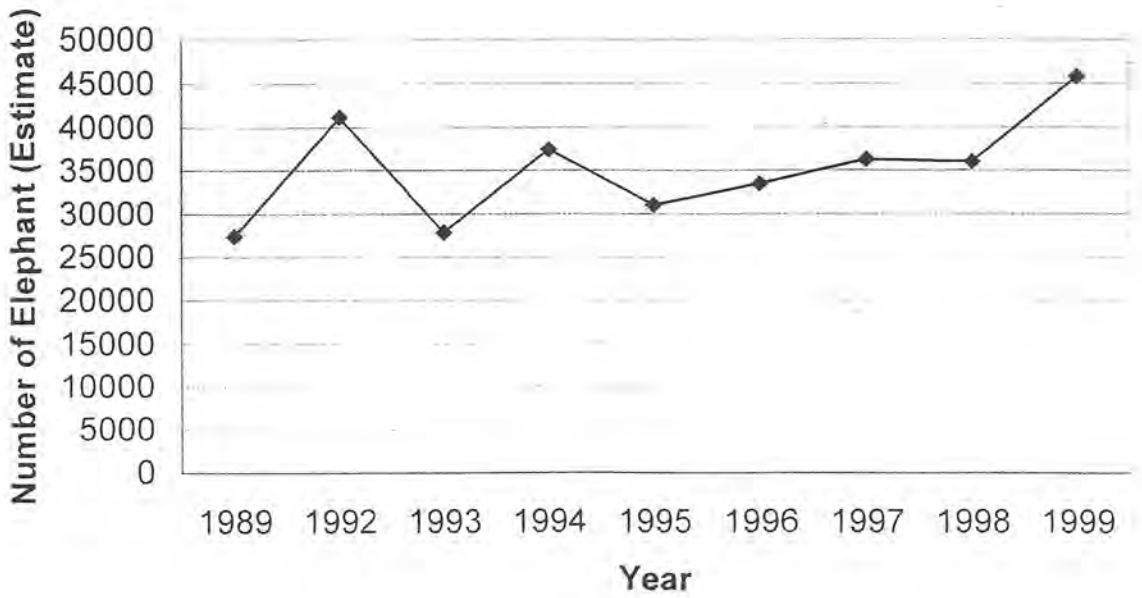
Over the past decade the Department of National Parks and Wildlife Management have reportedly not been meeting these obligations either for Victoria Falls or Mana Pools, which is also inscribed. Now there is some confusion regarding who should be the management authority for the WHS (National Museums and Monuments are reportedly interested in taking this role.) A multi-disciplinary National World Heritage Committee has been created but at the time of writing this body had apparently yet to meet.

It is urgent that these matters are resolved and that Zimbabwe, together with Zambia who are co-proposers, meet their obligations as states parties. Also, the WHS status should be more actively promoted in Victoria Falls generally.

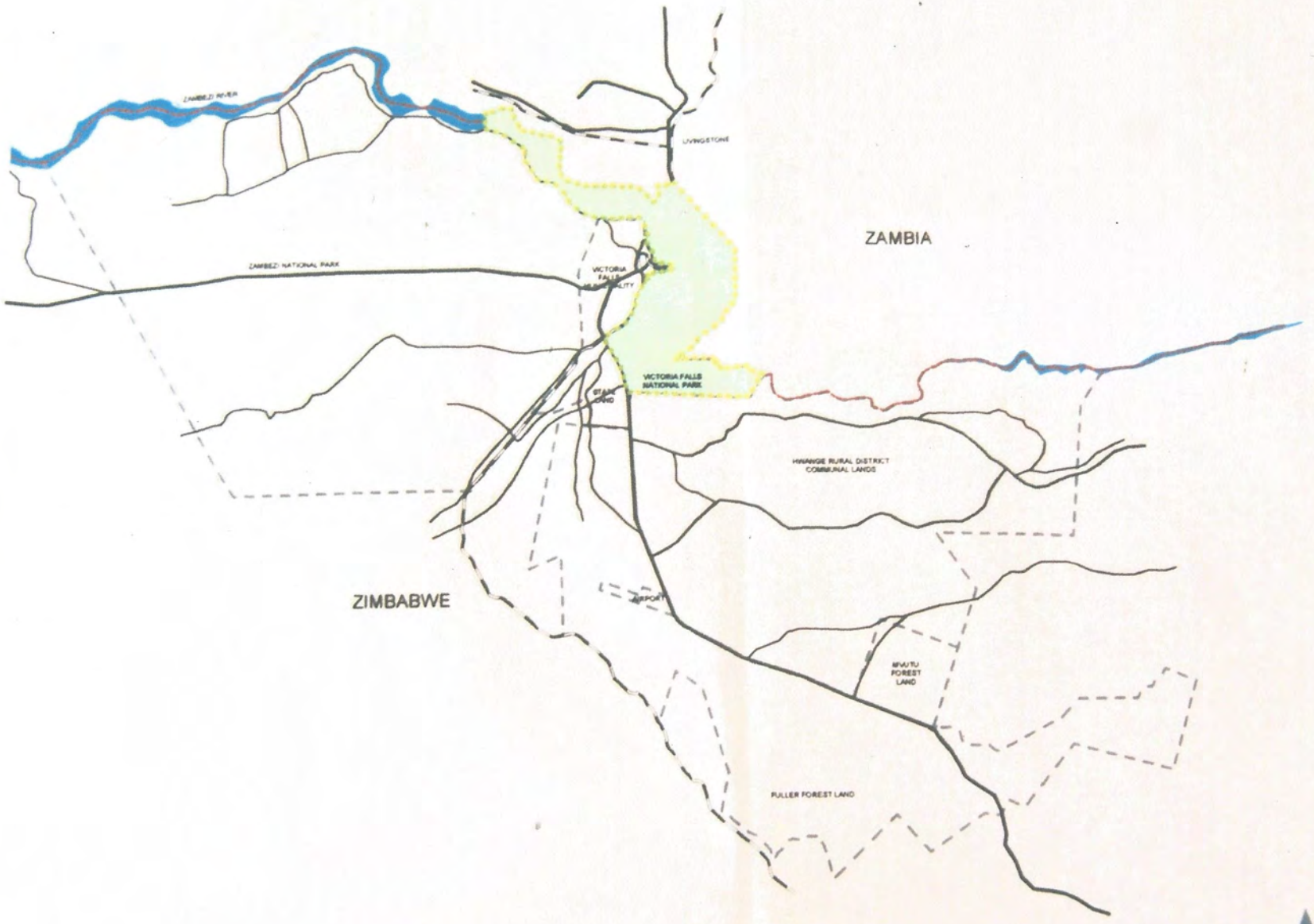
7.7.3 Elephant Management

From a planning perspective the main wildlife issue in Victoria Falls is the increasing elephant population. Figure 2 shows the trend for elephant populations in north west Matabeleland (from WWF aerial census data). The population is growing at 5% per annum and being augmented by the immigration of animals from the expanding population in Botswana. There has been no elephant control programme by National Parks since 1986, and the only losses are through natural death, poaching and hunting in the safari areas. In Victoria Falls densities of up to 3.7 per km2 are recorded for the riverine zone and judging from the level of damage in this habitat, this density is unacceptably high. Protected area policies include the maintenance of biological diversity and ecological processes as primary conservation objectives. Management authorities in southern Africa have long recognised that elephants are capable of radically modifying their habitats and that population control may be necessary to limit the habitat change. The risk of irreversible loss of biodiversity is too great to ignore (Taylor & Cumming, 1993).

Fig 2: Number of Elephant: North West Matabeleland: 1989 to 1999



Source: The EIA Shop



VICTORIA FALLS COMBINATION MASTER PLAN PREPARATION AUTHORITY

Drawing Title:

World Heritage Site Boundary

Legend

- UNESCO World Heritage Site Boundary
- World Heritage Site
- Railway
- 4x4 Tracks
- Minor Regional Roads
- Regional Secondary Roads
- Main Roads
- International Boundary
- Plan Area Boundary
- Zambezi River

Victoria Falls Environmental Capacity and Master Plan Project

Prepared by:

Zimbabwe Department of Physical Planning
Victoria Falls Consortium

Scale 1:250 000

0 5 Kilometers

Date:
March 2001

Map Number:
24

The first casualty of this elephant density is destruction of trees. Damage to the riparian woodlands and in Fuller Forest has been discussed. The riparian woodlands and thickets provide important habitats for many wildlife species, including birds.

In addition to tree cover, along the river the entire riparian system is at risk from increasing elephant pressure. The trees play an important part in maintaining the stability of the riverbanks by anchoring the soil with their roots: hence their destruction would increase the rate of bank erosion. This would change the banks from stable structures that allow marginal vegetation to grow to shifting unstable sandbanks where vegetation cannot take root. This is comparable to the situation in the middle Zambezi (a "sandbank river"; Jackson, 1986) where small species, and juveniles of large ones, cannot find refuge from predators. An increase in riverbank erosion in the upper Zambezi would lead to a decrease in the diversity and abundance of small fishes, which are preyed upon by desirable angling species like the nembwe, *Serranochromis robustus*.

7.7.4 Campfire in Hwange Communal Areas

Chidobe and Katcheteti Wards are both Campfire producers in Hwange District. Wildlife-related activities in the district include safari hunting leases, safari hunting trophy fees, tourism leases and bed-night levies, white water rafting fees, crocodile egg collection fees, craft sales. The disbursements to communities (after deducting District Council and Campfire Association levies for the past three years) in Chidobe and Katcheteti wards are shown below.

Table 5: Household benefits from Campfire activities

		Disbursements (net income) (Z$)			
Ward	**No. of Households**	**1997**	**1998**	**1999**	**1999 per Household**
Chidobe	1450	47 663	119 560	256 017	176.56
Katcheteti	850	24 141	29 711	164 275	193.26

Source: Hwange Rural District Council and WWF

The 1999 per household benefits, equivalent in value to ten loaves of bread a year, would make it difficult for the average family to forgo exploiting the natural resources allocated to Campfire.

7.7.5 'Problem' Animals and Problem Animal Control

Baboons and Vervet monkeys are associated with the hotels and waste dumps in the town and can become a problem. Hotel operators, businessmen, town residents and tourists have apparently done little to help solve the situation. One of the major issues is the timing of dustbin collection. If the rubbish were to be collected before daylight the baboons and monkeys would

not be attracted into the town. Visitors need to be aware of the associated risks of feeding monkeys. National Parks consider the problems to be a human-caused rather than animal-caused and have ceased control efforts (National Parks have only shot 20 baboons since 1996).

Crocodile have become a problem in the past few years. Last year alone, one man was killed by a crocodile, one National Parks staff member was attacked but recovered, and two canoes were bitten by crocodiles. The attacks happen while people are standing in the water launching boats. Crocodiles follow boats to eat the scraps and bones fed to them by tourists and operators.

Hippos along the upper Zambezi are reputed to be more aggressive towards canoes and boats than elsewhere downstream. This is attributed to their hunting and harassment on the Zambian side. Buffalo in the town vicinity are also a problem animal. This is particularly the case with old male buffalo ('dagga boys') which are found alone or in small groups and are often aggressive.

Problem Animal Control (PAC) operations carried out in Chidobe and Katcheteti wards have accounted for approximately two elephants in the last three years. There is a real need to start recording the number and details of animal problem incidents and their causes in the Victoria Falls area.

7.7.6 Sewage and Water Pollution

Because the Zambezi is a large river and the Victoria Falls lacks major urban centres or industrial development, there is tendency to overlook the possible problem of water pollution. As an example of this, the Victoria Falls Town Council was, some years ago, authorised to discharge raw sewage into the river because, it was thought, the volume of sewage was so small in relation to that of the river that it would have no impact. This was not the case and Feresu & van Sickle (1990) found high levels of faecal coliforms in the Batoka Gorge for at least 20 km below the falls. Both Livingstone and Victoria Falls contributed faecal matter to the river, which they considered to be heavily polluted. This explained why many people became ill after drinking the river water while rafting in the gorge - an obvious impact on the river's value.

The immediate short-term problem is the control and proper treatment of sewage. At present, the Victoria Falls sewage works is inefficient and overloaded, and major capital investment will be required to enable it to cope with sewage produced by the town. (The same presumably applies to sewage works in Livingstone). A visit to the VF sewerage ponds and discussions with the Town Engineer and staff at the ponds revealed that the system is not working correctly. Pipes have corroded, some ponds are empty and others are filling too fast, meaning that the effluent water draining into the Masuie River and ultimately into the Zambezi, has not been sufficiently purified. The effluent water is not being tested. In addition, when the pumping system breaks down through power cuts and malfunctions, and the raw sewerage is pumped directly into the Zambezi river just below the Victoria Falls Hotel. On occasion, raw sewage has flowed out of burst pipes in Chinotimba.

It should also be noted that local developments can contribute to pollution - Feresu & van Sickle (1990) found raised levels of faecal coliforms caused by two flush toilets on Kandahar Island, and at a hotel and caravan park on the river bank. While presently localised in their impact, these problems could increase if development continues along the river.

The problem of sewage and other pollutants will also have dealt with in the long term as well. Sewage treatment plants will have to be designed and constructed to deal with the output from a population that is likely to grow for the next 50 years or more. Throughout Zimbabwe (and perhaps in Zambia, too) sewage treatment capacity has lagged behind population growth through a lack of capital investment and forward planning.

At present, there is little industrial development in the two towns, but this could increase in years to come and would pose another threat to water quality. It is essential that clear plans are drawn up to prevent pollution from industrial activity while there is still time to do so.

7.7.7 Negative Visual Impacts

Negative visual impacts are a form of environmental pollution. The visual impact of the 'Float over the Falls' balloon could be reduced by making it a more appropriate colour such as green or blue, instead of white. Boat operators could be encouraged to paint their cruise boats more 'environmentally friendly' colours such as green, grey or blue instead of white. The large billboards along the main roads create an unwelcome 'commercialised' atmosphere and not a 'wilderness' feeling. There are also some buildings in Victoria Falls area that are 'eyesores'. Any developers wishing to construct new developments in the town should be encouraged to erect buildings that blend into the landscape and environment. There is a temporary construction camp (Gardini construction company) in the middle of the bush between the tar road and the Elephant Hills hotel which is an eyesore (and surely impacts tourism negatively).

7.8 Sensitive Areas / Conflict Zones

Areas which are environmentally sensitive or where conflict has arisen between human activities and the environment are shown on Map 25. The purpose of this is threefold.

- The combination master plan is aimed at guiding development sustainably, and many of the trends are clearly unsustainable and will have to be addressed in the plan.
- Many of the conflicts are spatial in nature – for example where land uses are juxtaposed. The combination master plan is clearly an opportunity to review spatial land use patterns.
- Some conflicts have arisen where responsible authorities are under-equipped to manage the resources effectively. Again, the master planning process presents authorities exercising control over the area with an opportunity to review management and resource new initiatives.

Where possible the pattern of likely movement of these areas under the influence of continued population pressure has also been identified.

Table 6: Sensitive and Conflict Areas

Area / Zone	Conflict / Problem
Aquatic / river system	• Excessive commercial fishing in Zambia = depletion of fish stocks = decrease in angling potential in Zimbabwe • Powerboats and jet boats = disturbance to wildlife and other tourists = loss of wilderness value = loss of tourism revenue • Alien fish and plants = competition with indigenous biota = loss of biodiversity = loss of ecosystem stability • Pollution = health hazard + loss of wilderness value = loss of tourism revenue
Riparian Woodlands and Islands	• Elephant damage to trees = loss of biodiversity + loss of visual appeal + loss of riverbank stability + loss of fish breeding areas • Development = loss of biodiversity and wilderness value • Boats, picnickers, fishermen = litter + disturbance to sensitive species = loss of wilderness value
Springs / Seeps	• Elephant damage and overgrazing = loss of trees; soil erosion
ZNP and VFNP boundaries with VF Municipal area	• Development right up to park boundary = impacts are felt inside parks = loss of wilderness value • No buffer zone marked or enforced = "hard edge" effect • Wildlife and tree poaching = loss of biodiversity and wilderness value + increased expenditure on anti-poaching • Fires = loss of biodiversity + increased cost of fire protection measures
Wildlife corridors	• Increased constriction of wildlife movement = increased stress to wild animals = increased chance of fatal accidents with tourists and locals + loss of wildlife experience for tourists
World Heritage Site	• Confusion re-management authority = weak accountability, no annual reports, poor maintenance. But these problems now being addressed by DNPWLM • Boundaries not well known so development occurring within WHS = loss of wilderness value • No buffer zones established = "hard edge" effect
VFNP boundary with Communal Land.	• Increased wildlife and tree poaching = loss of integrity of national park = loss of biodiversity + increased expenditure on anti-poaching

	• Livestock grazing = decreased forage available for wild grazers
Fuller and Mvutu Forest boundaries with Communal Land (fence has pulled down in places and used for wire snares)	• Tree poaching (commercial timber, carving and firewood) = loss of revenue to FC + loss of biodiversity and potential for regeneration + increased law enforcement costs • Wildlife poaching = loss of revenue from hunting and photographic safaris + increased law enforcement costs • Fires = loss of potential timber + biodiversity + increased costs of fire protection measures
Road past Water Purification works and Elephant Hills; Kazungula road; road between VF and airport	• Collisions with wild animals = increased loss of human life + increased costs of vehicle repairs = increased loss of nocturnal species (owls, porcupine, jackal, leopard, civet etc.)
Railway line from Masuie Siding north	• Collisions with wild animals = increased cost of repairs to trains + potential loss of human life
The Gorges	• Disturbance from aircraft = loss of rare and threatened birds = loss of 'draw card" species for birdwatchers and tourists + loss of wilderness value = loss of tourism revenue + loss of scientific/research value • Litter and pollution = loss of wilderness experience • Erosion of footpaths = increased cost to National Parks for preventative measures • Interference with traditional religious sites = conflict with local people
Masuie River in VFNP	• Water Pollution = health hazard to rafters and downstream users = loss of tourism + increased costs to community health services downstream
Chinotimba gully	• Soil erosion = encroachment into existing road = increased costs of road repairs + unsightly = loss of wilderness attraction
Dibudibu and Lunkunkuni Vleis	• Soil erosion = loss of productivity + loss of clean water downstream = loss of income + increased health hazard in communities + increased cost of rehabilitating vlei
Chamabonda Vlei	• Soil erosion = bush encroachment = decrease in game viewing + attractiveness of area + increased cost of rehabilitation
Strict Nature Reserve (Mukwa)	• Loss of Mukwa gene pool = decreased regeneration = loss of future income + loss of scientific / research value

Source: The EIA Shop

Many of these conflicts arise from rapid urban growth and the Plan Area being surrounded by national parks and forest land. In many cases it also arises from unsustainable exploitation and development of the natural resources, regardless of the long- term consequences for future generations.

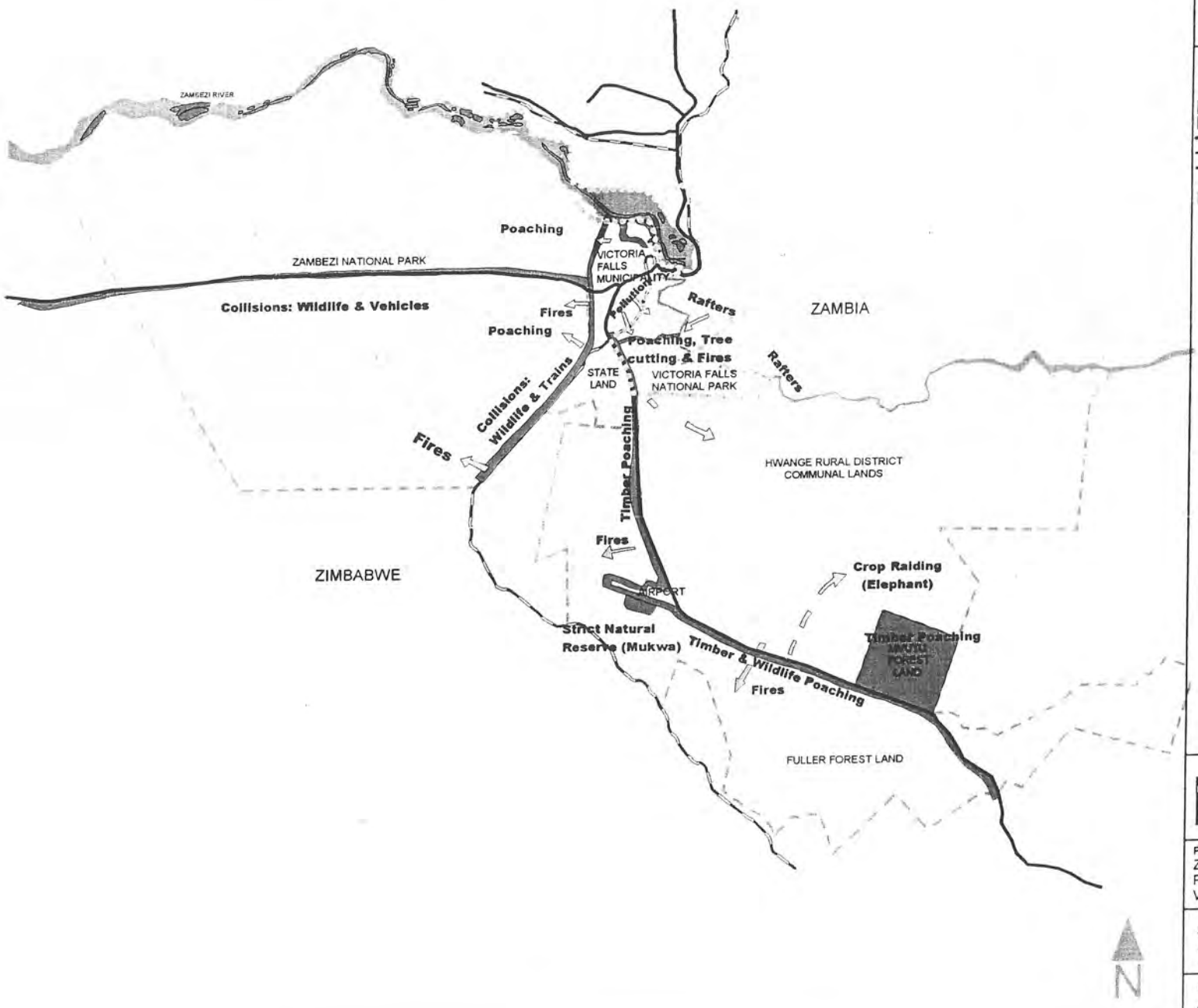
7.9 Key Issues

General

- Increasing vehicle traffic and poor alignment and maintenance of roads in the Zambezi National Park is damaging the environment.
- Chronic solid waste disposal problems have added to pollution.
- The town's sewerage system is not functioning correctly and is incapable of handling the present output from the town.
- Pollution of the Masuie and Zambezi rivers by inadequately treated waste water is rendering the Municipality to liability under the provisions of the Water Act.
- An inefficient water pumping and purification system is causing water supply problems.
- There has been insufficient resources devoted to inculcating civic pride amongst residents.
- Lack of effective law enforcement on the ground by National Parks and Forestry Commission has weakened protection of their estates.
- Lack of appropriate punishment for poachers is a poor deterrent.
- Increasing economic hardship almost everywhere has led to increasing reliance on and exploitation of natural resources.
- Women feel they have little influence in natural resource management, where they have great knowledge and are very active.

Vegetation

- Logging over several decades in Fuller and Mvutu has increased fire risk and the rate of cutting is unsustainable for forest regeneration. Mvutu Forest is now essentially a Teak Bush area.
- Diminishing supply of forest products for communal area population
- Diminishing supply of fuel and construction materials for urban population
- Increasing poaching of wood in forestry areas as communal land sources shrink
- Increasing land clearance in Communal Lands for timber and extensive dry land cultivation, with no long term prospects of sustained productivity
- No effective agro-forestry, re-afforestation or woodland management programmes in Communal Lands
- A fragile natural vegetation that is very slow growing and sensitive to fire



VICTORIA FALLS COMBINATION MASTER PLAN PREPARATION AUTHORITY

Drawing Title:

ENVIRONMENTALLY SENSITIVE AREAS AND ZONES

Legend

- UNESCO World Heritage Site Boundary
- Conflict Source
- Sensitive Area
- Main Roads
- Regional Secondary Roads
- Railway
- Plan Area Boundary
- Zambezi River

Victoria Falls Environmental Capacity and Master Plan Project

Prepared by:
Zimbabwe Department of Physical Planning
Victoria Falls Consortium

Scale 1:250 000

5 0 5 Kilometers

Date:
March 2001

Map Number:
25

Wildlife, Birdlife & Aquatic

- Increasing constriction of wildlife movements in and out of the town with the result that animals are now trapped
- Increasing conflict between wildlife and people
- Increase of commercial poaching in National Parks and Fuller Forest leading to a substantial loss of potential revenue and increasing costs of anti-poaching.
- An increasing regional elephant population and no plans to control it.
- Reduction of raptors, especially the Taita Falcon in the gorges
- Increasing number of river craft in the absence of a thorough understanding of the aquatic ecology

Development Issues

- World heritage site boundaries not always understood by local developers and too little management of the area to enforce controls.
- Increasing pressure for development along the upper river
- Increasing pressure for development on the islands
- Growing conflict between biodiversity conservation, maintenance of wilderness value, and immediate economic survival
- Lack of mechanisms to protect the cultural environment from development
- Lack of knowledge and respect for traditional values and cultural practices by tourists

8. THE URBAN ENVIRONMENT

8.1 Introduction

The urban environment in the Plan Area is found principally in Victoria Falls town, which is home to nearly 90% of the people who live in the Plan Area. Only small semi-urban settlements exist in the Communal Land areas, which is largely a rural environment.

Within Victoria Falls town the built environment consists of a combination of structures and communication routes that make up any typical urban place. Given that so many people live in this environment it is important that it is conducive to a decent quality of life. It is also the locale that most tourists who visit the Plan Area come into contact with or stay for a period. It is therefore important that such an environment, especially in the tourist zones, meets high standards of design, is in some way "in tune" with an expectation that tourist might have of such a place in such a wilderness zone and is generally functional.

Making an assessment of the quality of the built environment can involve some very personal judgements that reflect individual values. Achieving consensus on such matters as the size and type of buildings, the use of materials and the arrangement of uses can be difficult. However, there are some generally agreed areas of what constitutes a good urban environment in any given situation. These cover such matters as safety, lack of pollution, convenience and harmony. This latter concept is perhaps more controversial but it is a critical ingredient and concerns the way different parts of the town and individual buildings relate to each other. Harmony as a planning and architectural concept rests upon the notion that overall and individual design should seek to be complementary rather than in conflict.

8.2 Urban Form

Urban form refers primarily to the shape of the town and the way different uses are distributed within it. However, this latter issue will be considered in more detail in the next chapter, which is specifically concerned with land use arrangements. The overall form may be basically circular, or linear, or some combination. In terms of uses, usually the central business district (CBD) is located fairly centrally and industrial areas occupy a separate and sometimes peripheral location. The shape and composition of towns reflects a number of factors such as terrain, policy, history and land availability.

If we look at the current urban form of Victoria Falls (see Map 26) it is apparent that it has two special characteristics. The first is that the centre of town, the CBD is located at the northeastern extremity and is not central to the main residential areas. The second feature is that the town is lopsided with significantly more development in the south and east than in the north and west.

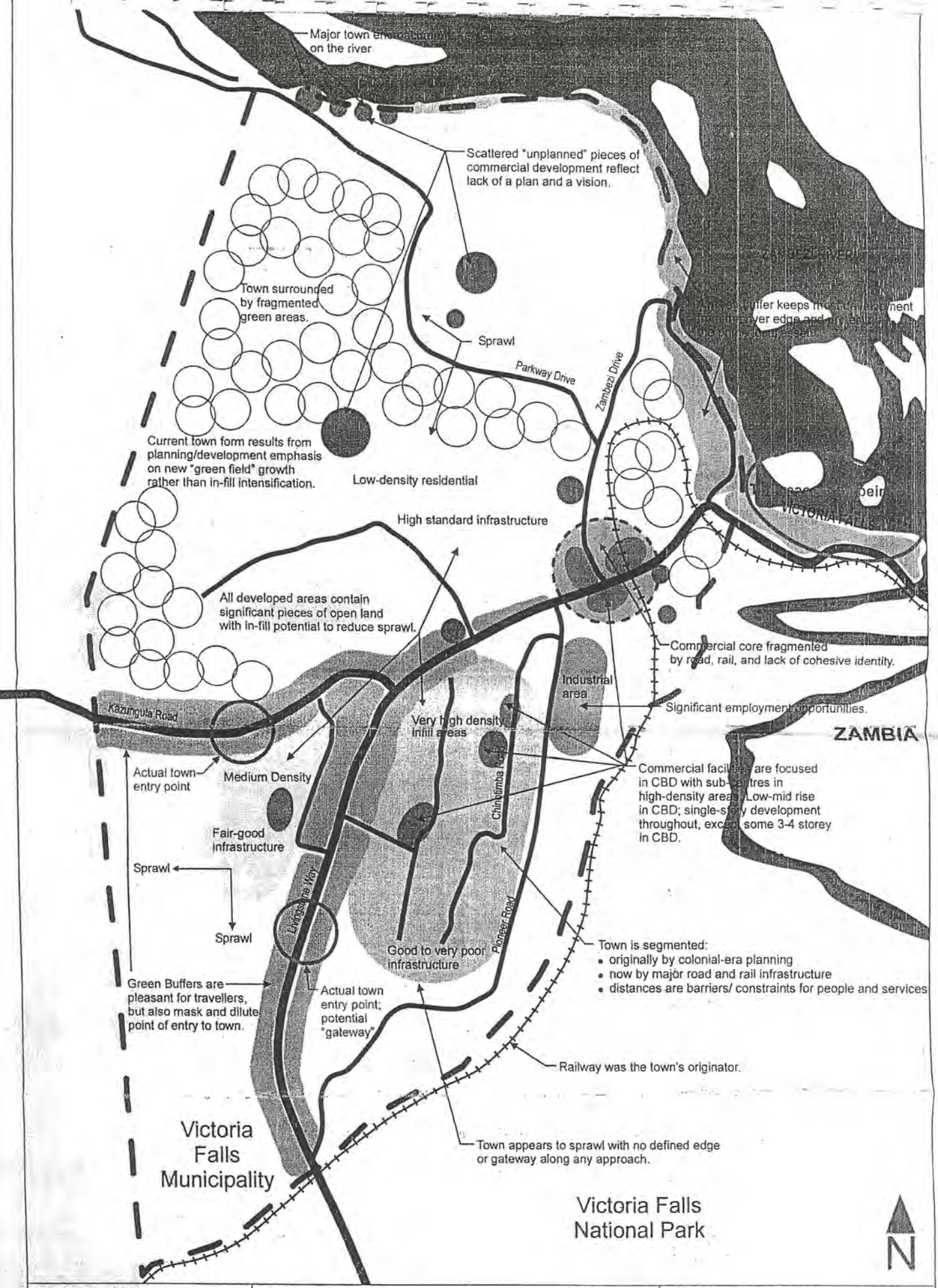
The reasons for this state of affairs lies in the nature of the town as a tourist settlement oriented to a very specific feature and the separation policies of successive colonial regimes. Victoria Falls originated as tourist settlement and was built as close as possible, within environmental constraints to the Falls. The location of the railway station and the disposition of railway lines and associated land were also crucial. Given this origin the town was bound to develop southwards away from the Falls as this was the only logical direction once conservation policies dictated that the Falls and the Zambezi River and environs should be protected.

The shape of Victoria Falls remained fairly regular for much of its history, being a very small settlement gathered around the railway station. But it was always a sharply divided settlement, with the small group of white residents located to the north and west and the growing number of black workers located to the south of the police camp, which was south of the railway station. Subsequent planning reinforced this division, which is common to all towns in Zimbabwe and reflects the racial attitudes of the dominant regime between 1896 and 1980. The cause of the lopsided form is that the African population, required to provide labour in ever growing numbers, had to be located in a separate township, Chinotimba. The small white community remained in its enclave to the west of the centre and despite occupying generous stands could not take up the same area of land as the working class. Whilst the policy that dictated such clear separation of localities was ended in 1980 it has a stored up dynamic through land allocation in the 1975 Outline Plan. Whilst it is true that the racial separation of residential areas ended in 1980 and greater mixing appeared in the low density areas, it was not until the late 1990s that working class suburbs began to emerge on the west side of Livingstone Way.

The other notable feature of the urban form of Victoria Falls is the location of tourist amenities in the far north of the Municipal Area, abutting the Zambezi National Park and the River Zambezi. This includes a hotel, a Crocodile Farm, a Boating Club and numerous boat jetties. Two large hotels occupy prominent high sites within the otherwise open area between the river amenity area and the main town.

Lines of communication play an important role in the urban form of Victoria Falls. The early influence of the railway on the central area has been noted. The approaching main line from the south into the town area now defines the eastern boundary and helps to reinforce the containment of the urban form on that side, which is also constrained by the scarp.

The presence of an international road into and through Victoria Falls is also an important feature of urban form. It divides the municipal area, more or less east and west and runs through the middle of the commercial centre, now that shops have been opened on the south-west side of Livingstone Way on railway land.



VICTORIA FALLS COMBINATION MASTER PLAN PREPARATION AUTHORITY

Drawing Title

Urban Form

Victoria Falls Environmental Capacity and Master Plan Project

Legend

- Plan Area Boundaries
- International Boundary
- Main Roads
- Railway
- Regional Secondary Roads
- Minor Regional Roads
- Municipal Roads
- Minor Municipal Roads
- Islands
- Zambezi River

Prepared by:

Zimbabwe Department of Physical Planning
Victoria Falls Consortium

0 0.5 1 2 km

March 2001

Map Number:

26

8.2.1 Spatial interactions and Domains

The picture presented above is a uni-dimensional and static one, undertaken to describe the salient features of the urban physical form on the ground. But the urban form is also dynamic. inter-active and multi-layered. These features become apparent when the way space is used and who uses it are considered.

One useful way to appreciate this dimension is to view the urban area from the perspective of different activities and different actors in the urban scene. These can be described as different "domains". Each domain has a special spatial distribution relevant to the purpose and exposing this helps to unravel the way the town works on a day to day level.

8.2.1.1 The Residents' Domain

Maps 27 and 28 Illustrate the spaces occupied by local people for both living and working. The key feature of the residents' domain in the Communal Areas is the close inter-linkage between the spaces they occupy to live and the areas in which they undertake work. However, this relatively close harmony of domain is offset by the need to access important resources, such as wood and water, from further afield. The other important feature is the considerable greater space required for work than living, due to the nature of agricultural activity. The urban residents' domain shows a reversal of the rural picture in the larger areas devoted to living than working and the degree of separation of living and working space. Map 28 shows the more detailed urban residents' domain, illustrating the way work spaces tend to be separate from residential areas, although these boundaries have become blurred with the increase in informal economic activity in or near the home and the construction of lodges in several gardens in the low density areas.

8.2.1.2 The Vistors' Domain

The visitor experiences a different locality to many residents. As the larger scale Map 29 illustrates the visitors' domain extends along routes and lines of access and special interest. Thus the roads and the river are key domains to the visitor. When the town is viewed in more detail (Map 30) the visitors' domain is linked primarily to hotels, lodges, the town centre and tourist attractions. Thus Chinotimba and Mkhosana do not exist for most visitors and, whilst the low density residential areas have become more part of the visitors' domain with the advent of new lodges there, many hotel guests will never venture into these areas.

8.2.1.3 Wildlife Domain

The whole of the Plan Area was at one time a wildlife domain. Gradually this has been affected by the march of the urban area so that the wildlife domain has been pushed to the periphery of the town's area and important wildlife routes to water supplies have been affected. However, the

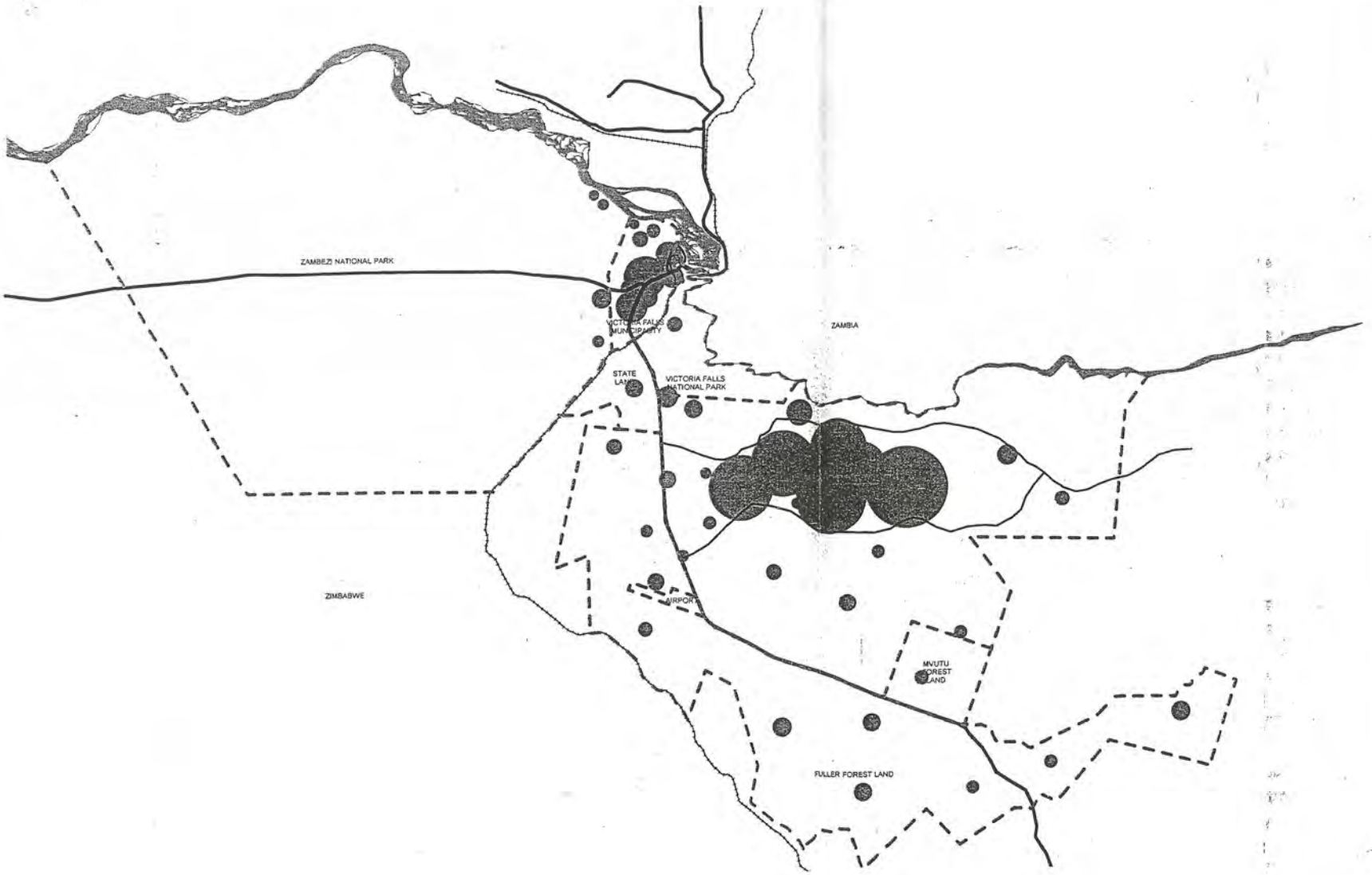
wildlife domain remains an important part of the urban area as Map 31. Illustrates. The arrows on the map indicates the key areas where wildlife seeks to move, sometimes with continuing freedom of movement and sometimes blocked by urban development. The co-existence of wildlife and urban life can be a difficult one, especially where larger game is concerned. Elephant, buffalo and, even occasionally, lion at times enter the residents' and visitors' domains. This can be destructive to both life and property but In Victoria Falls such conflicts are rare. Wildlife is also very adaptive and certain species find new opportunities within urban habitats. Thus the town's sewage ponds are home to a large colony of Maribou Storks and even, for a period crocodile. Baboons too sometimes raid gardens. Birdlife can be rich in the gardens of the low-density residents.

8.2.1.4 Services' Domain

The services' domain are those spaces occupied by the various physical infrastructure systems upon which a town depends. Map 32 shows the largely linear spaces occupied by these roads and lines. More compact space is occupied by water and sewage treatment plants, water tanks and the landfill site for solid waste. In addition, there is a hidden domain and high domain where run sewage and water pipes beneath the ground and electricity and telephone wires above the ground. All of these various services have to be paid for and offices exist to collect payments and administer the service. Thus the Municipality, the Electricity offices, the Post Office and the Railway Station all provide another part of the Services' Domain. Both residents and visitors depend upon these various services but the visitor will rarely interact with them unless there is a problem. The services that visitors will most seek a personal and direct access will be the communication ones of telephone, fax, internet, post, road, rail and air.

8.2.2 Live/Work Relationships

One of the most important spatial urban relationships referred to above is the one between where people live and where they work. The current situation is typical of most Zimbabwe towns with a mixture of separation and inter-mixing. The forces that impel these relationships tend to reflect special interests and have important dimensions relating to the ability to choose. The owners of businesses seek to site their activity as close as possible to their market and in ways to maximise their advantages for selling their product or service. Thus hotels will be situated in places that will attract their customers, even if these are relatively remote and shops and other businesses that require a high turnover will seek to be close to potential customers and end up together in a town centre or suburban centre. The employee, however, seeks to ensure that his own interests are met. Thus if he or she is poor they prefer work that is close and does not involve any significant expense. Better-off employees may prefer to travel a short distance to work to emphasise the separateness of work and living. For those without formal employment work space may be required in or close to home, especially if this is a productive activity. However, where trading or selling is concerned the informal entrepreneur requires sites that will



VICTORIA FALLS
COMBINATION MASTER PLAN
PREPARATION AUTHORITY

Drawing Title:
Residents' Domain: Plan Area

Legend
- Grow/Harvest
- Live
- Work
- Plan Area Boundaries
- Main Roads
- Railway
- Regional Secondary Roads
- Minor Regional Roads
- Islands
- Zambezi River

Victoria Falls Environmental Capacity and Master Plan Project

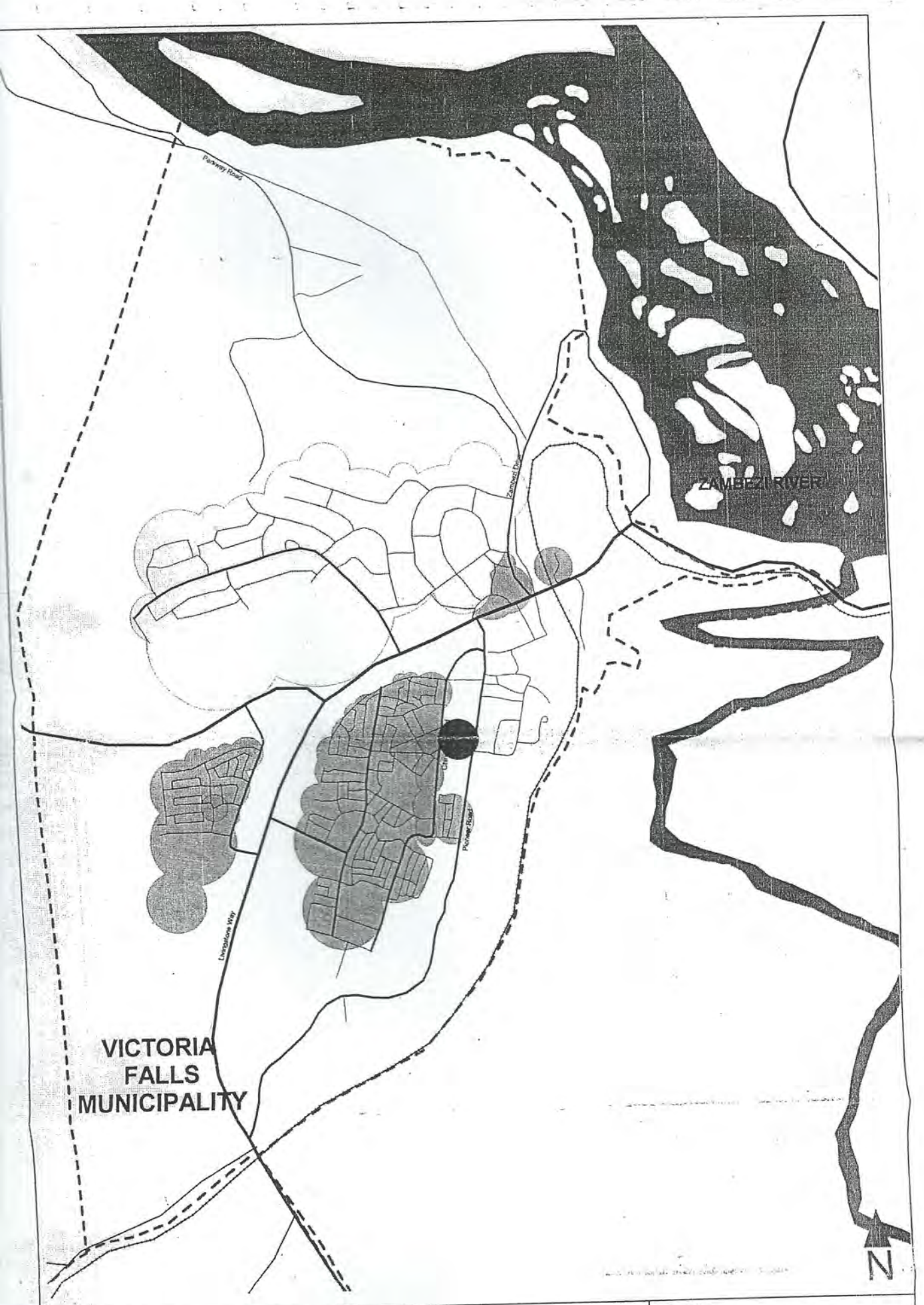
Prepared by:
Zimbabwe Department of Physical Planning
Victoria Falls Consortium

Scale:
1:250 000

5 0 5 Kilometers

Date:
March 2001

Map Number:
27



VICTORIA FALLS COMPINATION MASTER PLAN PREPARATION AUTHORITY

Drawing Title:
Residents' Domain: Municipal Area

Victoria Falls Environmental Capacity

Legend

- Commercial (Goods, Employment)
- Low Density Residential
- Medium-High Density Residential
- Recreation
- Plan Area Boundaries
- Main Roads
- Railway
- Regional Secondary Roads
- Minor Regional Roads
- Municipal Roads
- Minor Municipal Roads
- Islands
- Zambezi River

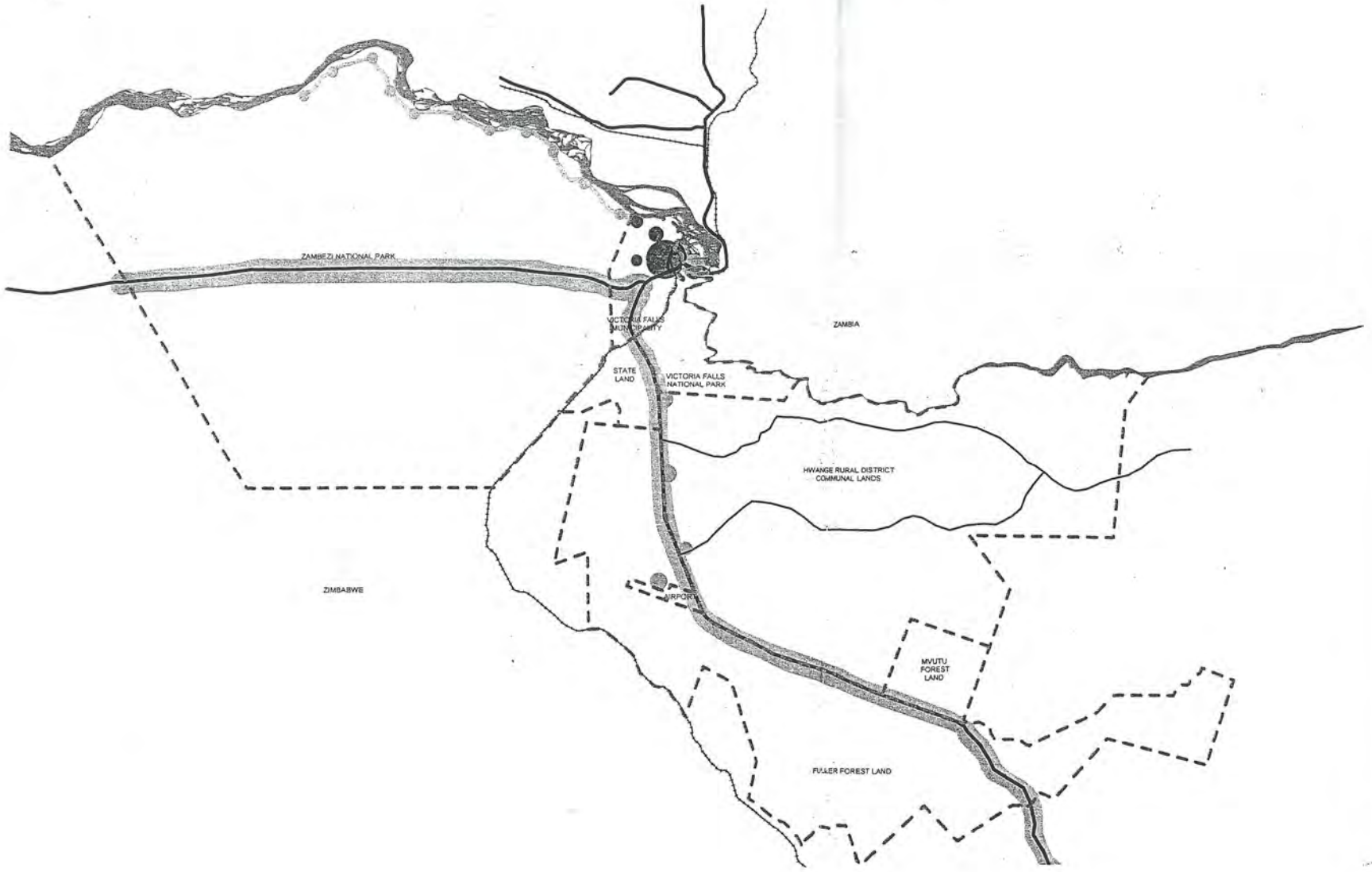
Prepared by:
Zimbabwe Department of Physical Planning
Victoria Falls Consortium

Scale: 1:25,000

0.5 0 0.5 1 Kilometers

Date:
March 2001

Map Number:
28



VICTORIA FALLS
COMBINATION MASTER PLAN
PREPARATION AUTHORITY

Drawing Title:

Visitors' Domain

Legend

- Stay
- Travel
- Visit
- Plan Area Boundaries
- Main Roads
- Railway
- Regional Secondary Roads
- Minor Regional Roads
- Islands
- Zambezi River

Victoria Falls
Environmental Capacity
and Master Plan Project

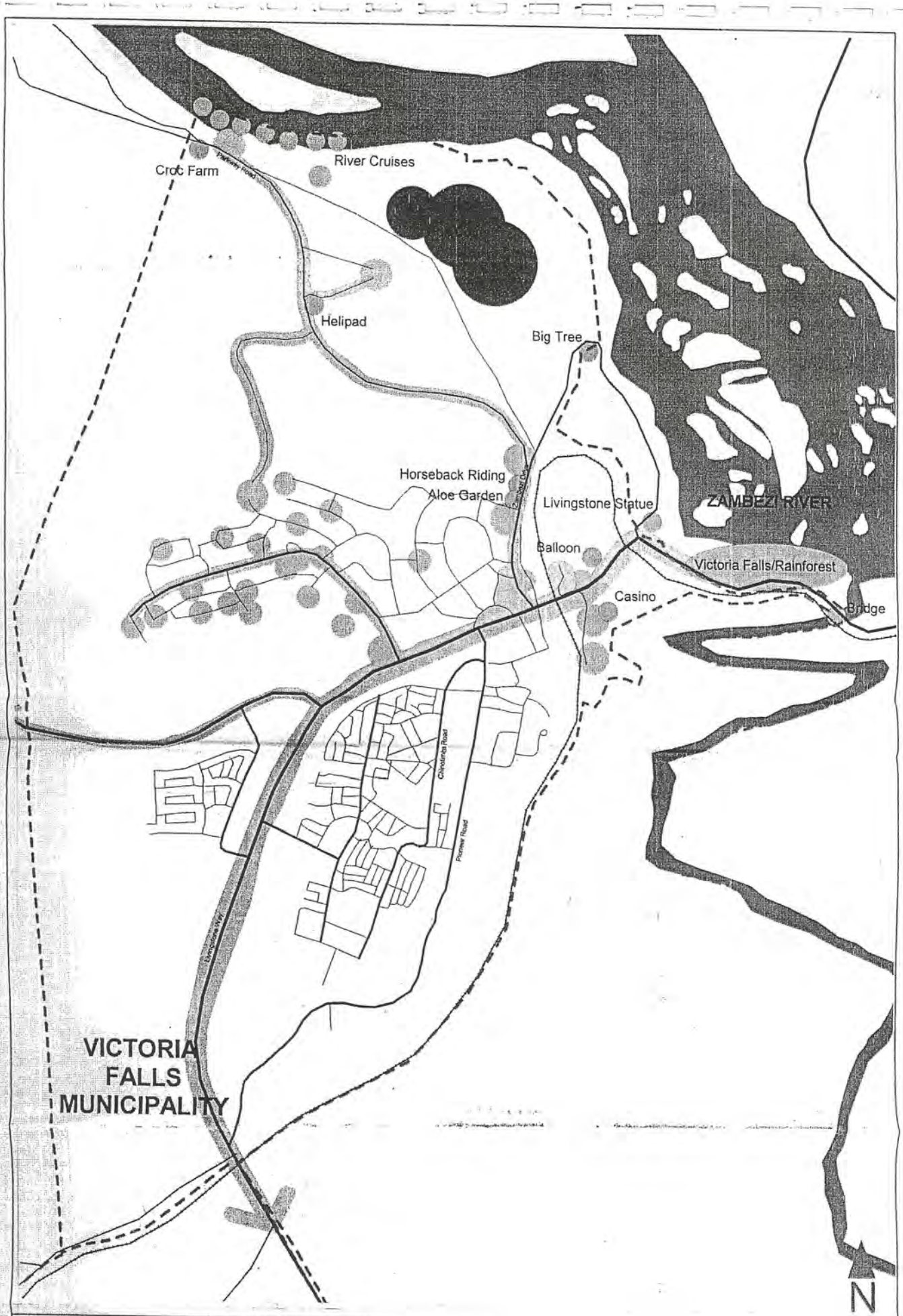
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Victoria Falls Consortium

Scale:
1:250 000

5 0 5 Kilometers

Date:
March 2001

Map Number:
29



VICTORIA FALLS COMPINATION MASTER PLAN PREPARATION AUTHORITY

Drawing Title:
Visitors' Domain

Victoria Falls Environmental Capacity and Master Plan Project

Legend
- Accommodation
- Attractions
- Circulation
- Commercial (Goods & Services)
- Recreation
- Plan Area Boundaries
- Main Roads
- Railway
- Regional Secondary Roads
- Minor Regional Roads
- Municipal Roads
- Minor Municipal Roads
- Islands
- Zambezi River

Prepared by:
Zimbabwe Department of Physical Planning
Victoria Falls Consortium

Scale: 1:25,000

0.5 0 0.5 1 Kilometers

Date:
March 2001

Map Number:
30



VICTORIA FALLS COMPINATION MASTER PLAN PREPARATION AUTHORITY

Drawing Title:
Wildlife Domain

Victoria Falls Environmental Capacity and Master Plan Project

Legend
- Built-up Areas
- Wildlife Domain
- Plan Area Boundaries
- Main Roads
- Railway
- Regional Secondary Roads
- Minor Regional Roads
- Municipal Roads
- Minor Municipal Roads
- Islands
- Zambezi River

Prepared by:
Zimbabwe Department of Physical Planning
Victoria Falls Consortium

Scale: 1:25,000

0.5 0 0.5 1 Kilometers

Date:
March 2001

Map Number:
31

expose him or her to the maximum number of clients. In some cases this can lead to potential conflicts with formal traders.

These various factors will have to be taken into account in the plan preparation stage as they have important repercussions on how we organise space and transport.

8.3 The Quality of the Built Environment

The most significant area of the built environment from the point of view of both residents and tourists is the town centre. This is the most prominent public area and provides the town with its general image. The quality of the hotels, lodges and camp sites are also very important from the perspective of the visitor. To the locals the design and appearance of the general residential and industrial locales are also important.

8.3.1 The Town Centre

The overall visual impact of Victoria Falls town centre is a confusing and mixed one. The area is not well integrated physically and in terms of design is a mixture of the good, the bad and the ugly. The presence of trees along parts of Livingstone Way and opposite Park Way in the Council area save what might otherwise be a disastrous assault on the senses. The Town Centre comprises several important parcels of land that are generally unrelated and built in different styles and periods. Even within the blocks there is no sense of a general style, but rather a congruence of different buildings. The shopping zone now falls into three areas. The original zone, built on the corner of Park and Livingstone Way, is the largest and most important. It lacks any sense of wholeness and parts of it are extremely ugly. Recent and current redevelopment has missed an important opportunity to develop a style that sought to relate Victoria Falls in some way to its environmental position. Instead it is brash and commonplace, owing nothing to any concept that might be termed eco-friendly.

The second zone comprises the area beyond the railway line that includes the post office, banks and craft and curio stores. The frontage of this area can be said to have some style in the individual buildings but once again they lack any attempt at an eco-friendly design and bear little relationship to each other. Ilala Lodge at the extreme edge has sought to utilise wood and thatch in an effort to blend in more easily with the rural surroundings. Behind the frontage the redevelopment of part of the craft and curio area does seek a more "ethnic" look and generally succeeds. The surrounding area is well covered in trees and that assists in making the area less obtrusive. There are, however, some very unkempt areas on the edges that detract from the appearance of the zone.

The third shopping area that has recently opened is the one that lies opposite the Council offices and has been developed on NRZ land. The style of this built environment could be described as "old colonial". It seeks to bring out a reference to the original colonial appearance of buildings

using corrugated tin roofs, painted green, wooden windows and cast iron colonnaded streets. It has generally been well received and visitors like it as it provides an experience that feels historic and also blends into the area successfully.

The other important areas of the town centre are the Council area with its offices. lodge and camping facilities and the government administrative area, comprising the police camp, Courts, Immigration and National Parks. The Council area is an extremely important piece of land lying as it does at the very heart of the town. The low density of development and the existence of many large, mature trees provide an important park-type zone, although it is not generally a public area. The impact of this area is therefore generally low-key, especially from the outside. Within the area the lodge and camping buildings are quite old and in need of improvement or redevelopment. Their style is typical 60s government lodge approach, which is not unpleasant, but not especially good in terms of using local materials and blending into the natural environment. The Council Offices are also standard "Government Issue" and make no attempt to relate to the locality, but the tree cover prevents any intrusiveness. The recent need for additional space has led to some temporary wooden buildings, which are extremely uncomfortable to work in and another building that has a more modern approach to ethnicity.

The Government area is a mixture of buildings, one of which is a protected historic building (National Parks). The Police Station is a more modern building, but it is tucked away and does not have a prominent public position. The most important point about this zone is that it is very undeveloped and occupies an important position in the town. Any new development should be carefully controlled from a design point of view.

8.3.2 Hotels and other Tourist amenities

There are eight hotels in Victoria Falls, counting Ilala Lodge, which is supposed to be primarily a restaurant. The most famous is the Victoria Falls Hotel, built as early as 1905, redeveloped in 1916 and added to at various times since. It is an elegant structure, which has a colonial feel and although it is not especially eco-friendly it blends into the natural environment by dint of good design and good landscaping. Opposite this hotel is the Kingdom Hotel, which was the Makasa Sun and Casino. The redevelopment is generally thought to be a significant improvement on what was there before but some critics view the design as kitsch and overly extravagant. It is built in the manner of the theme hotels developed by Sol Kersner in South Africa. The hotel certainly offers the tourist an "experience" and the use of materials and décor seeks to be "ethnic". The outside material is however concrete managed in texture and colour so as to be similar to stone. This helps to blend it into the environment.

The other hotels fall into three categories: utilitarian (Elephant Hills, Sprayview), theme (Rainbow) and "ethnic" Safari Lodge, "A" Zambezi and Ilala Lodge). Sprayview does not have a strong public profile, being low rise and located behind screening. It is not especially pleasing from a design point of view, offering accommodation to the lower end of the market. Elephant

Hills is directed at the top end of the market yet its design has generally been severely criticised. It occupies an important prominent site that owes its origins to a much smaller original hotel built in the 60s. Such a massive hotel in this position would probably not be permitted today. It is built in oppressive dark concrete which a thatched roof cannot hide. By contrast the Victoria Falls Safari Lodge, which is also built on a high ridge cannot be seen easily and blends into the environment in a skilful way. Extensive use of wood and thatch and an imaginative use of slope help make this one of the best-designed hotels in the town. The 'A' Zambezi and Ilala Lodge also demonstrate how it is possible to create a significant structure that can blend into the locality rather than impose itself upon it. The Rainbow Hotel is a town hotel and as such its position is not a very sensitive one. It has been designed in a Moorish style, which appeals to some tourists.

A large number of private lodges have emerged in the town over the past decade. These are located in the low-density residential areas and as such do not impinge upon the built environment. However, they are invariably sensitive buildings seeking to create a style that visitors can appreciate as "African". The Inyathi Lodge and Camp site occupies a potentially prominent site on the edge of the town. It has been sensitively developed using thatch and good blending materials.

8.3.3 Contrasting Environments

There are some starkly contrasting urban environments within Victoria Falls. On the one hand a tour of the low-density suburbs will illustrate mainly superb dwellings in a well managed and well maintained setting. By contrast a visit to Chinotimba township shows the extreme poverty of the area and a legacy of neglect in terms of basic services such as road maintenance and street lighting. The saving grace for much of Chinotimba are the many surviving trees, often teak, that provide shade and green in a area of old and poor quality high density housing.

Victoria Falls' urban environmental quality has been greatly influenced by the poor financial capacity of the local authority, rural–urban migration and the rapid growth in tourism. These factors have resulted in the mushrooming of informal settlements near Chinotimba high-density area and over-crowding within Chinotimba high-density area itself. The informal settlements being unplanned, lack proper sanitary facilities and hence are a danger to health and environmentally unsightly. Overcrowding puts a lot of pressure on existing infrastructure, which leads to overloading and burst sewage pipes, again resulting in a health hazard.

At the same time the lack of capacity, both financial and human has meant that the Municipality has been unable to plan and finance infrastructure at a rate that would keep pace with problems caused by rapid rural–urban migration and the growth in tourism. Poor urban environmental quality in the town is therefore evidenced by air pollution mostly from the burning of waste at the towns landfill site, poor waste management evidenced by irregular collections, the absence of proper collection vehicles and thus the presence of uncollected waste in the town.

8.4 Historic Buildings and Cemeteries

The National Museums and Monuments Act (Chapter 313) accords all structures and buildings which predate 1910 automatic legal protection. This protection can be extended to structures that postdate the legal cut-off point, if a representation for that protection is made to the NMMZ. The implication of this legal protection is twofold:

a) Building/Structures built before 1910 should not be demolished, altered or added onto without authority from the relevant custodial department – NMMZ, and
b) Demolition, alteration or addition to an already existing but protected building/structure should be preceded by a comprehensive documentation exercise producing such records as architectural drawings and photographs.

Victoria Falls is not endowed with many listed historic buildings that are afforded statutory protection. This is a reflection of the limited development that occurred prior to 1910 and the paucity of any important architectural buildings since then. There are four listed buildings in terms of the National Museums and Monuments Act:

- Part of Victoria Falls Hotel
- Clarks Curio Shop
- The Office of the DNPWLM
- The Victoria Falls Bridge

The Strategic Environmental Assessment of Developments Around Victoria Falls (1996) suggested that other buildings deserving protection as historic buildings or having architectural merit should include the Police Station, the Show Trade building, Shops on Stands 308 and 309, old railway houses and the old Sports Club building on Stand 91. In addition the Railway Station should also be considered. All these buildings are indicated on Map 33.

It should be noted that the Railway Bridge was also conferred the "International Historic Civil Engineering Landmark Status" in 1995 in recognition of its value to Zambia and Zimbabwe.

Two historic cemeteries have been identified.. Both cemeteries are located on Map 33. Although the cemeteries are post-1910 and probably established in the 1950s, it is necessary to take note of their presence and location to prevent possible sacrilegious acts.

8.5 Entry Points and the Streetscape

Perceptions of a town to the visitor are often determined by what they first notice upon arrival. Thus the road into Victoria Falls from the south is a most important visual experience and is the one that most visitors will have. The railway station is the other important entry point. The entry from the Zambian border is one that may assume greater significance in the next period as

Zambia seeks to increase its share of the tourist market. The entry from Botswana via the Kazungula Road is less well used but needs to be considered.

The other critical aspect of the road and street environment is the experience of walking, mainly in the town centre. Most visitors will walk within the town centre environs and the visual impact of the street, its signs, lighting and other "furniture" can be a crucial experience that will affect impressions, which will be passed on to other potential visitors.

8.5.1 Road Entry from Bulawayo and the Airport

Strong attempts were made in the 1975 Outline Plan to ensure that travellers along the main road into the town would not be able to see any sign of urbanity until they reached the Sprayview Motel. This was achieved by adopting a wide buffer zone of open space. Several factors have combined to weaken that illusion. The first sight of Victoria Falls town is now achieved in the descent down to the Masuie River and Railway Line. The most prominent object visible from this point is the new water tower in Chinotimba. More regrettable is the sight of smoke from the town's rubbish dump. Glimpses may also be had of the sewage works, although it is not possible to tell that is what it is without some prior knowledge. On travelling up the slope to the town occasional views may be had of Chinotimba high density housing and some of the shacks through the buffer zone that is being thinned by residents seeking wood fuel. The third change has been the erection of large advertising hoardings by the roadside. Taken together the main entry point into the town could be considered inappropriate for a centre trading on wilderness value.

8.5.2 Road Entry from Kazangula

The route into the town along the Kazungula Road remains strongly wooded and provides the visitor with a good introduction to the town up to the point where it joins Livingstone Way.

8.5.3 Road Entry from Zambia

The route into town from the Zambian border includes the dramatic drive over the Victoria Falls Bridge. However, for those wishing to have a clear view of the Eastern Cataract and the Boiling Pot, or the Gorge as Rhodes had intended they will have to choose a time when Bunji Jumping is not in full swing, as this attracts considerable crowds. Following that the scene is not especially attractive as the road runs along the railway line and then into an unattractive Customs Post. Thereafter the route to the town centre is short but reasonably well wooded.

8.5.4 The Streetscape in the Town Centre

There are several factors that influence the street experience. First there is the utilitarian one of the quality of the pavement and roads, secondly the quality and appropriateness of shop fascias

and advertising signs, thirdly the various directional signs erected on streets and finally the street furniture such as litter bins, street lights, telephone kiosks and so on. The overall impression in Victoria Falls is that there is no control or general design guide that takes any of these matters into account. As a result it presents an untidy and at times chaotic image.

8.6 Key Issues

- Victoria Falls' urban form is reasonably compact but at present is overdeveloped on the east side of Livingstone Way.
- The town centre is not central to the resident population but is well located for the tourist.
- The perception of the Plan Area is strongly influenced by who you are and what you do. Visitors only tend to frequent the most attractive areas. Residents will experience living and working environments. Wildlife has another experience. These different domains do not often impinge on one another. Planning has to take account of all these perceptions and domains.
- The live-work relationship is a critical one in both rural and urban contexts as it determines one of the dynamics of how people live. Poor people require a close spatial relationship between the two.
- The quality of the built environment shows an acute inequity between the relatively rich low-density suburbs and the extreme poverty of Chinotimba, with its many squatter units.
- The Town Centre lacks any sense of unity and is contains mostly poorly conceived and designed buildings. Some of the more recent developments show some sensitivity to the natural environment and to the use of appropriate materials for a tourist town.
- The town centre is not well sited for the majority of inhabitants but is generally within walking distance of all.
- The Hotels contain many different styles but the most successful seek to use local materials and to try to blend into the landscape.
- There are few historic buildings in Victoria Falls, which suggests that it is important to protect what does exist.
- The main entry point into the town along Livingstone Way has deteriorated in recent years, affected by tree cutting within the buffer zone, the poor siting and management of the refuse dump and the proliferation of inappropriate advertising hoardings.
- The street scene in the town centre is a jumble of garish advertising, poor shop fascias and mixed signs. The outcome is unsatisfactory and often tawdry.

9. LAND USE

9.1 Introduction

This chapter considers the way that land in the Plan Area is currently used and the anticipated developments that are in the pipeline. The urban land uses are the most complex and therefore most of the detail in this chapter is devoted to land use in the Municipal area. However, rural land uses constitute by far the largest zones in the Plan Area and, although there is less detailed information available, they too are dealt with in this chapter. Some of the material in the two previous chapters has also highlighted aspects of land-use.

9.2 Existing Land Uses in the Municipal Area

Most categories of land use in an urban context are reasonably straightforward, covering such activities as residential, industrial and commercial. However, the category of Open Space is a more complex. It covers areas of land designated specifically as open space for recreational purposes and available for either public or private use. In the case of the Municipal area there is also a category of open space that the public have access to but whose function is to act as a buffer between the main road and residential areas. Finally, there is a category of open space that is designed to protect environmentally sensitive areas near to the Falls and the river Zambezi, part of which lies within the purview of the Municipality and part of which falls under the control of the DNPWLM. To cover this situation three categories of Open Space are adopted in this chapter and reflected in Table 8 below. The category of undeveloped land is also a complex one. For the purposes of the table below it is dealt with as one category, Vacant Land. A subsequent section will detail the various land categories and status of "Vacant Land", including land that is approved for development but not yet developed, land suitable for development and land which is not suitable for development.

The total land area of the Municipality has recently been surveyed and given as 2,170.5882 ha. This varies from the figures used in the 1975 Outline Plan by about 41 ha. This may be explained by the inclusion in the Outline Plan of land along the River Zambezi that was included for planning purposes but was outside the Municipal boundary. It seems sensible to continue to include this strip of land in the urban context, rather than to separate it out into the rural part of the Plan and therefore the figures given in Table 7 maintain the larger area for the purposes of analysis.

Table 7: Land Uses within Victoria Falls Municipality: 2001

Land Category	Land Area (Ha)	%
Residential Low Density & Flats	170	7.7
Residential High Density	175	7.9
Commercial: Shops	12	0.5
Commercial: Tourism	102	4.6
Light Industrial/Warehousing	32	1.4
Open Space: Public (parks, sports)	15	0.7
Open Space: Private (sports)	122	5.5
Open Space: Buffer Zone & Protected	188	8.5
Institutional and Public Utility	95	4.3
Railway Operational Land	151	6.8
Vacant Land	1,150	52.0
Total	**2,212**	**99.9**

Source: PlanAfric Estimates

It can be seen from this table that the largest single category of land use is the "Vacant" Land", which comprises 52% of the total land area. This is such an important category of land from the point of view of the Master Plan that a detailed analysis of the various component parts of it is given below. The next most significant area, when taken together is Open Space, which takes up 14.7% of the total area. Given that the Open Space, is by definition, not built on to any significant extent it can be seen that over 66% of land in Victoria Falls is of an open, undeveloped aspect. If most of the railway land is added to this then one can say that close to three-quarters of all land in the urban area is undeveloped and open in character. This, of course, is not to say that, it can be developed or that it is desirable to do so. This will be discussed below.

Looked at another way, Victoria Falls has developed about 636 ha for various types of development. Of this over half (54.2%) is devoted to residential development, 18% to commerce, 5% to light industry and 23% to institutional uses and used railway land.

9.3 Residential Land Use

Residential uses in the Municipal area account for 15.4% of the total land area and 32.6 % of the non-vacant land. It is noticeable that land devoted to low density and flat areas is larger than that occupied by high density residential areas, despite the fact that 93% of the population live in high density accommodation. This can be seen on Map 34.



VICTORIA FALLS COMBINATION MASTER PLAN PREPARATION AUTHORITY

Drawing Title

Existing Land Uses (Urban)

Victoria Falls Environmental Capacity and Master Plan Project

Legend

- Aerodrome
- Cemetery
- Commercial
- Green Space
- Hotel
- Industrial
- Institutional
- Public Utility
- Railway Land
- Recreational
- Residential
- Special Residential
- Vacant
- Zambezi River
- Main Roads
- Regional Sec Roads
- Railway
- Plan Area Boundary

Prepared by
Zimbabwe Department of Physical Planning
Victoria Falls Consortium

Scale 1:25 000

0.2 0 0.2 0.4 Kilometers

Date
March 2001

Map Number
34

Residential development in Victoria Falls can be divided into two main categories of high density and low density. The high-density areas are primarily located in the southern part of the town and the low-density areas are in the north. The High-density area of Chinotimba has been progressively developed over at least 50 years. In that time different standards of space and building have applied. In the early days the policy of the then colonial government was to discourage African families from settling in urban areas. Accordingly they tended to provide single quarters for men. These residential blocks had communal toilets and showers. Some of these still survive and now accommodate families. Their condition and arrangements are not suitable for current use and the Municipality is in the process of redeveloping them. The size of stands for family accommodation in high-density areas was around 300 square metres until the mid-1990s, when it was reduced to between 150-250 square metres. The larger stands have enabled large numbers of squatters to erect cabins and plastic shacks within a stand area. Now that most available space has been taken up in this way some new shacks have been built on vacant land in and around Chinotimba.

There is very little land left in Chinotimba for additional residential use and efforts are now concentrated on land to the west of Livingstone Way, where a new high-density suburb called Mkhosana has been established. About half of the stands in Mkhosana are 160 square metres and the other half about 260 square metres.

Low-density housing, with generous stand sizes of 3-4000 square metres have been developed over the past 50 years in the area to the west of the town centre. Major expansions occurred in the 1960s and 1990s. The most recent developments have extended low density housing to within 800 metres of the western Municipal boundary. The generous stand sizes have allowed several houseowners to develop tourist lodges within their property, initially illegally.

There are a number of residential flats on the edge of the town centre. Some of these properties have been developed by the hotel and tourist industry to meet the needs of their managers and other senior employees. In at least one instance an area within the low-density area has been redeveloped at a much higher density, often referred to as townhouse development.

9.4 Commercial Land uses

Commercial land uses comprise shops, offices, hotels, restaurants and a variety of tourist facilities. The location of these uses is primarily in the town centre or CBD, with a number of suburban shopping centres and several tourist facilities such as hotels, lodges and specialist activities located in more peripheral sites. Approximately 5.0% of the total land area, or 10.7% of non-vacant land, is taken up with such uses, the majority of which is accounted for by hotels and other tourist facilities.

In addition to the above commercial facilities, there is a wide range of informal selling activities in various parts of the town. In some cases this activity takes place on the street or in areas close to formal commercial areas. In other cases, such as in markets, it has its own designated area.

There are also several small retail outlets within high density stands, called "tuck shops". Tuckshops typically sell small grocery items, drinks, cigarettes and sweets.

9.4.1 Town Centre

The commercial uses at the Town Centre are to be found in the core area bounded by Livingstone Way, Parkway, Fox Road and Clark Road, the new Landela Complex and the area north of the railway line comprising the post office, banks and craft village.

The original town centre has been enlarged and redeveloped during the last 10 years to include the Pumula Centre and the Supermarket. A further new development is under construction. The main uses are oriented to the tourist, as they are in all the town centre sites. Thus gift shops, clothes shops and tourist operator's offices predominate. However, there are what might be termed some mainstream shops that meet the needs of the residents as well, such as the supermarket, chain stores, a chemist and a garage. The area also has some restaurants and take-away facilities. The Pumula Centre provides a number of small offices as well, to augment a limited supply in the remainder of the core area.

Banking outlets and curio sellers dominate the area beyond the railway line. The front- line use includes a number of banks, a post office and an airline office. At the northern end Ilala Lodge provides a large restaurant, casino, nightclub and a limited amount of accommodation. The area behind these uses includes many curio shops, some office space and a restaurant/club. A significant part of the curio area was redeveloped a few years ago in a sensitive manner. Behind the curio sellers a new tourist facility, a helium balloon has been established that rises on a tether to provide view of the Falls. Opposite this complex there is a petrol filling station and garage.

The Landela complex is the latest addition to the town centre and offers a mix of shops, offices and restaurants, mainly oriented to visitors. It has been built in an "old colonial" style that fits in well with the general environment.

9.4.2 Neighbourhood Shopping Centres

Chinotimba has long possessed its own shopping area with a post office, small supermarkets and other small shops. In addition, new major neighbourhood shopping centres were developed in the 1990's in southern Chinotimba and Mkhosana and are now fully operational.

9.4.3 Markets and Informal selling areas

There are two designated markets in Chinotimba near the stadium. These consist of a flea market and a vegetable market. Various goods ranging from clothing, video tapes and other

electrical gadgets are sold at the flea markets. At the vegetable market a variety of produce is sold, mainly from Bulawayo and from an irrigation scheme within Hwange district.

In addition to these formal markets there also exists several informal selling points within the Municipality. The informal selling areas are mainly concentrated at the shopping centres, beer halls and at other strategic areas within the residential areas. A range of products are sold, from vegetables to second hand clothes.

Food is also sold at various points, especially baked or boiled maize cobs in season, sweet reed and sugar cane, eggs, cooked nuts and other items. The bus terminus is a favourite venue to sell food to passengers before they set off on a long journey.

Certain goods are also hawked along the streets by a direct approach from the seller to the passer by. The common items sold in this manner are currency, small carvings, jewellery and watches.

9.4.4 Hotels and other Tourist facilities

The majority of the tourist facilities are situated either in the town centre or close to the Zambezi River. There are five hotels situated in the town centre, one by the river and two on low hills overlooking the river. Apartments are available in the town centre and lodges in the low-density residential suburbs. There are three camping and caravan sites, two of which are owned by the Municipal Council. These are situated in the town centre, by the River Zambezi and on the northern outskirts of the town (Inyathi Lodge). Many tourist facilities are located on the banks of the Zambezi. These include numerous boating facilities for river cruises, the Falls themselves, which is operated as a commercial venture by the DNPWLM, Bunji Jumping off Victoria Falls Bridge and White Water Rafting, which operates below the Falls and through the Gorges. Finally there are tourist facilities located at the Sprayview aerodrome, which provides the "Flight of Angels" over the Falls (now relocated to Victoria Falls Airport) and next to the Elephant Hills Hotel, where helicopters also fly over the Falls and the Zambezi National Park. All these features are shown on Map 35. Further detail on tourist facilities is provided in Chapter 11 on the Local Economy.

9.5 Light Industrial and Warehousing Land Use

The light industrial and warehousing areas in the town are located in the north-east, running south from the Railway sidings. There is very little industrial activity as such, the main enterprises being workshops, service industry, storage and distribution depots. Altogether they occupy a relatively small area comprising 1.4% of total land area, or 3.0% of the non-vacant land area.

9.6 Open Space

Th three categories of Open Space account for 14.4% of total land area or 30.7% of the non-vacant land. However, whilst this sounds very adequate the actual picture is decidedly poor from a public open space point of view. If the buffer zone, protected zones and the private open space are omitted from this picture the 45,000 residents of the Municipal area are only left with 15 ha of parks and sports fields. This represents only 1.3% of the built-up area.

The main area of concern with regard to lack of public open space is Chinotimba. Apart from the stadium and swimming pool area there are only small areas of incidental open space, some of which are now occupied by squatters. There is a need for improved recreational facilities of all kinds.

The Private Open Space category is dominated in area terms by the Elephant Hills Golf Course. Apart from this there are a few private sports and recreational clubs.

The Buffer Zone that operates along either side of the main road is open to residents for general recreational purposes but has no facilities. Over the years the vegetation in this zone has been depleted.

An important category of Open Space, established under the Outline Plan, is a protected area of Public Open Space that is part managed by the DNPWLM and part by the Municipality. The DNPWLM is responsible for the Victoria Falls and Rain Forest area, which is accessible on payment of a fee and a strip of land along the river Zambezi, which is accessible without charge. The Municipality has responsibility for land, which runs from the Victoria Falls and Rain Forest to the Town Centre and embraces an area known as the Railway Loop. It is also responsible land either side of the circular road that links the town centre, the large Boabab Tree and circumvents the Rain Forest area. This is an area of wildlife, with a small buffalo herd and many smaller antelope and mammals as well as occasional elephants. The railway loop area has been partly eroded from the south by commercial activities, the latest of which is the establishment of the Helium Balloon.

A further area of Public Open Space, for which the Municipality is responsible, is that area that lies north of Park Way, from opposite Inyathi Lodge to the Zambezi Camp site. This area abuts the Golf Course. It is a generally flat area of sparse vegetation that has resident populations of impala and other antelope, as well as small mammals, such as warthogs and acts as a game corridor for the larger animals seeking to reach the river Zambezi.

9.7 Institutional/Utilities

4.2 % of the total area or 9.0% of the non-vacant land is being utilised for institutional use of one type or another. These include: schools; the hospital; the Police Camp; the Vehicle Inspection



VICTORIA FALLS COMBINATION MASTER PLAN PREPARATION AUTHORITY

Drawing Title:

Tourist Facilities (Urban)

Victoria Falls Environmental Capacity and Master Plan Project

Legend

- Livingstone Statue
- Crocodile Farm
- Zambezi Horse Ri
- Cataracts
- Hotels
- Helipad
- Caravan Parks
- Commercial
- Municipal Lodges
- Aloe Garden
- Jetties
- Balloon
- Big Tree
- Minor municipal roads
- Municipal Roads
- Minor Regional Roads
- Regional Secondary Roads
- Main Roads
- Railway
- Zambezi River

Prepared by
Zimbabwe Department of Physical Planning
Victoria Falls Consortium

Scale 1:25,000

0.2 0 0.2 0.4 Kilometers

Date
March 2001

Map Number
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Depot; and various local authority and central government sites. In addition, this category includes sewerage works, cemeteries and the refuse dump. The location of these uses is scattered throughout the built-up area. The main cemetery, the refuse dump and the sewage works are all located relatively close together in the south of the town, immediately beyond the Chinotimba residential areas.

9.8 Railway Land

Railway land occupies 6.7% of the total municipal area. This is made up of the railway line and its wide reserve as it enters and leaves the town, as well as an important area close to the town centre. It has been the general intention of legislation in the past to ensure that railway land was utilised solely for railway operational purposes. However, that has always been interpreted widely, especially in the case of Victoria Falls, which had from the early days developed a hotel, housing, a curio shop, sewage works and other uses on its land. In more recent years it has sought to develop some of its land for commercial use and this part of its estate has in effect become part of the town centre. A further area, north of the Landela development on the other side of the railway line is also earmarked for commercial development.

Most of the railway land is reserved for future use for railway infrastructure development, i.e. freight and passenger facilities, workshops, warehousing, office and residential development. However, the town centre land still has considerable areas of developable space, of which NRZ has produced a planning indication of the probable developments. Consultants will be engaged to come up with the Local Subject Plan for the area for possible approval by the Local Authority in conjunction with the DPP prior to implementation. The NRZ is anxious to develop this land in a manner that supports its core business of passenger transportation through promotion of the tourist trade.

9.9 Vacant land

Vacant Land comprises 52% of the total land area at the present time. It comprises two main categories of land in terms of the 1975 Outline Plan. The first is land designated for future development, such as the whole of the Chinotimba area between the main road and the railway and the area south of existing development in the Sprayview area. The remainder is demarcated as Rural Land. In effect this designation was designed to prevent development within the plan period but not according it strong protection as in the case of land designated protected open space.

9.10 Undeveloped Land in the Urban Area

For the purposes of this section all land is considered which is not developed. Developed land includes both land that is built upon and land that is used for open activities such as the

Elephant Hills golf course or for game viewing such as the zone around Victoria Falls Safari Lodge.

Undeveloped land comprises all land that is not developed in accordance with the definition above and that will include all the category referred to as Vacant Land, as well as that Public Open Space that is not used for active recreational activities.

It is important to analyse this area to appreciate how much of this land may be available for development in the future and where it is located. Table 8 below provides a breakdown of this land in to four main categories, with two sub-sets:

Table 8: Undeveloped land in the Municipal Area

Category	Land Area (ha)	%
1) Land approved for development	228	17.0
2) Land subject to development ideas	26	2.0
2) Land not planned but suitable for development		
a) Residential and associated uses	434	32.4
b) Low key tourist related activities	305	22.8
3) Land not developable due to constraints		
a) Physical constraints	86	6.4
b) Environmental constraints	259	19.4
Total	**1,338**	**100.0**

Source: PlanAfric

Taken together the land available for development comprises just under 60% of all currently undeveloped land. The remainder is deemed to be too heavily constrained for one reason or another to be utilised. A more detailed picture of these different land categories is given below.

9.10.1 Land subject to approved development

The details of land subject to approved development are set out below. Approved development refers to those developments that have been approved by the DPP, prior to the declaration of Victoria Falls as a Municipality in 2000 and those that have been approved by the Municipality since 2000. In the case of DPP approvals, if the development comprises more than five stands a layout must be prepared and approved by the Director of Physical Planning. Developments of less than five stands may be approved by the Provincial Planning Officer, after due consideration and consultation with the local authority and other stakeholders. These small developments are accorded a Stand Number, if none exists. Since 2000 the Municipality has

had the power to approve developments by resolution of Council, although they have generally maintained close liaison with the DPP and sought their advice on all specific proposals.

Table 9 below sets out approved developments that have not yet been implemented. The site numbers refer to land parcel numbers edged in red on Map 36.

Table 9: Land Subject to approved development

No.	Location	Area	Description/comments
1.	Far north-west of Municipality between boundary and Croc farm	6 ha	Proposed Bird Sanctuary
2.	To east of the A Zambezi Hotel	4 ha	Proposed hotel (Sheraton)
3.	To east of Municipal Camp and caravan site	3 ha	Proposed fish farm
4.	Between western boundary and new low density housing north of Sprayview BC 128	20 ha	Proposed 11 lodge sites
5.	Known as the Sprayview Airport site (layout BD 39)	78 ha	Proposed medium and low density residential plus ancillary uses
6.	To west of above	6 ha	Proposed school
7.	North-western part of BD 46	13 ha	Proposed high density housing
8.	East of 7 above, part of BC 60	10 ha	Proposed secondary school
9.	South of 7 above, part of BD 46	5 ha	Proposed Primary School
10.	South of above developments, remainder of BD 46	20 ha	Proposed high density development and ancillary uses
11.	Southern portion of Mkhosana and BC 841	20 ha	Proposed high density development
12.	North-east of above, BC 841	5 ha	Proposed Primary School
13.	Junction of Livingstone Way and access to Mkhosana	2 ha	Proposed Truck Inn Site
14.	Far south-western corner of Municipality	10 ha	Proposed site for a Helipad
15.	Adjacent to western boundary just north of Kazungula Road	1 ha +	Proposed Lodge
16.	Immediately south of existing cemetery in Chinotimba	5 ha +	Proposed extension to cemetery
17	Just to south of Chinotimba Secondary School	0.5 ha	Proposed Vocational Training Centre
18	To east of Chinotimba	10 ha ?	Proposed holding camp for Squatters

	Secondary School		(Temporary)
19.	Spencer Road	1 ha	Proposed Craft Centre
20.	To north of Spencer Road	0.5 ha	Proposed Petrol Filling Station
21.	Junction of Spencer Road and Pioneer Road	1 ha	Proposed light industry
22.	East of Spencer Road	1 ha +	Proposed Flats
23.	As above	1 ha +	Proposed Flats
24	North of Livingstone Way just west of existing town centre.	3 ha	Proposed commercial centre
25	Southern edge of Chinotimba residential area	2 ha	Final portion of approved layout BD 09
	ALL SITES	**228 ha**	

Source: PlanAfric

These proposals can be grouped into different broad uses as follows:

Table 10: Approved Developments by land use

Category	Area (ha)
Low density housing + ancillary uses	38
Medium density housing + ancillary uses	40
High density housing + ancillary uses	67
Education	26.5
Tourism	42
Commercial	3.5
Light Industry	11
Total	**228 ha**

Source: PlanAfric

Most of these developments will have to be considered as "fixed" in that they have been subject to considerable layout design work and in some cases service development is underway. In other cases stands have been allocated and appropriate leases have been issued. Where this is not the case there may be an opportunity to re-consider the proposal for the purposes of the Master Plan.

9.10.2 Land subject to development ideas but not fully approved

The planning process is a dynamic one that starts with a development proposal and goes through many stages of consultation, negotiation and approval before finally becoming



VICTORIA FALLS COMPINATION MASTER PLAN PREPARATION AUTHORITY

Drawing Title:

Land Categories and Status: Municipal Area

Victoria Falls Environmental Capacity and Master Plan Project

Legend

- Approved Planned Development
- Developed
- Not Developed
- Plan Area Boundaries
- Main Roads
- Railway
- Regional Secondary Roads
- Minor Regional Roads
- Municipal Roads
- Minor Municipal Roads
- Islands
- Zambezi River

Prepared by

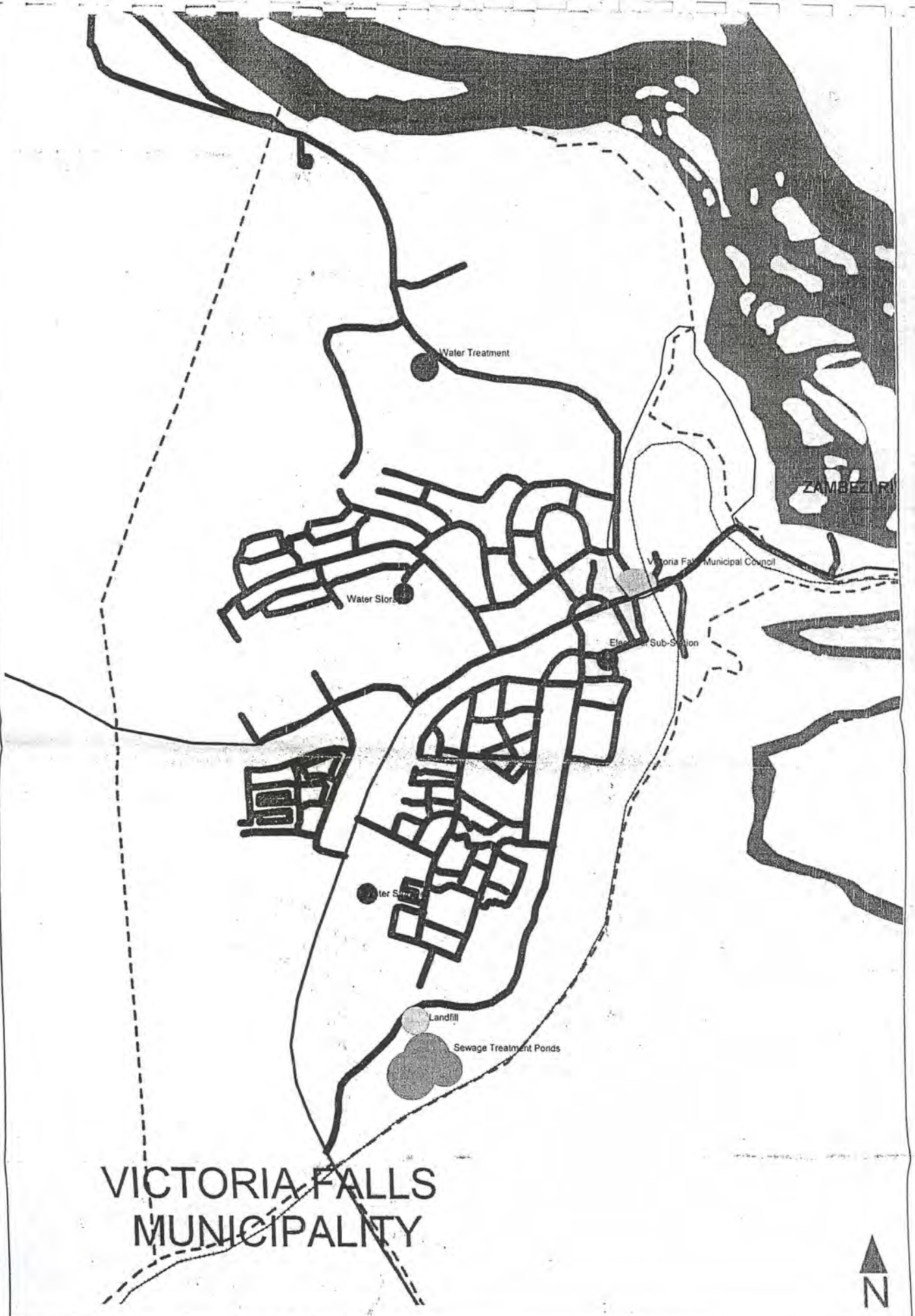
Zimbabwe Department of Physical Planning
Victoria Falls Consortium

Scale: 1:25,000

0.5 0 0.5 1 Kilometers

Date:
March 2001

Map Number
36



VICTORIA FALLS COMPINATION MASTER PLAN PREPARATION AUTHORITY

Drawing Title:

Service Domain

Victoria Falls Environmental Capacity and Master Plan Project

Legend

- Electrical Sub-Station
- Landfill
- Sewage Treatment Ponds
- Victoria Falls Municipal Council
- Water Storage
- Water Treatment
- Main Service Routes
- Plan Area Boundaries
- Main Roads
- Railway
- Regional Secondary Roads
- Minor Regional Roads
- Municipal Roads
- Minor Municipal Roads
- Islands
- Zambezi River

Prepared by:

Zimbabwe Department of Physical Planning
Victoria Falls Consortium

Scale: 1:25,000

0.5 0 0.5 1 Kilometers

Date
March 2001

Map Number
32

development on the ground. There are a number of proposals in the Victoria Falls area that have been discussed with the Municipality and DPP over the past two or three years that are at various stages of finalisation but which can all be classified broadly as not having been fully approved. Most of these development proposals are commercial and tourist-oriented in character. The important aspect at this stage is to identify the main localities where these pressures for development are being experienced so that the Master Plan can formulate a view about the way such ideas may fit into the overall strategies and proposals of the Plan. The main proposals are listed below in Table 11.

Table 11: Land subject to development proposals: not yet fully approved

Proposal	Location	Area (ha)
Shopping Centre + Hotel	NRZ land north of Railway line	3
Shops/offices/low cost hotel/ Petrol Filling Station	Either side of Livingstone Way Between town centre and Spayview Motel	6
Shops/Entertainment Centre/Petrol Filling Station, African Lodge	Either side of Kazungula Road between proposed Sprayview developments and Mkhosana suburb.	6
Lodges	West of Sprayview development	10
Museum/interpretative centre	Town Centre/ Sopers Curio Shop	1
Total		**26**

Source: PlanAfric

It can be seen from the above table that there are two main "hotspots" for development pressure along the two main roads. This will need to be carefully appraised during the Master Plan preparation.

In addition to the above proposals there are development proposals that have not been tied to a specific site but have been suggested for development during the Master Plan period. These include a Prison, a Technical College, a Hotel Training School and additional Vocational Training Colleges (VFCs). These will have to be carefully considered, and if appropriate, sites found within the urban (or rural) locality.

9.10.3 Land not subject to any Development Proposals

The remainder of the land not developed comprises land that is both developable and undevelopable. The latter is undevelopable by virtue of physical or environmental constraints. All categories of undeveloped land are listed below in Table 12. The site numbers are for land parcels shown on Map 36, edged in green.

Table 12: Land not built upon or planned for development

No.	Location	Area (ha)	Description/comments
1.	Spencer Creek/Zambezi	1 ha	Unused, full vegetation. Owners selling off
2.	Bounded by Spencer creek, Park Way and road to V.F. Safari Lodge	90 ha	Gently undulating land with sparse Mopane scrub. More rugged to south. Important for animal route to Zambezi. Also looked acroos from V.Falls Safari Lodge.
3.	Western edge is Municipal boundary, eastern edge is Spencer creek. North edge is Croc farm and south is arbitrary line just to north edge of V.Falls safari Lodge holding.	59 ha	Similar characteristics to Area 2.
4.	Between Camp site/proposed Fish Farm and E.Hills Golf Course and Park Way	28	Flat terrain near to River Zambezi. Traversed by River Safari Companies accessing jetties and also access to Water intake pump house. Overlooked by E. Hills Hotel.
5.	Between E. Hills access roads and Park Way	5	Rugged area.
6.	North of Park Way to E. Hills Hotel and Golf Course	56	Rugged near to E. Hills Kopje site, then very flat terrain crossed by numerous small streams. Important animal crossing area. Has one small temporary construction depot and a football pitch
7.	Between ParkWay, Baobab Road and Golf Course	8 ha	Relatively flat, part riverine vegetation. Temporary Gardini Camp. Extent of Golf Course not clear.
8.	West bounded by Municipal Boundary, east by V. Falls Safari Lodge site. North to site 3 and	79 ha	Generally flat, mopane scrub. Part of the area acts as important game corridor between low density area and V. Falls Safari Lodge site.

	south by northern extent of low density housing and proposed lodges sites.		
9.	North boundary is Park Way and access road to V. Falls Safari Lodge, south is bounded by low density housing.	96 ha	North-west part is rugged with old quarries. Eastern area is more amenable to development.
10.	Small triangular piece of land between Council Rest Camp and the Railway Line and ParkWay	1 ha	Edge of town centre site, possibly too small and difficult to develop
11.	Area between Railway Loop and River Zambezi, bordering the Rain Forest to south	38 ha	Riverine, attractive area. Protected currently under the Outline Plan against development.
12.	Area within the Railway Loop	28 ha	Good vegetation, wildlife. Incursions from south from commercial operations. Protected currently under Outline Plan against development.
13.	Open area within town centre bounded by roads	1.0 ha	Capable of development.
14.	Between Railway, Kingdom Hotel, main road and Municipal Boundary	11 ha	Attractive area close to Zambezi. Protected under Outline Plan from development.
15.	Between proposed Sprayview development and western boundary and between proposed lodges and Kazungula Road.	58 ha	Generally very flat with a gentle slope in north part of site. Vegetation similar to sites 3 and 8.
16.	Open area between Sprayview Motel and proposed extension to town centre commercial area.	6 ha	Flat, good trees, important position as entrance to main town centre.
17.	200m strip south of Kazungula Road	28 ha	Wide buffer zone, flat, good trees.
18.	Wide strip bordering western boundary of	21 ha	Flat, good trees

	Municipality and Mkhosana		
19.	200 m buffer strip to west of Livingstone Road and rest of Mkhosana	19 ha	Designated open area (buffer zone) in Outline Plan. Flat area already an incursion through VID development. ZESA wayleave.
20.	South-east corner of planned Mkhosana development	14 ha	Flat land. Reserved for State use by DPP.
21.	As 19 but south of the access road to Mkhosana	6 ha	As 19. Planned incursion for a Truck Inn
22.	Area of land between proposed southern extent of Mkhosana and steep ridge and between western boundary and Livingstone Way	103 ha	Well wooded land sloping north to south. Slope increases gradually.
23.	Steep Ridge south of 22.	12 ha	Ridge is more pronounced to west and decreases near to Livingstone Way. Too steep for development.
24.	South-west corner of the Municipality between Livingstone Way, the Railway and western boundary.	80 ha	Rugged, undulating area that has been subject to quarrying. Proposed site for a Helipad is within this zone.
25.	Buffer strip south of Livingstone Way from town centre to southern access to Chinotimba	39 ha	Comments as in 19 and 21.
26.	Chinotimba Gully	9 ha	Very rugged zone with anti-gully works.
27.	Area just west of old main road bordering gully and other rugged terrain.	8 ha	Relatively flat area bordering the road. Crossed by ZESA line.
28.	Area south of Chinotimba gully sloping west to east down to the railway line and eastern boundary.	18 ha	Rugged area with steep slopes
29.	Area between Zesa line and railway in south east corner of Municipality.	21 ha	Difficult terrain with slopes, traversed by old Bulawayo road.
30.	Area to east of Livingstone Way	32 ha	Sloping site, but not very steep. Part of area is the Livingstone Way Buffer zone.

	from southern access to Chinotimba to edge of quarry and wrapping around the cemetery		
31	Area west of Chinotimba cemetery to powerline and from proposed new squatter camp to sewage works	25 ha	Sloping site north to south but developable land.
32	Southern part of Municipality wrapped around the sewage works	25 ha	Contains current waste disposal site and some old quarries. Area south of sewage works to railway line is flat.
33	DNPWLM land along the River Zambezi, including the Falls and Rain Forest area	59 ha	Protected from development, both as part of the Parks estate and in the Outline Plan.
	ALL AREAS	**1,084 ha**	

Source: PlanAfric

Of this land total approximately 75% has potential for some form of development, although only about half of that (434 ha) is seen to be suitable for residential and other intensive urban development. The remainder of developable land may be appropriate for low key uses, mainly because of its position or because of the rugged nature of the site. Approximately 25% of land in the above table is considered unsuitable for any type of development, mainly because it is environmentally very sensitive, being near to important zones such as the Falls and the river Zambezi. The different categories are explored in more detail below.

9.10.3.1 Land Suitable for Development

Table 13 below provides the detail on the land considered to have development potential. It is divided into general categories and identifies general location.

Table 13: Land Suitable for Development

General Use and Location	Area (ha)
Appropriate for Residential and associated uses	
Area to the north and west of Northern Residential Areas	78
Area to the south of Mkhosana to the Railway Line	232
Areas in Chinotimba, mainly to the east and south	116
Town Centre	8
Total	434
Appropriate for low key tourist/recreational development	
North of Parkway to the River	29
South of Parkway, west of Spencer Creek	59
South of Parkway, east of Spencer Creek	12
West and south of Victoria Falls Lodge stand	135
East of Lodge to Parkway	70
Total	305
Grand Total of developable land	**739 ha**

Source: PlanAfric

9.10.3.2 Land not developable due to constraints

The final category of land includes all that land that appears to be difficult to develop due to slopes and other rugged features. If such land were attempted to be developed it would result in potential serious erosion. It also includes areas that are probably too sensitive to develop due to their proximity to very attractive and important environmental features, such as the Zambezi River or areas commanding important vistas.

However, it is important to note that these are preliminary judgements and requires more detailed consideration in the light of the Vision for the Plan Area and other matters. Some areas of land that are unsuitable for general development due to slopes and rugged terrain may, in fact, be suitable for an activity that does not envisage very much building. By the same token there may be areas of land that have environmental sensitivity but which may be used for non-intensive uses. These issues will need to be appraised at the appropriate stage.

Table 14: Land Unsuitable for any form of development

General Location	Area (ha)
Environmentally Sensitive	
National Park land	59
Areas close to the River	49
Railway Loop	28
Other areas	123
Physical Constraints	
Steep slopes	12
Chinotimba Gully and area to south	27
Other rugged areas	47
Total	**345 ha**

Source: PlanAfric

9.11 Existing Land Use in the Rural Areas

The rural areas in the Plan Area constitute a very large area and it is not possible to provide a detailed land use description. An approach is therefore adopted which is more akin to land area classification that includes:

- National Parks
- Forestry
- Airport
- Forest land and
- Communal Land

It is acknowledged that these categories do not fully describe the actual land use. National Parks, for example include a mixture of uses that cover specific tourist amenities, residential areas for staff and large areas that are meant to remain wild and untouched. Forest Areas also have a mix of commercial areas for logging, commercial areas for tourism, staff areas and protected areas to be retained unused. The Communal Land Areas also have a variety of uses and since this is more important from a planning point of view some general attempt has been made to provide a breakdown of actual use. The Rural State Land area is largely unused but has some tourist facilities. Map 37 indicates the broad land classifications and some of these detailed uses.

Table 15: Existing Land Uses in the Rural Areas: 2001

Land Category	Land Area (Ha)	%
Zambezi National Park	56 000	46.7
Victoria Falls National Park	2 000	1.7
Fuller Forest Area	23 400	19.5
Mvutu Forest Area	2 000	1.7
Hwange RD C (Communal Lands)	35 000	29.2
a) Settlement and Agriculture	*16 485*	*47.1*
b) Forest areas	*8 058*	*23.0*
c) Bush land	*10 457*	*29.9*
State Land	1 476	1.2
Airport	3	---
Total	**119 879**	**100.0**

Source: PlanAfric

The overwhelming use of land in the rural part of the Plan Area is given over to National Parks, which occupy 48.4% of the land area. The Communal Land Area is next in size at 29.2 %, followed by Forest Areas at 21.2%.

9.12 National Parks

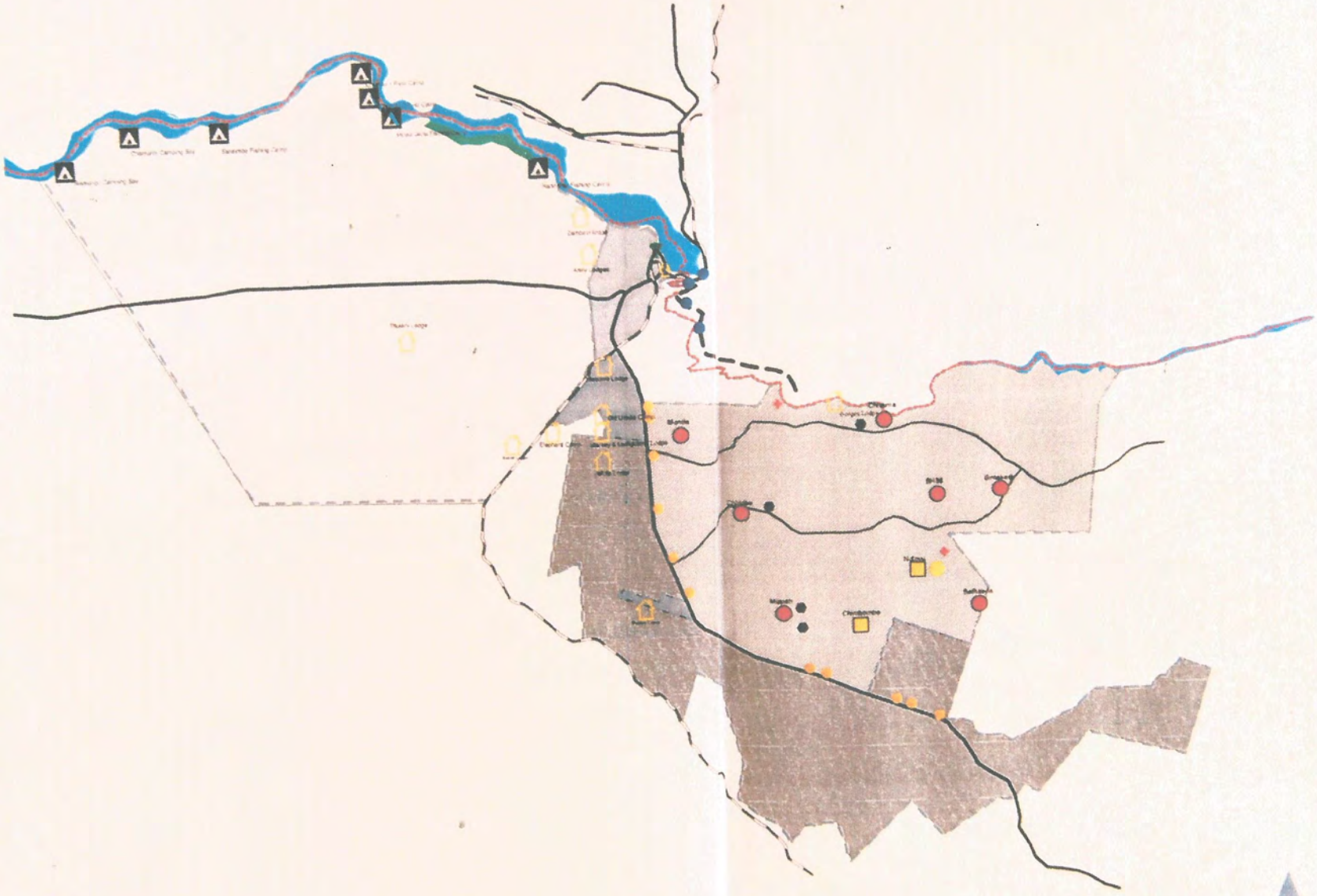
The two National Parks in the Plan Area are fundamentally wilderness areas in which natural vegetation provides varied habitats for a large variety of animals and birds. There are, however, small area given over to residential camps for the workers, tourist lodges and interpretative centres, as in the case of the entrance to the Victoria Falls Rain Forest and Falls area.

The Zambezi National Park has also leased an area for a private lodge, which is referred to in the Local Economy chapter.

9.13 Forest Areas

The two forest areas of Fuller and Mvutu are predominantly used for forest purposes. This means that they are either maintained undisturbed as forested areas, designed to protect watersheds and provide important habitats, pr are used for periodic logging and timber sales.

Fuller Forest contains important wildlife, which is exploited in some case for hunting safaris and others for photographic safaris.



COMBINATION MASTER PLAN PREPARATION AUTHORITY

Drawing Title

Regional Land Use

Legend

- Hwange Communal Lands
- Fuller Forest Land
- Airport
- Mvutu Forest Land
- State Land
- Vic Falls National Park
- Vic Falls Municipality
- Zambezi National Park
- Primary School
- Secondary School
- Business Centre
- Rural Service Centre
- Rural Health Centre
- Picnic Sites
- Big Tree
- Livingstone Stat
- Gorges
- Rafting activities
- Curio Sites
- Camp Sites
- Regional lodges
- Railway
- Regional Secondary Roads
- Main Roads
- International Boundary
- Plan Area Boundary
- Zambezi River

N

Victoria Falls Environmental Capacity and Master Plan Project

Prepared by
Zimbabwe Department of Physical Planning
Victoria Falls Consortium

Scale: 1:250 000
0 5 Kilometers

Date
March 2001

Map Number
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The resources of the forest areas are also accessed by local communal area residents on an approved basis for certain resources such as dead wood, thatching grass and grazing areas. In addition, the forests are also subject to illegal poaching for various products, especially timber for carving craft products.

Finally there is a small area of land used for residential and office purposes by Forestry Commission staff.

9.14 Communal Land Areas

Within the Communal Land areas 47% of the area is used for settlement and cultivation, judging by the Landstat Maps. However, livestock activity is widespread within forested and bush areas and cannot be quantified in terms of land use. Much of the land that appears to be unused may be in that state due to steep slopes, poor soils, lack of water and so on. It is not possible in a study of this sort to quantify these details.

9.14 1 Residential and Commercial

The pattern of settlement in the Communal areas is dictated largely by the availability of soils suitable for arable purposes and the availability of water. This means that the key settled areas run along valleys and zones of basalt soils.

Commercial facilities in the communal areas follow the settlement pattern of households. The major rural service centres and business centres and are a Bethesda, Ndlovu, BH 10, Chisuma, Sizinda, Monde, Lupinyu and Chidobe. The shops at these major commercial centres mainly consists of lower order goods such as groceries and bottle stores. In addition to the grocery shops there also exists butcheries and grinding mills.

9.14.2 Agriculture

Agricultural activities are located close to the homesteads, following the pattern described above. The various agricultural activities are undertaken on a subsistence level. The main types of crops being cultivated are sorghum, pearl millet and maize.

Livestock is widely owned, but not on an equitable basis. Cattle, goats and some sheep, plus poultry are widespread.

9.14.3 Forested areas

The forest areas within the communal areas constitute 23% of the total land use. The uses of forests in the areas include wood cutting for cooking, curio making and grazing. In the forest

areas there exists some wild animals and Campfire activities are being undertaken in every locality.

9.14.4 Deciduous open woodland and bush land

A third of all communal land area is now low scrub trees and grassland. This is a direct result of tree cutting and is a serious threat to the environment. In very dry seasons and periods the grass cover fails leading to the acute danger of soil erosion. These areas are also poor habitats for wildlife and therefore prejudice local people of potential revenue from Campfire operations.

9.15 Rural State Land

Much of the Rural State Land at Masuie is unused. There are a few tourist lodges situated in the northern part, closer to the River Masuie. For the remainder the area is bush and forest, which harbours wildlife and acts as an important buffer for Fuller Forest.

9.16 Future Development in the Rural Areas

The DNPWLM have granted three leases in the National Parks for tented accommodation. Two of these are located in the Zambezi National Park and one is in the southern part of the Victoria Falls National Park, close to the Communal Land Area. They have also considering an application for the development of another helium balloon to be established in the Victoria Falls National Park, close to the Falls.

9.17 Land Availability in the Rural Areas

The issue of land availability in this context refers to three factors: technical availability, physical availability and environmental availability. In order for land to be available for development purposes in the rural part of the Plan Area, all three aspects of availability need to be present.

The technical and environmental factors immediately rule out the National Parks and Forest Areas for residential and general urban development. Additional low key tourist developments may be allowed, subject to environmental assessment.

The Communal Areas are already highly populated, given the nature of the land. All the best areas from the point of view of settlement and arable production are occupied. It is possible to envisage the expansion of some of the settlements in the area, provided there is an economic basis for so doing, but it has not been possible to study this in depth. The possibility of expanding some settlements on the basis of tourist investment may be an option, especially for areas close to the Zambezi Gorges.

The Rural State Land at Masuie has the technical and physical possibility of being developed. The northern area is not suitable from a physical point of view, as it has relatively steep slopes and the possibility of erosion if the area were disturbed would be strong. Moreover, the various tourist ventures in the area would be adversely affected and so it is also environmentally constrained. There is a stretch of land to the south, comprising some 550 ha that could be said to be physically capable of development. However, it has some serious environmental constraints. The area lies adjacent to Fuller Forest and is a valuable wildlife habitat. The soils are light and the removal of the tree cover would present serious problems of erosion.

9.18 Land Ownership

There are three main types of land in the Plan Area; Private Land, Municipal Land and State Land. State Land can be further subdivided in terms of the appropriate authority such as National Parks, Forestry Commission, NRZ and the Rural State Land Office. Most of the land within the municipality boundary is Municipal owned, having previously been State Land. Such land consists of residential, commercial and industrial properties as well as much of the undeveloped areas.

9.18.1 Municipal Land

The conferment of municipal status on Victoria Falls led the state land, previously administered by the Urban State Land Office in the Ministry of Local Government, being vested with the local authority. The Ministry of Local Government retains a 10% interest but no longer holds specific land areas. The Municipality therefore owns a considerable asset and can, subject to planning permission and other relevant statutes, dispose and use the land as it decides.

9.18.2 State Land

The main areas of State Land within the Plan Area are the huge tracts of National Parks and Forest Land estates, the Masuie State Land administered by the Rural State Land Office in the Ministry of Lands, Agriculture and Resettlement but under the general jurisdiction of the RDC, the land operated by NRZ and various parcels of land in the Municipality used for state purposes, such as schools, hospitals, police, defence and certain residential properties.

Communal Land is also a form of State Land, vested in the President but with traditional ownership rights provided through traditional leaders. The RDC also has an administrative function over these areas. In some cases the state alienates communal land for such matters as ZESA wayleaves, roads and certain facilities such as schools and clinics.

Private individuals can lease state land and communal land and this has been done by the several tourist enterprises in the Masuie State Land and the Communal Area.

9.18.3 Private Land

Freehold title has been granted to a number of property owners in the Municipal area. This includes many residential properties in low and high density areas, various commercial stands, the hotel and other tourist sites. In some cases long leases have also been granted for areas of Municipal land (previously State Land) such as the area surrounding the Victoria Falls Safari Lodge.

9.18.4 Access to land

There are acute problems of access to land for the urban majority as well as some difficulties for rural people who are overcrowded. There is also a special problem of inequity for women in access to land generally. In the case of urban contexts the main problem for women is one of resources, where they often lack formal employment and income levels sufficient to apply for housing land. This applies to many men as well but disproportionately to women.

In the rural areas many women indicated that they do not own or have access to land in their own right. This is largely a matter of traditional rights and values as enshrined in law.

9.19 Key Issues

- 52 % of the Municipal area comprises vacant land with a further 14.7% being Public Open Space, buffer and protected zones.
- The built-up areas in the town, such as residential, industrial and commercial only take up 27% of Municipal land area.
- 93% of the urban population live on about 15% of the built-up area.
- Tourist facilities, such as hotels account for 4.5% of total urban land area.
- Light and service industry account for 1.4% of the land area.
- Although designated Public and Private Open Space accounts for 14.4% of all urban land there is only 0.6% of allocated for the public active recreation of 45,000 people.
- Of the 1,338 ha of undeveloped land (Vacant + Buffer and protected zones) 220 ha or 17%is subject to approved plans. Of this amount 145 ha is for residential use, 42 ha for tourism and 26.5 ha for education.
- Approximately 26 ha of land have active development proposals that are not fully approved.
- 739 ha are judged to be suitable for some form of development. Of this 434 ha are suitable for residential and other urban developments, the remainder has potential for recreation and/or tourist use.
- The remainder of the undeveloped land of 345 ha is judged to be too heavily constrained physically or environmentally to be developed, although this will need to be carefully studied before reaching a final view.

- In the Rural Areas over 48% of land is occupied by the National Parks and nearly 20% by the Forestry Commission.
- Communal Areas account for 29% of the Rural Land area.
- Within the Communal Areas the settled and arable zone constitutes 47% of the total communal land area.
- Of the remainder only 23% is forested, with nearly 33% taken up by depleted forest/bush and grasslands.
- Potential development land in the rural parts of the Plan Area is very scarce. The National Parks and Forest Areas are unavailable. There may be some potential for expanding small settlements in the Communal Areas, but this requires detailed study. There is an area in the Rural State Land that could be technically and physically developed but there are strong environmental constraints.
- Land ownership within the Plan Area is heavily dominated by either State Land or Municipal Land. Within the urban area the Municipality is responsible for most of the undeveloped land. Private ownership predominates in the residential, commercial and industrial areas.
- There is inequity in the access to land caused by both low incomes and gender inequality.

PART C

SOCIO-ECONOMIC

BASE

10. POPULATION AND HOUSEHOLDS

10.1 Introduction

Estimates of the current population in the Plan Area, its characteristics and dynamics provide an important element to the Master Plan process. Current and projected population estimates provide the basis for calculating current and future needs in land, social services and infrastructure over the next 15 years.

Unfortunately there is no existing accurate estimate of current population in the Plan Area . The last Population Census was taken in 1992 and much has transpired since that time. It is not possible in an exercise of this nature to undertake a fresh Census. Arriving at current (2000) estimates of the level and characteristics of population will be derived from a number of sources. The VFC commissioned an important study, called *Economic Impact, Socio-Economic and Asset Survey Report (December, 2000)* which was prepared by Ramos Mabugu with Grant Milne. This report contains some important data on population characteristics. The Municipal Council has also undertaken some studies of population and housing and these too provide useful insights. Lloyd Manyema has also undertaken important surveys of all properties in the Victoria Falls urban area, which provides important data on formal and informal dwellings. In addition, the 1992 Census provides important known aspects of the population structure in 1992, which can be extrapolated forward to the current year.

Providing a reliable projection of future population change is a difficult exercise due, again, to lack of clear data. The major problem lies in the lack of data on migration into and out of the Plan Area. From the statistics of the Ministry of Health it is possible to arrive at a reasonable estimate of trends in the natural increase of the population (the excess of births over deaths). But much of the population growth in the past has been fuelled by a significant in-migration of people from all over Zimbabwe and other countries. There is scant detailed information on this crucial phenomenon.

One final problem in demography at the present juncture is how to build into any projection the likely impact of HIV/AIDS. Whilst experience is accumulating generally there is still no specific data and no clear consensus.

All these issues will be discussed in this chapter, which will commence by considering the historic growth of population in Victoria Falls. After establishing a current estimate of population for both the urban and rural parts of the Plan Area an examination will be made of the characteristics of the population, such as age, sex and distribution. The chapter will then go on the consider the likely changes in population over the plan period and changes to the population structure, taking into account such factors as HIV/AIDS, migration and possible policy

interventions. A series of different population scenarios will be developed to the year 2015 with the broad implications of these from a planning perspective.

10.2 Past Population Growth 1903-1992

10.2.1 Victoria Falls Urban

From its origins in 1903 up to the 1950s the small settlement of Victoria Falls numbered only a few hundred people. In these early years there were no Census's and often quoted figures omitted the African population. So we can only surmise that population growth occurred more or less evenly, perhaps prompted to expand by new developments such as improved road communications and air transport.

The figures for the post second world war period are more accurate and by 1961 can be based upon accurate Census's of the whole population. The Table below illustrates the accelerating growth of the town from 1946 to the 1992 Census.

Table 16: Population of Victoria Falls Urban area 1946 – 1992

Year	Population	Growth	% pa Growth
1951	756		
1961	1,603	+ 847	7.8%
1969	3,450	+ 1,847	9.6%
1982	8,126	+ 4,676	6.8%
1992	16,826	+ 8,700	7.5%

Source: Census for 1969, 1982 and 1992 and Archives

Note The early population figures include African employed population only and so under records actual population.

It is apparent from these figures that the population of Victoria Falls has been doubling every decade since the 1950s. This represents an exponential growth and establishes Victoria Falls as one of the fastest growing towns in sub-Saharan Africa.

10.2.2 The Rural Areas

The population of the rural parts of the Plan Area is generally not recorded until the later Census's. In all likelihood the population of the rural areas around Victoria Falls in the period prior to the Second World War was very small. However, it would be quite wrong to suppose that it was not settled. Indeed there is a rich, if largely unrecorded history of Nambya, Tonga and

other peoples who lived close to or within the Zambezi Valley for centuries prior to the arrival of the Ndebele or Europeans. Prior to that San Bushmen were indigenous for tens of thousands of years and prior to that middle and Old Stone Age man has left some evidence of their stay through their stone tools.

The 1992 population of the Communal Land area of Hwange RDC included in the Plan Area (Chidobe and Kachecheti Wards) amounted to approximately 8,120 or 11.2% of the total RDC population. Utilising that same proportion the 1982 population would have been approximately 4,318 and that of 1969 2,714.

In addition to the above there were small populations existing in the other land categories in the Plan Area based upon National Parks and Forestry Commission staff and their families (400) and the managers and staff working in the lodges in the Rural State Land area (100). Since we do not know the historical record of these small populations we have assumed a small growth rate, although the population in the State Land Area is of recent origin.

Table 17: Population of Victoria Falls Rural Areas 1969 – 1992

Land Area	1969	1982	1992
Communal Land	2,714	4,318	8,120
National Parks/FC	260	320	400
Rural State Land	----	----	100
Total	**2,974**	**4,648**	**8,620**

Source: PlanAfric

10.2.3 Population of the Plan Area in 1992

On the above basis the overall picture that existed in 1992 for the different component parts of the Plan Area and the overall total is given in the Table below.

Table 18: Population of the Plan Area in 1992 by land type

Land category	Male	Female	Total
Victoria Falls Urban	9673	7153	16,826
Hwange RDC Wards	3900	4220	8,120
Other State Lands	240	260	500
Total	**13,813**	**11,633**	**25,446**

Source: Census and PlanAfric Estimates

10.3 Estimating the current (2000) Population

There have been some significant increases in population in the Plan Area since the last Census in 1992. Victoria Falls town in particular has experienced significant in-migration, as evidenced in the mushrooming of informal shacks and other temporary shelters throughout the urban area. The rural areas are likely to have grown but at a much slower rate. The population of the various state land areas in the Plan Area can be assumed to have remained static.

10.3.1 Urban Population estimate 1995

The *Strategic Environmental Assessment of Developments around Victoria Falls (IUCN 1996)* estimated that the population of Victoria Falls town in 1995 stood at approximately 25,000. This figure was arrived at from two alternative directions. The first was based upon a survey of employment in the town and applying activity rates to arrive at an overall labour force and those economically inactive. To this total was added an estimate of the number of people under 15. The second approach used as the starting point an estimate of the total number of dwellings of all types and applied to these figures different occupation rates. The resultant figures from the two methods were almost identical. The population estimate for 1995 reflected a 14% annual growth rate over the period 1992-1995.

10.3.2 Estimate of Population (2000) based on extrapolating a 14% p.a. growth

Assuming that the growth rate of the early 1990s continued throughout the decade the current urban population in Victoria Falls would be 48,860. The calculation can be seen as follows:

Table 19: Victoria Falls Urban Population 1995-2000 (14% p.a. growth)

Year	% Growth p.a.	Annual Increase	Population
1995			25,000
1996	14	+ 3,500	28,500
1997	14	+ 4,480	32,980
1998	14	+ 4,617	37,597
1999	14	+ 5,263	42,860
2000	14	+ 6,000	48,860

Source: PlanAfric Estimates

In fact this estimate accords fairly well with other current estimates and can be used as a bench mark for the main method of estimation, outlined below.

10.3.3 Estimating Urban Population in 2000 through Housing Occupancy

Estimating current population on the basis of the number of people occupying dwelling units can provide a reasonably accurate methodology. The strength of the method, however, relies upon good data of existing dwelling units by type and some knowledge of typical levels of occupancy for those different types of dwellings. This information has been provided by our direct surveys, the Municipality records, and 1999 statistics on informal dwellings and their occupancy.

Table 20: Victoria Falls Urban Population 2000 based on House Occupancy

Housing Category	No. of Units	Occupancy Rate	Population
High density houses	2,605	8.0	20,800
Low density houses + Institutional	458	6.0	2,748
Flats	111	4.0	444
Company compounds	371	3.8	1,484
Informal	5,274	3.5	18,459
Total	**8,489**		**43,935**

Source: PlanAfric

The major problem with this methodology is calculating the appropriate occupancy rate. In the case of the average occupancy of the formal high density dwellings we know from other studies (Bulawayo, 1999) that typical average occupancy rates for high density dwellings are in the region of 8. But this is an estimate. Even a small variation in this rate can produce significant changes to the figures. For example if the figure of 7 is adopted for high-density dwellings the total population is reduced by some 3,000. However, for the purposes of this report the average occupancy rate of 8 is adopted. It needs to be borne in mind that this is an average figure that will encompass a range.

From the above table it can be seen that the estimated urban population of the Plan Area in the year 2000 is 43,935. **This can be sensibly rounded up to 45,000.** This places it within the same broad range as the extrapolated estimate of 48,860 on the basis of a continued 14% p.a. growth rate. The difference of 4,300 may be explained by a possible reduction in in-migration in the past two years due to the decline in job opportunities in the town as tourism has slumped. For the purposes of the Plan it is proposed to adopt the estimate of 45,000 for the current urban population.

10.3.4 The Rural Population in the Plan Area (2000)

The 1992 rural population of the Plan Area was estimated to be 8,720, made up of 8,120 in the Communal Lands of Chidobe and Kachechete and 600 combined for National Parks Forestry

Commission staff quarters and those resident in the three safari camps in the Rural State Land area.

It is unlikely that the population in National Parks, Forestry Commission and Rural State Lands would have altered very much but the Communal Land population will have increased. The most likely per annum growth rate for this area is for a gradual decline over the period as follows:

Table 21: Communal Area Population Growth 1992-2000

Year	Av. Annual Growth Rate	Population
1992		8,120
1993	2.9	8,355
1994	2.8	8,589
1995	2.7	8,821
1996	2.6	9,051
1997	2.5	9,277
1998	2.4	9,500
1999	2.3	9,718
2000	2.2	9,932

Source: PlanAfric Estimate

The assumptions behind the adopted growth rates are that in and out migration balances each other. It is not known if this is correct. It is likely that there is a significant out-migration, especially by young adults, some of whom will migrate to Victoria Falls town. But, Hwange has also been the subject of some in-migration from people who live in more crowded communal areas. The natural increase was recorded as 3.0% in the 1992 Census for all rural areas in Matabeleland North. General evidence indicates that birth rates have been decreasing steadily in all areas and death rates rising due to HIV/AIDS and some increase in poverty. It may be that the assumptions for population increase in the table above are too generous, but as the numbers are relatively small the issue is not significant. On the basis of the above and adding in the 600 people assumed to be living in other areas the 2000 population estimate for the rural part of the Plan Area is 10,532, rounded to 10,500.

10.4 Total Plan Area Population 2000

In summary the total population of the whole Plan Area for the year 2000 is calculated as shown below in Table 22 . The Male/Female split is arrived at by using the same % splits as in the 1992 Census.

Table 22: Total Population for the Plan Area : 2000 Estimate

Area	% of Plan Area	Male	Female	Population
Urban	1.8	25,875	19,125	45,000
Rural	98.2	4,946	5,544	10,500
TOTAL	**100.0**	**30,821**	**24,669**	**55,500**

Source: PlanAfric Estimate

10.5 The Characteristics of the Plan Area Population

10.5.1 Number of Households

The 1992 Census found that in the Victoria Falls urban area the total population of 16,826 was grouped into 3,528 households, an average household size of 4.8. According to a socio-economic study (*Mabugu and Milne, 2000)* the average household size had decreased to 4.0. This is broadly in line with other research, such as the *Zimbabwe Demographic and Health Survey (ZDHS), 1988, 1991 and 1999* that has been indicating a steadily declining average household size in both urban and rural contexts. This is closely related to the declining size of the family. On the basis of the *Mabugu and Milne* figures there are 11,377 households in Victoria Falls urban area. These figures provide an important indicator of housing need and will be introduced into the housing chapter.

The 1992 Census found that the average household size in the Chidobe and Kachchete wards was 6.1 and 6.0 respectively. In their 2000 survey *Mabugu and Milne* indicate that the average household size is 7.0. This figure conflicts with the Census and the ZDHS demographic data. On the basis of the most recent national statistics the figure might have been expected to be closer to 5.0. The small sample of *Mabugu and Milne* may have resulted in the difference. On the basis of an average household size of 5.0 the number of rural households in the rural areas of the Plan Area is 2,106.

10.5.2 Head of Household

Mabugu and Milne report that from their survey, "The majority of the surveyed households were male-headed (81.9 percent). Most of the household heads were married (74 percent). However, 18 percent of the household heads in the rural wards were widowed, contrasted with 5 percent in Victoria Falls (see Table below). A significant proportion of the sample in urban areas was single (17.1 percent) and this contrasts with that in rural areas, which was significantly small (1 percent). It is likely that owing to the impact of AIDS some heads of households are technically children and this phenomenon is growing, although we have no information on this issue.

10.5.3 Marital Status of Household Heads

Commenting on the marital status of the household heads, *Mabugu and Milne* state,
"Analysing the marital status from the gender perspective, it can be seen that females constituted the bigger percentage of those who were widowed in both urban and rural areas compared to males. This is probably due to the fact that males usually remarry when their wives pass away, which is not usually the case with females." The Table below shows the marital status of households in both the urban and rural contexts.

Table 23: Marital status of household head across gender and area of study

Area			Married	Single	Divorced	Widowed	Separated	Other	Total
Urban	Female	Count	253	39	12	20	6	-	330
		% within respondents gender	76.7	11.8	3.6	6.1	1.8	-	100.0
	Male	Count	124	49	3	5	3	2	186
		% within respondents gender	66.7	26.3	1.6	2.7	1.6	1.1	100.0
	Total	Count	377	88	15	25	9	2	516
		% within urban area	73.1	17.1	2.9	4.8	1.7	0.4	100.0
Rural	Female	Count	39	-	2	15	-	-	56
		% within respondents gender	69.6	-	3.6	26.8	-	-	100.0
	Male	Count	43	1	-	4	-	-	48
		% within respondents gender	89.6	2.1	-	8.3	-	-	100.0
	Total	Count	82	1	2	19	-	-	104
		% within rural area	78.8	1.0	1.9	18.3	-	-	100.0

Source: Mabugu and Milne, 2000

10.5.4 Households and Educational Levels

Mabugu and Milne studied the education levels of households in both urban and rural areas and their conclusions are given below:
"Household heads in Victoria Falls were relatively more educated than those in Chidobe and Kachecheti wards (the rural area). For instance, 20 percent of the household heads in Chidobe and Kachecheti had never attended school compared to 2 percent in Victoria Falls (urban).

Eighty percent of the household heads in the rural areas had attained at most, grade 7 qualifications, whilst 81 percent in urban areas had at least grade 7 qualifications." These results are shown in Table 24 below:

Table 24: Highest level of education completed by household head in both rural and urban areas

	Highest level of education completed by Household head (%)						
	Never	Primary	Secondary	Diploma/certificate after primary	Diploma/certificate after secondary	Graduate	Total
Urban	2	17	61	4	13	3	100
Rural	20	60	18	1	1	0	100

Source: Mabugu and Milne 2000

In addition, *Mabugu and Milne* note that, "An analysis of the level of education from a gender perspective within the urban and rural areas under study shows that both males and females are generally more educated than their counterparts in the rural areas (Table 25). The survey showed that more males are educated than females in both urban and rural areas under study. For those children who have never attended school, females dominate, both in the urban and rural areas. This underscores the trend in many households with severe income limitations to support males in school before females, if choices have to be made. This result is further solidified by the fact that more males have attained secondary education compared to females.

Table: 25 Highest level of education attained by household head across Plan Areas and by gender

		Highest level of education attained by household head (%)						
		None	Primary	Secondary	Diploma/certificate after primary	Diploma/certificate after secondary	Graduate	Total
Urban	Males	1	17	63	3	13	3	100
	Females	5	18	55	8	12	2	100
Rural	Males	15	63	20	1	1	0	100
	Females	44	44	12	0	0	0	100

Source: Mabugu and Milne

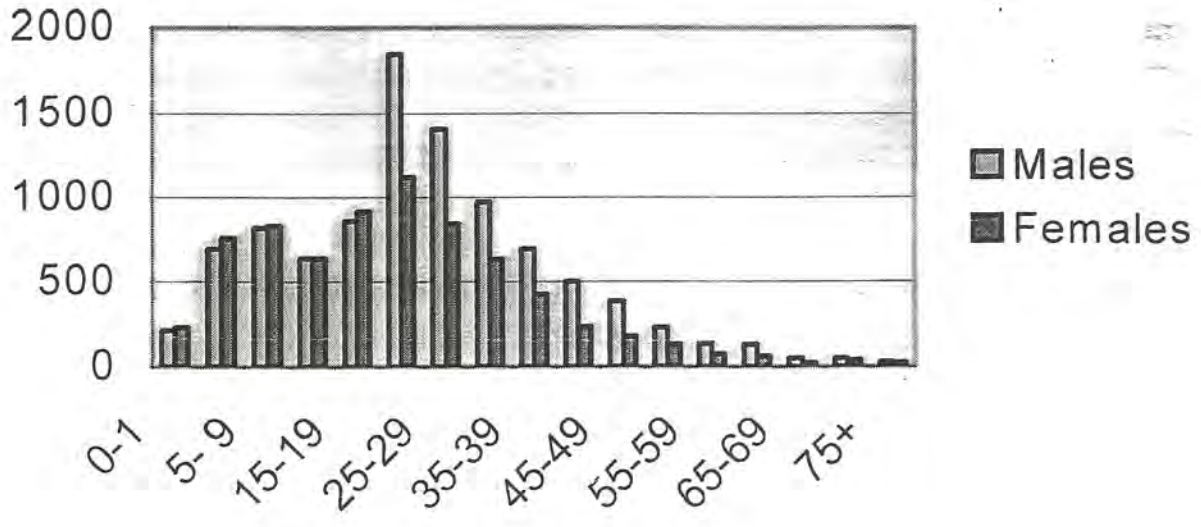
Note: These are percentages of the gender within the residential area.

10.5.5 Age/Sex Structure

The last available statistics on this issue are the 1992 Census. The figures for Victoria Falls urban show a significant bias in the population to males, with 57.49% of the total population being male and 42.51% being female. This marked imbalance may be explained by the high number of male in-migrants seeking work. This is illustrated in the age/sex structure for the town, where females slightly outweigh males in the younger age groups but are subsequently the minority in all other age groups.

The age structure of Victoria Falls urban shows a young age structure but not as young as the population in Zimbabwe as a whole. Those under 15 account for 29% of the total population compared to 50% in the population at large. However, 70% of the population in Victoria Falls are aged below 30. This is a pattern that is similar for both sexes. The Age/Sex structure below indicates these features:

Fig 3. Age/Sex Structure of the Urban Area 1992

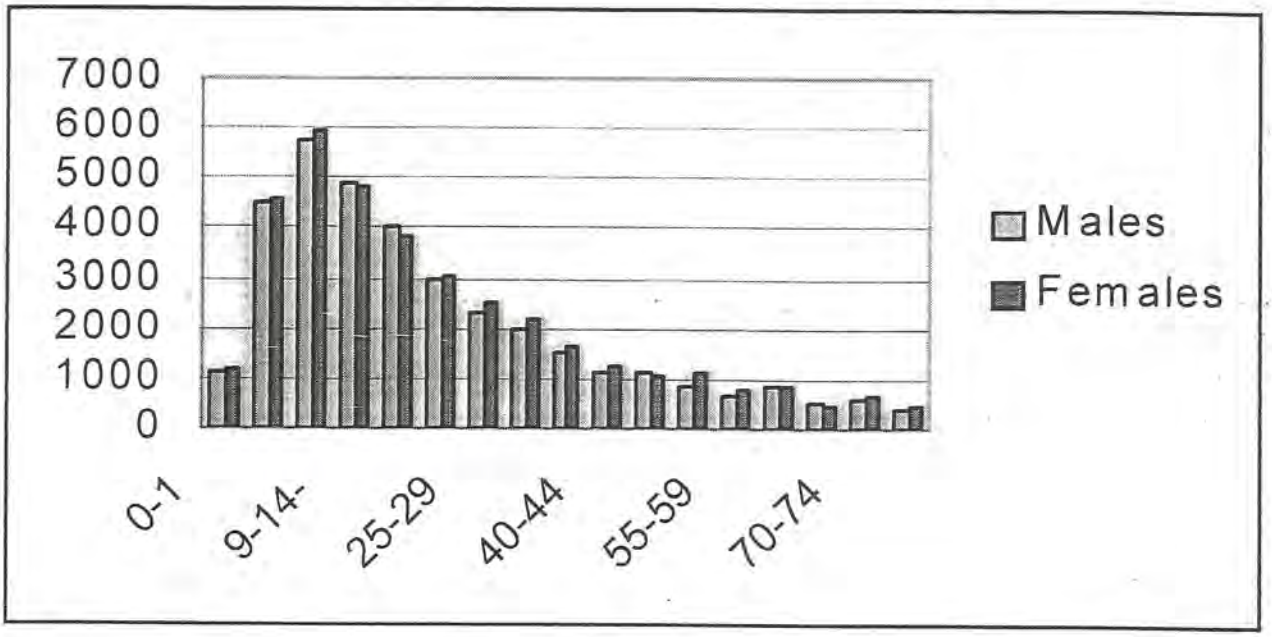


Source: CSO 1992 Census

The sex structure in the Communal Lands in the Master are more balanced than the urban areas. In Chidobe ward in 1992 there were 52.79% females and 47.21 males. In Kachecheti ward there were 51.13% females and 48.87% males.

The Census lacks age structure detail by ward. However, it can be assumed that the Chidobe and Kachecheti wards are broadly similar to the district as a whole. Hwange district has 45.3% of its people aged under 15 years and in a very similar figure to the Victoria Falls town 71% are aged under 30 years. The Hwange Age Structure is shown below:

Fig. 4 Age/Sex Structure - Hwange District 1992



Source: CSO 1992 Census

10.6 Population Distribution and Density

The distribution of population in Victoria Falls urban area is dramatically skewed so that the vast majority of inhabitants are located within the Chinotimba high density areas. This means that 85% of the population of Victoria Falls are located to the east side of Livingstone Way, although this comprises only approximately 30% of the built-up area. This is a common feature in all Zimbabwean towns and is a result of the extreme disparity in house plots between high and low density, itself a legacy of colonial racial policies. Currently because of the state of overcrowding and homelessness in Chinotimba the densities being experienced are approximately double that which was originally planned for. The effect of such overcrowding is felt in acute social pressure and environmental destruction.

The population densities in the Communal Land areas of Chidobe and Kachecheti can only been given in approximate terms since ward areas are not provided in the Census. The communal lands in the Plan Area occupy approximately 300 square kilometres and the estimated population living there in 1992 was 8,120. The gross density can, therefore, be estimated at about 22 persons per square kilometre, at that time. The overall national density for the same period (1992) was about 27 persons per square kilometre. Within Matabeleland North

average district densities were much lower, except for Nkayi district, which was 21 persons per square kilometre. Whilst the average density in the Communal Areas of the Plan Area are not especially high a few things need to be borne in mind. First, the land area is very fragile and cannot support high levels of densities. Second the distribution of population in the wards tends to be along such river courses and better soils and here the densities are much higher. Moreover the average density is increasing steadily with the result that pressure on the natural resource base is increasing. On the basis of our 2000 population estimates the average density is now 33.1 persons per square kilometre.

10.7 Fertility and Mortality

There is a very significant difference in the fertility rates in urban compared to rural areas, although both are gradually decreasing in Zimbabwe. The 1992 Census showed that both Victoria Falls and Hwange District had lower fertility rates than the Provincial average. This is not surprising for Victoria Falls but Hwange has rates in all fertility categories that are lower than any of the similar districts around it. It is not known why this should be so. In fact only Bubi District, which has some peri-urban characteristics, has lower figures than Hwange. Hwange District had a Crude Birth Rate of 34.54 births per thousand women and Victoria Falls, 28.35, compared to the Provincial average of 37.60. In the Total Fertility Rate (which indicates the total number of children a group of women will have in their life) Hwange district stands at 5.46, while Victoria Falls is only 3.8 and these both compare with a Provincial average of 6.4.

Unfortunately we do not have any recent data on fertility rates in the Plan Area but the latest *Zimbabwe Demographic and Health Survey (1999)* shows that birth rates are declining in all fertile age groups except teenagers. The number of births per 1000 women in the 20-24 age group, for example, has declined from 250 in 1988 to under 200 in 1999. This may be attributed to increasing education levels and a high knowledge of birth control in Zimbabwe and the accessibility to contraceptives in most areas.

The Crude Death Rate (CDR) is the number of deaths per 1000 population in a given period, usually a year. The overall CDR for the province in 1992 was 8.1 deaths per 1000 population. Victoria Falls had the highest rate in the province at 9.8, Hwange district had 7.7 deaths per 1000 population. This is an area where other statistics indicate some significant changes with significant increases in death rates, largely due to the impact of the HIV/AIDS epidemic. Similarly Infant and Child Mortality Rates are also on the increase and Life Expectancy at Birth has deteriorated in the past 8 years since the Census. Data on infant and child mortality rates in 1992 showed that there were no significant differences between Hwange and Victoria Falls. However, in the area of Maternal Mortality Victoria Falls recorded the highest rate in the province at 419 deaths per 100,000 live births and Hwange has an astonishingly low figure of 120 deaths per 100,000 live births. This latter figure may be an error in recording, as pointed out in the Census.

10.8 Future population scenarios 2000-2015

The purpose of this section is not to forecast the future population of Victoria Falls but to explore the likely future population levels given different scenarios. This will provide the policy makers with some sharp choices and enable a vision for the area to be developed according to certain principles in the knowledge of the likely consequences of their actions. For, whilst there are dynamics involved in population change that are beyond the scope of policy makers to affect in the short term, such as natural increases, the levels of migration can be strongly influenced. In a country of high unemployment and poverty the mere prospect of a job, or some income provides a major allure to poor people. The rapidly increasing population in Victoria Falls town can be attributed to the perception among people within Zimbabwe and outside that there were opportunities there, which few other centres had. Every time a new hotel was opened or expanded, or a new shopping centre developed hopeful migrants would flock in, erect a plastic shack and enter into the population statistics.

The result of laissez-faire policies that allowed such migration and informal and illegal settlement to take place is that Victoria Falls has been the fastest growing urban place in southern Africa since the early 1990s and has one of the most pressing housing and social condition problems in Zimbabwe.

Before considering different migration alternatives there is a need to review the natural increase/decrease dynamics of the local population and make some assumptions about the prospects for these over the next fifteen years.

10.8.1 Future Birth and Death Rates: The Natural Increase Equation

The underlying natural increase of population in both the urban and rural parts of the Plan Area has been in decline for some years. This can be inferred from national data, as there is no reason to suggest that the demography of the Plan Area is any different. Birth rates have been in steady decline over a long period. The reasons for this have already been outlined. It is reasonable to assume that they will continue to decline over the first ten years of the plan period, but then stabilise. Death rates have been increasing, also steadily since the 1990s as HIV/AIDS and poverty related illnesses shorten life. The result of these two phenomena is seen by many commentators to lead to a negative growth rate in the medium term. In other words Zimbabwe's population may cease to grow and to actually decline over the next 10 years, assuming that no cure for AIDS is discovered and the cost of anti-retroviral drugs continues to be too expensive for all but the very rich.

Given the lack of data it is not possible to be very precise about the assumptions on natural increase that are required in these Master Plan Population projections. On the basis that the natural increase rate in the urban areas is approximately 1.8% p.a. and in the rural areas is 2.2% p.a. we may assume that the following pattern could occur over the plan period:

Table 26: Natural Increase Assumptions over the Plan period 2000-2015

Year	Urban rate % p.a.	Rural rate % p.a.
2000	1.8	2.2
2001	1.4	2.0
2002	1.0	1.9
2003	0.5	1.7
2004	0.1	1.4
2005	0.0	1.0
2006	0.0	0.6
2007	0.0	0.2
2008	0.0	0.0
2009	0.0	0.0
2010	0.1	0.1
2011	0.5	0.5
2012	0.7	0.7
2013	0.9	0.9
2014	1.0	1.0
2015	1.0	1.0

Source: PlanAfric

Using these natural increase assumptions as common to all alternative scenarios in the urban area one can then add in different migration assumptions to provide a range of possible population projections.

10.8.2 The rapid growth scenario

The rapid growth scenario envisages a continuous and steady urban in-migration pattern similar to the experience over the past 10 years or so. The assumption is that the area will continue to attract hopeful migrants who have no alternative counter attraction. The current depression of tourism is seen as either temporary or insufficient to put off the would-be migrant. The only variation in growth rates is that caused by the underlying natural increase assumptions. Migration rates of + 10%, which have been the norm throughout the past decade are assumed to continue. It is assumed that in-migration and out-migration balance each other out in the rural areas. The resultant growth will see Victoria Falls attain a population of 214,000 and thus become a major city by Zimbabwean standards. The table below sets out the main figures:

Table 27: High Growth Population Scenario

	2000	2005	2010	2015
Urban	45,000	80,200	129,100	214,500
Rural	10,500	11,500	11,700	12,100
Total	**55,500**	**91,700**	**140,800**	**226,600**

Source: PlanAfric

10.8.3 Medium growth scenario

The medium growth scenario is based upon the view that urban migration will be linked to the success or otherwise of the tourist industry in the Plan Area. This is assumed to stay depressed for a few years and to pick up in the medium term so as to recover the 1998 position within 10 years and thence grow slowly for the remainder of the plan period. It is assumed that in-migration and out-migration balance each other out in the rural areas. The table below sets out the main figures:

Table 28: Medium Growth Population Scenario

	2000	2005	2010	2015
Urban	45,000	64,000	81,700	112,500
Rural	10,500	11,500	11,700	12,100
Total	**55,500**	**75,500**	**93,400**	**124,600**

Source: PlanAfric

10.8.4 Static or slow growth scenario

The static or slow growth scenario is based upon the assumption that new urban in-migration is controlled through a strong housing policy that prevents any additional informal housing and allocates all new housing to existing inhabitants. The sole determinant of population change is therefore natural increase. It is assumed that in-migration and out-migration balance each other out in the rural areas.

Table 29: Low Growth Population Scenario

	2000	2005	2010	2015
Urban	45,000	47,200	47,200	48,700
Rural	10,500	11,500	11,700	12,100
Total	**55,500**	**58,700**	**58,700**	**60,800**

Source: PlanAfric

10.8.5 Commentary on the population scenarios

The first scenario illustrates that if Victoria Falls carries on accepting in-migration at the same rate as in the past 10 years its population will quadruple in 15 years time. The implications of such a scenario are very considerable and need to be considered very seriously.

Even if the in-migration rate can be assumed to decline due to the fall in tourist numbers currently being experienced the second scenario shows that, without any control on new migrants, this will still create a population that is more than double the present within 15 years.

The third scenario provides for a stabilised situation in which growth is very small and determined solely by natural growth. This scenario will require strong management of the town and an end to laissez faire policies.

10.9 Key Issues

- The last Census of Population was in 1992. Detailed demographic data for local areas is unavailable and this makes estimating current population very difficult. In particular there is a lack of data on population migration in and out of local areas.
- The demographic impact of HIV/AIDS is not fully known, but it is undeniably reducing the natural increase of the population through high death rates.
- Very rapid urban growth (14% p.a.) has occurred in the urban area for the past 10 years. Rural growth has been much lower and declining (2.9%- 2.2% p.a.).
- It is estimated that the population of the Plan Area in 2000 was 55,500 of which 45,000 live in the Municipal area.
- Within the urban area there has been a major influx of migrants, many of whom (nearly 18,000) live in shacks.
- The size of the average household has been declining and it is estimated that in the urban area it is 4.0 persons per household and in the rural area 5.0. This means that there are 11,400 urban households and 2,100 rural households in the Plan Area.

- The age structure of the urban area is overwhelmingly young but not as young as the national picture. 29% were under 15 and 70% under 30 years of age (1992 census). In the rural areas 45.3% were under 15 and 71% under 30. There is a small but significant preponderance of men in the urban population structure and a preponderance of women in the rural areas.
- The natural increase of the population (births over deaths) is declining due to decreasing fertility and increasing mortality rates. The former is due to increasing education and use of contraceptives and the latter due to HIV/AIDS and increasing levels of poverty.
- Future population levels will depend upon a number of socio-economic factors and the policy framework which local managing agencies agree to adopt. The key determinant for the urban area, as in the past, will be the extent of in-migration.
- If there is a continuation of a "laissez-faire" population policy in the Plan Area then it is possible that we will see a population of well in excess of 200,000 by 2015.
- Even if a lower in-migration level occurs, but at a level more typical of other urban areas of Zimbabwe the Plan Area will still experience major growth and have a population of over 100,000 by 2015.
- Only if in-migration ceases or is prevented can we expect to realise a population at or about 60,000 by 2015.

11. THE LOCAL ECONOMY

Acknowledgement: *Significant sections of this chapter are derived from the Economic Impact, SocioEconomic and Asset Survey Report by Ramos Mabugu with Grant Milne.*

11.1 Introduction

This chapter will seek to analyse the nature of the local economy in the Plan Area and to assess its strengths and weaknesses. There is no doubt that the central driving force of the local economy in the urban area is tourism. The rural hinterland's economy is also strongly influenced by tourism and parts of it, such as the National Parks are centrally involved in the sector. But there are other sectors of the urban economy that have become established and that, to some degree, have their own dynamic. The Communal Land areas are primarily involved in subsistence agriculture and this will be examined with a view to assessing its viability and potential for improvement. The future will be considered in terms of the likely pattern for all sectors and the prospects for creating new economic activities to meet the needs of the present labour force. Tourism is such a key and vital aspect of the local economy that a separate chapter has been devoted to it.

Before embarking upon detailed analysis it is necessary to place the local economy into its global and national perspectives. The state of the local economy is largely determined by forces outside the area and it is important to assess the state of the national and international economic dimensions and possible longer term changes.

11.2 The Global and Regional Economy

As a centre for world tourism the Victoria Falls area is prone to the vicissitudes of the world tourism market. Taking the long run it is possible to say that tourism has been a growth area for many decades and shows little sign of abating. The desire of those who live in the relatively prosperous areas of the globe to travel and visit places of scenic beauty and interest in any part of the world has become increasingly manifest in the past twenty years. It is a reasonable assumption that the desire for foreign holidays and visits will continue during the Master Plan period. However, for desire to be translated into continuing demand will be largely dependent upon the maintenance of prosperity in the developed world. Assuming that is maintained the world tourism market should be sustained throughout the Master Plan period.

However, the specific places visited by the world's tourists are affected by their perceptions of the safety and efficiency of the places to be visited. The current downturn in visitors to Victoria Falls illustrates the volatility of a market easily put off by adverse publicity. Moreover, such perceptions are not necessarily accurate or site specific. General adverse publicity about Africa, or of the southern African region can serve to reduce visitors to an area such as Victoria Falls.

The regional tourist from countries within southern Africa, especially South Africa has also been put off by the understanding that the national economy of Zimbabwe is in a poor state. Lack of fuel, possibilities of power black-outs and other shortages may easily deter such visitors.

Finally it is important to point out that whilst tourism is a buoyant sector it is increasingly competitive. It is no longer sufficient to simply rely on the fact that the Victoria Falls are world famous and Zimbabwe is the logical destination. There are now dozens of World Heritage sites and all manner of international attractions competing for the tourists business. Even within the Victoria Falls area other countries are competing for this potentially lucrative market. Zambia is undertaking significant investment and Botswana promotes visits to the Falls from its own bases nearby.

11.3 The National Macro-Economic picture

The national macro-economic situation has several influences on local economies such as Victoria Falls. In the first place if the national economy is weak and seen to be in decline this can affect, as discussed above, overseas perceptions as to whether it is a good place to visit. In the second place, it affects investment prospects, which, in turn affect employment and add to the problems of poverty. Thirdly the decline in a national economy affects public expenditure, which is manifest in the decline of social service provision and local capacities to manage local areas. Finally national economic decline also affects local economies through declining incomes, thus lowering expenditure on goods and services and weakening the ability of people to pay for essential services such as housing.

The more specific analysis of the national macro-economic picture is taken from *Mabugu and Milne (Socio-Economic Survey, 2000).*

Starting in 1990, Zimbabwe developed and implemented two different but related programs of macroeconomic reforms. In 1991, the country embarked on its first reform programme, called the Economic Structural Adjustment Programme (ESAP) with the support of the International Monetary Fund and World Bank. It had four principal components: fiscal reform, trade liberalisation, domestic deregulation and social safety nets reform.

Although concern with the 'social dimensions of adjustment' was expressed even in the early policy statements, this was not seen as a major part of the programme. However, during programme implementation, negative impacts on the poor became increasingly obvious; thus greater effort was made to develop poverty-alleviating programmes. The Social Dimensions of Adjustment (SDA) programme was introduced in 1991 (GOZ, 1991). It established a Social Development Fund (SDF) which provided financial assistance to households earning less than Z$400 per month to help them meet the increased user costs for education and health associated with ESAP. It also provided a small income supplement to offset the effects of

deregulation of basic food prices. The SDF also provided introductory training courses and soft loans for retrenchees who had started new businesses.

Although the successor to ESAP – ZIMPREST: *Zimbabwe Programme for Economic and Social Transformation 1996-2000* – continues the same thrust as regards macroeconomic and structural policies, as its name suggests it focuses more explicitly on social dimensions: poverty, empowerment, indigenisation, land reform (GOZ, 1998). It has a much broader focus than its predecessor and can be regarded as more of a development programme than ESAP. There have been other general policy statements and plans in the ten years since the reforms first started, most notably *Vision 2020*. However, it is not clear that these have had any effect beyond their high-profile rhetoric.

Authorities proceeded with many parts of macroeconomic reforms. They succeeded in so far as trade and capital account liberalisation is concerned, but failed with respect to stabilisation, as government has not managed to reduce the budget deficit. This has had important knock-on effects on inflation and exchange rate depreciation as would be expected.

Under the reform programme, the economy showed a gradual improvement in many areas to the end of 1996. During the past three years however, a serious and significant decline has generated serious cause for concern. The salient features of this macroeconomic decline are:

- Declining GDP per capita
- Inflation
- Depreciation of the Zimbabwean dollar
- Rising national debt
- Rising unemployment
- Rising poverty, coupled with worsening income distribution

By mid-2000, inflation had reached over 58 per cent per annum; the Zimbabwean dollar is trading at 55 to 1 against the US dollar (compared to 18/1 two years earlier and 2.5/1 when the country embarked on economic reforms). Total external debt more than doubled between 1985 and 1996 (Table 2). Total government debt has grown from Z$37 billion (USD$3.97 billion) in 1995, to the current level of Z$207 billion (USD$4.45 billion) in 2000. Of this amount, domestic debt alone has grown from 26.5 percent of GDP to 37 percent over the same period. This high stock of debt has resulted in huge increases in the interest bill. Investment, which is crucial for employment creation and growth in the economy, has declined sharply from 23.4 percent of GDP in 1995 to 13 percent in 1999, while savings have declined from 20 percent to 9 percent of GDP over the same period. The very low savings and investment levels imply negative future growth prospects for the economy. The economy is projected to contract by about - 4.2 percent in 2000, with tourism expected to decline by 4.5 percent below its 1999 output level.

Adverse economic conditions noted above have led the government to reverse some of the liberalisation policies. For example, although export incentives were abolished in 1994, various new forms (mainly through tax reductions for exporting firms) have been experimented with since 1998. They do not appear to have had an effect. In the financial sector, there have been other important policy reversals, with significant impacts on the economy.

11.4 Employment in the Plan Area

The Labour Force is defined as those who are economically active above the age of 15. This includes paid employees and employers, unpaid family workers, own account workers and the unemployed. The economically inactive include children under the age of 15, students, homemakers, the retired, the very old and others.

The total labour force in the total Plan Area in 2000 is estimated to be **28,200** of whom **20,600** are men and **7,600** are women. (figures rounded)

The future size of the labour force within the Plan Area will depend upon the population strategy adopted by the Master Plan. What can be said is that if the rapid growth scenario were to take place the labour force would more than quadruple to something around 85,000 by 2015. In the lower growth scenario the labour force will be in the order of 50,000 by 2015. In both scenarios the job and land implications are considerable. The third scenario will create the most static situation, but here too the labour force is likely to grow as the very young reach over 15 years and insufficient numbers reach retirement age to compensate for this growth.

The Tables below show the estimated number of economically active people in the Urban and Rural parts of the Plan Area in 2000. The figures utilise the 1992 Census ratios applied to the Master Plan estimate of population in 2000.

11.4.1. The Urban Labour Force

According to the 1992 Census, 12,445 or 74% of the total population were aged over 15 and of this figure 8,894 or 71.4% were economically active. The specific male/female figures are also derived from the 1992 Census and showed that 90.0 % of males were economically active, and 49.1% of females. Assuming that the same proportions hold true in the year 2000 then the current urban labour force is as follows:

Table 30: Current Urban Labour Force: 2000

	Population over 15	Activity Rates	Economically Active
Male	20,546	90.0	18,491
Female	12,754	49.1	6,262
Total	**33,300**	**74.36**	**24,753**

Source: 1992 Census and PlanAfric

11.4..2 The Rural Labour Force

Based upon the general 1992 figures for Hwange district it is possible to calculate the rural labour force in the Plan Area at that time. On this basis 3,307 or 54.7% of the total rural population in the Plan Area were aged over 15 and of this figure, 1,976 or 59.76% were economically active. Of the total economically active 1,230 were males, representing an activity rate of 78.6% and 746 were females, representing an activity rate of 42.8%. Assuming that the same proportions hold true in the present then the 2000 rural labour force in the Plan Area is as follows:

Table 31: Current Rural Labour Force: 2000

	Population over 15	Activity Rates	Economically Active
Male	2,740	78.6	2,154
Female	3,004	42.8	1,286
Total	**5,744**	**59.76**	**3,440**

Source: 1992 Census and PlanAfric

11.4.3 Employment and Unemployment

The exact figures for employment and unemployment are difficult to establish. The 1992 census stated that 2,133 or 23.98% of the economically active were unemployed in Victoria Falls town. If this ratio was applied to the 2000 estimate of the economically active then 6,000 are unemployed. The assumption made in the IUCN Report of 1996 was that 35% were unemployed. Today this would represent 8,700 people. Estimates of unemployment in urban economies in Zimbabwe today vary from 40-60%. It is possible that unemployment in Victoria Falls is lower than the national urban average, perhaps in the order 30-40%. If this were the case then the numbers of unemployed would be between 7,000 and 10,000.

The 1992 Census indicates that 32% of all those economically active in Hwange rural district were unemployed. Applied to the rural part of the Plan Area this equated to 632 people. Using the same unemployment rate would mean that in 2000 there are 1,100 unemployed in the rural areas of the Plan Area. In terms of employment the 1992 Census demonstrates that nearly 70% of employed people in rural areas in Matabeleland North are occupied in agriculture. It is likely

that this figure is higher in the rural parts of the Plan Area as there are few settlements supporting shops and other services and relatively few social facilities. There are likely to be a disproportionate number occupied in craft production, especially in the villages next to the main Bulawayo-Victoria Falls road.

In any event the definition of employed and unemployed has less relevance in countries like Zimbabwe where there are no unemployment benefits and the figures rely on self-definition. In practice hardly anyone can afford to be unemployed. The real distinction to be made is between formal employment and informal employment.

11.4.4 Formal and Informal Employment

Unfortunately there is a lack of hard data on this issue. However, it is possible to construct some idea of the relative sizes of the formal and informal sectors in the urban area using the 1995 data of IUCN and the Tourism Asset survey (*S.K.Nyapokoto, 2000*).

In 1995 the basic split in employment in Victoria Falls town was estimated to be 51,5% in formal employment, 13.5% in identifiable informal activity and 35% unemployed (IUCN).

In 2000 it is estimated that formal employment has increased since 1995 in terms of numbers but decreased as a proportion of the total labour force. It is thought likely that formal employment in the urban area stands at around 10,000, or approximately 40% of the labour force. This leaves 60% of the labour force technically unemployed. If we assume that there is, in reality, no substantive category of "activity" called unemployment then all those not in formal employment are to a lesser or greater extent engaged in informal employment. It is important to note that there are very fluid overlaps between all employment categories. Many who are employed in formal work also undertake informal activity to help supplement their low wages. Similarly those in informal work may, from time to time, achieve contract work.

Within the rural areas the categories of formal and informal work have less relevance. The overwhelming majority of those in the labour force that remain at home are peasant farmers, who are in effect self-employed. There are some that are engaged in formal employment in the public services, shops and tourist sector. Finally there are a significant number of people engaged in craft and curio production, especially those who live in villages close to the main road. They are also likely to live in farming households.

11.5 The Urban Local Economy

The local economy of the Plan Area is dominated by the urban economy of Victoria Falls town, which is, in turn, dominated by the tourist industry. However, the rural areas of the Plan Area have some economic activities, which are largely independent of the town such as agriculture

and forestry. This section will seek to describe the various parts of the local economy and assess their relative strengths and weakness.

The approach used to describe the local economic structure is an employment-based one. The alternative approach of using value of output, in terms of sector GDP is attractive but data is not readily available for such an analysis. Even using employment-based methods has problems. It must be stated, quite clearly, that there is no accurate data available on the current numbers of people engaged in various employment categories in the Plan Area. Therefore, the estimates given below are based largely on subjective assessment and may well contain serious inaccuracies. Even the 1995 survey, undertaken for the IUCN study was not a comprehensive survey and involved subjective assessment.

An attempt has been made to re-work the 1995 IUCN data to reflect some calculations concerning the likely labour force at that time and hence arrive at a more comprehensive picture. This led to a calculation that formal employment in 1995 probably accounted for 55 % of the total labour force. An assessment of the likely numbers formally employed in 2000 suggests that the socio-economic survey's estimate that 56% are now in formal employment is too high. Our estimates suggests that the formal/informal split is now approximately 40-60%. This is much closer to the situation recently analysed in Bulawayo (*PlanAfric, 1999).*

There are many ways of cutting the employment structure cake. Official statistics use different occupational categories and different employment sectors. The following table is a simplified version of the employment sector approach. It adopts only five main categories: services, administration, light and service industry, storage and warehousing and distribution and transport.

Table 32: Employment By Sector: Victoria Falls Town 1995 and 2000

Sector	1995	%	2000	%
Formal Sector	**7,250**	**55.0**	**10,000**	**40.3**
1.Services	5,250	72.4	7,300	73.0
Hotels	*1,700*	*23.4*	*1,750*	*17.5*
Other Tourism	*1,350*	*18.6*	*2,350*	*23.5*
Commerce	*800*	*11.0*	*1,230*	*12.3*
Finance	*200*	*2.7*	*250*	*2.5*
Domestic workers and Security	*1,200*	*16.5*	*1,700*	*17.0*
2.Administration	900	12.4	900	9.0
Central Government	*500*	*6.9*	*500*	*5.0*
Local Government	*400*	*5.5*	*400*	*4.0*
3. Light & Service Industry	500	6.9	800	8.0
4. Storage/Warehousing	300	3.5	500	5.0
5. Distribution & Transport	300	4.1	500	5.0

Informal/Unemployment Sector	**5,950**	**45.0**	**14,800**	**59.6**
1. Selling fruit and vegetables*				
2. Selling curios*				
3. Selling other goods*				
4. Making curios*				
5. Making other goods*				
7. Providing services*				
Total Labour Force	**13,200**	**100.0**	**24,800**	**100.0**

Source: IUCN (1996) and PlanAfric

* It is not possible to ascribe figures to these six main informal sector categories without a detailed survey. They are described in more detail below.

The main observation to make on the above table is that the economic structure of the formal economy is dominated by the service sector. This reflects the obvious lack of an industrial base in the area and the significance of tourism. It should also be noted that the impact of tourism is felt in most of the other sub-sectors of the service sector and in the other main sectors. Thus the commercial sub-sector of the services group serves a resident population but has a strong tourist bias. Similarly the distribution and transport sector relies greatly on the tourist industry.

Employment in the direct tourist sub-sectors grew between 1995 and 2000 by about 1,000, but it is noticeable that hotel employment has stagnated. This is a result of the recent reduction in visitors and the consequent laying off of staff that several hotels have been forced to do. The overall growth has relied upon the increase in general tourist activities.

Administration is the second biggest employer, after the services sector but according to the information provided in 1995 and today has not grown in line with population increase. Its relative significance has therefore declined in the past 5 years.

11.5.1 The Formal Urban Economy

11.5.1.1 The Service Sector

Since the tourist industry is such a dominant force in the urban economy and in one way or another affects practically every aspect of the local economy a separate chapter is devoted to describing its features and assessing its market position.

Apart from tourism the service sector comprises employment in shops and offices of various types. The town has a compact town centre that provides higher order goods and services for its

population. In addition to the retail sector, are curio shops rafting company offices, restaurants and *take-aways*, stationery, supermarkets and clothing shops. There are also services such as hairdressers, pharmacies, dry cleaners and petrol filling stations. Financial services include 11 Foreign Exchange Bureaux, and five banks and building societies.

The informal sector is well represented in this sector undertaking selling a wide range of products, especially in the residential areas. This is dealt with in a separate section below. Smaller neighbourhood shopping centres provide lower order goods and services, mainly to poorer suburbs. It is estimated that employment in this sector has increased since 1995 due to the opening of several new outlets such as the Landela Complex and the Mkhosana shopping area.

Domestic work accounts for an important segment of employment in the town, especially, but not exclusively in the low-density suburbs. Most households in these areas will employ at least one domestic worker and some of the larger properties with lodges may employ several. Whilst the pay is generally poor there are often benefits such as housing.

There has been a significant growth in the employment of security guards for both business and residential premises.

The finance sector is a small but important element of local service provision, meeting the needs of local residents, local businesses and visitors. There are five banks: Barclays; Zimbank; Standard Chartered; First Banking Corporation; and Metropolitan Bank. There are two building societies: CABS, which also offers banking facilities; and the Zimbabwe Building Society. There are eleven Bureaux de Change operating in the town, complemented by a flourishing black market in foreign currency. In addition all the hotels and local banks provide foreign exchange facilities.

11.5.1.2 Administration

This too is an important sector in Victoria Falls. Several Central Government Ministries and Departments have offices in the town, including Customs and Immigration, the Police, National Parks, Public Construction and National Housing, Tourism, Transport and Communications, Defence, Justice, Legal and Parliamentary Affairs, Lands, Agriculture and Resettlement, Home Affairs and Health and Child Welfare. There are also a number of parastatal organisations located in the town, including the NRZ. ZESA, PTC and the Zimbabwe Tourist Authority. Local Government is represented by the Victoria Falls Municipality.

11.5.1.3 Light and Service Industry

Victoria Falls does not have a strong manufacturing base. Most articles are imported into the area from other parts of Zimbabwe. The main local manufacturing industry is associated with

craft and curio making and is therefore part of the tourist industry. Some of this activity takes place in the informal sector. There is some limited construction of furniture and some food manufacture. Other uses of the industrial area relate to building/hardware facilities, bakeries, warehouses for commercial goods and automotive depots. Victoria Falls' industrial policy has been against heavy polluting and obtrusive industry in favour of light industry.

11.5.1.4 Storage and Warehousing

This is quite an important element of economic activity and takes up many of the industrial stands. Since the town is an importer of goods many companies have storage facilities. Among the wholesalers who operate in the town are Wholesale Fruiters, Pinnacle Foods and Natbrew and United Bottlers.

11.5.1.5 Distribution and Transport

This is also an important activity in the town. Companies require land to keep vehicles and lorries that in turn collect goods from Bulawayo and Hwange and distribute them in the locality. Public transport is an important factor from railways to commuter omnibuses to private sector tourist buses. 9 companies offer cargo/freight services in the town.

11.5.2 The Informal Urban Economy

The informal sector can be described as "proto-enterprises" which are unregistered and untaxed. The activities normally take place in the open, by and on the streets, roadside and bus termini. It may also take place in small workshops or tuckshops, or even at private homes. The main areas of informal sector activity are within Chinotimba and Mkhosana high-density residential areas or their immediate vicinity and the town centre and hotel environs. The former is mainly an activity between residents and latter seeks to target visitors. The dominant activities in these localities is selling produce within the residential areas and selling curios and artefacts in the tourist areas. Other activities include making and mending different products and providing various trading and personal services. The extremes of the informal sector merge into formal business on the one hand and criminal activities on the other.

The sector exhibits various degrees of organisation. In some cases, those who engage in the informal sector business are "managed" or employed by others whose presence and identity is not always clear. In others there are family connections and organisations. In most cases the informal sector probably consists of people working for themselves.

Given the current economic downturn and low employment in the formal sector, great emphasis is being placed by the Government and other agencies on the development of the informal sector. The main interest in the informal sector lies in its potential for creating employment opportunities and hopefully reducing a drift from unemployment into crime. The informal sector

has proved to have moderate potential in creating new job opportunities because of relatively easy entry, on-the-job training (or learning by doing) and the low initial investment involved.

The table above provides seven main categories of informal activity. These are explored in a little more detail below.

11.5.2.1 Selling fruit and vegetables

Many people, especially women, are involved in this activity, principally in the high density suburbs. The produce may be grown locally, imported from the communal areas or bought at discount prices from wholesalers. The returns on this form of enterprise are very low and are used, generally, to supplement income from other sources.

11.5.2.2 Selling curios

The informal selling of curios within the town takes place from either static sites, such as the one behind the Craft Village or as a peripatetic activity. The numbers of people selling from the streets is limited to some extent by the market. Too many traders is off-putting to the visitor and can prevent sales. There is, however, no regulation of this activity and so numbers vary. Favourite positions for selling direct to the tourist are outside hotels, by the railway station, along Livingstone Way, among the shops, by the Falls and any other area accessible and frequented by visitors.

11.5.2.3 Selling other goods

There is a considerable range of goods sold, especially in the flea markets and adjacent to the bus terminus and formal market. These may include all manner of clothes, often second hand, electrical goods, plastic goods and so on. Whilst the main locations are where people tend to congregate, especially within the high density areas some selling points are to be found near to the town centre. In addition, several households sell products from their house or gardens and these are sometimes referred to as tuckshops.

The development of shortages in such commodities as foreign exchange and fuel has quickly led to a flourishing black market. Tourists are prime targets for selling foreign currency and are often accosted too often for their liking. The black market in fuel is a more recent development and is one that occurs out of sight. Anecdotal information suggests that the customers for the fuel are both public and private sector businesses and agencies.

11.5.2.4 Making curios

The making of curios takes place at various places. One of the largest areas lies behind the Craft Village. Others are to be found within the high density areas and some within the industrial areas. The curios are mostly stone sculptures, but there is also a considerable number of

wooden sculptures, baskets, jewellery, wire toys and artefacts and so on. Many of these items may be sold to formal business operation in the town, including the hotels.

11.5.2.5 Making other goods

The manufacture of other goods is usually undertaken within the home area or adjacent open areas. There is a considerable range of goods made in this way, from furniture to clothes, crocheted wares and cooked products. Sales are either from the home or from the various selling points such as flea markets and the like.

11.5.2.6 Providing services

There is a tremendous range of service provision. Repair services are available for practically every type of product from vehicles to all manner of electrical goods and for watches. In addition, panel beating and upholstery repairs can be done. Car washing is available close to the town centre. Personal services are also undertaken on an informal basis. One of the most popular activities is hairdressing, which is provided at home.

Commercial sex workers provide a different kind of service and one that has important ramifications for health education and the prevention of the spread of STI and HIV.

11.6 The Rural Economic Structure

Within the Communal Lands of the Plan Area there is a limited range of economic sectors. The primary activity is in agriculture, with limited off-farm employment opportunities. The main sectors are discussed below. The issue of informal activity is less apposite in a rural setting, where most people are self-employed as peasant farmers and generally not registered for tax purposes. However, there are a significant number of people involved in wood carving, the products of which are either sold on to dealers in Victoria Falls or sold directly by the roadside.

The National Parks employ staff for a range of activities associated with operating the Parks and running their tourist accommodation. The Forestry Commission likewise have a number of people living and working in their estate. The Rural State Land area has a small population engaged in tourist activities. A summary table below sets out the main employment by land category. The details are described below the table.

Table 33: Summary of Employment in the Rural Areas of the Plan Area

Employment Category	C.A.'s	State Land	Nat. Parks	Forests
Small Farmers	2,000*	--	--	--
Central Government	89	--	39	25 (FC)

			(DNPWLM)	82 (Airport)
Local Government	2	--	--	--
Manufacturing: Formal Informal	15 500 *	--	--	--
Commerce	50	--	--	--
Tourism	12	72	16 (Thulani)	14 (Jafuta)
Total	**2,668**	**72**	**55**	**121**

Note* In the Communal Areas small farmers also engage in craft manufacture. Therefore, the total exceeds the estimated number of the labour force given above. The numbers are estimates and require proper survey.

Source: PlanAfric estimates

11.6.1 Agriculture

Agriculture occurs in the Communal Land Areas only. Within Matabeleland North it accounts for 70% of all occupations in the rural areas. It is likely to be a higher percentage in the Chidobe and Kachechete areas as there are no major settlements. The agriculture sector is all subsistence based. There are no irrigation schemes or cash cropping in the area.

Agriculture typically involves a mixture of arable production, usually maize and livestock production, including cattle, goats and chickens. Most households will have access to some arable fields. According to the study of *Mabugu and Milne* farmers have access to two fields; home fields and main fields. In general farmers in Kachecehte have larger main fields than farmers in Chidobe as the following table illustrates:

Table 34: Average Field Size for Rural Wards by Head of Household (ha)

Type of field	Kachechete Ward		Chidobe Ward	
	Female	Male	Female	Male
Main-Field (ha)	2.6	3.7	2.2	3.1
Home-Field (ha)	1.0	1.3	1.3	1.6

Source: Mabugu and Milne

The quality of the arable land varies but is generally not very good. Some of the valley soils offer better prospects. However, a major determinant of agriculture success is the pattern and amount of rainfall coupled with the high temperatures. Only in exceptional seasons will conditions be sufficient to mature a good crop of maize. Even in such cases yields will be generally poor due

to lack of fertility in the soil and the inability of local farmers to afford expensive fertilisers. Short season, drought resistant maize varieties would be more appropriate but these are not so readily available and knowledge is often not available. Small grains are grown and are more appropriate to this area but most farmers still prefer to grow maize. Where there are surpluses the marketing of such a product is not easy. Transport and distribution networks are weak in this area.

Mabugu and Milne's research indicated that 55% of communal households in the Plan Area own livestock, both large and small. Further, 20-25% of all households have no draught power (cattle or donkeys), according to local Agritex personnel. Those farmers who do own livestock experience recurring problems of lacking access to water in the dry season and having insufficient grazing land.

11.6.2 Public Administration

Within the Communal Lands there are 88 central government employees. Local schools employ 75 people. There are two Health Clinics and these employ 8 people. Agritex employs 2 as do the Ministry of Youth development, Gender and Employment Creation. The Ministry of Local Government, Public Works and National Housing employ 1 person at the D.A.'s camp. The only employees of the Hwange RDC in the area are 2 who work in the small beerhall in Kachechete Ward.

11.6.3 Manufacturing and Commerce

Manufacture in the communal areas is confined to the operation of grinding mills and craft manufacture. There are 11 grinding mills in the area, which employ approximately 15 people. Craft manufacture is concentrated in those villages located near the main road. This issue is dealt with below under Informal Activity.

There are 26 small shops scattered throughout the area in Ndlovu, a Rural Service centre and 9 business centres. Taken together they employ approximately 50 people.

11.6.4 Tourism

The details on tourism in the rural areas are contained in the next chapter. Suffice it to say here that each of the land areas: National Parks, Forest Areas, Communal Lands and Rural State Lands contain tourist facilities and activities. Lodges exist in every area, game viewing is present in most and cultural experiences available in the communal areas. The Communal Lands have relatively few tourist facilities, but there is potential for more.

11.6.5 Forestry

Within the Fuller Forest there are 25 Forestry Commission employees who are engaged in the work of the Forestry Commission. The issue of Jafuta Lodge has been covered above under Tourism.

11.6.6 Transport

Victoria Falls Airport employs 82 people. A number of them have accommodation at the airport in a compound. There may be some casual employment gained in the Victoria Falls airport by people in the adjoining communal lands.

11.6.7 The Rural Informal Sector

From visual evidence the primary informal economic activity undertaken in the Communal Land areas is woodcarving, crocheting and basket weaving and the associated process of selling these products. It is likely that curio making takes place in many homesteads throughout the Communal Area but it likely to be more concentrated among those communities who live close to the main selling points along the Victoria Falls road. Those who make products are also likely to be involved in the selling, but their curios may also find their way to other outlets, formal and informal in the town. The impact of this activity on environment, through the destruction of trees and ilala palms, has been raised in Chapter 7.

The selling of vegetables, fruit and other natural produce occurs throughout the communal areas, being particularly concentrated at settlements and bus stops. In this case the produce will be grown locally, although it is possible that owners of small irrigated gardens may sell their produce to others who sell on to the public.

There are, in addition, some manufacturing activities in the rural areas such as beer making, tin smithing, pot and brick making, cart manufacture and so on. Indeed it is probable that most economic activities in the rural areas, including farming and small building operations could be counted as informal in the sense that they are unregistered and generally untaxed.

11.7 The Local Economy: Prospects and Challenges

Earlier in this chapter it was estimated that there are nearly 14,000 people in the Victoria Falls labour force without formal work. This represents a major stumbling block to eradicating poverty and overcoming homelessness and other social and civic problems. This chapter concludes by considering the prospects for creating additional formal jobs, whilst noting that this raises important environmental issues along the way. The issue of seeking to improve the income derived from informal economic activities is also raised.

11.7.1 Tourism

The prospects for the future of the tourist industry in Victoria Falls are unpromising for the next few years because of the likelihood of continuing political and economic problems that have deterred visitors in the first place. These prognostications are always hazardous as the market is fickle and circumstances do change beyond predictions. Nevertheless it seems likely that tourism will be depressed for a few years. Assuming that at some stage in the next few years something approaching normalcy will be restored in Zimbabwe the question is whether Zimbabwe can recapture its previous share of the Victoria Falls market. The main competitor, Zambia is currently investing heavily in tourism along the banks of the Zambezi close to the Falls and is well positioned to take an important slice of the market from the Zimbabwe side. There are some reasons for cautious optimism. The investment in Victoria Falls is substantial and has proved attractive to clients in the past. Zambia has a long way to go before it can replicate all the facilities on offer on the Zimbabwe side, should it wish to do so. Even so, it will be some time before all the current slack in the tourist sector is taken up. In any event it will need to be established whether it would be sensible for the town to approve additional investment in the tourist industry that will bring greater pressure on to the natural resource base of the area and threaten its long term sustainability.

11.7.2 Prospects for job creation in other sectors in the urban area

One of the paradoxes of the Victoria Falls situation is that in order to overcome poverty and to build the revenue base of the Municipality new jobs are required. On the other hand whenever new investment takes place in the town two or three people arrive for every job on offer, worsening the situation.

Therefore, if the new Master Plan is to develop job-creating policies it must go hand in hand with a strict prevention of new in-migration. A further paradox is that whilst new investment is required to create more jobs such investment can be extremely harmful to the environment, taking up land, utilising resources and creating possibilities of pollution. Therefore, any new programme of attracting investment will need to be undertaken within a framework of sustainability that takes full account of environmental issues.

Given these points what are the prospects for attracting new investment and so create new jobs? On the face of it there may be some prospects for limited manufacture in say furniture or food production (always assuming that the issue of pollution and sustainability can be satisfied) A mitigating factor against such new investment is the necessity to bring inputs from long distances, adding to costs. A supporting factor is the size of the local population, which provides a market for goods and services, although the level of population may still be below the threshold for most enterprises. Service industry has grown over the past few years, servicing both the resident population and the tourist industry and others. Small builders, electrical repairs, refrigeration services and so on have found a place. It is possible that this could be expanded.

Whilst the commercial sector has seen increases the main effort has been in the lucrative tourist market, adding to curio shops, specialist clothing and other areas that appeal to tourists. It is noticeable that there is still only one general supermarket in the town centre and very few general shops. There may be some scope for expansion in such areas.

In terms of scale, the clear preference in the Victoria Falls situation is to encourage small and medium sized enterprises (SMEs) The SME sector offers opportunities for local entrepreneurs, is less likely to damage the environment and can be more flexible and innovative. Ideas for developing environmentally friendly enterprises, that, for example utilise re-cycling should be encouraged.

11.7.3 Prospects for the Informal Sector

The Informal Sector will continue to provide one of the most important sectors of the local urban economy for most, if not all of the Plan period. Craft manufacture and selling is also likely to remain an important activity in the rural areas. The key question is how the strategies and policies in the Master Plan can assist the development of the sector, facilitate some innovative activities and provide ladders for the most enterprising to climb out of the poverty trap and possibly into formal activity.

Perhaps one of the first tasks with regard to developing the sector is to recognise its legitimacy as a means of poor people securing or augmenting their livelihoods. The Master Plan can play a role in this but it will require genuine understanding and commitment from central and local government. Once this is achieved a dialogue is required with representatives of the sector to appreciate their needs for such matters as appropriate space, water and toilet facilities, knowledge and assistance and so on.

There may be a need to provide guidance and support for rationalising and channelling energies into those areas that may have the best chance of bringing improved incomes. Where experience elsewhere has indicated success in certain new types of activity or new styles in old ones this could be shared and innovation encouraged.

Building on success stories not only provides the basis for wealth creation and benefits to the national fiscus but also makes way for more development at the base. There is therefore a case for intervention with various types of support to provide a way out of marginal informal activity to viable small enterprises. Appropriate types of space and micro-finance are often the keys to this endeavour.

Concern for environmental and gender awareness in the pursuit of informal sector policies is vital. Many informal sector activities rely on natural resources that are seen to be free and available, without any consideration of the damage thus caused to the very basis of survival. However, it is pointless "educating" people in these matters without offering viable and sensible

alternatives. There is a need to seek ways of utilising re-cycling materials, factory waste products and other available resources that do not harm the natural resource base. Gender awareness in pursing support to this sector is more vital than most as the majority of participants are poor women, many of whom have no other means of support and utilise the proceeds to bring up families.

11.7.4 The rural hinterland economy and linkages

Prospects for the growth of the rural economy in the Plan Area are not strong. The area of the communal lands is not suitable for rain-fed arable agriculture. There are periodic droughts, crops frequently fail and food relief is often required. Cattle rearing is more appropriate now that the tsetse fly has been eradicated but this too can be difficult if the seasons are very dry since grass cover quickly deteriorates, especially with diminishing tree cover. Water provision is difficult and over-stocking leads to rapid erosion in the fragile soils.

Irrigation prospects are generally poor in the two wards under consideration. The Zambezi lies in a deep gorge and cannot be easily tapped, even if such a thing were acceptable from an environmental point of view. There are some potential sites for small dams and these should be explored but they will not have a major impact.

Tourism in the area has some prospect. The Gorges Lodge is a good example a joint venture project that brings quality tourism to the communal areas, whilst levering resources to the local community through a CAMPFIRE project. Whilst the opportunities for similar ventures may be limited to sites along the Gorges there may be other opportunities for tourism. There is a strong interest among a section of the international tourist community for experiencing the rural life of the local people. The communal areas in the Plan Area are well placed to meet that demand. In addition, there may be some scope for marketing the cultural and archaeological history of the area. Supervised visits to some of the Stone Age and Iron Age sites could be attractive if presented well, with possible re-enactments of life in those times.

11.8 Key Issues

- Tourism, the mainstay of the economy in the Plan Area, is highly susceptible to the vagaries of the international market. Perceptions about southern Africa generally and Zimbabwe in particular can influence the decisions of tourists whether to visit Victoria Falls or not.
- The national macro-economic picture is very gloomy. High inflation, lack of foreign currency, poor agricultural performance due to political factors and adverse weather has conspired to create a serious economic crisis. This affects all elements of the national economy and the prospects for new investment.
- The Labour Force of the Plan Area is estimated to be 28,200 (2000), of whom 24,800 are in the urban area.

- Approximately 10,000 people are estimated to be formally employed in Victoria Falls, leaving 60% technically unemployed. However, most of those who are "unemployed" engage in informal economic activities, as well as some of those who are in formal employment. The informal economy is therefore very important and deserves full consideration in the planning process.
- The economic structure of the urban part of the local economy is dominated by tourist activity. At least 50% of all formal employment is directly in the tourist sector and many of the remainder are strongly dependent upon it. Apart from tourism the other main sectors of the economy are administration, domestic service, light and service industry, distribution and transport and security services.
- Prospects for the urban economy are poor in the short term due to the likely maintenance of depression in the tourist sector. This is unlikely to lift until it is perceived that Zimbabwe is politically stable and has security in such matters as fuel and energy.
- Even once improved conditions return to Zimbabwe from a tourist point of view, the challenge from the main competitor, Zambia, will be a factor that may impede immediate recovery.
- The economic structure of the rural areas is rooted in subsistence agriculture, with the tourist sector also playing a significant role. In fact the value of tourist activity in the rural areas is probably in excess of that of agriculture despite the fact that vastly more people are engaged in the latter.
- The prospects for agriculture in the Communal Areas are not strong. In many ways the area is not a natural one for agriculture, especially arable production. A combination of poor and depleted soils, lack of fertiliser, very hot sunshine and sporadic rainfall combines to ruin most maize crops.
- Livestock production is more suitable for the communal area, which lies in Natural Region IV and V, but the same conditions that are described above also combine to reduce grazing opportunities and water resources.
- The Informal Sector is arguably the most important economic sector in that it is engaged in by the largest number of people, is the only livelihood for many poor people or augments low wages for others. Over 44% of the labour force is involved in informal activities in the urban area and up to 25% in the rural areas. The range of activities is very large, ranging from making new products, repairing old ones and selling produce and made products.
- The prospects of the informal sector are that it will continue to be a mainstay for most people in the urban areas and a sizeable minority in the rural zone. There is an urgent need to consider ways in which support can improve incomes and reduce environmental degradation. There is also a need to ensure a gender sensitivity to any support as the majority of participants in the sector are women.

12 TOURISM

Acknowledgement: *Significant sections of this chapter are derived from the Tourism Asset Survey by S.K.Nyapokoto and a report on Tourism by Grant Milne.*

12.1 Introduction

Victoria Falls is a prime international tourism destination in Africa and a focal point for tourism in Zimbabwe. Tourism generates between 5 and 10 percent of total Gross Domestic Product in the country and is one of the few sectors with high economic growth potential (Milne, 1998). The tourism industry in the Victoria Falls region is underpinned by the natural beauty of the Falls themselves, and the rich biodiversity of the Zambezi River system, both upstream and downstream. One measure of the natural value of Victoria Falls is its designation as a UNESCO World Heritage Site.

From 1988 to 1999, tourism in Victoria Falls saw rapid growth, especially with international tourists (Table 35). The main drivers for this boom were: the signing of the Unity agreement between the government and the main opposition party in 1987; hosting of the Commonwealth Heads of government meeting (CHOGM) in Victoria Falls in October 1991 and; general growth of global tourism. With this expansion in tourism, the town has experienced rapid population growth, far above the level of resources available to the planning authorities to maintain infrastructure investments. Another serious concern is the increase in environmental impacts in the sensitive ecosystems of the Falls and surrounding river basin.

In 2000 this pattern reversed; tourism in Zimbabwe and Victoria Falls declined sharply due to the political violence associated with the June Parliamentary elections, erosion of property rights through illegal land invasions, a general breakdown of law and order, and severe economic problems, including a foreign exchange liquidity crisis, which has constrained basic imports such as fuel and electricity. This situation has continued into 2001 with tourism numbers to Zimbabwe falling to about 40 percent from 1999 levels. The situation is not expected to improve until after the Presidential elections, scheduled for 2002. Accounting for slight increases in Zambian tourism, visitors to the Victoria Falls region were approximately one-half of 1999 levels.

Table 35: Visitor arrival trends for Zimbabwe, Zambia and Victoria Falls, 1990-2000.

Year	Zimbabwe	Zambia	Total	Estimate for Victoria Falls
1990	606 000	141 000	747 000	374 000
1991	664 000	171 000	835 000	418 000
1992	738 000	159 000	897 000	449 000
1993	750 000	167 000	917 000	459 000
1994	1 105 000	141 000	1 246 000	623 000
1995	1 529 000	163 000	1 692 000	846 000

1996	1 743 000	264 000	2 007 000	1 003 500
1997	1 894 000	278 000	2 172 000	1 086 000
1998	1 986 474	312 000	2 298 000	1 149 000
1999	2 100 520	349 000	2 450 520	1 224 760
2000	840 208	391 000	1 231 208	615 604

Notes:
Visitors for Zambia for 1998-2000 estimated using average 12% annual increases over previous year.
Visitors for Zimbabwe for 2000 estimated by hotel occupancy rates
Visitor for Victoria Falls region estimated at 50% of total visitors to each country

12.2 The Economic benefits of Tourism

Despite the economic malaise gripping the country and Victoria Falls in particular, the impact of tourism is still extremely important. Survey work in 2000 indicated that average expenditures per visitor were an estimated $564 USD, including accommodation, food and beverages, activities, shopping for curious, and local transport. Total estimated tourism expenditures in 2000 were $237 million USD. Nearly half this expenditure was on accommodation and one quarter on activities. Half of all visitors surveyed indicated their primary activity was viewing the Falls and rain forest. Another 34 percent said they participated in river-based activities such as boat cruises, canoeing, rafting and sport fishing. The average duration of a visit to Victoria Falls is approximately two days.

These expenditures generate significant regional income, both through the direct injection of the original expenditure, and the indirect benefit as this income is circulated through the economy. Since Victoria Falls is small and has a very narrow economic base, a high proportion of this income leaks out of the region for imports. In addition, much of the expenditure for accommodation never flows into the region since many foreign visitors will pay in advance in their home country, or will use an international credit card from a foreign bank. Also, as direct income is circulated through the local economy, some is withdrawn in the form of savings. Taking these leakages into account, the income benefits from tourism in 2000 were an estimated $102 million USD, or about 43 percent of total expenditures. Average income generated per visitor was approximately $243 USD. These figures are based on conservative assumptions but may still be an overestimate since a proportion of business profits from many companies will flow out of the region to head offices in Harare, Bulawayo, or to foreign offices. Regardless, the figures do illustrate the significant income benefits to the region from tourism.

Tourism also brings significant fiscal benefits, estimated at $14 million USD in 2000. This represents approximately 14 percent of regional income from tourism, and 4.5 percent of total tourism expenditures. The fiscal revenues are heavily weighted in favour of central government with only a small proportion either being collected by local authorities or being returned from central government. This is a serious institutional issue that needs to be addressed.

12.3 Tourist Attractions and Facilities in the Urban Area

12.3.1 The Victoria Falls National Park: Falls and Rain Forest

This is the premier attraction in the area. The Victoria Falls National Park offers walking trails along the Falls. The entry charge into the Falls is a main source of revenue for the Department. Entry charges are a major source of complaints by regional and foreign tourists who feel overcharged in comparison to local visitors. Current entry charges are:

- Z$50 for locals (less than US$ 1.00 at present exchange rates)
- Z$1020 for regional and foreign tourists (around US$ 20.00), paid in foreign currency

Again, there is a marked decline in the number of arrivals between 1999 and 2000 to the rain forest, both local and foreign. However, revenues have not fallen as much as tourist arrivals, in part reflecting the depreciation of the local currency and the requirement for foreign visitors to pay in foreign currency. This is further enhanced by the observation that foreign arrivals fell by less than local arrivals.

Table 36: Tourist arrivals and revenue for the Rain Forest

	Arrivals						Revenue		
	Local			Foreign					
Station	1999	2000	% Change	1999	2000	% Change	1999	2000	% Change
Rain Forest									
January	6871	5931	-13.7	17289	17193	-0.6	5917201	6872052	16.1
February	4005	3541	-11.6	13602	14477	-6.4	4941549	4730228	-4.3
March	6140	3586	-41.6	18474	15056	-18.5	5840898	4918202	-15.8
April	10609	8557	-19.3	19799	16295	-17.7	7576875	6287067	-17.0
May	9125	4555	-50.1	1278	561	-56.1	5589163	4480580	-19.8
June	6849	1702	-75.1	11039	6896	-37.5	5660942	4479924	-20.9
July	5652	2682	-52.5	24456	11515	-52.9	10129831	17182635	69.6
August	9312	5747	-38.3	23024	15736	-31.7	17179293	11939712	-30.5

Source: DNPWLM

12.3.2 The River Zambezi

The River Zambezi is the second most popular attraction in Victoria Falls. Boat cruises, canoeing, fishing and whitewater rafting are some of the main activities. A number of companies operate boat and canoe activities from jetties positioned along the River Zambezi between the Water intake and the Boating Club. Presently there are 36 "booze cruise" boats, of various sizes,

registered to operate along the river, although the maximum number allowed to be on the river at any one time is 22. There are also several powerboats and jet boats for fishing safaris and private use. Canoe safaris of varying duration are on offer from several companies.

Whitewater rafting, which takes place downstream of the Falls and proceeds through several rapids in the Gorges is a very popular activity, especially with the young. Some five companies operate on the Zimbabwean side of the river: Shearwater, safari Par Excellence; Frontiers; and Adrift. Together they operate 112 rafts and employ 135 people. Canoeing also takes place through the gorges and a new variation on the rafting is to riverboarding, a form of travelling the rapids on a small surfboard.. The rafting Association of Zimbabwe and Zambia (RAZZ) has been formed to safeguard and promote the interests of the rafting companies.

12.3.3 Commercial Accommodation

Accommodation in Victoria Falls ranges from hotels and lodges, to commercial campgrounds (Table). There are 9 hotels, 1 timeshare lodge complex, 1 restcamp with chalets and cottages and 31 licensed tourist lodges with a total bed capacity of 3,238. Six of the hotels offer conference facilities. Three of the hotels offer a casino. A recent trend has been growth in informal and unlicensed lodges, or bed and breakfast accommodation in certain areas of town, often from private homes. These provide a low-cost alternative for accommodation compared to the hotels and licensed lodges.

Table: 37 Hotel and Lodge Accommodation in Victoria Falls Town

Hotel/Lodge	Rooms or Lodges	Beds	Other
Kingdom	294	660	Casino, 4 restaurants, conference facilities
Elephant Hills	276	552	Casino, 2 restaurants, conference facilities
Victoria Falls	181	362	3 restaurants
A Zambezi	83	205	1 restaurant, conference facilities
VF Safari Lodge	72	144	1 restaurant, small conference facilities
Sprayview	64	140	1 restaurant
Rainbow*	46	131	1 restaurant, conference facilities
Ilala	32	64	1 restaurant, 1 night club and a casino, conference facilities

Inyathi Motel	11	45	
Lokhutula Timeshare Lodges	37	133	1 restaurant
Municipal Restcamp lodges and hostel		242	Cocktail bar
Private lodges/cottages (licensed)	31	560	
Total	**1,127**	**3,238**	

Source: Tourism Asset Survey, Nyapokoto

* Note: Rainbow Hotel is undergoing extensions that will increase the number of room to 88 and the beds to 200

There were plans to construct two additional hotels, but these have been shelved during the present downturn in the industry.

The 1999 room occupancy average for Victoria Falls was 62 percent against a national average of 56 percent. The average for 2000 was 45 percent. The 1999 average bed occupancy rate was 56 percent against a national average of 42 percent. The bed occupancy rate in Victoria Falls for 2000 was 38 percent against a national average of 32 percent.

In addition to these facilities there are three camping/caravan sites, two of which are owned and operated by the Municipality. The main town centre restcamp provides space for 18 caravans and 350 tents. The Zambezi site provides for xx caravans and yy tents. The Inyathi Valley restcamp provides 16 caravan bays and numerous camping sites.

12.3.4 Transport Companies

Bicycle hire companies

There are four companies running bicycle rentals shops. Approximately 100 bicycles are available for hire on an hourly, half-daily or full day rate.

Car rental companies

There are six car-rental companies with a combined vehicle fleet of 76. This number however fluctuates according to demand. Presently there is low fleet utilisation due to depressed tourist arrivals.

Bus companies

Currently there are three companies operating luxury coaches between urban areas in the region, and hired by tourism companies for package tours

Commercial Train Operators

The National Railways of Zimbabwe (NRZ) provides a daily train service to and from Bulawayo. South Africa's Spornet operates a monthly train service between Cape Town, Johannesburg and Victoria Falls. The present Blue Train is a 5 star mobile hotel with all the usual hotel facilities such as luxury private rooms and restaurants. The Victoria Falls Safari Express provides tourists in Victoria Falls with an opportunity to realize the romance of a bygone era by taking a trip on the Victoria Falls Safari Express. Rovos Rail also offers steam train facilities from Bulawayo to Victoria Falls and across into Zambia. It is operated from Bulawayo.

Air service companies

Besides the national and international flights to Victoria Falls, four local companies offer flights over Victoria Falls, and/or the surrounding areas, using small fixed-wing aircraft, helicopters, and ultra-lights. A micro-light service is available in Zambia.

Taxi companies

Forty registered taxi operators run a fleet of about 100 taxis in Victoria Falls.

12.3.5 Restaurants

There are 12 hotel-based and eight other restaurants in Victoria Falls. Total available restaurant capacity is over 3000 persons. Investment in infrastructure and equipment is over Z$200 million.

12.3.6 Cultural entertainment

There is a Craft village that is locally owned and offers the African Spectacular or traditional dance on a nightly basis. The dance is a reflection of the Makishi and Tonga cultures. Victoria Falls Hotel also offers a dance show featuring Shangaan culture.

12.3.7 Crafts and curios in Victoria Falls

Approximately 26 craft and curio operators are located in Victoria Falls. Eleven more are located along the main road between Victoria Falls and the airport.

12.3.8 Evening entertainment

There are 21 pubs/bars and five other clubs for evening entertainment in Victoria Falls.

12.3.9 Crocodile Farm and Wildlife Sanctuary

Spencers Creek Pvt. Ltd. owns a wildlife sanctuary and crocodile farm. The crocodile ranch is home to over 11 000 African crocodiles. Within the ranch is a craft shop where crocodile skin is used to produce handbags and belts. These end products are sold to local curio shops or are

exported. The crocodile meat is sold to hotels and restaurants within Victoria Falls. As a conservation policy, 2500 eggs are collected annually from the Zambezi River for incubation at the sanctuary. In return, the crocodile farm releases 5 percent of the hatched crocodiles into the Zambezi River to balance the egg harvesting.

Spencer's Creek operates a ranch within the crocodile farm plus a museum. The sanctuary is home to three lions, three ostriches, one leopard and a wide variety of bird species. The entry charges into the sanctuary are:

- local – adults Z$50, kids – Z$20 (less than US$ 1.00 for adults)
regional/foreign adults Z$200 kids, Z$100 (around US$ 3.50 for adults)

12.3.9 Safari and Tour Operators

There are 38 safari and tour operators in the area affiliated to the Zimbabwe Association of Travel and Safari Operators (ZATSO). Tour operators receive revenue from the discounts allocated by hotels and from their transport operations. They are encouraged to join a safari tour operator association, obliging them to adhere to prescribed standards and ethics. Standards, pricing and service levels offered vary considerably. Tour operators offer the following activities for tourists:

River activities

- Breakfast, lunch and sunset cruises (upstream)
- Kayaking and canoeing (downstream)
- Jet boats (upstream)
- Sport fishing (upstream)
- White water rafting, canoeing and boarding (downstream)

Air activities

- Fixed wing, seaplane, helicopter, micro-light and ultra-light flights over the Falls
- Helium balloon (only gains elevation and does not drift over the Falls)
- Skydiving

Land trips and tours

- Birding safaris
- Elephant riding safaris
- Game drives in Zambezi National Park and Hwange National Park
- Horse riding
- Train safaris
- Guided tour of the Falls
- Day trips to Hwange National Park for game viewing

- Day trips to Botswana for game viewing
- Visit to Zambian side of the Falls
- Visit to private crocodile farm
- Visit to curio market
- Walking safaris

Leisure Activities

- Bicycle hire
- Bowls – Elephant Hills International hotel
- Bungi jumping off the Victoria Falls bridge
- Casinos
- Golf – Elephant Hills Hotel
- Scooter hire
- Squash – Elephant Hills Hotel
- Tennis at various hotels
- Swimming at various hotels

12.4 Tourist Attractions and Facilities in the Rural Area

12.4.1 Game Viewing

Game viewing takes place in Zambezi National Park, where there are two main drives: the Zambezi Drive, which takes visitors along the River Zambezi; and the Chamabonda Drive, to the south of the Park. Although the Victoria Falls National Park extends south and east of the Municipal area into rugged land reaching to the Gorges there are no current game drives in this zone.

Fuller Forest has considerable game but access is allowed only to those visitors staying at Jafuta Lodge.

Game viewing is also a feature of the lodges located in the Rural State Land area of the Plan Area.

12.4.2 The Gorges

Although the Zambezi Gorges are one of the more spectacular landscape features of the Plan Area access is difficult and generally only seen by whitewater rafters and canoeists. The Gorges Lodge in the Communal Land area affords some marvellous views of this feature and it is possible climb down into the chasm at certain points, but with difficulty.

12.4.3 Hunting

Hunting is available within limited parts of the Plan Area, such as the Fuller Forest in certain demarcated zones and within the private lodge properties in the State Land area.

12.4.4 Commercial Accommodation

There are four lodge/hotel establishments within the rural part of the Plan Area, consisting of 43 separate lodges with 157 beds. In addition there are another four upmarket establishments on the edge of the Plan Area, with 82 beds in 14 lodges. The details are provided below in Table 38.

Table: 38 Tourist Accommodation in the Rural Areas

Lodge/Camp and Location	Lodges	Beds	Other
Zambezi Lodges, Zambezi N.P.	20	95	
Thulani Lodge, Zambezi N.P.	9	18	
Jafutal Lodge, Fuller Forest	8	24	
Mubiya Camp, Forest Area			
Gorges Lodge, Communal Land	6	20	
Stanley & Livingstone, RSL	10	20	
Masuie & Sekuti, RSL	2	20	
Old Ursula Camp, adj. Private Farm			
Elephant Camp, adjacent Private Farm			
Total			

Source: Nyapokto and PlanAfric

The DNPWLM operates a 95-bed lodge complex in the Zambezi National Park. The daily rate is Z$1000 per person per day with the occupancy rates showing a dramatic decline in 2000 (Table 5). While the average occupancy rate was 75 and 72 percent respectively in 1998 and 1999, it was a mere 44 percent in 2000. An average occupancy rate of 44 percent indicates that the park accommodation is less than half full, which suggests very high excess capacity. Visitor arrivals show the same declining trend. This will worsen if current conditions are allowed to prevail.

Table 39: Average occupancy at the Zambezi National Park

Year	J	F	M	A	M	J	J	A	S	O	N
1998	72	45	83	83	75	75	82	87	74	72	67
1999	51	55	72	80	73	79	81	84	65	70	72
2000	55	45	40	40	38	30	30	70	-	-	

Source: DNPWLM

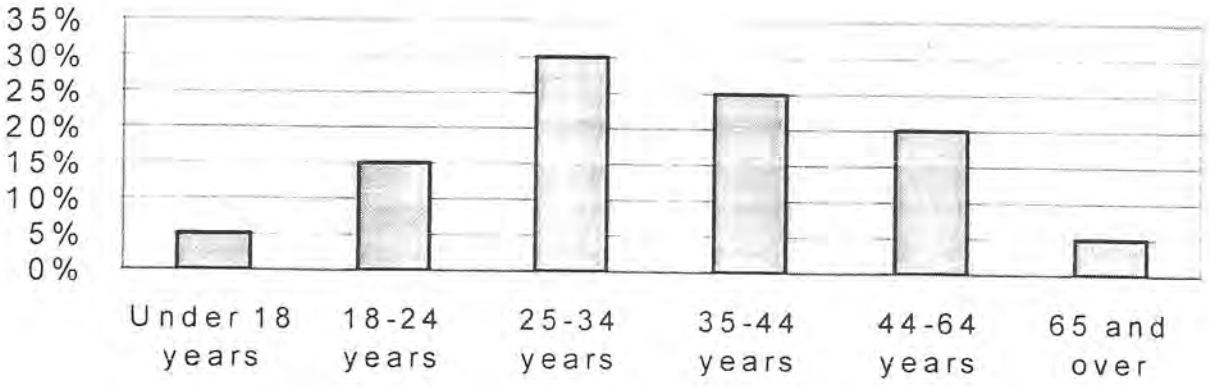
12.4.5 Campfire

Within the Communal Areas employment in tourism is largely limited to work at the Gorges Lodge, where there are 12 employees. There is also an associated CAMPFIRE project linked to the lodge, which brings income to some local villagers, who are visited on a planned basis by tourists staying at the hotel. The local school has also benefited through this programme.

12. 5 Market Analysis

A sample of 100 tourists was interviewed as part of a tourist asset survey research (Nyapokoto). The majority of visitors to Victoria Falls were within the 25-64 year age group (Figure 6). About half the interviewed tourists were under the age of 35 years, a result similar to that obtained by Dube and Milne (1995) and Nangati and Nyaruwata (1994) in similar studies. This reconfirms the conclusions in these studies that the conventional wisdom of tourists to the Falls being older is flawed.

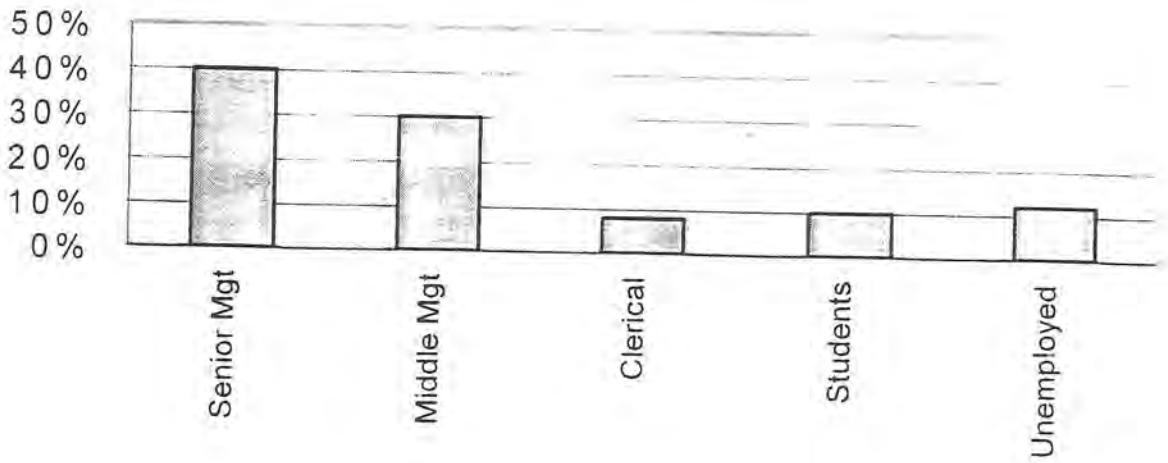
Fig. 5 Age distribution of Visitors to Victoria Falls



Source:Nyapokoto

Most of the respondents were professionals, within the middle to senior management level with 40 percent being senior management and 30 percent as middle managers. The 30 percent balance is spread out among clericals (7 percent), students (9 percent), and unemployed (14 percent). As for average length of stay, 61 percent of the tourists expected to stay over 2 days while 39 percent opt to stay for between a day and two. This is against a national length of stay that has declined from 11 days to currently 3 days (Passenger Exit Survey).

Fig 6: Professional status of visitors to Victoria Falls



Source: Nyapokoto

According to the tourist survey results, the tourism sector in Victoria Falls presently relies heavily on regional markets and there has been very little diversification of the source markets. There are close ethnic links between the various population groups in the country and other neighbouring states. Consequently, the largest group of visitors are from Southern Africa countries (about 40 percent).

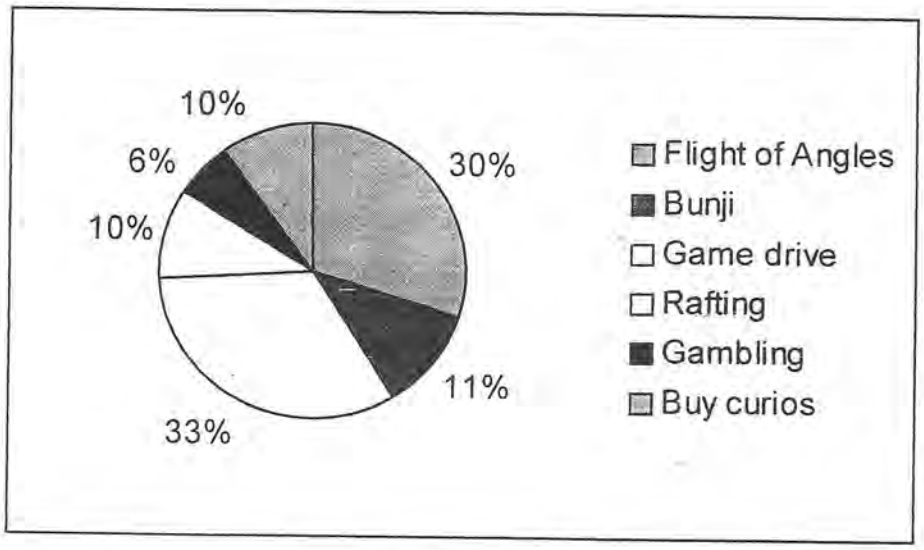
As discussed in greater detail in Nyapokoto (2000), Southern African visitors tend to be low spending, with some of the visitors using private homes for accommodation. The most important overseas market, the UK, showed a stronger tendency for commercial holidays and thus to utilise commercial accommodation (also North America and rest of Europe, North Africa). In terms of expenditure while in Zimbabwe, visitors from the United States are clearly the most valuable for the region. Visitors from Europe and the United Kingdom follow these.

The majority of visitors prefer to stay in budget accommodation (40 percent) and hotels (35 percent), while another 20 percent prefer lodges, with 5 percent staying with friends and relatives. Victoria Falls still attracts an upmarket clientele that prefers quality facilities and eco-tourism products typified by the more expensive lodges. Hotels are slowly losing business to lodges and budget accommodation. This is mostly due to low prices and increasing interest in

eco-tourism lodges. The fact that at least 30 bed and breakfast facilities have been constructed between 1996 and 2000 supports the increasing prominence of budget accommodation.

Respondents were asked about their preferences for activities and the results are reported in Figure 8.

Fig 7: Planned activities by visitors to Victoria Falls



Source: Nyapokoto

The major reason for visiting Victoria Falls is to view the Falls. Activities carried out within Victoria Falls are the second main reason for visiting. Game drives (33 percent), Flight of Angels (30 percent), Bunji jumping (11 percent) and rafting (10 percent) are the most popular activities preferred by respondents. These activities are high priced, with game drives costing US$115, the Flight of Angels (US$70) Bunji jumping US$115 and rafting at US$85. Based on these preferences, an estimate of annual expenditure on each activity can be made.

Tour operators were reluctant to disaggregate data on revenue generated from the different activities and instead would only reveal overall revenue generation. Based on visitor arrivals disclosed by the department of National Parks, we can conclude that revenue generated has fallen significantly in 2000 compared to 1999. This picture is in keeping with the general decline experienced in the broader tourism especially in the run-up to the June 2000 elections.

12.6 The future of the Tourist sector in Victoria Falls

As and when the national political situation stabilises and the economy begins the very slow process of recovery, tourism activity in Victoria Falls will gradually move back to 1999 levels. Assuming a modest 20 percent tourism recovery, an input-output analysis suggests that the

trade and transport, and service sectors will benefit most. There is little scope for new investment in the foreseeable future. The economic downturn has created major over capacity in the tourism sector in Victoria Falls, which will take several years to fill as activity slowly edges back to 1999 levels.

It is critical that tourism development recognise the value of the natural environment and the importance that visitors place on having a "wilderness experience" as part of their trip to Victoria Falls. The tourism sector is largely based on the Falls and the surrounding natural environment, particularly the upstream Zambezi River basin. Poorly planned development and associated environmental degradation will eventually erode the wilderness values sought by tourists to a point where the destination loses international appeal to a large market segment.

12.7 Key Issues

- International visitor numbers to Victoria Falls rose fourfold during the 1990s from 374,000 in 1990 to 1,224,760 in 1999. They then fell dramatically by 50% in 2000.
- The economic benefits of tourism in Victoria Falls are considerable. In 2000 some US$ 237 million was generated, of which some US$ 102 was retained by enterprises locally. The fiscal benefits are also considerable at US$14 million in 2000. But central Government retains most of this income.
- Victoria Falls has a well developed tourist infrastructure with many attractions. The premier attraction is the Falls and Rain Forest, followed by some form of river activity on the Zambezi.
- The urban area has 11 main hotels and 31 private lodges providing 1,127 rooms or lodges capable of catering for 3,238 people.
- The rural area has 9 lodges and camps, providing..... Rooms or lodges capable of catering for.....people.
- A market survey conducted for this study showed that 50% of respondents were under 35 years of age and that the majority were from high income occupations. After viewing the Falls and taking boat trips on the River Zambezi the main activities were Game Drives, followed by Bunji Jumping and Whitewater Rafting.
- The economic downturn experienced by the tourist industry in 2000-2001 has led to over-capacity in the sector, with some downsizing. It will probably take several years to get back to 199 levels of returns.

13. WATER

13.1 Introduction

This chapter is divided into two main parts. The first looks at the urban situation, describing the manner in which water is taken from the Zambezi River, treated at the Municipal treatment works before it is distributed to the various parts of the town. Some other areas outside the Municipal boundary such as the airport are also served by urban water and this is also described in this section. The second main part addresses the water supply situation in the Communal Areas. In all areas the issue of water conservation is important. As costs rise many poorer customers will not be able to afford to use more than a very basic amount.

13.2 Raw Water Supply to the Urban Areas

Reticulated water supply with the town and other areas in the immediate periphery is the responsibility of ZINWA and Victoria Falls Municipality. The authorities monitor the needs and plan future new supplies.

Zimbabwe National Water Authority (ZINWA) formerly the Department of Water Development is responsible for drawing and supplying raw water to the Municipal Water Treatment Works. The raw water is obtained from the Zambezi river by pumping. The capacity from the water source, Zambezi has adequate water supplies to cater for whatever demands may arise in the future. The existing raw water pumpstation was constructed in 1972 and can supply the town and airport ten thousand cubic metres per day when operating for 24 hours. ZINWA diverts the river flow onto a 2 m deep canal from where two Sulza Low Lift Pumps (Duty and Standby), on a Floating Boom, pump the water to the Water Treatment Works via a 2010 m long and 450 mm AC/steel main at a rate of 400 m^3/hr. Although ZINWA pumps for 24 hours a day, the demand is not satisfied, especially during hot periods.

Under normal circumstances water treatment should not be a 24 hour operation, there should be enough spare capacity within the works to enable maintenance to take place without creating a water shortage. A major problem in terms of the ability of the Local Authority to satisfy demand is the low reservoir storage of 7275m3, which is far less than the daily water demand. In the event of power cuts or plant breakdowns lasting several hours occur, it can take two to three days for supplies to get back to normal. As a result, during the hottest months as few as four hours water per day can be made available at very low pressures insufficient to enable water to reach shower or high level cistern height. Whilst demand during the wettest days of the wet season can be accurately determined, the inability of the Local Authority to satisfy demand during the dry season means that demand during the dry season is not known.

ZINWA also supplies raw water for garden irrigation for all the hotels and public spaces. The raw water is pumped through a 150 mm diameter AC main to a +/-450 m^3 reservoir tank at the proposed medium and low density development from where it is distributed directly to the respective needy areas. The irrigation water main follows the same route as the 450 mm diameter water main up to a site opposite the Elephant Hills Hotels from where it turns South East to join Park Way at Valley Hotel and then proceeds via Fox Road and Clark Road, Livingstone Road and Reynard Road (at Sprayview Hotel) and turns SE into the former Aerodrome Reservoir site.

The Raw Water Pump Station is located approximately one kilometre downstream the A' Zambezi River Lodge. The station is accessed by a gravel road that branches off Park Way. The location of water related infrastructure is shown on Map 38.

In an effort to improve the current water situation as well as ensuring the full utilisation of the upgraded water treatment, storage and distribution systems, VFM has plans to install their own raw water abstraction system besides the one being operated by ZINWA. The process would entail construction of both the pump station at the Zambezi River as well as a 2 000m long 600 mm diameter pumping main to the Water Treatment Works. A budget of Z$25 million has been proposed for the initial phase of the upgrading process.

13.3 Victoria Falls Water Treatment Works

The Victoria Falls Municipality owns, operates and maintains the only Water Treatment Works in the town. The water works are located about 1 km from CBD along Park Way. The water treatment works were built in 1972 to treat raw water from the Zambezi River for the supply of Victoria Falls town. The treatment works have a capacity of 360 cubic meters per hour although they are supplying 10,000 cubic meters when pumping for 24 hours.

The 1 900m long and 450mm diameter Raw Water Main delivers the raw water to the Treatment Works at the Intake Tower which were designed at 450 m^3.

Effort to improve the water supply situation is currently underway as the Municipality has embarked on an upgrading programme for the Water Treatment Works. The upgrading programme would ensure improving current supply from 9.6 ml/day to 20 ml/day. Victoria Falls Municipal Council has already installed a 525mm diameter AC Class 24 and 18 main from the Treatment Works to the new 10 000 m3 reservoir at the former Aerodrome. The cost of the upgrading scheme was estimated at $ 35 million.

The existing situation is such that treated water is pumped into three reservoirs located at the former Aerodrome, Sprayview and Masuie before being reticulated to the various parts of the town as well as the airport.

13.4 Water Storage Reservoirs in the town

There are three main reservoirs in Victoria Falls, two of which have been recently augmented. More details about each reservoir are given below:

13.4.1 Aerodrome Reservoirs

Water from the Treatment Works is distributed to the two major tanks the main ground water and elevated tower whose capacities are 2 280 m3 and 450 m3 respectively. Efforts at improving reservoir capacity are underway as the Municipality has constructed a 10 000 m3 RC reservoir at the Aerodrome site, which has been partially commissioned. In addition, a 200 mm main has been constructed to join the existing reticulation system along Raynard Drive.

The 2 280 m3 main ground reservoir is currently supplying the following areas:

- Masuie Reservoirs via a 200 mm main
- Sprayview via a 300 mm main
- Low Density Areas
- Hotels (Safari Lodge, Rainbow, Inyathi, Elephant Hills, A' Zambezi), National Parks and Army Chalets via a 200 mm main that reduces to 100 mm after the A Zambezi River Lodge.

The 450 m3 elevated Reservoir is supplying the following areas:

- Sprayview Reservoirs via a 300 mm main
- Low Density Houses in Raynard Drive, Soper Crescent and Ronald Road

13.4.2 Sprayview Reservoirs

As above, these 1000 m^3 capacity (each) reservoirs are fed from the Aerodrome Elevated Reservoir via a 300 mm main. They feed part of the Low Density Areas through the 200 mm main.

13.4.3 Masuie Reservoirs

The Masuie reservoir is a ground water reservoir with a capacity of 2 280 m^3. The main supply areas for the reservoirs are:

- Chinotimba High Density Area
- Mkhosana High Density Area
- Sewage Treatment Works
- The airport

Efforts at improving supply to the various parts of the town include the new elevated 750 m^3 reservoir which is intended to supply Chinotimba, and Mkhosana through a 300 mm diameter main. The new elevated reservoir was constructed at an estimated $ 20 million.

13.5 Urban Water Reticulation

The existing water reticulation system in Victoria Falls is shown on Map 38. The system supplies all the various parts of the town via a network of pipes in descending size. The main problem being experienced with the existing system is that most of the pipes are very old resulting in leaks and pipe bursts.

In addition to the provision of water to individual houses to most households in the town public stand pipes have been put up to service residents at the free-standing informal dwelling areas at the DRC The furthest distance to the common water tap is about 500 metres. As a result of the large number of people using the stand pipes there is a considerable strain on the facilities. Many individual dwellings also experience water supply problems simply due to the large number of users who are utilising the stand pipes. In some cases there are more than 100 users on each tap.

13.5.1 Consumers outside the town

Victoria Falls Airport is being supplied with water by ZINWA via a 150 mm main from the Masuie reservoirs. The main water line which supplies Victoria Falls airport runs along the main Bulawayo-Victoria Falls road. Some households along and to the North of the Bulawayo road before the airport get their water supplies from the same system.

The Zambezi National Park is fed off the 100 mm main that passes by the A Zambezi River Lodge from the Aerodrome Reservoirs.

13.6 Tariff Structure

The majority of the consumers with the exception of those who are utilising stand pipes are metered individually for billing purposes. People who are utilising the stand pipes are billed collectively and they share the costs. Whilst, meters are generally used as a basing for billing consumers, cases of inoperative meters were also noted at the time of the study. In an effort to ensure improved water supplies at commercial rates the Water Charges have been increased to allow for inflation. At the time of the survey the water charges were as follows:

Minimum charge:

- Domestic $ 60.75
- Commercial $ 85.40

Cubic metre rates:

Domestic:	
0. - 50 m3	$ 6.08
50 - 60 m3	$ 9.52
+60 m3	$ 15.53
Commercial:	
0 - 50m3	$ 8.05
50 - 60 m3	$ 11.27
+60 m3	$ 16.10

13.7 Urban Water Supply: Current and Future Capacity

The lack of capacity in the urban water supply to purify and deliver adequate water supplies to the various parts of the town has been one of the most pressing problems facing the Municipality. Water cuts have been experienced in many residential areas over the past decade or so. The existing treatment plant, water storage reservoirs and distribution lines have become too small to ensure availability of potable water to all sections of the town. The existing infrastructure was designed to cater for a population of about 8 000 only but the population in the town has now grown to over 40 000 and this is putting a major strain on the existing infrastructure.

Efforts at addressing the water problem are underway through the Water Augmentation programme. Under this programme the Municipality is currently undertaking a major upgrading of the system under the Urban II World Bank programme. The upgrading programme would involve improving treatment capacity and storage capacity. New infrastructure such as ground and elevated reservoirs, booster pump stations and interconnection pipe work will be constructed as part of the upgrading programme. In addition, ZINWA has installed a new raw water supply system to enhance the extraction capacity of raw water. The new design capacity of the new system is planned for a population of 70,000.

13.8 Rural Water Supply

Safe water supplies in the rural areas of the Plan Area are derived from boreholes, deep wells and in a limited number of cases, piped water schemes. Shallow wells can be found in some of the wetlands though by and large the study area is not suitable for this facility. The non-availability of clean water is a major cause of concern for the residents in Jabulani, Kachecheti and Chidobe villages. The main focus of this section is on the communities who live in the Communal Areas. The salient features of the water supply facilities are indicated on Map 39.

13.8.1 Communal Areas

The national level one standard for safe water supplies in communal areas is based upon the notion of a shallow well unit. 1 shallow well unit (SWU) is deemed to provide water for 50 people. A borehole is seen to be the equivalent of 5 SWUs and thus meet the needs of 250 people and a deep well is reckoned as 3 SWUs meeting the needs of 150 people. Ideally there should be sufficient boreholes, deep wells and shallow wells to meet these standards. However, this is only an approximate yardstick as much depends upon the distribution of the population and the availability of potable water. In addition to the household needs it is also national policy to provide safe water to larger settlements such as Rural Service Centres and business centres, to schools, hospitals, clinics and dip tanks.

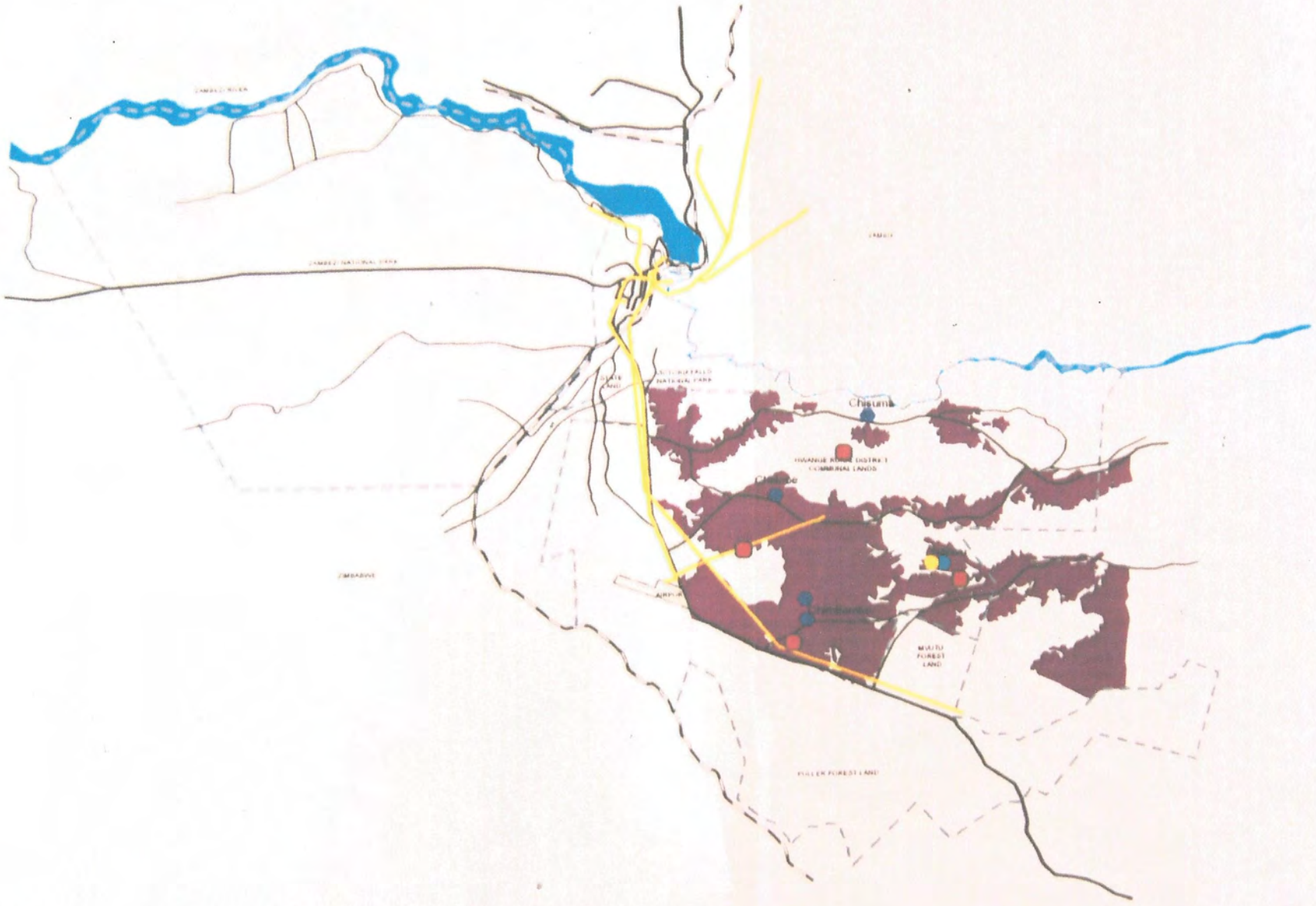
In Jabulani, Kachecheti and Chidobe villages water is generally a problem. Women in Jabulani village cited specific water problems. There is only one borehole serving the whole community. In Kachecheti and Chidobe wards, the average distance to the nearest safe water source is 1.5km and the furthest 15km. As a result women spend considerable time travelling long distances and queuing for water. Women in these two wards expressed the need for boreholes to be built near their homes. In some wards like Hlanganani, water was not a problem but the soil was very soggy and therefore not suitable for agriculture. Other wards noted that although boreholes are available, they no longer work and need to be repaired. It was suggested that Hwange Rural District Council should make efforts to repair the boreholes. This will lessen the burden of women travelling long distances to fetch water.

In 1990 Hwange District developed a Water and Sanitation Plan. In the plan an inventory of existing facilities is presented. Chidobe Ward was recorded as having 19 boreholes and Kachecheti Ward 31 boreholes. By and large the existing facilities represent some of the original infrastructure placed there during the 1940s and 1950s when people were forcibly resettled from other areas of Matabeleland. In the 1990 survey Chidobe was seen to need a further 10 boreholes and 3 wells and Kachecheti 16 boreholes and 6 new wells. There were also a number of needs for improved supplies to schools and clinics.

A few years later Hwange RDC developed an Integrated Rural Water Supply and Sanitation Programme (IRWSS) in accordance with the national standards and approach. This programme was supported by DANIDA between 1994 and 1997. Under the programme boreholes and deep wells were sunk in the various wards were water had been identified as a major problem.

13.8.2 Other Rural Areas

Zambezi National Park receives its water supplies for the lodges and staff areas from the Municipal water supplies. Fuller Forest provides its residential and office complex with water from boreholes. The tourist facilities in the Rural State Land and in Fuller Forest are also



VICTORIA FALLS
COMBINATION MASTER PLAN
PREPARATION AUTHORITY

Drawing Title

Rural Infrastructure

Legend

- Airport
- Aerodrome
- Dip Tanks
- Settlements/Cultivation
- Business Centre
- Rural Service Centre
- ZESA-Main Lines
- Railway
- Regional Secondary Roads
- Main Roads
- Plan Area Boundaries
- Zambezi River

Victoria Falls
Environmental Capacity
and Master Plan Project

Prepared by
Zimbabwe Department of
Physical Planning
Victoria Falls Consortium

Scale 1:250 000

Date
March 2001

Map No
3

supplied by borehole water. The Airport, as has been mentioned receives piped water from the Municipality.

13.9 Key Issues

- Urban water supply has been very inadequate for the size of the population for many years. However, current works are underway to augment the overall reticulation and storage system to cater for a population of 70,000.
- The water reticulation system is very old in some sections of the town and will need to be replaced. In some cases pipe diameters are too thin for the current use.
- Water pricing will need to be examined to ensure that everyone can afford a basic minimum of water. However, the major constraint is that costs of supplying clean water has escalated sharply due to increases in ZINWA's tarrifs as well as other items such as chemicals and fuel.
- Water conservation measures will need to be adopted to ensure that water is used sensibly and not used profligately.
- Rural water supplies are still inadequate to meet the basic needs of the rural population despite the implementation of an IRWSS project during the 1990s.
- Many rural communities still have recourse to unprotected water sources, thereby adding to health problems.
- Water supplies for livestock is a problem in the communal areas.

PART D

PHYSICAL

INFRASTRUCTURE

14. SANITATION

14.1 Introduction

This section will focus on the urban and rural systems of sanitation. The urban system is a water borne one in which most parts of the town are connected to the sewerage reticulation network. This is described below. Rural sanitation in the Communal Area is based upon pit latrines, usually of the Blair variety. However, many households do not have a Blair Latrine and use the bush.

14.2 The Urban Sewerage System

Water borne sewage collection systems constitutes the existing sewerage system in the Municipal area. The general topography of Victoria Falls generally defines the watershed between northern and southern catchments. The two main catchments are divided into smaller sub-catchements as a result of local topographical features. The presence of small sub-catchments has resulted in the need to provide both pumped and gravity sewerage systems, for the transfer of sewerage to the existing treatment plant.

The town is served by four separate raw sewage pumpstations which effectively operate in series to transfer raw sewerage from the northern and central sub-catchments to the head of the main trunk sewer. The maximum capacity of the pumping system is 10,8ML/d. The existing trunk sewer has a maximum capacity of 5,3ML/d (ADWF) in its lower reaches. The location of sewerage infrastructure is shown on Map 38.

14.2.1 The Pumping and Gravity arrangements

14.2.1.1 Caravan Park Pumpstation

Sewage from the 'A' Zambezi Hotel, and the Caravan Park gravitates to this pump station located at the Caravan Park. The sewage is then pumped via a 1,174 m long 100 mm diameter main to the Elephant Hills pump station.

14.2.1.2 Elephant Hills Pumpstation

The combined sewage from Elephant Hills Hotel and Caravan Park pump station is pumped through a +/- 1 165 m long 150 mm diameter main to a stilling manhole on Park Way adjacent to Inyathi Valley Lodge. From here the sewage joins the town gravity reticulation system to Victoria Falls Hotel Pump station

14.2.1.3 Victoria Falls Hotel Pumpstation

Raw sewage from Elephant Hills, Industrial, Commercial, Low Density, part of Chinotimba and as well as from other tourist areas all gravitate to Victoria Falls Hotel Pumpstation, located on the southern boundary of the Victoria Falls Hotels.

The sewage is inadequately screened and de-gritted before being pumped through a 1 570 m long 350 mm- to-400 mm diameter main to a stilling chamber at the head of the Trunk sewer that eventually transmits the wastewater to the Treatment Works.

14.2.1.4 Gravity Sewers and Trunking

From the Stilling Chamber in Chinotimba, the sewage is trunked through a +/-2.4 km long sewer of diameter 450 that duplicates a 525 mm trunk as well. 300 mm and 375 mm gravity sewers also bring sewage to the Stilling Chamber in Chinotimba from where is combined the pumped sewage flows from Victoria Falls Hotel.

14.2.1.5 Victoria Falls Safari Lodge Pumpstation

A small pumpstation transfers the raw sewage into the town system. No technical was available from the Lodge. It is owned, operated and maintained by the Lodge personnel.

14.2.2 Reticulation

The existing reticulation system links practically all dwellings and buildings in the Municipal area. In some parts of Chinotimba there are public ablution blocks that were provided for the single men quarters built during colonial period. These single quarters are now occupied by families and this has resulted in more people utilising the facilities compared to the number originally designed for.

The reticulation system was designed for a much smaller population and in some cases the expansion in the last decade has been poorly designed. As a consequence the sewers are often too small, or suffer blockage and leakage. This poses a serious health hazard to the community.

The large number of informal units on residential stands imposes an overuse of most toilet facilities on most properties. The use of the toilet facilities by more people than originally designed for has resulted in frequent blockages. For those who live in free-standing informal shacks the main recourse for sanitation is the bush. This poses a health hazard. Efforts at addressing the problem of toilet facilities at transit camps are underway as the Municipality is in the process of building communal toilet blocks to meet this crisis.

14.2.3 Sewage Treatment Works

Victoria Falls is currently served by a set of waste stabilisation ponds. The existing Sewage Treatment plant, situated East of Chinotimba Township on the West banks of the Masuie river were built in 1991. The works comprise an inlet works, 4 parallel anaerobic ponds, 2 parallel facultative ponds and 1 tertiary pond. The whole works cover an area of 8 hectares to the west of Masuie River. The sewerage ponds have a design capacity of three thousand five hundred cubic metres per day but they currently treat in excess of five thousand five hundred cubic metres per day. As a result the treatment plant is hydraulically overloaded by nearly 60%. The ponds and pump station are operating for 24 hours a day, and this has created a problem in that the flow through the works does not allow adequate retention time within the pond system. As a result sewerage is not treated to a satisfactory standard. The final effluent from the maturation ponds is being discharged to the Masuie river in contravention of existing Government discharge standards (GM 687/77).

Due to an increase in population and tourism in the past few years the existing sewage works have become overloaded and no longer meet minimum pollution standards. The Municipality's engineering services department has proposed that the existing treatment works be upgraded to increase capacity form the current 3500 cubic meters a day to 10,000 cubic meters a day. The sewage treatment augmentation project is expected to accommodate current demand as well as planned demand during the plan period. The main objectives of the augmentation project are:

- Upgrading of pre-treatment and grit removal facilities at Victoria Falls Hotel pump station, in order to enhance system reliability and minimise maintenance requirements.
- Provision of adequate treatment capacity for projected sewage flows up to 2010.
- Provision of a simple, economic treatment system which will minimise the generation of process by-products e.g. waste sludge and allow direct discharge of treated effluent to the Masuie River in compliance with the existing Discharge standards (GN 687/77).

The sewage treatment augmentation project will include the duplication of the trunk sewer and construction of a new Biological Nutrient Removal (BNR) treatment plant to increase the existing treatment capacity such that adequate sewage disposal facilities will be provided up to year 2010.

14.2.4 Tariff Structure

Cost recovery for sewage collection and treatment is based upon a tariff on the assessed value of land and improvements. Consequently, there is no direct relationship between costs recovered and the amount or strength of sewage treated.

14.3 Rural Sanitation

The provision of sanitation in the rural areas of the Plan Area is generally through Blair Latrines, although tourist facilities are served by a water borne system linked to septic tanks. The main emphasis in this section is on the communities in the Communal Areas. The coverage of sanitation in the rural areas is shown on Map 39.

14.3.1 Communal Areas

The aim of national policy on rural sanitation in communal areas is to achieve 50% coverage of all households with Blair Latrines in the first stage. In addition, all schools, clinics and other public institutions should have an adequate provision of latrines.

In the 1990 survey it was found that 47% of all households in Kachecheti Ward already had Blair Latrines. On the other hand coverage in Chidobe Ward was only 22%. However at the time of the survey 2000 it was noted that sanitation is very poor in Chidobe and Kachecheti wards. 67% female and 62% male headed households use the bush as toilets (about 230 meters away), while the rest use pit latrines. The use of the bush as toilets causes sanitation problems especially during the rainy season as this increases the rate at which people get infected with diseases such as dysentery.

Under the IRWSS programme, supported by DANIDA blair latrines were constructed in the communal areas.

14.4 Key Issues

- The pumping as well as gravity sewerage systems is being utilised in Victoria Falls.
- The urban sewerage system is overloaded, can no longer cope with the extra population as well as meeting the minimum pollution standards.
- The existing sewerage treatment works design capacity is 3 500m3 but its currently treating 5 500m3 of sewerage resulting in an overload of nearly 60%. The ponds and pump station are operating for 24 hours a day, resulting in the works not having adequate retention time within the pond system resulting in sewerage not being treated to a satisfactory standard.
- A 1996 design for increasing the capacity of the Sewage Treatment Works is in place but this has not yet been implemented due to lack of funds. The intention is to upgrade the treatment works from 3 500 to 10 000m3
- Some parts of the reticulation system are have surpassed their life span and suffer blockage and bursts. There is a need to have a plan in place to deal with this aspect of the system.
- Communal toilet blocks should be dispensed with in Chinotimba.

- The large numbers of informal shacks poses a major sanitation problem due to an over use of most toilet facilities whilst for others the main recourse is the bush. A long term solution is required.
- There is a poor coverage of Blair Latrines in the Communal Areas as 67% of female and 62% of male headed households do not have any sanitation facilities.
- The issue of Hygiene Education assumes an importance in both the urban and rural contexts due to inadequate arrangements and potential health risks.

15. TRANSPORT FRAMEWORK

15.1 Introduction

The Transport Framework chapter describes and analyses the existing transport networks in the Plan Area for all the modes of traffic, that is, road, rail and air. Public transport is also considered for each of the networks. Where appropriate the situation in the different land areas is described separately. Maps 41 and 42 presents the salient aspects of this chapter.

15.2 The Urban Road Network

The urban road network is managed by two Roads Authorities: the Department of Roads, who manage national roads; and the Municipality that are responsible for all other roads in their area.

15.2.1 National Roads

There are two national roads within the urban area.

- Bulawayo–Livingstone Road
- Victoria Falls–Kazungula Road

The Bulawayo–Livingstone road links Victoria Falls to Bulawayo (via Hwange) to the southeast and Zambia to the North. The Kazungula road links Victoria Falls to Botswana to the west. Both are all weather roads, which are kept in good condition, as they are of national importance especially in the tourist sector.

The Department of Roads in the Ministry of Transport is responsible for capital, operation and maintenance works for these two national roads. The Provincial Roads Engineer, Matabeleland North has the specific responsibility. He is based in Bulawayo but there is a local manager based in Hwange and various Road Units available to work on the road. There is a proposal, under the current Roads Bill, to create a new National Roads Agency, as a parastatal and this agency will undertake responsibility for these two roads.

15.2 2 Municipal Roads

The rest of the roads within the urban area fall under Municipal jurisdiction and consist all-weather paved surfaces, gravel and earth roads.

The CBD, the low-density area and high-density distributor roads are all-weather, bitumen surface. The CBD is largely centred around Parkway road, which is also bitumen surfaced. The

low-density area to the west of the CBD has a network that is surfaced with tarmac. Some of the collector roads include Reynard Drive, West Drive and Selous Crescent.

The road network that links the hotels to the CBD is also all-weather surfaced. These include Livingstone Way, Parkway and Metcalf Roads.

The main distributor roads for the industrial and high-density area of Chinotimba, Pioneer and Chinotimba road are also paved. However, most other roads especially in Chinotimba are either gravel or earth roads.

15.2.3 The Condition of the Urban Road Network

Save for the roads in the new residential area of Mkhosana, most of the roads in the Municipal area are over 20 years old. The roads have passed their useful life spans and need to be either rehabilitated and/or upgraded.

In Victoria Falls there is need for pavement rehabilitation to be undertaken. The process involves undertaking measures that are aimed at improving, strengthening or salvaging existing deficient pavements so that they may continue, with routine maintenance, to carry traffic with adequate speed, safety and comfort.

Efforts at improving the existing road network may involve overlaying tarred roads with at least a 25 mm thick premix for major roads or Double Spray and Chip for Distributor, Collector and Tertiary roads. However, some of the gravel and earth roads in the urban area would need complete pavement reconstruction, that is, to be upgraded to all-weather surface roads, whilst others will need partial reconstruction involving the strengthening of existing pavement layers, with or without stabilisation, before resurfacing. Any improvement work which may be undertaken on the roads must be preceded by detailed assessments to establish the causes, extent of distress and cost implications of rehabilitation. This may be attributed to the fact that road improvement measures are costly.

In addition, there is need for regular maintenance in an effort to sustain a good road system, in the case of gravel or dirt roads, regular grading is necessary. Due to financial constraints being experienced by most Municipalities at the present moment, the local authorities are unable to fulfil these needs. The new national approach which has been proposed to resolve such problems is to establish a Road Fund and provide all road authorities with resources to maintain their road systems, subject to the production of appropriate plans. The delay in the implementation of this new scheme is contributing to the road authorities failure to maintain the roads.

15.2.4 Stormwater Drainage

The storm water drainage system in Victoria Falls is achieved by surface drains along the town and suburban streets that lead into a system of subsurface drains, which in turn discharge into natural water courses.

The capacity of the existing drainage is inadequate for the storm water that occurs in Victoria Falls. Most street intersections are flooded with rainwater during the rainy season. As a result of the inadequacy of the existing drainage system there is need for improvements to be undertaken to the existing system as it cannot cater for the expected storm water drainage requirements. Since most soils in the urban area are soft and fragile a failure to address the poor drainage system is likely to result in serious erosion and damage.
Due to the nature of the deep desert sands found in the area, the ordinary earth trapezoidal, V – and rectangular drains easily choke up with aeolian sand in the early stages of the rainy season. This has resulted in most of the gravel and earth roads (especially in Chinotimba and the Industrial areas) suffering serious erosion as noted in Mkhosana Township. The damage to roads is mainly because they are acting as drains whether longitudinally or laterally (cross fall). Wash ways from the surrounding areas also compound the problem by silting the drains. A stormwater drainage system with adequate capacity has to be developed in the town in order to arrest further deterioration.

15.2.5 Proposed Improvements to Roads and Stormwater Drainage

The Municipality has proposed projects which are aimed at improving some infrastructural works in the town. These include:

- Rehabilitation (reformation and reconstruction: 2 bases and drains) of a total of 10 km of gravel/earth Roads.
- Upgrading of 5 km of major gravel roads and surface them as well concrete lined drains.

A total of $ 440million has been set aside for these projects.

15.3 The Road Network in the Rural Areas

The road authorities in the rural areas constitute of the Department of Roads and the Rural District Council (RDC). In addition to the Department of roads and the RDC, the District Development Fund (DDF) is also an important road authority in the Communal Areas.

The Department of National Parks and Wildlife Management (DNPWM) and the Forestry Commission operate private roads within the National Parks and Forest Areas.

15.3.1 Hwange RDC Areas

There are two national roads traversing the Hwange RDC areas in the Study Area. They constitute of the main Bulawayo-Victoria Falls road and the road leading off to Deka and Binga. The road leading off to Deka is a gravel road and under the recent re-classification exercise it was recommended that it becomes a local authority road.

All the other roads in the Communal and Rural State Land areas are under the jurisdiction of Hwange RDC, although they are being maintained by DDF. The quality of the roads varies according to the status. Those roads deemed to be of a secondary level importance, usually carrying buses and other heavy traffic from time to time are of a gravel construction. The tertiary road network, which generally are feeder roads to homesteads, schools and clinics are of earth. However, the general condition of roads in the communal areas is very poor and this is generally attributed to lack maintenance resulting from financial constraints on the part of the Local Authority and DDF.

15.3.2 Other Rural Area Roads

The road network within the Zambezi National Park is under the jurisdiction of the DNPWLM. The roads mainly serve one main purposes to allow visitors to travel through appropriate areas in the Park. The main drives within the park area is the Zambezi Drive that takes visitors close to the River Zambezi and the Chamabonda Drive to the south of the Park. These roads are all earth roads, some of which can be impassable in wet conditions. The other network is solely for the use of Park Staff so that they might have access to various areas for purposes of research, maintenance and observation. In addition to these roads the national Kazungula road also cuts through the Park and is maintained by the Department of Roads. The state of roads in the National Parks has been the subject of considerable criticism. Lack of resources has been previously cited as the reason for this state of affairs. The current Rehabilitation project supported by the World Bank is intended to tackle this issue among others.

The various estate roads within the Forest Areas are operated and maintained by the Forestry Commission. As is the case with National Parks roads some of these are tourist drives for those staying at Jafuta Lodge. Others are for internal purposes, including logging roads. A secondary road runs through Fuller Forest after cutting through the Rural State Land area, eventually re-joining the main Bulawayo road. This road despite being within the forest area is the responsibility of the RDC.

15.4 Road Transport in the Urban Area

The main volume of road traffic in the urban area constitutes of private vehicles as well as other vehicles owned by tourist companies. Public transport is in the form of buses, which mainly ply

the Victoria Falls-Bulawayo route as well as the communal areas. Taxis also constitute a large proportion of public transport but the commuter omnibus industry is less developed.

15.4.1 Traffic Levels

The volume of traffic on the roads within the Municipal area has increased significantly over the last ten years or so. Large volumes of traffic in the town centre are often experienced during holidays resulting in congestion, especially at the Parkway and Livingstone Way junction. Some delays are also being experienced when trains cross Livingstone way. Whilst it cannot be said that there are major traffic problems in Victoria Falls there will be a need to adopt sensible traffic management policies to ensure a reduction in conflict.

15.4.2 Vehicle Parking

The need for car parking space arises in several circumstances. In the first place there is a need for space in the town centre as vehicles make trips for shopping, business, tourist support and other purposes. A large car park near Pumula centre provides important parking space for shoppers and other people in the town centre. Similarly the spaces along the Livingstone Way frontage to the shops is well patronised. The parking bays which are mostly patronised are along Parkway and at times this area becomes congested and presents a visually intrusive scene. There will be a need to establish policies to manage car and vehicle parking in the town centre which will ensure that the needs of the vehicle owners are catered for as well as ensuring that there is adequate parking space. In addition, there is need to ensure that overall parking needs are catered for to present a well managed and visually attractive street scene for residents and visitors.

Victoria Falls experiences a reasonably high level of heavy vehicle traffic that is either en route to Zambia, from Zambia, or has goods to deliver to the town. The heavy vehicles do not have appropriate overnight parking facilities at the moment. They are parking at a site near the intersection of Chinotimba road. However, most of the companies which provide a regular supply service to the town have their own depots, which allow for some overnight parking. Due to a large number of lorries utilising undesignated space there is need to designate an appropriate site for heavy vehicle overnight parking facilities. Some proposals to meet this need are in the pipeline.

15.4.3 Pedestrian Movement

The urban area is characterised by considerable pedestrian movement. Within the town centre there is a regular passage of tourists and residents who move between the various parts of the town centre. This is especially evident along Livingstone Way. Other parts of the town where pedestrian movement are high are between Chinotimba, the industrial areas and the town centre. There is also considerable pedestrian movement within Chinotimba. Walkways have

been provided from some of the main hotels to the central business district and other tourist focal points.

Despite high volumes of pedestrian movements the conflicts between pedestrian movement and vehicle traffic is not yet at a serious level. However the large volumes of traffic could be a cause for concern in the near future. An assessment of the current situation has to be to be undertaken so that appropriate measures are taken to ensure that safety is preserved.

15.5 Urban Public Transport

The majority of public transport trips are between the town centre and the various tourist destinations and the township of Mkhosana. The mode of traffic is made up of taxis, minibuses and vehicles especially modified for tourist excursions into the surrounding wildlife areas.

Due to the geographical location of Victoria Falls, the Bulawayo road-Livingstone road is the main bus route to areas (both Rural and Urban) outside the Municipal area. The buses plying the various routes vary from ordinary to luxury. The luxury coaches include Blue Arrow and Express Coaches and they ply the Victoria Falls-Bulawayo Road. The majority of buses plying the Victoria Falls route are ordinary buses. Although originating from towns such as Victoria Falls the buses tend to carry rural passengers to the Communal area before proceeding to the town.

The main terminus for local buses is situated in Chinotimba near the tavern, market place and Chinotimba Commercial Centre. Buses turn off the main Bulawayo road and proceed to the terminus eastwards. The main bus stop at the hospital turn off on the Bulawayo-Livingstone road is used as a terminus for buses and taxis. The Chinotimba bus terminus surface has large pot holes and in need of repair and improvement by adding facilities such as bus sheds

The majority of residents who use public transport to and from work are those staying in Mkhosana. The majority of the urban population walk to and from town for business and leisure.

15.6 Rural Public Transport

Rural bus services connect the Communal areas in the Plan Area to Victoria Falls, Hwange and Bulawayo. The buses use the main roads that link Deka, Jambezi and Kamativi to access the various parts of the communal areas as well as other adjacent districts.

15.7 Railway Transport

The National Railways of Zimbabwe operates both passenger and goods trains to and from Bulawayo. Transit freight trains also run through Victoria Falls to Zambia and the Democratic

Republic of Congo. The viability of the passenger service, especially private operated steam safari trains heavily depends on tourists and as a result of the current slump in tourism, the services have been heavily compromised.

15.7.1 Existing Service

Freight traffic constitutes an important component of railway transport. The main freight composition is as follows:

Local: Building materials, Fuel, Scrap iron, Coal and Coke.

Import: Fertliser and Salt

Export: Coal and Coke

Transit: Minerals, Fertlizer, Maize, Fuel and Chemicals

Information on the composition of annual freight tonnage is indicated in the table below.

Table 40: Annual Freight tonnages (2000 actuals)

Local - Down (Vic Falls-Byo)	1 459 321
- Up (Byo-Vic Fall	60 805
Export	259 856
Import	24 258
Transit	311 089
Total	2 115 329

Source: National railways of Zimbabwe

The projected growth rate is 3% per annum compounded for both passenger and freight commodities.

15.7.2 Available service infrastructure

The available railway infrastructure consists of passenger service facilities, passenger coach stabling and platform roads, crossing loops, storage loops for wagons, cabooses and locomotives, coach washing facilities, coaling plant and steam locomotive coaling area, goods sheds and freight loading roads.

15.7.3 Additional services

Additional services provided within the NRZ reserve developed by the NRZ, leasees or resulting from joint venture developments includes NRZ infrastructure maintenance, staff accommodation, shopping facilities, bureau de change, steam safari excursions, cloak rooms as well as freight forwarding services and internal security services.

15.7.4 Constraints

The existing goods shed area is serviced by 4 roads with the fifth one reserved for maintenance works. The storage capacity of the sheds although adequate at present, is limited despite the fact that there is space available for possible expansion.

Stabling capacity for the goods sheds roads is 900 metres which translates to 60 wagons at any given time. However, space is available for an additional 4 roads which could double storage capacity.

The Livingstone road/rail crossing is a potential black spot which needs addressing - possibly by way of a road over rail bridge. Such a development could be hampered by space constraints and junctions which could inhibit the construction of the requisite road embankment.

15.7.5 Future Plans

Short term future plans envisage the construction of safari train passenger facilities and ancillary services on the south western end of the station.

The other development earmarked for the station area is a commercial development which also encompasses a new station complex on the western side of the existing station building. A World Heritage Museum is also earmarked for the development within the station environs. NRZ's objective in promoting such commercial development is to promote growth in the passenger service business through the development of suitable facilities for tourists and other passengers.

In the event of a major freight traffic up-surge, plans are in place to upgrade Jafuta Siding (on the outskirts of Victoria Falls town) but within the study area boundary into a buffer siding to compliment Victoria Falls traffic yards. This is especially with regards to containerized traffic handling.

15.8 Air Service

The Civil Aviation Authority operates a commercial Airport located adjacent to Fuller Forest area within the jurisdiction of Hwange Rural District Council. The airport is located approximately 23 kilometres from the centre of Victoria Falls town along the Victoria Falls-Bulawayo Road.

The airport handles domestic and international flights with transcontinental flights being rare. On average there are 1 000 fights with about 225 000 passengers per year. As a result of increased traffic volumes an Airport expansion programme has been proposed as part of the airport Master Plan programme. The expansion plans envisage to include the construction of a new 5km runway and taxiway, an international terminal and a general improvement of the airport/s supporting infrastructure. These improvements are meant to keep in step with the envisaged tourist boom

15.9 KEY ISSUES

- The tarred urban road network is very old and in need of a major overhaul. Maintenance costs are high, but resources to ensure proper maintenance are limited.
- The gravel and dirt roads in the town also require an overhaul. Regular grading is not being undertaken due to problems of equipment and resources.
- Delays in the implementing of the Road Bill and Road Fund is inhibiting the implementation of a sustainable solution to road maintenance.
- The storm water drainage system in the town is very inadequate. A storm water drainage plan to ensure a long-term approach to this vital issue in the town has to be developed to ensure an improvement to the existing drainage system.
- Most of the Rural roads are in a poor condition and lack regular maintenance and grading. As a result some parts of the communal areas are inaccessible during the rainy season.
- Roads in the national parks which were designed as seasonal are now being utilised throughout the year resulting in their state deteriorating. However, a World Bank rehabilitation project has been proposed to address this issue.
- The volume of traffic in Victoria Falls urban has increased greatly over the last ten years or so. Traffic congestion is an issue of concern in the town especially during holidays and this requires a long-term traffic management plan.
- Car parking similarly requires a management plan to prevent conflicts and avoid chaotic street scenes.
- Heavy vehicles require special overnight parking areas.
- Pedestrian movement in the town is very high, especially in the town centre and Chinotimba and between the two. Consideration of ways of avoiding conflict between pedestrians and vehicles is required.

- Urban public transport is adequate for the demand but as the town grows southwards the issue will require increased attention.
- Rural public transport is often difficult due to the state of the roads, which causes considerable wear and tear to buses.
- Rail travel continues to be popular for freight as well as with certain categories of travellers and should be maintained. Proposed developments should be aimed at promoting railway business.
- Proposals aimed at improving air transport in Victoria Falls include upgrading the airport by extending runways to allow for larger international aircraft. This will be achieved at an environmental cost.
- Lack of air transport between Bulawayo and Victoria Falls weakens the linkages on the western side of the country to the resort.

16. ENERGY SOURCES

16.1 Introduction

The primary energy sources in the Plan Area are wood, paraffin and electricity. Whilst electricity is the main source of power in the urban area the majority of poor people in the town use wood or paraffin. In the rural areas, despite the implementation of the Rural Electrification Programme electricity is not yet available on a large scale hence its not yet an option. The majority of the households in the rural areas are using wood fuel. Alternative sources of energy such as solar power and biomass, currently play a very minor role. Maps 38 illustrates the main electric power lines in the Plan Area.

16.2 Electricity

The Zimbabwe Electricity Supply Authority (ZESA) is responsible for supplying power within the Plan area. Victoria Falls and other parts of the plan area get their power from Hwange Power Station, and Livingstone, Zambia. Electricity transmission within the plan area is via an 88 kv line, which is overland via high tension lines on pylons. The power is then stepped down to 33 kv to the main substation located in the Industrial Area. From there the power is transmitted at 33 kV level to:

- the 33-11 kv substation in the Industrial Area
- Pandamatenga (Botswana)
- Matetisi Lodges about 36 km away.

From the 33-11 kv level, five 11 kv feeders distribute the power through several substations to the following areas:

- Chinotimba
- Central Business District
- Low Density Areas
- Kingdom Hotel
- Airport/Jambezi

Efforts at improving electricity supply in Victoria Falls town were undertaken in year 2 000 resulting in the upgrading of the 33 -kv substation. The urban area power supplies can meet all the current demands. in addition there is spare capacity to meet any additional demand arising from future planned growth.

The distribution lines to the High Density properties are overhead while those to the Low Density properties are underground. All the consumers are metered individually.

The Zimbabwe Electricity Supply Authority (ZESA) has a national Tariff structure which has resulted in electricity being beyond the reach of the majority in the urban areas. This has contributed to an increase in the use of wood fuel in the urban areas.

In the rural areas that fall within the Plan Area, and in particular communal areas, there is generally no electricity except at tourist facilities such as lodges and rural service centres.

16.3 Wood Fuel

An increase in the electricity charges has resulted in an increase in the number of people who use wood fuel in the Plan areas. Many residents in the urban area and most households in the Communal Areas are now using wood as their main energy source. The increased use of wood fuel has resulted in a steady depletion of woody cover. Most of the vegetation cover near Chinotimba has been depleted in the past few years and there is evidence that the search for wood extends to the adjacent Victoria Falls National Park to the east and to the urban area to the west of Livingstone Way.

The Communal Areas have also suffered major loss of trees in the last decade, as illustrated in the chapters on the Environmental base and Environment Capacity, Threats and Management. Fuller and Mvutu Forest Areas become attractive to wood seekers and, whilst dead wood collection is acceptable there is insufficient supplies to satisfy all needs.

The loss of tree cover will lead to an increase risk of erosion and weakening of habitats for wildlife.

16.4 Solar Power

The Government supports the use of more solar power, especially in rural areas. However, it remains largely unused, partly due to costs and partly due to lack of knowledge and easy access. Some tourist lodges utilise it to supplement electric generators.

16.5 Petrol, Diesel and Paraffin

Petroleum products remain a crucial source of energy for vehicles and engines of various kinds. Paraffin has also been used by many high density residents for cooking and lighting. However, the increasing price and lack of availability of all petroleum products recently has caused considerable problems. Victoria Falls has suffered from these fuel shortages, not simply like everyone else in terms of inconvenience and additional costs but due to the adverse impact on tourism. Many tourists have often cancelled their bookings in the past is due to the uncertainty over fuel.

The high cost and lack of availability of paraffin has resulted in real hardship to many residents. It has also meant that there has been an increased reliance on wood fuel as well as a depletion in forest areas.

16.6 Biomass

Despite the many advantages of using biomass as a source of energy it has failed to make any impact in rural areas. The main problem would appear to be the lack of familiarity with the method and the costs and difficulties in establishing it in the first place.

16.7 Key Issues

- Electric power supplies in the urban areas are adequate and there is capacity for expansion. The main problem associated with this source is its increasing cost, pricing it beyond the means of many poor people.
- Increasing use of wood fuel, by an expanding urban and rural population is reducing woody cover and exposing the area to erosion and loss of wildlife habitats.
- Shortages and increased costs of petrol and diesel has led to an adverse impact on tourism. The shortage and increased costs of paraffin has led to an increase reliance on wood fuel among poor urban dwellers.
- Alternative energy sources such as solar power and biomass are not yet being utilised by the rural poor on large scale.

17. POSTAL SERVICES & TELECOMMUNICATIONS

17.1 Introduction

This chapter deals with postal services and telecommunications. Postal services covers the analysis of the services offered by the PTC in all matters related to post offices and related services. Telecommunications includes telephone services of land lines, radio and mobile phones and the associated electronic mail and internet services. Map 38. provide some information on the location of the main PTC services, land lines and the masts erected for mobile subscribers.

17.2 Postal Services

17.2.1 Central Area Post Office

The Main Post Office in Victoria Falls is located in the town centre and has a total of 5 counters in the main hall. Other services within the hall include Telecommunications, Express Mail and Fast parcel services and a telegraphic section. The post office also offers a special service for craft village agencies that intend to post parcels on behalf of their clients. Post Office Banking services are also provided through POSB.

There are 300 rented postal boxes at the main post office which serve the residents and companies in the town. Before the construction of Chinotimba Post Office the 300 private boxes at the town centre post office could not cater for the demand. However, this has now reduced as some people and companies have taken up private boxes in Chinotimba. Another factor reducing demand has been the high increase in rental fees for the post office boxes. At the time of the survey (February 2001) more than 50% of the post office boxes had not been renewed. In addition to the private boxes the post office has the capacity to offer 100 private bags. However at the time of the study only 19 bags had been taken up. The major reason for such a relatively low figure to the availability of the private bags is that private bags are viewed as not convenient as it involves queuing. The private bags are encouraged for those who live out of town.

17.2.2 Chinotimba Post Office

There is one Post Office serving the high-density residential areas located in Chinotimba. The Post Office has six counters but one is leased to the Zimbabwe Building Society (ZBS) and the other is not being utilised at the moment. The post office has 800 post office boxes which have all been taken up. POSB services are offered.

17.2.3 Demand for the Postal Services

There is a high demand for postal services at the town centre. Both post offices are very busy during the end of the month paying salaries to various categories of workers. There is spare capacity at Chinotimba post office.

Currently there is no demand for postal agency status as the existing facilities can cope. There seems to be a steady increase in the number of vendors who sell stamps.

There will be a need to monitor demand and capacity to ensure an efficient service able to meet customer demands.

17.2.4 Overnight Postal Services

In addition to the general postal service the PTC offers an overnight facility through Fast Parcel and Express-Mail Service (EMS). The EMS facility is offered nationally, regionally and internationally. The overnight facility, which is being offered by PTC has other competitors as indicated below.

Whilst PTC retains a significant influence in the provision of postal service, there also exists a significant number of private service providers .The companies service both the local and international scene thereby linking Bulawayo efficiently with its partners in terms of efficient communication and delivery service. Services offered are both day and overnight mainly by DHL and Swift.

17.3 Telephone Services

17.3.1 The PTC Land Line system

The telecommunication section of PTC is offering several telecommunication services in the district. The existing analogue telephone exchange, providing the PTC land line service to the Victoria Falls Urban area is located behind the Victoria Falls Post Office whilst some areas within the Plan area are being serviced by the Hwange exchange. The Victoria Falls exchange has a capacity of 1 600 lines. This is far too few for the current demand. In addition to the service lines in Victoria Falls there are 23 public call boxes in the town. The distribution of service lines in Victoria Falls urban is indicated in the table below.

Table 41: Existing Telephone Services in Victoria Falls

Area	Business	Residential	Total Number of Lines
Victoria Falls	825	401	1 226

Source: Telecommunications

From the total exchange capacity of 1 600 there is a spare capacity of 374. However, despite that there is spare capacity the existing equipment is already congested such that there are no additional lines which may be accommodated. The situation at the exchange is likely to improve when the existing obsolete equipment has been replaced and the digitilisation programme completed.

There are plans to increase the capacity of the exchanges in Hwange and Victoria Falls as a result of the digitilisation programme. The Victoria Falls exchange capacity will be upgraded to 4 500 lines. At the time of the survey there were 1 821 business and 2 355 residential applications on the waiting list in Victoria Falls urban. The table below shows the waiting list for telephone applicants.

Table 42: Current demand for telephone services

Exchange	Business	Residential	Total
Victoria Falls	1 821	2 355	4 176

Source: Telecommunications

The waiting list expresses only the most urgent un-met demand. Additional requests in Victoria Falls are likely to emerge due to an expansion or development in the town as well as an improvement in tourism business.

For rural telephone users who are outside the 5km radius efforts are being made to change the manual party lines to digital lines. About six customers are currently sharing a party line. A reduction in the number of people being serviced by a party line is expected to improve telecommunication services in the near future as a result of the digitilisation programme.

Efforts at improving some parts of the Rural are being undertaken through the Multi Access Radio System (MARS), which is 3 years old. The MARS will be dovetailed into the new Digital system and this is being installed at strategic points in the district. The MARS system will take the existing capacity but will replace the overhead network. The plan area will be catered for under the Victoria Falls network, this will cover Kazungula, RTP 1060,, Myila RPT, Pandamatenga, Matetsi, Ndlovu and Chidobe.

An improvement to the existing telecommunication system by replacing the obsolete equipment as well as the digitilisation programme in Hwange and Victoria Falls is expected to be through by the end of August 2001. This is likely to result in an improvement to the telecommunication system.

17.3.2 Mobile Phone systems

The mobile phone systems operating in the town are Econet and Net One. These mobile providers, whose Centralised Switching Centres are in Harare, have already put up base stations in the town. As a result of increased demand for telephone services compounded by a failure by the telecommunication section to cater for the demand, there is need for more base stations and associated towers to meet the increased demand. However, in the provision of mobile phone facilities there is a need to be aware of the sensitive nature of these communications towers and their impact on the environment.

17.4 Computer use and telecommunications

In common with the rest of Zimbabwe, Victoria Falls urban area has adopted the use of computers in many areas of life. The tourist industry has been one of the first to realise the need as well as advantages of electronic telecommunications. Most of the bookings are being undertaken on the e-mail as well as advertisments and promotions for their services and facilities through the World Wide Web (WWW). The tourist industry in the Plan Area must be able to utilise the latest telecommunications systems if they are to remain competitive. The acute shortage of telephone lines has prevented some businesses becoming fully operational; For others the analogue system was technically poor for accessing the internet and e-mail. The move to a digital system will greatly improve telecommunication services in the area.

17.5 KEY ISSUES

- Postal service are able to meet current demand, although the main post office is generally very busy.
- The telephone system has failed to meet basic demand and has been technically inferior for advanced telecommunications applications. However, the PTC are addressing this weakness and a new digital system should soon be in place which will ensure increased capacity at the main exchanges.
- Access to telephones in the rural areas is still poor.
- Efforts are underway to improve the rural telephone network as a result of the (MARS) system as well as a reduction in the number of people sharing a party line.
- Mobile phone networks require high transmission masts that have an impact on the environment.

- The tourist industry has come to rely on the new electronic telecommunications systems for much of its marketing and booking arrangements.

18. SOLID WASTE DISPOSAL

18.1 Introduction

Victoria Falls is making serious efforts at improving its solid waste management system to ensure the cleanliness of the town and its immediate environs. Over the years Victoria Falls has experienced an increase in the total waste generated as a result of population growth, increased hotel development and non-adherence to formal waste disposal procedures by the local population. This is essentially an urban issue.

18.2 Current Situation

Refuse disposal services in the city are being provided by the Municipality's Environmental Health section, which falls under the Housing and Community Services Department. Domestic waste in the residential areas is collected once a week and daily from the Central Business district and hotels.

At the time of survey, the business people were satisfied with the services but the residents felt that the services were erratic. They stated that refuse was not regularly collected on the due dates. This was seen to be the reason why there was illegal dumping of waste in open spaces within the residential areas. The Municipality attributed problems in refuse collection to lack of vehicles and lack of bins by most people in the town. However, the situation has now improved. The environmental health section has a fleet of three trucks, two of which are new vehicles purchased under the Urban II programme.

18.2.1 Former Landfill Site

There is one former landfill site in the town. The site is located in Chinotimba near the gully, east of Pioneer road. The site has been landscaped by planting vegetation on it. However, there is a need to monitor the site for gases and settlement to assess if it may be reclaimed for some form of development

18.2.2 Current Landfill Site

The main method of solid waste disposal is by tipping at the site close to sewage works, south of Chinotimba. The site was commissioned in 1975 and it is not an ideal site in many ways. There is some visibility of the site due to the smoke it generates as visitors enter the town from the south. The identification of a new landfill site will need to be done as part of the Master Plan process.

Approximately 29m3 of refuse are generated on a daily basis within Victoria Fall most of which is collected and deposited by the Council. Domestic waste is tipped mechanically at a service charge of $25-00 and $168-00 per bin in the high and low density residential areas. This is charged to residents under the rates. Hotels and commercial entrepreneurs are being charged $566 and $322 respectively. Residents are also allowed to bring and dispose of waste at the site.

The growth of solid waste in the past few years has been considerable and the Municipality has been unable to develop the capacity to manage the site in accordance with modern principles of landfill site management. There is no sorting of rubbish, fires burn continuously and there is no regular covering of the rubbish. The site is unfenced. As a result the tip is unsightly, waster paper blows about and scavengers are a major problem. The site is also relatively close to the Masuie river and it is possible that some contamination of groundwater, seeping into the Masuie is taking place.

In addition the identification of a dump site would ensure that possible pollution which could be underway at Masuie river is reduced as a continuation in using the site without assessing or monitoring the implications for Masuie river may result in some environmental problems.

18.3 Urban Environmental Planning and Management Project

Efforts at improving solid waste disposal are being undertaken under the Urban Environmental Planning and Management Project (Urban EPM) of the Danida funded Environmental Sector Support Programme (ESP). The EPM is concerned with the development of urban environmental planning concepts, systems and procedures that effectively address urban environmental problems. The programme is being co-ordinated by Environment 2000.

The Programme has 4 major outputs:

a) Developing a waste management plan, on how best it should be done.
b) Awareness raising to the residents of Victoria falls about critical issues regarding waste disposal and people's responses about the existing situation.
c) How best to improve waste recycling.
d) Designing alternative waste collection systems in an effort to improve the sanitary conditions at the dump site.

18.3.1 Activities under the Project

Environment 2000 has started undertaking various activities which are aimed at achieving the above outputs. Some of the activities which have been undertaken in an effort to achieve the out puts are indicated below.

18.3.1.1 An Audit of existing waste management systems

In developing an appropriate waste management plan Environment 2000 has undertaken an audit of the existing waste management systems which are in place. This was aimed at assessing the existing situation at the refuse, the existing departments actively involved in solid waste management, revenue collection from rates and the amount specifically allocated for refuse collection services its adequacy and what could be done to improve the existing situation.

The preliminary report on the above issues has been completed though not yet finalised. There is need for discussion to be held with the management section within the Municipality. However preliminary findings have indicated problems in that technically refuse collection is under engineering, the department has ultimate control over transport, the dumpsite and the drivers. However administratively refuse collection is under the housing department.

18.3.1.2 Awareness raising

Awareness raising has been undertaken has been undertaken by Environment 2 000 in collaboration with the Environmental health section of the Municipality. This has involved major activities:

a) Awareness raising surveys to get people views about waste collection in the town generally in an effort to devise appropriate community strategies. Some of the issues where people's perceptions were required include why people dump illegally, the availability of refuse bins, why people did not have refuse bins and their awareness of problems associated with the non availability of refuse disposal bins.

b) A survey on the availability of refuse bins was also undertaken as part of the awareness activity component. At the time of the survey 5 500 households in the formal and informal structures were enumerated not to have refuse bins. In an effort to assess people's response once bins were provided plastic refuse bins were allocated to about 600 households. The bins were distributed to some households part of the monitoring process improved refuse disposal if people had the bins. The monitoring process which was undertaken through interviewing the residents and waste collection crews revealed a reduction in cases of illegal dumping. The use of plastic refuse bins was recommended on the basis of affordability by the majority of the residents who felt that the metal bins were beyond their reach. At the time of the survey a plastic bin was estimated to cost between $15-$18 and it was expected to last up to 3 months. However, the results of the survey also revealed the need to ensure that more durable plastic bins are manufactured so at to improve their life span.

18.3.1.3 Recycling Initiatives

Efforts at improving recycling are being undertaken through collaboration with an agent of National Waste Collection based in Victoria Falls and Environment 2 000. Under this project

Environment 2000 provides logistical support to the national waste collection agent in Victoria falls in ensuring waste is sorted as per materials for recycling before being transported to a temporary site which was donated by the Local Authority along Pionner road in Chinotimba for recycling waste.

The recycling of waste project is currently being undertaken on a small scale. It involves commercial entrepreneurs (hoteliers and business people only). A meeting has been held with the commercial entrepreneurs, who agreed and are being assisted to sort out the waste material by the sub agents of the National Waste collection agent. The commercial entrepreneurs assist by providing transport to the site. Once the separated recyclable material has been delivered on site Environment 2 000 make Swift aware of material which is ready for collection before delivery to National Waste Collection in Bulawayo.

A high level of success has been achieved so far such that Environment 2000 is looking forward to undertaking the recycling project on a larger scale to include some of the residents. However, before the commencement of the programme in the residential areas there is need for pamphlets to be printed and distributed which would explain basic information about recycling, what is recyclable as information obtained during awareness programmes revealed that most people have never heard or had no knowledge about recycling at all. The publication of the pamphlets has to be complimented by workshops to explain the information on the pamphlets and answer some queries.

To support the recycling activity the Local Authority has donated another site where a proper recycling scheme may be undertaken. Environment 2 000 is in the process of sourcing for funding from the European Union to implement the project. However the major snag at the moment is that the donated piece of land is near the current landfill site which is viewed as not being very suitable. Land within an industrial area is viewed as the most appropriate as recycling is should be viewed as constituting an industrial component.

The importance of recycling should also be viewed from the point of view of encouraging waste separation as well as increasing the life span of refuse disposal sites as less waste material may be dumped.

18.4 Future Issues and Problems

The future treatment of solid waste should be undertaken on a professional basis using the latest sustainable methods of control and organisation. Methods such as composting and pulverisation should be considered. It is important that the Municipality aims to ensure that international waste management standards and procedures, relevant to a third world country, are adhered to.

There is an urgent need to identify a new landfill site that has the capacity to meet the levels of waste being generated by the urban area. There are a number of considerations that need to be taken into account in choosing such a site. The location must be sufficiently removed from the main tourist and residential areas so that it does not cause a nuisance or an eyesore. On the other hand it should not be so far away that the costs of transport make the service uneconomic. The chosen site should have sufficient capacity to meet the long-term needs of the Municipality. Ideally, a site is required that is a natural or man made basin that will allow eventual reclamation. Finally, the chosen site will need to be assessed to ensure that possible water contamination through seepage does not take place. It may be that land with these characteristics is not available within the current Municipal area and that a site in adjacent land areas will be required. This will involve negotiation and agreement with the landowner.

Problems in Waste Disposal and Management Issues

Municipality

- There is need for a new site for refuse disposal purposes.
- The unavailability of refuse bins to most residents has resulted in a lot of illegal dumping especially at sites which are supposed to be utilised for garden refuse
- There is need for reliable service vehicles to ensure that refuse is collected in the whole town.
- Very little control, no separation of refuse is being undertaken.

Local Community (Residents)

- There is a lot of scavenging by people and wild animals from the site
- Uncollected refuse results in uncontrolled dumping in the residential areas.
- The unavailability of refuse bins

18.5 Key Issues

- Due to an increase in the population and tourist operations there has been an increase in the amount of waste generated in Victoria Falls.
- The Illegal dumping of waste on undesignated sites is unsightly and unacceptable.
- There is a need to identify a new landfill site that meets environmental, location and economic requirements.
- The development of appropriate expertise in landfill management is required within the Municipality.

PART E

SOCIAL

INFRASTRUCTURE

19. HOUSING

19.1 Introduction

Housing is arguably one of the most pressing problems facing the Municipality and therefore a key matter for the Master Plan to address. But, it is also a national question and is circumscribed by a number of national policies, which have to be taken into account. This chapter seeks to set out the main facts of the housing situation in terms of what is on the ground so as to obtain a grasp of the size and nature of the problem. It also seeks to understand what the land and social implications are of the stored up problem of inadequate housing and what some of the solutions might be.

The issue of rural housing is not dealt with in a major way as it is considered to be a less pressing problem.

19.2 The Number and Range of Urban Housing

This section provides details of the different types of urban housing in three broad categories: formal dwellings; semi-formal units; and informal units. The difference between the last two categories is marginal except that the semi-formal structures are usually more substantial and erected by companies. As such they are seen to be semi-permanent by the local authority.

Victoria Falls is characterised by a very large number of informal housing units, so many in fact that there are considerably more in this category than in the formal category. This is probably unique in Zimbabwe.

In total there are 8,819 dwellings of all kinds in the urban area. The details are given below:

Table 43: Total Number of Urban Dwellings (March 2001)

General Category	Numbers	%
Formal Dwellings	3,174	36.0
Semi-Formal Dwellings	371	4.2
Informal Dwellings	5,274	59.8
Total	**8,819**	**100.0**

Source: Lloyd Manyema and PlanAfric

19.2.1 Formal Dwellings

Formal dwellings are those that are built as permanent structures, usually of brick with asbestos or tile roofs and having at least basic internal sanitary and other facilities. It is government policy that all households should reside in houses that conform to Building Standards as laid down by the Model Building By-laws. There are also standards governing the minimum and maximum sizes of housing stands at different densities and guidance on the width and quality of roads servicing housing areas.

In the table below formal dwellings are divided into three main categories: high-density; low density: and flats. There is usually a third category of medium-density but there are no such examples yet constructed in the Municipal area, although some are planned.

As at March 2001 it is estimated that there were **3,174** formal dwelling units in Victoria Falls. Table 35 below shows the number and distribution of these dwelling units in terms of their density, which also reflects a general socio-economic classification.

Table 44: Number and Density of Formal Urban Dwellings (2001)

Density Zone	Stand Size (sq.m)	Number of Dwelling Units	% Total
High Density	200-300	2,605	82.1
Low Density	2000	458	14.4
Flats	N/A	111	3.5
Total		**3,174**	**100.0**

Source: PlanAfric and VFMC

From the table above it can be seen that high-density housing constitutes 82.1 % of the total formal stock in Victoria Falls, with low-density housing providing 14.4%. This ratio is very similar to other urban areas in Zimbabwe. The spread of incomes in Zimbabwe is such that only a few can afford high-cost housing and even, what might be termed, the middle-income earner, receives insufficient income to afford a medium-density dwelling.

The development of flats near the town centre has been undertaken by tourist and hotel companies to meet a need for housing their junior managers and technical staff.

19.2.2 Semi-Formal Dwellings

Semi-formal dwellings have arisen as a result of several factors. In the first place private companies erect temporary dwelling units for casual or contract workers, engaged on building projects. There are several examples of these "camps" situated around the town. In some cases



VICTORIA FALLS
COMBINATION MASTER PLAN
PREPARATION AUTHORITY

Drawing Title:

Urban Housing

Victoria Falls
Environmental Capacity
and Master Plan Project

Legend

- Free Town(DRC)
- "Informal Shacks" (indicative only)
- Flats
- Institutional
- New Camp(Informal)
- Old/Slums/Redevelopment
- Semi-Formal
- High Density
- Low Density
- Main Roads
- Regional Sec Roads
- Minor Regional Roads
- Municipal Roads
- Minor municipal roads
- Railway
- Zambezi River

Prepared by:
Zimbabwe Department of Physical Planning
Victoria Falls Consortium

Scale 1:25 000

0.2 0 0.2 0.4 Kilometers

Date
March 2001

Map Number
40

the original purpose has expired and the units are now occupied by families. In the second place, such structures have been developed by some companies as a stop-gap measure to house workers who are essential to their business but for whom no permanent houses are available. The type of materials used during the construction of these units ranges from pre-cast to wood and zinc. The main unifying characteristic of these dwellings is it that they has achieved a degree of permanence and their locations are defined and acknowledged by the authorities. Since the numbers are relatively small the issue is not a major one but their future will need to be determined in the Master Plan. The table below illustrates these various dwellings and their location in the town.

Table 45: Number and Type of Semi-Formal Urban Dwellings (March 2001)

Area	Number of Structures
a) Chinotimba	
1. Company Compounds	
a) Zimsun: Precast	115
b) Savanna Woodland: wood	48
c) Gardini: zinc	82
2. Old Rest Camp (brick)	7
b) Mkhosana	
a) Murray & Roberts Construction: wood	66
b) Power Construction: zinc	4
c) Other	
a) Gardini (off Zambezi Drive)	34
b) Police Camp (Wooden & tents)	15
Total all semi-formal structures	**371**

Source: PlanAfric and VFMC

19.2.3 Informal Dwellings

A physical survey conducted in March 2001 revealed that there were over 5,000 informal dwellings established in high-density residential areas and on some open spaces and industrial sites. Various materials are used for the construction of these structures but the predominant one is plastic and in common parlance these units are sometimes referred to as "plastics", and more commonly, "Baghdads". The majority of the informal structures is situated in Chinotimba and located within the stands of existing formal dwelling units. In addition to these there is a free-standing squatter camp, whose size varies, known locally as the "DRC" or "Free Town". The new high-density suburb of Mkhosana has already established its own quota of informal structures within stands, as well as some free standing ones. The table below shows the

distribution of these various informal units and they are also illustrated in a generalised way on Map 40.

Table 46: Number and location of Informal Urban Dwellings (March 2001)

Area	Number of Structures
a) Chinotimba	
1. Within residential stands	4,618
2. Old Rest Camp	102
3. DRC/Free Town	220
4. Open Spaces	55
5. Others	33
b) Mkhosana	
Within residential areas	217
Mfelandawonye area	29
Total all Informal structures	**5,274**

Source: PlanAfric and VFMC

19.2.3.1 The status of Informal Dwellings

The erection of informal structures, whether on existing stands or on open land is illegal. The local authority is within its rights to remove these structures, and indeed has sought, on several occasions to do so. The people who live in these dwellings are often referred to as "squatters". The main implication of this term is that they are migrants who have left their homes, either elsewhere in the country or from abroad, and have come to Victoria Falls in the hope of obtaining employment. There is also a small criminal element that has come to seek gains from what they perceive to be a suitable market. There are also a number of local people, who may or may not be in work but who lack access to formal housing. The social composition of the "squatters" is therefore complex.

19.2.3.2 The cause of Informal Dwellings

There is a both a general and a specific cause why there are so many informal dwellings in Victoria Falls. The general cause is related to the state of the national economy and the affordability of basic housing. The specific cause is a question of the rapid increase in tourism to the Plan Area during the 1990s.

The erection of informal structures in urban areas is fuelled by two complementary forces. On the one hand the increase of urban populations, due to natural increase and in-migration has led to an increase in the number of households demanding separate dwellings. On the other hand a

combination of factors has led to a failure to ensure a sufficient supply of new dwellings at affordable prices for people to occupy. Among these latter causes are: low personal incomes; lack of capacity of local and central government to facilitate housing; rapidly escalating building costs; and inability of the state to subsidise housing. The onset of ESAP in 1991 had negative impacts on all of these factors. Many people lost their jobs as companies retrenched workers. Public expenditure was squeezed at both central and local level. Inflation became an established phenomenon. Victoria Falls was subject to all of these factors either directly or indirectly.

At the same time that the country was undergoing problems caused by the adoption of a liberalised economy Victoria Falls was benefiting because of the tourist boom that was in part linked to the same process. The holding of the 1991 CHOGM in the town provided a major spur to construction of several new hotels. Once it became known that there was a prospect of a job in Victoria Falls migrants arrived from every corner of the country. To a large extent this considerable population movement caught the authorities by surprise. There was a major clamour for new housing land by the tourist companies who needed stands for several categories of their workers. Many individuals lodged applications with the local authority for a housing stand or to be placed on the House Waiting List. New housing layouts were hurriedly prepared and extensions were made to both the high-density and low-density areas, but this process inevitably took time. In the meantime the number of illegal informal structures located on high-density stands multiplied.

Whilst the local authority was within its rights to order the demolition of the shacks it faced several problems. In the first place it was a very unpopular move. The individuals and families who lived in the informal accommodation were naturally opposed, as they had nowhere else within the town to live. There was no census taken to categorise the various squatters so that destroying illegal shacks affected local residents as well as recent migrants. The owners of the high-density stands in whose property the illegal structures had been built were strongly opposed to their demolition as they received important sources of income from renting the space (albeit illegally). The local authority was itself divided. Those councillors who represented wards with squatters could ill afford to support unpopular moves to remove the illegal structures. Moreover, the resources of the Council were insufficient to mount such an operation. Various attempts have been made over the years but they have often been met with violence and the forces of law and order have been insufficient to see the process through. Finally, the problem with informal structures from a demolition point of view is that they are easily replaced. What is destroyed at 6.00am can be replaced later the same day.

19.2.3.3 The problems and benefits of Informal Dwellings

The general problem with the growth of informal dwellings is that they add to an already overburdened infrastructure and overcrowded neighbourhood. The current population of Chinotimba is well over double the planned number. This has ramifications on every aspect of life. Schools, clinics and other social facilities are over stretched. Water and sanitation facilities

become inadequate. The capacity of the authorities to exert social control are diminished. The impact of this situation can be identified as follows:

- An increase in health problems: Overcrowding both within the illegal structure and in the immediate surroundings adds to the likelihood of the spread of infectious diseases, through personal contact and the difficulty of maintaining good hygiene.
- Pressure on the environment: The gathering of so many people into a small area places great pressure on the natural environment. Trees are felled for fuel and to make space for people. There is pressure on the surrounding country once all immediate resources have been taken. Increased densities of people add to soil erosion. The unsightly nature of the illegal structures blights the urban landscape. The inability of sewage systems to cope or people to access sanitation facilities leads to greater pollution.
- Increase in violence and crime: Overcrowding induces more tension and leads to greater violence within the family and between families. The gathering of so many poor people together in such conditions allows criminal elements opportunities to operate under cover, to draw in new members. Prostitution and drug pushing tends to increase.
- Increase in political instability: The "squatters" represent a constituency that is potentially volatile and can be used by unscrupulous politicians In any event this represents a new political factor.

Whilst these points add up to a formidable case for addressing the problem and seeking new solutions there are a some important benefits of informal housing that need to be taken into account.

- Informal housing provides poor people with a practical option for shelter.
- The process of building and improving an informal structure places greater control and decision-making in the hands of the household.
- At the outset there is much less burden on the local authority regarding the provision of infrastructure.
- Increasing the density of people in a locality has benefits for traders and other entrepreneurs, who have a greater market.
- Intense use of space may have some negative ramifications but it also prevents sprawl and waste of land.

In fact informal housing of some kind is likely to be the only form of housing that most people will be able to afford as their first home. The issue then becomes one of how to ensure that the negative impacts described above can be avoided.

19.2.3.4 Recent responses to the issue

- Quantifying and understanding the problem.

The Municipality has the sought to conduct a census to establish the numbers, identities and needs of the "squatters". They received some assistance in this process from the Zimbabwe Homeless Peoples Federation. However, it is very difficult to conduct such work, partly because there is considerable movement among such people and partly because there is much suspicion as to the real motives of conducting surveys and enquiries. So the information received is not always reliable.

- Creating "Freetown".

In a second initiative the Municipality created a holding camp close to the rubbish dump in Chinotimba. Originally 800 households constituting a population of about 1250 were resettled in 1999 drawn from scattered sites on open areas and from some of those on housing stands. The settlers were allocated stands measuring 7m2 with basic communal facilities. A survey undertaken in March 2001 revealed that the number of shacks has reduced considerably and now stands at 221. This is, perhaps, an indication that some migrants are moving back to their original home areas in a response to the slump in job opportunities.

- Removal of informal settlements from Local Authority, Government and Company Houses.

This approach involved the Municipal Housing and Community Services Department advising those who rented property in the town to remove the shacks from their premises or face the consequences. This move had the backing of the appropriate landlords. As these people were occupying tied accommodation they faced eviction unless they complied. This initiative was beginning to bear fruit until political pressure through constant demonstrations led to its abandonment. However, many shacks were removed in this process.

- New Holding Camp

There is a new initiative, currently underway to establish a new holding camp next to the Secondary School. Roads have been serviced and currently the Municipality is putting up toilets and water standpipes. The purpose is to provide a centre where all current illegal "squatters" can be accommodated pending some long-term "solution". The implications of placing a large number of people in one camp are not fully understood. Nor is the long-term "solution" yet established.

19.3 The Characteristics of Urban Housing

This section seeks to describe the characteristics of housing in Victoria Falls in terms of type, occupation, tenure, facilities and condition. Much of the description is general and anecdotal as the last detailed survey of urban housing was carried out under the 1992 Census. Whilst there

was some informal housing at that time it constituted only 20% of the total, whereas today it accounts for 60%. However, where relevant figures from the 1992 Census will be cited.

19.3.1 Informal House Types

In general most informal housing consists of a small shack, suitable for either a single person or a small family. There may be some simple division inside to demarcate a living and a sleeping area. Cooking and washing are activities that are undertaken outside. Usually there are no windows, ventilation and light being obtained from a doorway.

Informal housing is made of materials that are free or cheap and come easily to hand. For this reason plastic sheeting is the most favoured material, being stretched and secured over some kind of frame, usually of wood. 60% of all individual informal structures are made of plastic. The next most popular material is wood. Some entrepreneurs have made a living providing appropriate wood panels that can be assembled into a small wooden shack. Compared to a plastic shack this type of building provides improved shelter from rain and sun, but it requires some increased outlay. These types of dwellings account for a further 36% of individual informal units. The remaining house types contain a variety of material that individuals have managed to find or buy, the main one being asbestos, followed by pre-cast concrete slabs (durawall) and finally metal.

There is a small group of temporary dwellings in the town, constructed by companies for their employees. Some of these are quite substantial, being made of concrete or wood and larger than the average informal structure. Whilst they are strictly temporary dwellings erected to meet an emergency, given the acute shortage of formal dwellings in the town, they are likely to remain in use for many years. These units are to be found on a number of compounds scattered around the town and belong either to construction or hotel companies.

19.3.2 Formal House Types

19.3.2.1 Low Density Houses

Housing has been constructed in Victoria Falls for close to a century and therefore it is possible to find a great range of house types in the town. There are a few examples of houses built in the early part of the century, especially on railway land. One of these has been adapted to become a restaurant in the new Landela commercial centre.

Within the low density areas the individual dwelling house has typically been a detached bungalow with veranda set in 3,000-4,000m2 with either a tin or asbestos roof. However, the size of a low density stand has been progressively reduced during the 1990s to the point where they now tend to be on average about 2,400 m2. In more recent years there has been an increasing number of larger properties built with thatch and sometimes two stories. In addition many owners

have built a cottage in their grounds, either to accommodate friends or paid visitors. Some of the houses operate as commercial lodges for tourists.

19.3.2.2 Flats and Town Houses

Flat development, especially adjacent to the town centre has been developed in two main periods, the 1960s and 1990s, largely associated with new hotel development which required accommodation for their managers. The flats are usually three storey walk-up units.

There is one example in the low density areas of a town house development, where a terrace and patio development has replaced the original house. This is a development by one of the main tourist operators and forms a similar function to the flat development described above.

19.3.2.3 High density houses

Before the 1940s all houses for African employees were self-built traditional pole and dagga constructions. But with the creation of Chinotimba Township a formal layout was prepared and brick houses constructed. The first phase of Chinotimba was completed by the 1950s and consisted of single person accommodation. These units were basically a string of rooms with a communal block for the toilets and washing facilities. These are now outmoded and being progressively replaced as discussed below under "Older Housing".

The family houses, which were built during the 1960s and 1970s were established on 300 square metre stands. In some cases they are built as semi-detached houses but in the main detached dwellings are the norm. The gardens are mature and the area is well shaded, although some thinning has taken place to accommodate informal shacks within the stands.

There was very little house building during the 1980s. During the 1990s a new burst of activity took place and new residential areas developed. These developments have consistently adopted the detached house model usually on stands of 300m2. In an attempt to reduce costs and make housing more affordable there was an agreement between the Government of Zimbabwe and USAID to develop small starter units on 150m2. A starter unit usually comprises one living room, one bedroom, a kitchen and a toilet/shower room. There is no finish to the house, such as plaster or ceilings although they are provided with internal water and electricity.

The Mkhosana suburb began to be developed in 1999. The Zimbabwe Building Society assisted in the development. The stand sizes were 300m2 and the houses, like the USAID development, three roomed, with the capacity to be easily expanded.

19.3.3 Housing and Stand Occupation

Housing occupancy is the number of people who reside in a dwelling, and can be used as an indicator of overcrowding. However, the acute lack of housing in Victoria Falls has led to a mushrooming of informal shacks within individual house stands. Whilst the number of people residing within a dwelling remains a useful statistic and an indicator of housing conditions the number of people per stand, or perhaps per square metre is also an important indicator of what life is like on the ground.

For those living in low density areas the tradition has been for the house to be occupied by one household, with an additional small household of domestic workers located in a single or double quarters within the stand. Thus on average the occupancy rate of low density stands would be approximately 5.0. However, there is every possibility that this average figure is now closer to 6.0 persons per house/stand due to change from two directions. On the one hand all low density housing used to be the sole prerogative of the white community and occupancy reflected their social structure. Since 1980 the race rule has been removed and all groups of people may now occupy houses in the low density areas, provided they can afford them. The social composition of these areas is thus slowly changing, possibly resulting in an increase in average occupancy as more extended families from the non-white community become householders. The second factor is an economic one whereby a significant proportion of low density houses are now offering tourist accommodation, either within existing houses and cottages or in new purpose-built lodges. Whilst the visitors do not increase the permanent resident population there is likely to be an increase in staff residing on the property to service the tourists. Unfortunately no information is available on these features.

From observation and the experience of housing officers there is a general consensus that *on average* at least two households, or 8 people, occupy each formal, high-density dwelling. This means that in some instances there will be three or more households and in others only one. In any event the range probably stretches from one or two people per house to 12 or more. But this is only half the picture as some householders in Chinotimba and Mkhosana let space within their gardens and yards to homeless households to erect shacks. Within Chinotimba 20% of all formal dwelling stands have informal structures within them and within Mkhosana the figure is 18%. The distribution of shacks is, therefore, quite heavily concentrated on a minority of stands. Part of the reason for this is the prohibition on Council and Company tenants on allowing such structures on the stands they rent.

A survey of informal dwellings in 1999 in Victoria Falls established that an average of 3.5 people lived in each shack. In practice this will equate to a mix of single person occupancy and small families. The shacks are too small to accommodate more than one household and these have to be relatively small.

In overall terms there are just over 3,000 high density dwellings and on average there are 1.7 shacks per stand. Taking the average occupancy of the house and the average occupancy of the shacks the average stand occupancy in high density Victoria Falls is 14 people. At one extreme a stand was found to contain 40 shacks, meaning that over 140 people lived within this one stand. This represents the extreme of overcrowding within an already overcrowded context.

19.3.4 Tenure

The different proportions of tenure in Victoria Falls can only be inferred, as there has been no recent survey. The huge influx of migrants over the past ten years, many of whom live as lodgers in shacks, will have dramatically altered the picture, last properly revealed in the 1992 Census. The largest tenure category is likely to be lodgers, who may be shack dwellers or live within the house. The householder in these cases is likely to be an owner-occupier. Tenant households and tied households occupy the majority of houses in Chinotimba, renting from either the Municipality, Government, Parastatals or private companies. Among the latter the tourist companies are by far the largest providers of homes, many of which are tied to the job. Even in the low density suburbs there are many tenants and tied occupants of houses built and owned by private companies and in some cases owned by the Government and other state agencies. Owner occupation is a minority tenure in Victoria Falls.

19.3.5 Housing Facilities

The 1992 Census revealed that 95.96% of all households in Victoria Falls had access to a flush toilet. The majority for having access to what are regarded as other key indicators of modern housing conditions, inside water and electricity for cooking were less dramatic, but majorities nevertheless. 56.9% were able to use an inside water tap as opposed to 22.7% who had their own outside tap and 20.2% who had to use a communal tap. In terms of energy used for cooking 36.92% used electricity, closely followed by 36.78% who used wood and 25.61 % who used paraffin.

At that time (1992) these figures revealed levels of housing facilities that were poor compared to other Zimbabwe towns. Only in sanitation did Victoria Falls approach standards seen in other towns. The fact that nearly 43% of all households in 1992 had to rely upon an outside water source, either communal or individual, is a reflection of the relatively old housing stock in the town. The heavy reliance on non-electric forms of energy for cooking was also out of step with other towns at that time.

Since 1992 much has happened to change these statistics for the worse. Overwhelmingly the majority of households, who live in shacks, have no modern facilities within their dwelling. Most will have access to a flush toilet, within the dwelling on the stand within which they reside. But heavy overuse of this facility in some stands has caused blocking and breakdown and may

inevitably lead to people having recourse to other forms of sanitation. Access to water will also be a problem on some overcrowded stands, although only in terms of time to wait.

It is likely that there has been a dramatic increase in the use of wood fuel as the preferred energy for cooking. This will be true for both the households living in shacks, who generally have no access to electricity in any case, and those living in formal dwellings, who can no longer afford the high tariffs. The use of paraffin is also likely to have declined due to its very significant increase in price, and more recently (and perhaps temporarily) an acute shortage of the product. It would seem likely that a very large majority of households in Victoria Falls, therefore, use wood for cooking. The impact of this practice upon the tree and bush cover in and around Victoria Falls is beginning to be seen. Significant areas of tree cover remain within the Municipality, but this will diminish as development takes place. Unless, affordable, alternative energy uses can be promoted and accepted by the majority of the urban population the impact of wood burning for cooking will be felt in the vegetation adjoining National Parks.

19.3.6 Older Housing

Some of the oldest housing sections of Chinotimba can be classified as sub-standard. The houses were generally built to a much lower construction and amenity standard and were meant for single men. The houses were originally intended to be shared by four single men per room. They lack basic facilities and the fabric is cracking. An improvement programme is underway whereby 175 units will be upgraded and new flat blocks added to create 800 flat units. The three-year programme is being undertaken in three phases and will cost $30 million. The MLGPWNH has completed the first phase, whereby some of the oldest house units have been upgraded and two blocks of flats have been built with a total of 16 units. The Municipality is supposed to undertake the remaining phases with some support from the Government's Housing Fund. The remaining funds will need to be obtained on the money market.

19. 4 Dwelling Construction

In common with all other urban areas in Zimbabwe the supply of new dwelling units in Victoria Falls has severely lagged behind housing demand. This has contributed to a huge backlog and a proliferation of shacks throughout the town. One of the major reasons for such a backlog has been lack of finance to develop affordable housing units. The rate of dwelling construction in Victoria Falls to date is shown in the table below:

Table 47: Dwelling Units construction 1980 to 2000

Period	Number of Dwelling Units Constructed
198081- 1989/90	179
1990/91- 1999/00	1,323
Total over 20 years	**1,502**

Source: VFM, Housing and Community Services Department

The above table shows that the 1980s were a very low period for house construction. In fact in the majority of years no new dwellings were constructed at all. The 1990s witnessed a significant growth in new dwellings constructed but the numbers were still far below those required. For several years in the mid-1990s no new dwellings were constructed.

The relatively high construction levels in the 1990s were a result of the USAID scheme, which resulted in the construction of 642 dwelling units in Mkhosana. The types of housing units in Mkhosana ranged from 2, 3 and 4 roomed. Co-operatives such as Busy Island have also assisted in housing construction.

There have been many factors involved in producing the low and erratic new building figures illustrated above. These can be seen as both supply and demand led issues. On the supply side bringing forward of an adequate and timely supply of serviced housing land has proved beyond the capacity of most urban areas since 1980. Demand has also been frustrated by weak housing finance and inadequate incomes.

The chief problem in the supply of housing land has tended to be the increasingly high cost of servicing. The provision of water and sewage reticulation to all stands and an estate road network is extremely expensive. Local authorities have sought joint ventures with potential developers so as to ensure land is serviced. This provided a way forward in several developments in Victoria Falls. Alternatively donor assistance has provided another route, as in the case of the latest Mkhosana development.

On the demand side there are two main problems. By far the largest issue is the fact that even the cheapest house costs more than the average home seeker can afford. The building societies, which provide mortgages require a minimum monthly income that excludes all but those in reasonably well paid jobs. In addition, there have been many periods since 1980 when mortgage finance was simply not available. We are currently in such a period now. Towards the end of 1997 the building societies ceased to provide mortgage finance, opting for short-term investments.

19.5 The Need and Demand for New Urban Housing

Housing need is a social concept, which is related to how society views its ideal housing provision. In many countries, housing need equates to the provision of one dwelling unit for every household. However this may not be the case for all societies, some of whom may welcome a degree of household sharing to accommodate a form of extended family. On the other hand demand is an economic concept that relies on market forces to determine how many houses of different types are required. Though it is an imperfect indicator of housing need, it provides a more realistic indication of the pressure for new housing. The council's waiting list is a measure of housing need and demand but excludes some people who know that they cannot afford a house either to buy or rent. It also includes people who may not be able to afford even the cheapest housing but nevertheless wish to register their need. As a result the housing waiting list needs to be used with caution.

19.5.1 Housing Need

There has been no serious research in this country into what might constitute real housing need. The idea that each and every household in Zimbabwe desires a separate dwelling is probably not true. The extended family is still a strong reality in the country and many dwellings contain more than one household because sharing is desired. However, there is no independent backing for this assertion and since people have very little choice it is hard to know the truth. On an arbitrary basis housing need is defined in this Plan as equivalent to providing sufficient dwellings to provide 75% of all households with a separate dwelling. This assumes that 25% will wish to share. On this basis, given that our calculations show there are currently 11,250 households in the urban area, there is a need for 8,438 dwellings. The existing stock of formal dwellings is 3,174, which leaves a shortfall of **5,264 dwellings.** This calculation assumes that all those people currently resident within the Municipality, including all current "squatters" have a right to a dwelling. There is a case for arguing that recent migrants who have arrived in search of work from other areas and have failed to achieve this objective should be required to return to their original home.

19.5.2 Demand for New Housing

Demand for new housing is usually expressed through the waiting list. As at December 2000 Victoria Falls had a waiting list of about 6,000. This was a significant drop of about 150% from the 1998/99 figure of about 18,000. The decline has been a result of the major decline in the tourism industry resulting in less disposable income among the residents and also the introduction of a registration fee of $40,00 for low income earners density, $60,00 for middle income earners and $ 80-00 for high income earners.

The reduction in the number of people on the waiting list does not suggest that most of them have been housed, it is just an expression of the people's inability to purchase stands or a

house. Deaths and out-migration from Victoria Falls due to retrenchments in the tourism industry have also been a contributory factor to a decline in the number of the applicants on the waiting list. The Municipality is currently reviewing the list to ensure that it accurately reflects genuine demand. As it stands it is remarkable close to the estimate of housing need given above.

Of the 6000 applications on the waiting list, 35% of the applicants can be said to earn below effective demand i.e. those earning below $4001 per month. Two thirds of the applicants constitute the middle and high-income groups and they qualify for full cost recovery schemes in the medium and low-density schemes. The table below sets out the income analysis.

Table 48: Waiting List Income Classification (January 2000)

Income Category	No of Applicants	% Total
Z$ 2501-4000	2 100	35
Z$ 40001+	3 900	65
Total	**6 000**	**100**

Source: VFM

19.5.3 Planned New Housing

There are a number of proposed new layouts for residential development, some of which have already been partly serviced. The table below shows their capacity:

Table 49: Planned New Housing Schemes

Area	Density	Developers	No of Stands	Servicing Status
Mkhosana	High	World Bank	800	Partially Serviced
Sprayview	Medium	Private Developers	440	Partially Serviced
Sprayview	Low	Private Developers	110	Partially Serviced

Source: VFM

These plans provide for a total of 1,350 new dwellings. As discussed in Chapter 9 there is further developable land available in the Municipality.

19.5.4 Housing Shortfall and Affordability

On the basis of Housing Need calculated outlined above and the numbers of planned stands in the pipeline there is a need to make provision for a further **3,914** housing stands. On the basis of the current Housing Waiting List the shortfall is **4,450**.

Whatever the amount of new housing that it is deemed appropriate to provide in the new Master Plan there will be a need to decide upon the type of housing to be provided. The vast majority of households that will have to be catered for are the very poor, mostly living in makeshift dwellings at the moment. There would seem to be little point in making plans to build formal dwellings when such people will not be able to afford such accommodation. To do this will sterilise land for a decade or more and lead to no fresh thinking in housing the poor. One way forward will be to break down the strict divisions between informal and formal housing and see them both as part of a linked process

19.5.5 Housing as a Process

The acquisition of adequate housing is a process: a social, economic and physical process as opposed to a "product" of four walls and a roof, or a building and connecting pipes and roads. Housing is a process that occurs at both an individual stand level and at a community level. By understanding the housing process it becomes evident where contributing agencies (local authorities, donors, NGOs and financial institutions) can make meaningful and effective interventions. Understanding the process becomes even more critical when addressing the needs of lower-income groups. Most households today in Zimbabwe cannot afford to acquire land and build a house immediately and, moreover wait in some other dwelling whilst this process is being completed. In this process the acquisition of a formal house is seen as a gradual, incremental process, the timing of which is dictated by the capacity of the individual. As can be seen the process allows for informal structures to be erected on allocated stands and recognises that these may remain for some time, as people accumulate resources. The provision of basic on-site facilities of water and sanitation are also seen as a process geared to the ability of the local authority to undertake the capital expenditure and the householder to pay for the service. Initially basic services would need to be provided off-site. The key components permitting this process are land and time.

Land delivery could be much advanced if the incremental approach was adopted. The cost of providing initial housing stands is very much reduced. The issue of the size of a housing stand for low income households has been much debated. Reducing stand sizes have not been able to make a significant contribution to reducing costs since the key factors are servicing the stands. Moreover, reducing stand sizes also reduces an important asset for poor people who will have less space to grow vegetables and undertake some informal economic activity on the stand. On the other hand land is a scarce asset, especially within the Municipal area and if all

estimated housing need is to be met with new stands some consideration will need to be made to stand sizes.

The community impact of the housing process also needs to be taken into account. The process calls for a much greater level of community participation so that the overall planning of new facilities and services can be geared to social need and general community capacity to absorb new costs. There is also a need to recognise the potential disharmony from an incremental process that will see neighbours at different stages in the development of their stands. A strong community leadership may help to avert conflict in such a situation.

19.6 Housing in the remainder of the Plan Area

Housing in the remainder of the study area is located in Zambezi National Park, Fuller Forest Area, the Airport and the Communal Areas.

19.6.1 Zambezi National Park, Fuller Forest and Airport

In the Zambezi National Park there are a total of 58 housing units for Parks employees. The types of houses range from single rooms (18), 2 rooms (8) 5 roomed of various types (30) and semi-detached units (2). Due to accommodation problems being faced within the Park the smaller housing units are occupied by families and in some cases a family may occupy two of the single quarters.

In the Fuller Forest areas there are 22 housing units. The type of accommodation, which exists in the Forest caters for bachelors and families whose household heads work for the forestry commission.

Residential units also exist at the airport. As at March 2001 there were 35 housing units, which were occupied by families.

19.6.2 Communal Areas

Communal Area housing for the peasant communities is predominantly of the traditional variety, being of pole and dagga materials with a thatched roof. Some families have built modern housing.
One of the main housing issues in the Communal Areas is the need for additional houses for state workers at schools and clinics. This has been a long running problem and is a factor in the difficulty of keeping trained personnel at some of these institutions.

Since traditional housing utilises natural resources there is an issue concerning the availability of certain materials, such as thatching grass and wooden poles. As populations grow and the

natural resource base shrinks some of these materials become more scarce and have to be sourced from further afield.

19.7 Key Issues

- Inadequate urban housing is a priority issue with major ramifications for land, environment and policy.
- Victoria Falls is probably unique in Zimbabwe in having the majority of its housing stock comprising informal shacks.
- Of the formal dwellings over 80% are high-density.
- Semi-formal structures, built as a temporary measure are playing a more permanent role in the housing stock.
- There are over 5,000 informal structures, mostly in Chinotimba. Their status is illegal but their removal poses huge political and social problems.
- The high number of informal shacks is a threat to health, the environment, security and also leads to higher levels of crime, prostitution and violence. But, they offer benefits too.
- Current initiatives to solve the problem by the Municipality and other authorities lack the framework of a longer-term vision.
- There is a high level of tied accommodation, which lacks security of tenure. This is due to the high number of dwellings owned by companies for their employees.
- Overcrowding is rife, with an average of two families occupying each high-density house (not counting illegal shacks).
- Modern sanitation is available to practically all formal dwellings but is over-used due to overcrowding.
- Inside water taps are available to the majority of houses but there is a high proportion who rely on outside taps. Both varieties are over-used due to overcrowding.
- Wood fuel for cooking is a growing method due to the high costs of alternatives and low incomes. This has an important impact on the local environment.
- There is a small pocket of older, slum housing that it is proposed to upgrade. Financial constraints are slowing down the programme.
- The construction of new dwellings has been very low and erratic over the past 20 years.
- To meet current housing need, defined as ensuring a separate dwelling for 75% of households, would require an additional 4,860 dwellings. However, to meet the House Waiting List would require 6,000. Current proposals to build 1,350 still leave a large shortfall.
- The vast majority of people who need a house cannot afford even the most basic starter unit. There is therefore a need to develop some creative thinking in how to cater for this sector.
- The failure of the main state actors in housing to ensure enough provision has led to a greater role for the private sector, NGOs and the community sector.
- Housing problems in the rural parts of the Plan Area relate mainly to a shortage of housing for state employees such as teachers, nurses and Parks staff. In addition, traditional housing uses natural resources, which are becoming more scarce as populations expand.

20. HEALTH

20.1 Introduction

The health condition of the people in the Plan Area is one of the prime indicators of well being. However, lack of time series data specific to the area limits the ability to say anything very detailed about such a crucial issue. It is known generally that HIV/AIDS is one of the most serious pandemics that the country faces yet we lack data that enables us to tell a clear story.

Central Government, local authorities and private practitioners are offering health services in the Plan Area. The Government is managing two health facilities in the Plan Area whilst the Municipality and Hwange Rural District Council are managing one health facility each. Surgeries and Chemists are being managed by private medical practitioners.

The Ministry of Health and Child Welfare's (MOHCW) role is to set out policies and provide a legal enabling environment for the operation of other actors. It also sets out national health policy service priorities, develops and regulates the operations of third party payment schemes. The Ministry monitors the implementation of health programmes, develops guidelines for training policies, technology assessment and monitors quality and standard of service. Individual institutions provide and manage the strategic framework within which services will be provided at the institution, offer specialist care, doctors, pharmacists and physiotherapist. The institutions also translate and implement national policy programmes.

20.2 Health Conditions

From general knowledge we know that the main causes of sickness and death in the Plan Area are TB, HIV/AIDS related illnesses, Malaria and Dysentery.

TB is one of the fastest growing diseases in the country and the Plan Area is unlikely to be any exception.

HIV/AIDS continues to impact heavily in all areas. Victoria Falls has one of the highest prevalence rates gathered from testing pregnant women in the country. This is not surprising as it is a border town that has links with three countries with the highest HIV infection rates in the world (Zambia, Botswana and Zimbabwe).

Malaria is endemic to all parts of the Plan Area and claims many lives each year.

Dysentery is caused mainly by drinking poor quality water and affects the very young and the old disproportionately. It is a particular problem in the Communal Areas.

20.3 Urban Health services

The Victoria Falls community is being served by Victoria Falls hospital and Chinotimba clinic. These health facilities also act as major referral centres for Hwange district.

20.3.1 Victoria Falls Hospital

This operates as the principal referral centre for patients both the urban area and in Hwange district. The hospital is located off the main road to the high-density suburb of Chinotimba. 2 doctors and 29 nurses are responsible for the delivery of health services at the hospital. The hospital has 24 beds.

20.3.2 Special Facilities

There are no specialised institutions, which attend to particular types of illnesses. Services such as infectious diseases, mental and maternity health conditions, eye units, paediatrics, obstetrics and gynaecology are being offered at the main hospital.

20.3.3 Municipal Health Services

Victoria Falls Town Council's Health Services Department offers primary health care and outreach Services. The only health facility under the jurisdiction of the Municipality is Chinotimba clinic, which is located near the Community Hall. The clinic caters for a large catchment that extends beyond the town to include parts of Zambia, Kasana, Zambezi National Park, Kazungula, Monde and Chisuna.

There is no doctor at the Municipal clinic, 15 nurses out of an establishment of 18 are responsible for service delivery at the health institution. However doctors from Victoria Falls hospital often visit the hospital to check on patients, especially the TB patients. However, due to a shortage of doctors their visits to the clinic have become less frequent, which is an issue of concern to the clinic.

The clinic has 24 beds and operates like a mini hospital. It is the only health facility that caters for infectious diseases such as Tuberculosis in the whole district. TB patients from as far as Hwange town and from other parts of the district are referred to Chinotimba. TB treatment is being offered as a service in addition to the basic services which the clinic offers such as maternity, out patient, baby clinic and family planning services. The clinic offers a 24 hour service. The health facilities in the town are shown on Map 41.

The Municipality has an outreach programme to supplement inadequate service delivery to areas such as the DRC camp. However due to staff shortages being experienced at the clinic



VICTORIA FALLS COMBINATION MASTER PLAN PREPARATION AUTHORITY

Drawing Title:

Urban Social Facilities & Transport

Victoria Falls Environmental Capacity and Master Plan Project

Legend

- Existing Primary School
- Existing Secondary School
- Proposed Primary School
- Proposed Secondary School
- Clinic
- Hospital
- Bus Station
- Emergency Taxi Route
- Railway station
- Pedestrian Conflict/Vehicle Conflict
- Vehicle Congestion
- Railway
- Municipal Roads
- Minor municipal roads
- Minor Regional Roads
- Regional Secondary Roads
- Main Roads
- Zambezi River
- Plan Area Boundaries

Prepared By:
Zimbabwe Department of Physical Planning
Victoria Falls Consortium

Scale 1:25 000

0.2 0 0.2 0.4 Kilometers

Date:
March 2001

Map Number:
41

the visits to the DRC are very infrequent. As a result, some people in the DRC area have been given basic training to ensure that they assist the sick and take responsibility for distributing malaria tablets and monitoring the health situation in the area. If an outbreak is realised it is reported at the clinic who have to monitor the health situation in the area. In addition, severe health problems, which may develop have to be reported such that the health personnel attends to it.

20.3.4 Other Health Facilities

Government and Local Authority health facilities are complemented by other private health facilities in an effort to ensure a healthy population in the town.

20.3.4.1 Surgeries

There are 4 surgeries within Victoria Falls town. Two surgeries are located in the central area, 1 in Chinotimba township and 1 in the low density. General practitioners are operating the surgeries with the exception the dental surgeon. The operation of health facilities in the residential areas mainly involves converting residential units to surgeries under special consent procedures.

20.3.4.2 Pharmacies

There are 4 pharmacies in Victoria Falls town, 2 are located in the town centre,1 at the Kingdom Hotel and 1 is located in Chinotimba. It seems advantageous for the suburban practitioners to provide dispensary services so as to retain their clientele as the current situation has revealed that most people still have to commute to the central area to buy medication.

20.4 Health facilities in the remainder of the Study Area

There are two health centres within the Plan Area in the Hwange Communal areas. These are Ndlovu and Chisuma Rural Health centres. Ndlovu Rural Health centre is owned by Rural District Council and Chisuma is owned by the state. The health facilities mainly serve the rural communities within the Rural District Council area of jurisdiction. The health facilities in the remainder of the plan area are shown on Map 42.

In addition to the above Rural Health centres, outreach visits are undertaken by officials in the Ministry of Health and Child Welfare especially in the areas were people are not close to existing health facilities. 4 mobile outreach sites are being used for services in the district they are Monde, Sizinda, Mvutu and Chidobe.

However, the existing health facilities and outreach sites, which are being utilised for health services cannot cope with demand. People in some parts of the district have to travel long

distances to the nearest health facility. In addition, despite the fact that mobile health facilities are being provided at some sites they are still not within easy reach for some people in the district. The mobile outreach visits are no longer frequent due to staff and fuel shortages.

20.5 Summary of Health Facilities in Plan Area

The table below shows the existing situation of hospitals in the study area as at March 2001.

Table 50: Summary of Health Facilitates in the Plan Area

Name of Facility	Ownership	Number of Beds	Means of Comms.	Source of Power	Source of Water	Staff
Victoria Falls Hospital	Government	44	Telephone	Electricity	Piped	2 Doctors 29 Nurses
Chinotimba Clinic	Town Council	24	Telephone	Electricity	Piped	15 Nurses
Chisuma	Government	8	Telephone	Solar	Piped	1 Nurse
Ndlovu	Rural District Council	8	Telephone	Solar	Piped	2 Nurses
Total		84				2 Doctors 46 Nurses

Source: PlanAfric

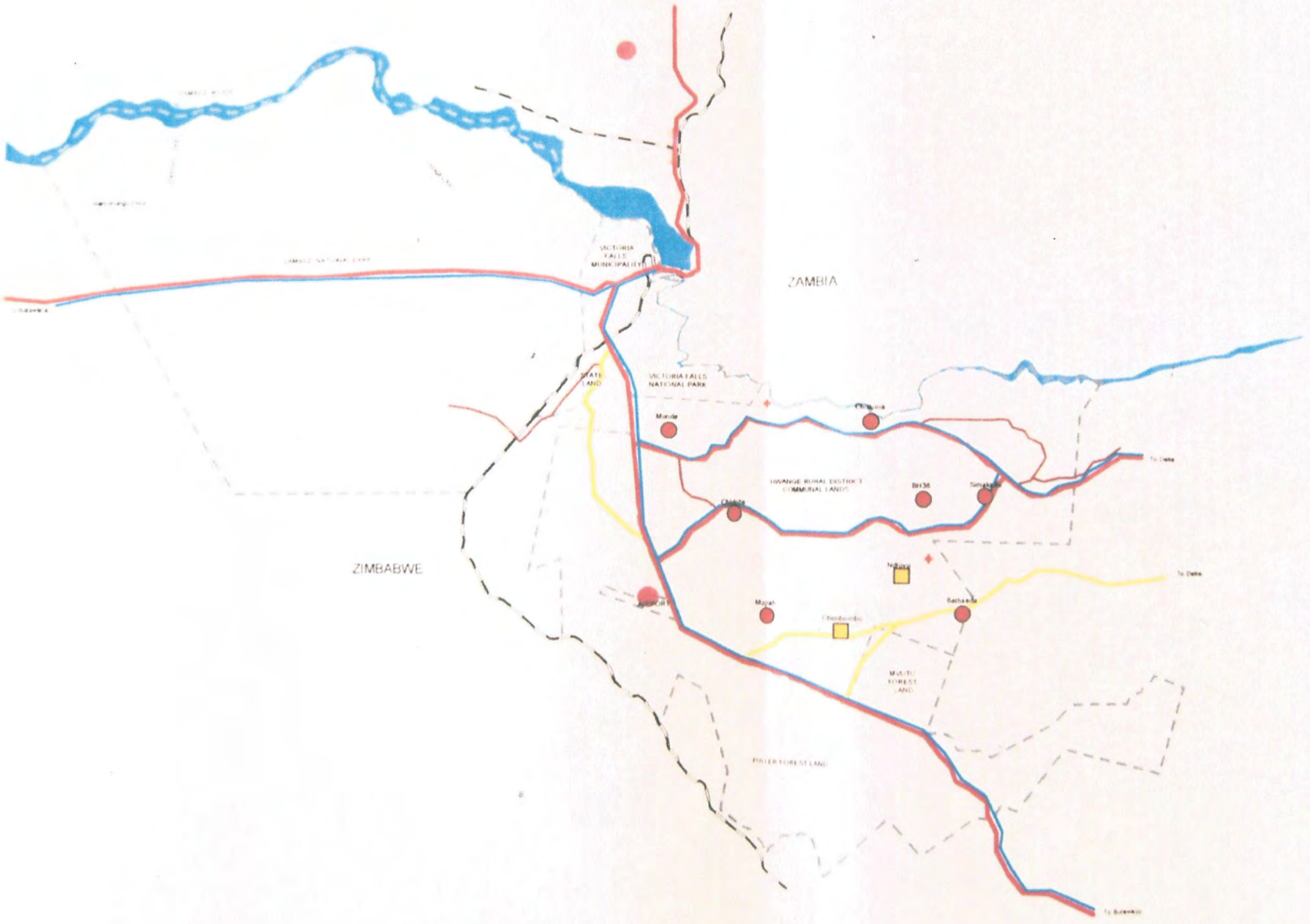
20.6 Problems in the delivery of Health Services

20.6.1 Local Authorities

a) There is a serious staff shortage as reflected by the absence of a doctor and 5 vacant nursing posts. This has resulted in a high patient to doctor/nurse ratio. In an effort to alleviate staff shortages the Municipality relies on the services of nurses from government hospitals who will be on leave.

b) There is a serious shortage of drugs, the central government medical stores does not have some of the drugs resulting in some patients being referred to pharmacies. However the cost of drugs from pharmacies is beyond the reach of many people in the town.

c) There is no fund or programme in place from which the destitute may benefit. As a result after providing a service to the destitute the Local Authority has nowhere to claim from which has resulted in a huge deficit for the Health Services Department.



VICTORIA FALLS COMBINATION MASTER PLAN PREPARATION AUTHORITY

Drawing Title

Regional Social Facilities &Transport

Legend

- Primary School
- Secondary School
- Rural Health Centre
- Airport
- Bus Routes
- National Roads
- Secondary Roads
- Tertiary Roads
- Plan Area Boundaries
- International Boundary
- Zambezi River

Victoria Falls Environmental Capacity and Master Plan Projec

Prepared by
Zimbabwe Department of Physical Planning
Victoria Falls Consortium

Scale 1:250 000

Date
March 2001

Map Nu
4

d) Chinotimba clinic has a large catchment area which it is difficult to service properly.

20.6.2 Government

a) The government is also affected by a high staff turnover as doctors and nurses leave for private practise or join private companies.

b) There is also an acute shortage of medication.

c) There is need for the expansion of some of the services and infrastructure.

20.7 Proposed Development

Land has been reserved in Mkhosana for the development of a clinic by Victoria Falls Municipality.

20.8 Key Issues

- Lack of data pertinent to the Plan Area limits the scope of detailed comment on the health condition of the people.
- The major causes of the rise in mortality rates in the area are TB and HIV/AIDS related illnesses.
- Malaria continues to inflict serious illnesses and deaths on significant numbers of people throughout the Plan Area.
- A major decline in central government budget for health delivery has resulted in a decline in the standard of service.
- There is a lack of specialist medical services in the Plan Area, which means that people either go without or travel to Bulawayo.
- The Municipality needs to develop a clinic development programme to ensure that the new residential areas are well catered for.
- Health institutions under the jurisdiction of the Municipality experience problems such as inadequate finance, equipment and staff shortages.

21 EDUCATION

21.1 Introduction

This chapter provides details on the various educational facilities available in the Plan Area from pre-school to tertiary level. The general lack of good facilities offering a full range of service with qualified teachers in post everywhere is a serious drawback for the area.

21.2 Pre- Schools in Victoria Falls

Pre-schools or early childhood centres are an important component in the urban area's educational system. The demand for pre-school facilities has increased over the years mainly because most parents like to ensure that their children have a good background before going to a formal school. The Pre-schools in the town fall into either Day Care Nurseries or Early Childhood Learning Centres.

There were seven registered pre-schools in Victoria Falls town as at February 2001, with a total enrolment of 515 children and 24 qualified teachers. This gives an average of 1:22 in terms of teacher to child ratio though some pre-schools such as Chinotimba have higher ratios of 1:26, whilst Victory has an average of about 1:10. The pre-schools are all located in the residential areas. Two of the pre-schools (Esandleni Senkosi and Tip Top) are operating from rented dwelling units, the other four are operating from sites which have been designated for pre-school use, whilst Baobab is operating from swimming pool changing rooms in Baobab Primary School.

Table 47 below provides the details of the seven pre-schools. The majority located in the high density residential areas.

Table 51: Pre-Schools in the Urban Area

Name of Pre-School	Owner	Number of Children	Number of Teachers	Location	Fees
Esandleni Senkosi	Private	80	3	Chinotimba	$1800-00 per term
St Kizito	Private	68	3	Chinotimba	$1,800-00 per term
Donald Duck	Private	32	2	Mkhosana	$1,800-00 per term
Tip Top	Private	65	3	Mkhosana	$1,400-00 per term
Victory	Victoria	42	4	Low Density	$6,900-00

					per term
Chinotimba	Town Council	183	7	Chonotimba	$150-00 per month
Baobab	Parents	45	2	Baobab Primary	$300-00 per term
Total		**515**	**24**		

Source: PlanAfric & VFM

Information presented above on fees for the pre-schools indicates that there are major differences in terms of fees paid at each pre-school, which may be attributed to the ownership arrangements. Chinotimba, a Municipal owned pre-school has the lowest fee charges, due to the fact that it is subsidised by the local authority. Baobab has relatively low fees and is run by parents who agree on what is affordable to the majority.

21.3 Pre-Schools in the Communal Areas

There are some pre-schools in the communal areas. The majority of the pre-schools face problems of shelter as very few operate from structures especially built for the purpose. Some operate from church structures, others in community halls and some under trees. The facilities tend to be owned and operated by the communities.

21.4 Demand for Pre-schools

The current enrolment and the large number of applications for pre-school places suggests that there is need for additional pre-school facilities. At the time of the study the owner of Esandleni Senkosi pre-school was expanding by 20 pupils and building a temporary structure to accommodate them.

21.5 Primary Schools

The responsibility for Primary School Education rests with the Ministry of Education. But they, like the MOHCW, are seeking to relinquish service provision to local authorities and the private sector, retaining a policy and monitoring role. Local Authorities have the responsibility of constructing new state primary schools, although the private sector may also build and operate schools under registration. School Development Committees, drawn from the community, manage and maintain the schools in liaison with the Head Teacher and the other partners. In the state sector the Ministry of Education provides staff and is responsible for curriculum development and implementation.

21.5.1 Existing facilities

There are four primary schools in Victoria Falls town. Two are operated and managed by the Ministry of Education, one is under Victoria Falls Municipality and one is privately owned. The primary schools in the urban area are shown on Map 41. The private school attracts pupils from the neighbouring countries of Botswana and Zambia. In future, it is likely that there will be an increase in the number of schools under the control of the Municipality.

In the remainder of the Plan Area there are seven Primary Schools. All the primary schools in the Plan Area are being operated and managed by the Rural District Council. The primary schools in the remainder of the study area are shown on Map 42.

An analysis of enrolment in the Plan Area shows that levels are much higher in the urban areas compared to those in the communal areas, which is to be expected. Enrolment at some of the rural Primary Schools is very low due to the fact that they lack facilities and teachers. The highest enrolment is at Chinotimba Primary School. Victoria Falls Primary School, which is a private school has the lowest enrolment as well as a very low teacher to pupil ratio. Generally there is a high teacher to pupil ratio throughout the Plan Area due to shortage of qualified teachers. This shortage is especially pronounced in the rural areas.

From the information presented in the table below most schools have their teacher to pupil ratio within the Ministry of Education's maximum of 1:40. However three schools exceed this ratio: Chinotimba, Simakade and Mizipah

The table below shows information about the primary schools as at March 2001.

Table 52: Primary Schools in the Plan Area 2001

Name of School	Ownership	Enrolment	Number of Teachers	Class rooms	Average Teacher to Pupil Ratio
Chinotimba	Government	1,840	31	21	1:46
Baobab	Government	535	13	11	1:40
Chamabondo	Local Authority	583	14	3	1:30
Victoria Falls	Private	159	9	9	1:25
Monde	Rural District Council	272	7	7	1:39
Chisuma	Rural District Council	428	11	10	1:39
Chidobe	Rural District Council	314	8	8	1:39
Borehole 36	Rural District Council	220	6	5	1:37
Simakade	Rural District Council	98	2	4	1:49
Bethsaida	Rural District Council	238	6	4	1:39
Mizipah	Rural District Council	504	11	9	1:46

Source: Ministry of Education

21.6 Future Pre-school and Primary School Development

New pre-school and Primary School development is expected to take place as new residential areas are developed. However, pre-schools depend on demand and will therefore be built as and when there is a market to support them. New primary schools are supposed to be built in relation to every additional 500 dwelling units and located within walking distance of the pupils. But this standard has been unaffordable for most Councils and this has resulted in overcrowding at many schools. Within Victoria Falls it is clear from the population levels that new Primary Schools are required. Chinotimba is very overcrowded and has to operate a dual system of pupil attendance known as "hot-seating".

21.7 Secondary Schools

The Victoria Falls Municipality and Hwange Rural District Council have assumed the responsibility of developing and managing new secondary schools within their respective areas.

However, the deployment of staff has remained the responsibility of the Ministry of Education. There are only two secondary schools within the Plan Area: Mosi-oa-Tunya Secondary School in Victoria Falls, administered by the Municipality and Ndlovu Secondary School in Chidobe, administered by the Government. Maps 41 and 42 shows the location of secondary schools in the plan area. The secondary schools offer secondary education up to Form 4, i.e. to "O" Level. However, there are plans for Mosi-oa-Tunya to offer Advanced Level with effect from March 2001. The necessary classrooms have been constructed but they are still to be fully furnished.

The table below shows the existing situation in secondary school provision as at January 2001.

Table 53: Secondary schools in the Plan Area 2001

Name of School	Ownership	Enrolment	Number of Teachers	Number of class rooms	Teacher to Pupil Ratio
Mosi oa Tunya High	Victoria Falls Municipality	1 405	46	17	1:34
Ndlovu	Government	443	15	15	1:30

Source: Ministry of Education

The secondary school in the Victoria Falls Town cannot meet existing demand due to limited facilities. However, Ndlovu Secondary School has a wide catchment area, resulting in a problem of access for many communities. Mosi-oa-Tunya Secondary School, like its Primary counterpart has a high enrolment, which is met by "hot-seating". The recommended teacher to pupil ratio at the secondary schools varies from 1:40 for the junior classes to 1:20 for the senior classes. From the average ratios, given above, it would seem that the two schools fall within these standards.

Stakeholders workshops have revealed the high priority accorded to education by the community. There is a very strong feeling that the area is being neglected though inadequate provision of teachers and school facilities. The fact that "A" Level courses have not been offered in the Plan Area is seen to place local youth at a significant disadvantage.

21.7.1 Secondary School Development Programme

Victoria Falls Municipality estimates that there is an immediate need for an additional secondary school in the Municipal area. A site has been reserved in Mkhosana. In the communal areas a new Secondary School is currently under construction at Sizinda.

In view of the current shortfall in provision and an expected increase in the number of pupils during the Master Plan period, additional land for secondary and high schools will need to be identified.

21.8 Special Schools

There are no special schools in Victoria Falls. Special needs pupils are either referred to special schools in Bulawayo or in some cases are met through special needs classes in exiting schools.

21.9 Tertiary Level Education

The increase in the number of students graduating from secondary school has not been complemented by the availability of tertiary level education facilities. The need for such colleges in Victoria Falls has been compounded by the fact that there are no Advanced Level facilities in the town to accommodate those pupils who have completed their Ordinary Level. The provision of colleges in Victoria Falls could also assist some adults who need to further their professional careers or advance their basic educational background.

At the time of the survey there were two private colleges in Victoria Falls, Victoria Falls Commercial Training Institute and Technical Systems (Pvt.) Ltd. Victoria Falls Commercial Training Institute is a Hotel and Tourism school whilst Technical Systems offers training courses in computers.

The Government proposes to establish a Tertiary College and a Vocational Training Centre (VTC) in Victoria Falls and sites has been earmarked for these developments. An important consideration in whether to provide such facilities is the degree to which their development will increase in-migration into the town. An alternative strategy may be to provide such facilities in the Communal Area or in Hwange Town.

21.10 Key Issues

- Due to an increase in population and the development of new residential areas, there is a need for more educational facilities to be developed.
- The development of pre-schools needs to be improved to ensure that the existing ones can cope in terms of teacher/child ratio.
- The inadequacy of primary and secondary school facilities has resulted in "hot-seating" at some schools.
- No special schools exist in the town.
- The development of private courses that offer professional courses should be encouraged to cater for school leavers.

- There are no tertiary educational facilities in the town at the moment. However, providing such facilities may lead to further in-migration, adding to the pressure on land and facilities that are already being experienced. Alternative sites in the rural areas or Hwange Town may be a better solution.

22. POVERTY & SOCIAL WELFARE

22.1 Introduction

The current national state of the economy has resulted in an increase in poverty and the number of people seeking social assistance. In the urban area, the Municipality and the Department of Social Welfare are responsible for managing and providing social assistance. This involves the identification and implementation of programmes that are aimed at improving and assisting the well-being of individuals and the community at large. However, the resources available for such programmes is woefully inadequate and only a small minority of needed cases receive benefits.

22.2 Poverty in the Plan Area

The problem of poverty in the Plan Area is a major one. Victoria Falls has many features of a wealthy town and there is no doubt that tourism has brought considerable benefits and incomes to some sectors of the population. But it is also self-evident that the vast majority of the town is very poor. The majority lacks formal employment, lives in inadequate shelter and has poor access to resources. With the recent downturn in tourism the extent of poverty has increased. Significant numbers of employees have been retrenched, adding to the unemployed in the town

Hwange district was ranked as the fourth poorest in the country following the Poverty Assessment Study Survey in 1995. Given that nationally 75% of all rural households were judged to be in the total poor category Hwange's ranking illustrates the extreme level of poverty in the district.

The issue of poverty is a national, and indeed a continental one and it cannot be expected that a Master Plan can solve the problem. However, it is important to take cognisance of the issue and to seek to address the manifestations and causes of poverty wherever possible. The question of access to land and other resources is a pertinent one for the Master Plan.

22.3 National Welfare Programmes

The Children's Protection and Adoption Act and Social Welfare Act are the guiding frameworks that guides tthe Ministry of Public Service, Labour and Social Welfare in its overall policy making and administration functions. In the Plan area the Social Welfare Department operates through its district offices in Hwange.

The Ministry of Public Service Labour and Social Welfare has two main programmes, which are aimed at assisting vetted individuals. Under these programmes there are over 2 000 people in the Plan Area who qualify for assistance, of which about 10 % are from Victoria Falls town.

However, it is clear that this number of people does not in any way reflect need, which is much higher.

The Department of Social Welfare operates on the basis of three-year Provincial Rolling Plans, which are derived from the National Plan framework. However, the last such plan was for 1994 – 1996. No plan of action was drafted for 1997 to 1999. A more plan for 2001 to 2003 is yet to be worked out.

The suspension of the Social Dimension Fund (SDF) in 1998 left many individuals desperate for food, medical and educational assistance. However efforts have been made to ensure a continuation of activities and programmes previously done under SDF through the Enhanced Social Protection Strategy (ESPS), Basic Educational Assistance Module BEAM) and Children in Extremely Difficult Circumstances (CEDC). ESPS involves assisting children through the payment of school fees and levies for identified children. However, the payment is no longer done through the Department of Social Welfare. It has been decentralised to Local Authorities for implementation through the Ministry of Education. Under the ESPS the Local Authority works closely with a committee constituting three members from the School Development Committee and a committee constituting the Councillor and other people from the community. The Department of Social Welfare is a member of the ESP merely on an advisory basis. The number of students to be assistance under the programme depends of the funds allocated per school.

BEAM and CEDC is a continuation of current foster care programmes and has a medical assistance component.

In addition to the above programmes there has been an introduction of a Public Works Programme, which is within the jurisdiction of Local Authorities. The programme is mainly earmarked for destitute persons. Local Authorities are supposed to identify various public works and the destitute receive pay for this work.

22.3.1 Social Welfare Programmes

The Department of Social Welfare undertakes various activities to assist the underprivileged. Some of the various programmes and activities which they are involved in are indicated below:

22.3.1.1 Public Assistance

The Public Assistance Programme (PAP) constitutes of monthly payments for general maintenance and rent allowance for urban dwellers. It used to encompass drought relief for the rural population, but this has not been in operation since 1998. It is supposed to be replaced with a public works programme. Only 42 people in Victoria Falls town were assisted under the PAP in 2000. This is expected to increase in 2001.

In the remainder of the Plan Area just 12 people were being assisted in 2 000. Five of the beneficiaries were from Chidobe and the other seven were from Kachecheti ward.

22.3.1.2 Travel Warrants

Only four warrants were utilised for the benefit of people in the plan area who were commuting between Hwange and Chidobe as well as between Hwange and Victoria Falls. In addition to these seven warrants were issued to refugees from the Democratic Republic of Congo, who were travelling to Harare for verification through the Commissioner for Refugees.

22.3.1.3 Pauper Burials

There are very few people being buried under pauper status in Victoria Falls. The majority of people who have pauper burial status undertaken are foreigners and locals who would have lost contact with relatives. In the whole of 2000 there were only a total of five cases at a cost of $ 8,000-00.

22.3.1.4 School Fees Assistance

Due to an increase in death rates, retrenchments and high unemployment levels the number of people applying for school fees assistance has increased. In 2000 beneficiaries from this facility numbered 561 A total grant of about $300,240 was utilised to benefit the applicants. The amount indicated above for school fees assistance also included examination fees for the beneficiaries.

The largest amount of money was utilised for the benefit those attending Mosi-oa-Tunya Secondary School ($171,360). Chinotimba Primary School beneficiaries received $ 69,000 and Ndlovu Secondary School beneficiaries received $59 880.

22.3.1.5 Social Development Fund

No money was received under the Social Dimension fund during the year 2000.

The table below summarises the various forms of public assistance, which benefited people in the district in the year 2000.

Table 54: Summary of Public Assistance in the Plan Area 2000

Category	Males	Females	Totals	Total Cost (Z$)
Travel Warrants	6	5	11	9,920
Pauper Burials	3	2	5	8,000
School Fees	270	291	561	$300,240

Social Development Fund	----	------	----	----------
Totals	**279**	**298**	**577**	**$ 318,160**

Source : Department of Social Welfare

22.4 Local Urban Welfare

The Municipality's Community Services Department complements services of the Social Welfare Department. The Community Services Department's major role is to identify and recommend the appropriate form of assistance, which could be rendered.

At the moment the Local Authority does not have a clear programme of activities it can undertake to assist people who need social assistance in the town. Whilst they are able to identify deserving cases such as orphaned children or children from problematic homes there is no institution where they may be safely kept. The only safe institution where children are taken to at the moment is the Old People's Home. This institution is used as a temporary refuge whilst they are in transit to children's homes in Bulawayo.

The institutions which cater for referred cases from Hwange district are mainly based in Bulawayo. They consist of Government institutions such as Luveve Training Centre, Percy Ibbotson and John Smile Homes, as well as private institutions,. At the time of the survey the government institutions were under-subscribed by more than 50% of their carrying capacity. However, in the event of the government institutions being fully subscribed some of the children are referred to private institutions, which are registered solely for that purpose. The government assistance to such institutions is in the form of grants, which provide a small proportion of their total needs.

22.4.1 Co-ordination between the Local Authority and the Social Welfare Department

In an effort to ensure an improved relationship between the Local Authority and the government on social welfare issues the Local Authority provides the Department of Social Welfare with an office. However, due to critical staff shortages being experienced by the Department, they have not been able to utilise the office. As a result there is no resident officer in Victoria Falls Town despite the realisation by the Municipality that its essential for the them to have a resident officer to take care of day to day activities. The problem associated with the absence of a resident officer has been exacerbated by the fact that the officer based in Hwange covers the whole district, which is a very large area.

22.4.2 Street Children and Orphans

There has been a growth in the number street children and orphans in the Plan Area. The majority of children on the street are a result of hostile environments at home and broken families whilst orphans are a result of deaths mainly associated with AIDS. Street children in Victoria Falls are mainly found in the central area while a few are noticed in the suburban areas. The children survive mainly through scavenging and begging.

There is a growing problem of Aids orphans. As soon as the Community Services office of the Municipality is made aware of the existence of orphans efforts are made to establish their age before appropriate measure are undertaken to take them to registered homes.

22.4.3 Old Age Homes

There is one Municipal owned Old Age Home in Victoria Falls catering for the elderly people in the town. The home is registered as a welfare organisation. At the time of the survey there were 17 inmates though it has a capacity to hold 50 people.

The Old Age Home is managed by a committee. The Municipality offers assistance in the form of a salary grant for 3 people who are employed at the home and provides transport as and when needed. The Home receives a grant of $ 30,246-46 per month from the government. However, the Home also relies on fund raising activities to ensure its proper upkeep. The Social Welfare Department inspects the Home and gives a per capita grant of $150-00 per person.

22.5 Rural Poverty Reduction

The Community Action Project (CAP), which was suspended in 2001 owing to the withdrawal of World Bank funding, was designed to provide resources to the poorest communities within the 12 poorest districts of the country. It began operating in 1999. Hwange district was one of the recipient districts and a Poverty Alleviation Plan (PAP) officer was based with the RDC. Poor communities were encouraged to put forward proposals in various categories of social assets and environment. These were then assessed, and if successful, grants were given to complement the communities' own inputs. Most of the first wave of projects were in the area of improving social assets such as schools and clinics, with some also upgrading short stretches of rural roads.

22.6 The Role of Non Governmental Organisations and the Community

Non Governmental Organisations (NGOs) play an important implementation role in social welfare. These organisations are funding various projects in the city under the Poverty Alleviation Programme. Some NGO's train and monitor self help groups, fund upcoming

community projects, link new entrepreneurs with major finance houses and provide welfare to the needy. The target population for all these organisations is women, school leavers, street children, existing and potential entrepreneurs, the underprivileged, co-operatives, schools and the unemployed.

Community-based initiatives in the Plan Area are being undertaken through the child welfare programme. This mainly consists of a task force headed by the Community Services Officer whose sole purpose is to identify children in extremely difficult circumstances and recommend appropriate measures to be undertaken to improve their welfare. The task force undertakes fund raising measures, which are aimed at sending the identified cases to school. They liaise with the headmasters and make appropriate arrangements regarding the payment of school fees. The community task force has been working in collaboration with an attached social worker from the United Kingdom who has assisted in fund raising measures.

The Child Welfare Forum has proved to be an active task force in the Plan Area with regards to children's welfare. They have been in a position to assist several children in terms of school fees without any assistance from the Department of Social Welfare. However, there are some cases such as street kids and orphans where they need the Department's assistance as they do not have appropriate institutions to keep the children.

In the communal area especially in Chidobe ward a Child Welfare task force through Chief Mvutu is also very active. Children in the most difficult circumstances have been identified and the chief working in collaboration with the community, headman etc have made some recommendation to the Department of Social Welfare about the children whom they feel need assistance. Plans are at an advanced stage for the construction of an orphanage through the Child Welfare Forum in Chidobe ward. $600,000 has been raised so far for the project.

22.7 Key Issues

- The levels of poverty throughout the Plan Area are extreme and affect the vast majority of residents.
- The provision for social welfare support by the Government and local authorities is wholly inadequate to meet need and only assist a small number of people. In 2000 the total welfare payments made to the whole of the Plan Area was Z$ 20,000.
- Despite the knowledge that few people succeed in benefiting from welfare there is an increase in the number of people seeking social welfare assistance.
- The government has been forced to abandon the Social Adjustment Fund (SDF), which was the main support plank for those who suffered due to the introduction of ESAP. In its place it has introduced programmes such as Enhanced Social Protection Strategy, Basic Educational Assistance Module (BEAM) and Children in extremely difficult circumstances (CEDC) to assist the underprivileged in terms of school fees, uniforms etc.

- Some welfare programmes have been decentralised to Local Authorities who have to work closely with School Development Committees, Councillors and other people from the community.
- The Local Authority has a Community Services Department, which is working closely with the Department of Social Welfare.
- The Old Age home on Victoria Falls is under utilised at the moment. It has a capacity of 50 but there are only 17 residents.

23. RECREATION & COMMUNITY FACILITIES ,

23.1 Introduction

This chapter seeks to cover the following types of facilities: community, recreational and entertainment. There are no hard and fast boundaries between these categories but they all tend to refer to activities that take place as part of people's leisure time.

Community facilities for the majority of the urban and rural population of the Plan Area are weak and in many areas non-existent. Where they do exist they are usually operated by the local authority. On the other hand there is a considerable variety of recreational and entertainment facilities within Victoria Falls. But they are generally geared to the tourist and the better-off residents. They tend to be private sector owned.

23.2 Urban Community Facilities

Community facilities are meant to encompass such things as libraries, community halls, churches, youth clubs and the like. There are very few community halls, youth clubs and libraries in the high density areas, but many churches. Indeed, in many ways the churches act as the key element in community life, although there are many different faiths and sects. The Town has only one Community Hall situated in Chinotimba. It is used for community functions such as meetings, weddings and other social gatherings. The Community Hall was originally used as an open-air cinema in the 1970s and early 1980s. No improvements have been undertaken and it is still not roofed. The hall has a sitting capacity of about 1000.

Apart from staging soccer matches, the Stadium, which is owned by the Municipality, is used for the larger community events, such as political rallies or large music concerts.

The Municipality, with the support of the community, operates a subscription public library in the town centre. A library is also planned for Chinotimba, where a stand has been reserved.

A Youth Club is planned for Mkhosana. The local authority will provide the site, which the community are then expected to build and operate.

23.3 Urban Recreational Facilities

Recreational activities covers both passive and active pursuits. Passive recreation mainly involves the enjoyment of sitting and walking in parks. Active recreation embraces a much wider spectrum of activity from children's playgrounds to all manner of sports.

Whilst Victoria Falls is endowed with a lot of Public Opens Space very little of it is managed as park areas, where people can sit and stroll. The CHOGM Park, opposite the Sprayview Motel, was opened in 1992 and is the first real public park in Victoria Falls. The NRZ has recently improved and managed the open area around the railway line and Station but it is not a public park as such. Similarly there is a small aloe garden opposite the Rainbow Hotel, that people can walk in, but it is not a public park and this use is temporary.

The shortage of public open space, which may be used for playing fields was indicated as a major issue during the course of the study. In addition, it was noted that the open spaces are being used for other uses e.g. informal settlements. There is need to ensure that park development is encouraged in the new residential areas such as Mkhosana and the proposed medium density areas as such facilities constitute an important recreational activity.

23.3.1 Urban Sports Facilities

Access to urban sports facilities is largely determined by where you live, itself a manifestation of social class. The large majority of residents, who live in the high density suburbs cannot afford sports that involve expensive equipment or entrance fees. They tend therefore to be limited to playing and watching football. In addition, there is some access to basketball and tennis, through sponsored programmes.

For the better-off it is possible to access most sports, including golf, boating, rugby, tennis, swimming, shooting and so on. Some of these facilities are managed through local community-owned clubs, such as the Victoria Falls Boating Club and others are owned by local hotels.

There are four formal soccer fields in Victoria Falls, owned and maintained by the Municpality. These are: Chinotimba stadium, which is the largest and most popular; the Victoria Falls Social Club stadium; one near Chinotimba clinic; and one next to the VID premises in Mkhosana. Another soccer field is to be found near the golf course opposite Inyathi Valley Motel. This is an informal facility.

Chinotimba stadium is mainly used by Intundla a football team, which is in Division One in the national leagues and for other functions such as state functions. Chinotimba Stadium is fully patronised for soccer matches and is the most important recreational activity for the majority of people in the town. The Falls Club is also a popular field, being used for competitive soccer matches by some Division Two teams. The soccer field near Chinotimba Clinic is being used by Chinotimba Primary School pupils for their various sporting activities as well as by other members of the community, whilst the soccer field in Mkhosana is used by members of the community. The other soccer fields are used for practice sessions by the established soccer teams as well as for social soccer.

There is no cricket or hockey pitch in the town at the moment. However, land has been reserved for the development of a cricket pitch in the town, pending the availability of funds.

The Victoria Sports Club, owned by the Municipality, has been transformed into the Zambezi Sports Club and considerable work has gone into reviving sports facilities there. The club offers tennis, basketball, volley ball and is renovating the swimming pool. Many of these facilities are not fully utilised and more could be done to promote and attract participants.

There is a Municipal swimming pool in Chinotimba, near to the stadium. Charges for swimming are $15-00 for adults and $10-00 for children during the day. Evening swimming is undertaken after 6 p.m. and the cost is $20-00 for adults

In the low density areas some residents have their own private swimming pools. The hotels also have swimming pools for their guests.

There is a private golf course in Victoria Falls situated at the Elephant Hills Intercontinental Hotel, who own and operate the facility. The course length is 6,205 m and occupies an area of about 120 hectares. Both hotel guests and local residents use the facility. About 70 golf caddies are contracted to the golf club. The usage charges are $730 per day for Victoria Falls residents and $550 for hotel guests. Annual membership is $ 6,000.

23.4 Urban Entertainment Facilities

As a tourist town Victoria Falls is geared to entertainment for the visitor, which the residents can also access, by and large, if they have the resources to do so. Entertainment facilities for the urban poor are poorly developed, largely due to the lack of disposable incomes that might support ventures that are privately operated.

Tourist entertainment facilities include casinos, restaurants, night clubs and cultural dance shows. All these facilities have both visitors and the better-off residents as clients. Casinos attract a range of people, from visitors to residents and in some cases the less well-off, who can ill afford to gamble but find the attraction irresistible.

There are six night-clubs within the Municipal Area. Three of them: Crock Rock, Explorers and Bed Hogs are located in the town centre. Wild Thing is located at the Kingdom Hotel, Sprayview night-club is located at Sprayview Hotel and Downtime is located at Ilala lodge.

One of the most popular entertainment facilities for the majority of residents is drinking and they are catered for by a large beer garden, which is jointly run by the Municipality and Ingwebu breweries. The beerhall is located in Old Chinotimba near the vegetable market along Chinotimba road. In addition, there is a tavern near Chinotimba bus terminus, operated in the

same fashion as the beerhall. The Zambezi Sports Club operates a popular, up market bar on a commercial basis through a license granted by the Municipality.

Efforts are being made to resuscitate the cinema in Chinotimba by leasing it to an entrepreneur. The unavailability of cinemas has promoted the emergence of video clubs as several people are now operating videos from their homes.

23.5 Community, Recreational and Entertainment Facilities in the remainder of the Plan area

Community and recreational facilities are very scarce in the rural areas. There are no community halls and few church buildings. But, the community is able to meet in schools and, weather permitting, in the open air. Churches are very active in the communal areas but most are poor and hold their services in the open.

The Rural District Council operates one beerhall in Kachecheti. Private operators have two bottle stores in Kachecheti ward as well as six in Chidobe ward. Whilst these latter are private enterprises they tend to act as focal points within the community.

There is a dearth of sporting facilities in the Communal Areas. Schools will usually have a football pitch, of poor quality, that the community also uses. Football can and is played in any open area, usually with a ball made of plastic bags.

23.6 Key Issues

- In general there is a lack of all types of community and recreational facilities for the residents of both the urban and rural areas. The problem is acute in the high-density areas of the town.
- The quality of hotels and lodges in Victoria Falls is very good and the better-off residents in the town can access many different sports and recreational facilities.

24. CEMETERIES

24.1 Introduction

Over the years, Victoria Falls has experienced an increase in death rates, which may be largely attributed to the AIDS pandemic and malaria. Increased death rates necessitate the careful consideration of providing adequate land for burial purposes for the duration of the Master Plan period. This is essentially an urban problem as burial in the rural areas is usually undertaken at the homestead.

24.2 Cemeteries

There are three existing cemeteries in the town. However, of these only one cemetery is fully operational. The cemetery near the industrial area, which was originally designated for high-income earners, is less active. It mainly caters for people who have already bought the gravesites in advance.

The cemetery, which is actively being utilised at the moment, is the one, which is south of the Hospital in Chinotimba. This cemetery is meant to cater for all residents in the town low and high-income earners. This is a change from the previous planning practices whereby cemeteries were designated for different races and/or low and high-income earners.

The other cemetery, which is no longer operational, is located along Pioneer Road near some semi-formal structures, which were constructed by Zimbabwe Sun. The cemetery was last used about 10 years ago and is now full. Two other disused cemeteries have also been identified, as mentioned in Chapter 6.

There is no crematorium in the town. The table below shows data on cemeteries available and their land areas.

Table 55: Location and area of Cemeteries in Plan Area

Name of cemetery	Land Area (ha)	Location (Suburb)	Status
Chinotimba	1	Chinotimba (near the Free town)	Very active cemetery Most burial are being undertaken at the cemetery
Chinotimba	0.3	Chinotimba (opposite the industrial area along Pioneer road	Less active. Grave pits have been bought in advance less than 10 grave pits left at this cemetery
Chinotimba	1	Chinotimba (near the Zimbabwe sun semi-formal structures)	The cemetery is full its no longer operational.

Source: PlanAfric

24.3 Future requirements for Cemeteries

The cemetery near the industrial area is technically full. The last burial at the cemetery was in November 2000 and the few remaining reserved sites may last another two years or so.

The operational cemetery is nearly full. On average 5 burials are undertaken at the cemetery per day. On this basis the life span of the cemetery is less than 2 years. However, there is a possibility of extending the cemetery towards southwards. The Municipality is considering how best to do this.

There is no doubt that the current death rate within the town will continue to have serious implications on existing level of cemetery provision in Victoria Falls. There is need for land to be identified and set aside for cemetery use during the plan period. In addition to the cemetery due consideration has to be given to the provision of a crematoria in the town, although it is unlikely that there would be sufficient demand for such a facility to justify the expense.

24.4 Key Issues

- There are 2 operational cemeteries in Victoria Falls at the moment.
- The new cemetery site near the Hospital is fast filling up and there are plans to extend it.
- Appropriate land for additional cemeteries will need to be identified during the plan period.

25. THE INSTITUTIONAL FRAMEWORK AND MANAGEMENT CAPACITY

Acknowledgement: *This chapter utilises and reproduces material from the report, Assessment and Plan for Human Resources and Institutional Capacities for Stakeholders in the Victoria Falls Master Plan Project (January 2001), by K2-TechTop Consultants.*

25.1 Introduction

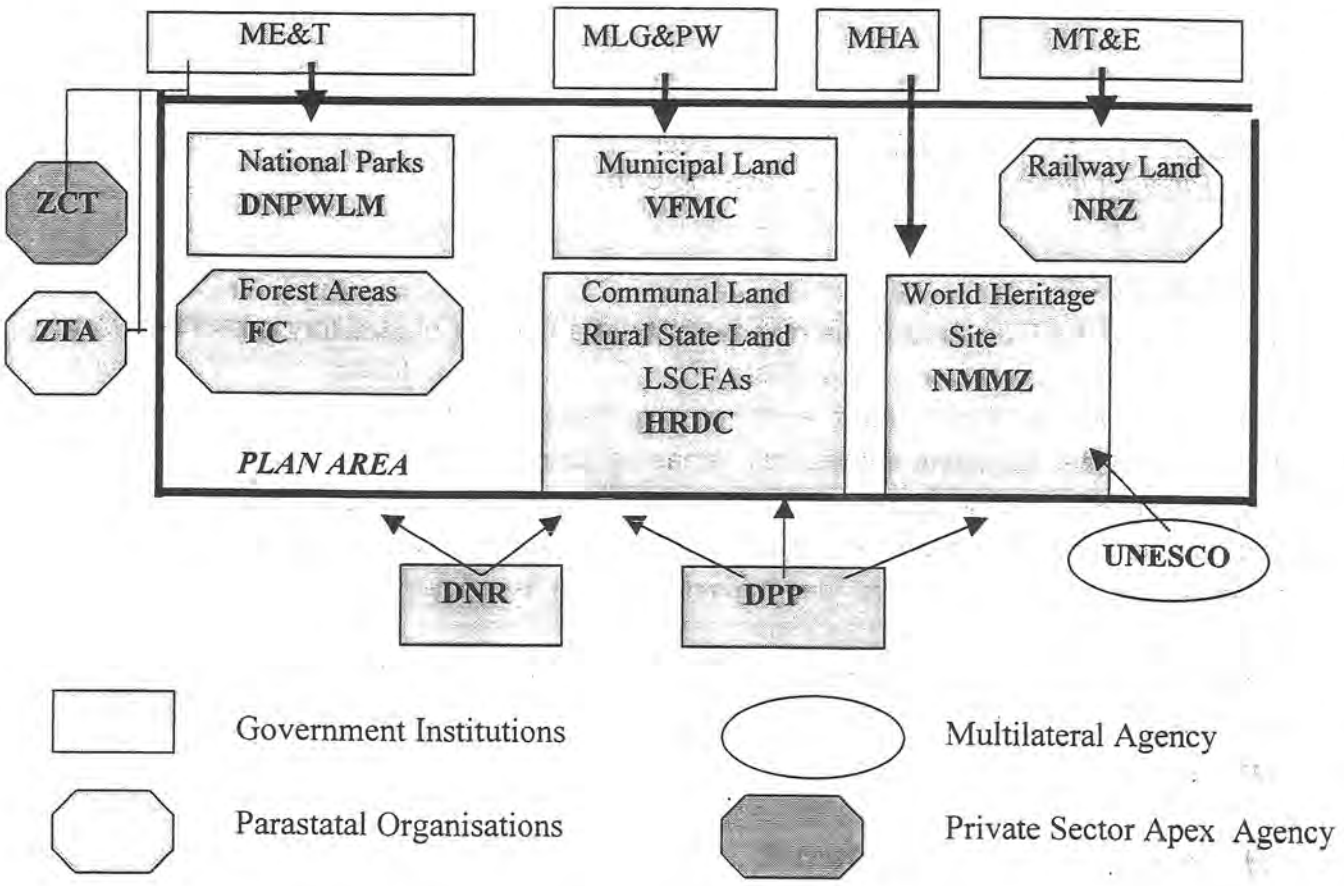
The management of the Plan Area is the responsibility of a number of statutory authorities who are brought together in the Victoria Falls Master Plan Combination Authority (CA) to undertake and implement the Master Plan. These agencies also have independent responsibilities for a range of administrative functions within their areas of jurisdiction, particularly the two local authorities, Victoria Falls Municipal Council (VFMC) and Hwange Rural District Council (HRDC). In addition, the National Railways of Zimbabwe (NRZ), although not a member of the CA is an owner of land in the Plan Area and provides housing to some its employees.

This chapter is concerned to establish the key areas of responsibility of the various managing agencies in the Plan Area, how they interact and their capacity to fulfil their obligations. Issues of financial resources are dealt with in the next chapter.

25.2 The Institutional Framework

The generalised institutional framework for the management of the Plan Area is shown in figure 9 below. The framework presented indicates those agencies that have a direct responsibility for managing land within the Plan Area, delineated within the heavy box, central government ministries and departments that have important functions and responsibilities advising and executing statutory functions with or on behalf of the above, and those agencies that have overviews or functions that affect the Plan Area. A more specific description and analysis of the role and mandates of these various institutions is given below. The local authorities are described first as they have both a land management function and a broader administrative role for the people they represent.

Fig 8: The Generalised Institutional Framework for the Master Plan Area



25.3 Victoria Falls Municipal Council

Victoria Falls Municipal Council (VFMC) is an Urban Council in terms of the Urban Councils Act. As such it has considerable autonomy to manage land and services within its area of jurisdiction. The Council is an elected, corporate body, headed by an elected Executive Mayor. The Council conducts its business through the committee system. There are five committees to oversee the operations of the various departments. The composition and functions of the Executive Committee are prescribed in the Urban Councils Act as the principal committee of Council. The other committees are (a) Finance, Development, Legal and Manpower Committee, (b) the Education, Health, Housing and Community Services Committee, (c) the Environmental Management and Technical Services Committee, and (d) the Audit Committee. Each committee meets as frequently as its business requires, and at least once a month. The full Council usually meets less regularly. Resolutions taken by a committee are presented to the full Council for approval. Thus, the most important committees with respect to the Master Plan Project are (a) the Executive Committee, (b) the Finance Committee (in terms of preparation of annual budget estimates, budget prioritisation of activities and manpower and human resource development planning), and (c) the Environmental Management and Technical Services Committee (for plan approval and development control and for environmental protection).

Most of the councillors on the Victoria Falls Council are relatively new, having been elected into office during the municipal election held towards the end of 1999. Much of the last year has therefore been a learning experience for them. There are no female members of Council at present.

25.3.1 Human Resources Profile of the Victoria Falls Municipality

The Municipality is divided into four departments, each under a head of department (HOD). The HODs report to the Town Clerk who is the Chief Executive Officer. The four departments are: Administration, Treasury, Engineering Services, and Housing and Community Services. The municipality has a total establishment of 489, out of which 365 (75%) were filled at the time of the study. The largest numbers are employed in the Department of Engineering Services (36% of the total number employed) and the Department of Housing and Community Services (37%). Central Administration employs 23%, while the Town Treasurer's Department has the smallest number, with 4% of the employees.

The municipality has had a fairly turbulent experience in the area of human resources during the past few years. The Town Clerk was suspended by the previous Council and only resumed his duties towards the end of 1999. For a long while, the three departments of Housing and Community Services, Treasury and Engineering Services did not have substantive heads. According to the Town Clerk, the town faces major problems in recruiting qualified and experienced personnel for senior management positions because of its isolation (Bulawayo, the nearest major city, is some 440 km away), hot climate for much of the year, and limited social services, especially for families. There has been a high turnover of staff, especially in senior management and technical positions. Some staff leave their families in Bulawayo and elsewhere when they take up appointments in Victoria Falls, only to resign as soon as opportunities arise elsewhere. Because Victoria Falls is a small local authority, it cannot offer highly competitive remuneration packages for senior staff as an inducement for them to stay. However, all departments now have substantive heads who have been appointed during the past year.

With respect to gender, none of the HODs are female. Female employees are found in the secretarial/clerical grades within the administrative and technical branches of the municipality, and among the nursing and teaching staff in the Department of Housing and Community Services.

The departments that are most crucial for the preparation, implementation and monitoring of the Master Plan and local development plans are the Treasury and Engineering Services. The Treasury, under the Town Treasurer, is mandated in terms of the Urban Councils Act (Chapter 29:15) with the collection, management and application of revenue from the residents and ratepayers within the jurisdiction of the local authority. Efficient revenue collection, management and cost control are crucial for the planned development of the town, the provision of services

and infrastructure to meet the needs of the ratepayers and residents. It is therefore beyond question that the human resources and technical capacities of the Town Treasurer's Department will be critical to the success of the Master Plan Project.

The report by the municipal management consultants identified several shortcomings within the Town Treasurer's Department that contribute to inefficient revenue collection. The major problem facing the department is that of insufficient and inadequately qualified personnel to handle activities such as billing, including low computer literacy skills to enable them to use the computerised accounting system (PROMUN) that has been installed in all urban local authorities. At present, the department has 14 people in post, including clerical staff and water meter readers. Any interventions to improve the human resources capacity of the municipality would need to include the accounting staff in the department.

The Engineering Services Department is responsible for providing the technical expertise to the municipality in areas such as water and sewerage reticulation, street lighting, waste management and refuse collection, road construction and maintenance, and, working together with the Department of Physical Planning, town planning. It is therefore a critical department in the successful preparation, implementation and monitoring of the Master Plan and, thereafter, the preparation and enforcement of all local development plans within the municipal area.

To date, the department has not been able to recruit qualified and experienced professional engineers and planners to fill senior positions. One would expect the department to have at least one civil engineer and one electrical engineer on the staff, both of whom would be registered members of the Zimbabwe Institute of Engineers (ZIE). Furthermore, with its new status as a municipality, there is need for a professional planner registered with the Zimbabwe Institute of Regional and Urban Planners (ZIRUP), together with technician level support staff. The town does not have any of these senior professionals at present, all of which will be important to the success of the Master Plan Project. Moreover, the recently appointed head of the department, while having over 10 years of experience, only has a technician's diploma in civil engineering.

The Administration Department is headed by the Principal Administration Officer who, in turn, reports to the Town Clerk like the other heads of departments. The Administration Department provides administrative support for the smooth running of the municipality. The principal role of the Principal Administration Officer and the Town Clerk in the preparation, implementation and monitoring of the Master Plan Project will be that of co-ordination and liaison with other institutions and government departments through the Ministry of Local Government. Thus, the main contribution of staff in the department to the Master Plan Project is to ensure teamwork by all concerned. Both the Town Clerk and the head of the Administration Department are substantive appointees. The Town Clerk has worked for Victoria Falls Municipality since 1994. Other senior administrative appointees immediately below the Principal Administration Officer are the Personnel Officer and the Committee Secretary. The latter is responsible for providing secretarial services at meetings of the Council and the management team.

The Department of Housing and Community Services has the most intractable problems in terms of meeting the social and environmental needs of the community. It is headed by a Director who was appointed in March 2000. He previously worked for the Ministry of Local Government for some 10 years and is therefore familiar with local government procedures and problems. There is also an Assistant Director who reports to the Director. The department employs some 180 people. It is responsible for the administration of the low income suburbs of Chinotimba and Mkhosana, social welfare services, the administration and maintenance of recreational and sporting facilities, the two municipal schools, municipal clinic and ambulance services, the municipal security unit, and environmental health and sanitation services. As a department, it is more likely to be a major beneficiary of the Master Plan Project in terms of an improved social and economic environment for the residents and ratepayers.

25.4 Hwange Rural District Council

Local government administration and management in the rural areas is regulated under the Rural District Councils Act (Chapter 29:13). Up until 1994 there were two systems of local government in the rural areas and their legacy is still evident today. The commercial farming areas were administered under the Rural Councils Act while the communal lands were administered under the District Councils Act. The two structures were amalgamated in 1994 six years after the Rural District Councils Act was passed. However, although it is now almost a decade since amalgamation, problems arising from the merger of the two systems still exist on the ground.

The Hwange Rural District Council comprises 22 councillors, of whom two are female. The Council operates on a committee system, with a committee being responsible for supervising the various departmental activities. There are five committees: (a) Finance, (b) Natural Resources, (c) Roads and Planning, (d) Social Services, and (e) Rural District Development Committee. The two female councillors chair two of the Council's four committees, namely those of Finance and Social Services. As in Victoria Falls, each committee meets as frequently as its business requires, and usually once every month in the case of the Finance Committee and once every two months for the other committees. The full Council usually meets four times a year. With respect to the Master Plan Project, the most important committees are the Finance Committee (in terms of budget preparation and financial prioritisation of projects) and the Roads and Planning Committee (for plan approval and development control). It was not immediately apparent from the committee structure which one was responsible for human resource development matters.

25.4.1 Human Resources Profile of the Hwange Rural District Council

Hwange Rural District Council is divided into four departments, (a) Administration, (b) Finance, (c) Social Services, and (d) Projects. Each department is headed by an Executive Officer, who in turn reports to the Chief Executive Officer. Two externally funded projects operate as separate

departments within the local authority, namely the Poverty Alleviation Action Programme (PAAP) Office (now ended) and CAMPFIRE. The Council operates from three locations in the district. The head office is at Lukosi near the town of Hwange, with two sub-offices at Gwaai and Dete. The two sub-offices are intended to reduce travel costs for the residents who would otherwise have to travel long distances to the Council head office for services.

Hwange Rural District Council has an establishment of 74 permanent staff. However, it hires temporary workers as and when necessary, for instance for road maintenance works. Two-fifths of the permanent employees are in the Central Administration, 32% in Social Welfare, and 12% under CAMPFIRE. The Finance Department has an establishment of four while another five are in Projects. The Council's Chief Executive Officer is head of the management team. He has been with the Council for about a year. At present, only two heads of departments are substantive, in the Administration and Projects Departments. At the time of the survey, the Council was in the process of appointing a new head for the Department of Social Services. The Council has operated without a substantive Treasurer since 1997 when the previous incumbent was suspended from duty. The case dragged on for some time and it was not until a few months ago that the matter was finally resolved.

The three senior managers currently in post are all males. At present, females on the staff only occupy secretarial and clerical positions.

The Finance and Projects Departments are the most crucial to the success of the Master Plan Project. Unfortunately, the Treasury faces serious problems of staffing. Following the suspension of the previous Treasurer in 1997, the Council could not make a replacement appointment until the matter had been finalised through the Labour Tribunal and the courts. A junior officer has been acting as the Council Treasurer for the past three years. This has compromised revenue collection and financial management within the Council, its books have not been audited by external auditors for several years, in contravention of the Rural District Councils Act (Chapter 29:13). At the time of the fieldwork, there were only three officers in post in the Treasury Department, including the Acting Treasurer. The fourth officer is away on 2-years study leave at the Domboshawa National Training Centre until December 2001.

The Projects Department is headed by the Executive Officer (Projects). The department is responsible for, among other things, roads and other infrastructural works and for planning. The head of the department has qualifications in bookkeeping, not in planning or any engineering field. As in Victoria Falls, there is no qualified engineer or planner in the department. To date, the Council has relied on the relevant government departments for technical expertise, such as the Ministry of Transport on road construction matters and the Department of Physical Planning on planning matters. Development proposals and planning approval are processed through the office of the Executive Officer (Projects). As officers in the technical departments of central government increasingly face problems of transport and lack of equipment and resources, this has affected the level of liaison with, and the amount of support to, the Council.

25.5 Department of National Parks and Wildlife Management

The Department of National Parks and Wildlife Management (DNPWLM) is responsible for managing the two National Parks in the Plan Area. Their role in this regard is defined in the Parks and Wildlife Act (PWLA). The key mandates for managing National Parks are:

- to preserve and protect the natural landscape and scenery therein and to preserve and protect wildlife and plants and the natural ecological stability of wildlife and plant communities therein for the enjoyment, education and inspiration of the public, and
- To control, manage and maintain national parks for the purposes set out above and as far as reasonable, practicable and compatible with such purposes, to provide facilities for visitors thereto.

The DNPWLM is a department within the Ministry of Environment and Tourism (MET). The responsibility for ensuring the PWLA is upheld lies with the National Parks Board, appointed by the Minister. The Minister acts as a local planning authority in terms of Parts III and IV of the RTCPA for the two National Parks within the Plan Area, controlling development and undertaking Local Development Plans if they so wish.

Each National Park is required to produce a five-year Management Plan. The Zambezi and Victoria Falls National Parks have combined to produce one plan. The plan acts as a framework for more detailed Annual Plans and sets out the key strategies and approaches that will be adopted in managing the park.

The Management Plans are produced by a Provincial Planning team, headed by the Provincial Officer and supported by a Central Planning team. In some cases consultants are also brought in to provide assistance.

25.5.1 Human Resource Profile of the DNPWLM

The organisation of the DNPWLM is based upon national, provincial and Park levels. The Department is currently undergoing a re-structuring exercise. In the new arrangements the national level, based in Harare, will have four main departments: Finance, Administration and Manpower Development; Management and Operations; Conservation and Research; and Investigations. The planning and management function, with direct links to the provinces and the operations of individual parks will be the responsibility of the Department of Management and Operations. A new provincial structure will be headed by a National Parks Provincial Officer who will manage 8 technical and professional departments. One of those departments will be responsible for the individual park wardens and the general management of the estate.

Organisation at Parks or Stations will be headed as now with a Park Warden and will comprise four departments, terrestrial ecology, aquatic ecology, Park management and extension services.

The DNPWLM has experienced major problems at senior management level, with suspensions, resignations and internal disputes. This has affected the morale of the whole department. But it would now appear that the Department is becoming stable and effecting important management changes. The capacity of the DNPWLM to provide planning expertise, both in terms of its own estate and when co-ordinating with other agencies has long been a matter of concern. However, there are signs that these issues are being addressed. The new style of Park Management Plans indicates an enhanced planning capacity. Support from the World Bank with the *Parks Rehabilitation and Conservation Project* appears to have had an important impact on both planning and capacity to implement much needed improvements to park infrastructure.

25.6 Forestry Commission

The Forestry Commission (FC) is a parastatal organisation established under the Forest Act. Its parent ministry is the MET, but a Forestry Board provides the primary source of policy and management guidance. The FC is the executive arm of the Commission and is headed by a General Manager who presides over several departments. From the point of view of the Plan Area the key departments are the Indigenous Resources Division, which has responsibility for Fuller Forest and Mvutu Forest, the Forestry Extension Division which operates in RDC areas and Ngamo Safaris, a commercial entity of the FC which manages a number of tourist facilities. Within the Plan Area Ngamo Safaris operates Jafuta Lodge in Fuller forest. The key duties of the FC their responsibilities in the Plan Area are:

- To control, manage and exploit State forests, plantations and forest nurseries belonging to the State,
- The survey of forest resources of Zimbabwe,
- Advice and propaganda on all forestry matters,
- Conducting research and investigations into all matters pertaining to forestry and forest products.
- The investigation of any matter relating to the use or occupation of the Forest estate.

From the perspective of the RTCPA, Fuller Forest was specifically excluded as an area where the FC (through the Minister) could act as a Local Planning Authority in terms of Parts III and IV of the Act. It is not known why this Forest was excluded.

Each Forest Area produces a Management Plan. A combined plan has been prepared for Fuller and Mvutu Forests. The details of the plan are dealt with under Chapter 6 in Part B. The planning process is undertaken by the IRD in the FC, with the support of the other divisions in the FC. The Fuller Management Plan is currently being revised.

25.6.1 Human Resource Profile of the Forestry Commission

The two main divisions of the FC concerned with planning and management issues in the Plan Area are the Indigenous Resources Department (IRD) and the Forestry Extension Services (FES). The Research department also has an interest in so far as maintaining the bio-diversity of forest resources are concerned and Ngamo Safaris have an interest in Jafuta Lodge and other future potential tourist projects.

All of the above departments have their headquarters in Bulawayo. The IRD department has the responsibility for the planning and management functions relevant to the Plan Area and these are pursued by the headquarters team in Bulawayo in coordination with the locally based teams. The IRD has a Northern Area Management Team located in the Fuller Forest, which also houses FES managers.

The Forestry Extension Services (FES) has a Provincial Officer based in Bulawayo and Extension Workers based in each District. The FES district officer is based in Lukosi and is expected to cover the whole Hwange district. This is clearly a difficult task and much of the area cannot be visited on a regular basis.

25.7 National Museums and Monuments of Zimbabwe

Through the National Museums and Mounments Act 25:11 of 1972, the National Museums and Monuments of Zimbabwe (NMMZ), a parastatal body under the Ministry of Home Affairs, is the sole custodian of Zimbabwe's cultural heritage.

It is therefore responsible for:

- Identifying, documenting and preserving archaeological sites,
- Instituting conservation of archaeological sites,
- Recommending the proclamation of sites and monuments as national monuments,
- Administering and maintaining museums and monuments, and
- Maintaining a register and protecting all structures and monuments.

Within the Plan Area there is one National Monument, the Victoria Falls, the first such proclaimed National Monument in the country (1937). In addition there are four historic buidlings/structures in terms of the Act: part of the Victoria Falls Hotel; Clarks Curio Shop; the DNPWLM office; and Victoria Falls Bridge. There are also a number of archaeological sites.

The NMMZ is also a responsible agency in terms of World Heritage Sites (WHS). In this regard it liaises with the DNPWLM and with UNESCO who, after due consideration confer WH status and also have the power to remove such a status. The Victoria Falls WHS is the joint responsibility of Zimbabwe and Zambia. ZNMM work closely with the National Heritage

Conservation Commission (NHCC) in Livingstone to ensure a collaborative approach to their roles either side of the Zambezi.

However, the management of the WHS in Zimbabwe is complex as it involves both the NMMZ and the DNPWLM. This is an issue that is discussed further.

25.7.1 Human Resource Profile of the NMMZ

The Department of National Museums and Monuments (DNMM), is essentially divided into Research and Monuments divisions. The research side is concerned with maintaining museum collections and developing increased understanding through research. It is also concerned with education through interpretative skills. The Monuments division is concerned with the protection and management of monuments under its care, the principal one being Great Zimbabwe.

The NMMZ has five regions, each headed by a Regional Director. The Plan Area falls under the Western Region with its headquarters in Bulawayo at the Natural History Museum. The role of the NNMZ in the Plan Area is to protect existing National Monuments, manage, with their counterparts in Zambia, the World Heritage Site, protect historical buildings and to research and protect any other archaeological, cultural and historical site in the area. However, staff based at Bulawayo, are expected to perform all of these functions. The capacity to concentrate upon any one issue in the Plan Area is clearly limited. It is acknowledged that the history of the area is under researched and important material may have been destroyed in the past by developers whose activities were not monitored. There are no NMMZ staff in Victoria Falls and if responsibility for managing the Victoria Falls Monument area, currently under the DNPWLM should fall to NMMZ, they will have to establish an office and appropriate staff, or have an arrangement to contract out to the management.

25.8 National Railways of Zimbabwe

The National Railways of Zimbabwe (NRZ) can rightly lay claim to being the first management agency in the Plan Area. However, by the 1920s their role was superseded by other agencies. Nevertheless the NRZ retains responsibility for its own land holding, which cuts through the Plan Area and occupies critical central space.

The NRZ is a parastatal organisation that relies for its mandate on the National Railways Act. Its parent ministry is the Ministry of Transport and Energy (MT&E). The primary duties bestowed upon the NRZ are to operate a national railway system. It was provided with land solely to effect that mandate and all uses on railway land were supposed to be operationally linked to railway activities. In this regard it was able to build houses for its workers and provide ancillary services such as water, sewage and electricity. In a recent extension to the notion of ancillary, the NRZ has leased railway land in Victoria Falls to developers, for commercial purposes. In the broadest sense this move is justified in terms of helping the NRZ to operate a cost-effective service by

maximising its resources. This has already had important ramifications upon Victoria Falls and is an important factor for future consideration. The MT&E is not a planning authority and therefore any proposed development on railway land should be considered by the appropriate local planning authority, either the VFMC or HRDC and involve the DPP.

25.8.1 Human Resource Profile of the NRZ

The NRZ, with its headquarters in Bulawayo, operates through four service divisions: Finance and Administration; Operations; Technical Services; and Marketing. Each division is headed by an Assistant General Manager, who in turn reports to the General Manager. The four divisions are in turn split into 16 branches, each headed by a Branch Head.

The Chief Planning Manager (Corporate Planning Branch) is responsible for, among other things, infrastructure and land use planning to ensure that land holdings are as productive as possible and to seek ways of maximising revenue accruing from the respective land uses. In this regard, he will seek to interest potential developers and plan and negotiate the general land uses, spatial and servicing arrangements. The Senior Planning Engineer and the Planning Engineer in the Projects Section are involved in the project on a regular basis.

The Civil Engineering Branch is responsible for the development of infrastructure and managing the property portfolio, with the Electrical, Mechanical and Signals and Telecommunications Branches providing support services. The Civil Engineering Branch's Estates Section has responsibility for assets inventories, leases and contract negotiations and management.

Day to day management of the Victoria Falls Station and Environs is under the purview of the Station Manager, who is actually the man on the ground, assisted by a staff contingent of 53 employees, who man the following: passenger and freight services provision; infrastructure maintenance and repairs; administrative duties and security provision; and parcels handling, health and safety. When need arises extra manpower is seconded from Headquarters to Victoria Falls to implement major new works and/or emergency major maintenance or repair works, inclusive of planning and land management issues.

25.9 Department of Physical Planning

The Department of Physical Planning (DPP) is a department within the Ministry of Local Government and Public Works (MLGPW). It derives its mandate from the RTCPA. The DPP's overall role is to ensure that the provisions of the RTCPA are undertaken and to provide guidance to local planning authorities on both general policy matters and specific technical issues. In the case of rural areas the DPP has acted as the local planning authority in terms of Part III of the Act (Master and Local Plans) and given strong support in terms of Part IV (Development Control). DPP is seeking to end this role and is encouraging RDCs to recruit Town Planners so that they might become full local planning authorities.

The Department is organised with a central headquarters and eight provincial offices. Each province is headed by a Provincial Planning Officer (PPO) who has responsibility for ensuring that the provisions of the RTCPA are complied with throughout the province. Where appropriate the PPO provides advice and guidance to local planning authorities. Since the DPP is still responsible for providing services to RDCs in terms of Parts IV and V of the Act individual planning officers in the provincial office have responsibility for certain RDC areas.

In the case of this Master Plan exercise the DPP is playing a leading technical role by managing the process and providing major inputs through its membership of the CA and its lead in the PPTT. The relevant PPO and his staff are based in Bulawayo.

25.9.1 Human Resources Profile in the Department of Physical Planning

The Department of Physical Planning, with its head office in Harare, operates through eight provincial offices countrywide to provide professional and technical planning services to local authorities in accordance with the Regional, Town and Country Planning Act (Chapter 29:12). The two offices that have a direct bearing on the Master Plan project are (a) the office of the Deputy Director (Strategic Planning), based in Harare, and (b) the Matabeleland North Provincial Planning Office. A major problem facing most government departments today is the loss of professional and technical staff, primarily because of low remuneration and poor conditions of service. For its part, government has put restrictions on the recruitment of new staff to fill vacant posts because of budgetary constraints. Consequently, many posts go unfilled for long periods of time. On the other hand, there is scope for a department to transfer people from one office or region/province to another as the need arises. Thus, although staff changes may disrupt the timely preparation and implementation of the Master Plan and cause delays in decision-making, there is greater leeway for accessing professional planning expertise than what is available within the local authorities.

The professional staff establishment in the Matabeleland North office of the Department of Physical Planning comprises the Provincial Chief Planning Officer, who is also the head of the office, plus five planners, supported by six technicians and other support staff. At the time of the survey, the Provincial Chief Planning Officer and four planners were in post. The five professionals in Bulawayo are the ones that are crucial to the success of the project. However, at present, the Provincial Chief Planning Officer, two Senior Town Planning Officers and one Senior Planning Technician are involved in the project on a regular or day-to-day basis. The Bulawayo office will also be responsible for spearheading approval of the Master Plan by the Minister of Local Government and for monitoring its implementation. They will also be responsible for approval and monitoring the local development plans prepared by the relevant local authorities in accordance with the Master Plan. The senior officers at Head Office are mainly responsible for policy matters, with the Provincial Chief Planning Officers reporting to the Director through the Deputy Directors. The two posts of Deputy Director (one for Strategic

Planning and the other for Plan Management) are filled, as is the post of Director of the department. At present, three senior officials (the Director, Deputy Director for Strategic Planning and the Principal Planning Officer) have oversight responsibilities for the Master Plan project. One town planning technician at head office has also been assigned to the project.

25.10 Department of Natural Resources

The Department of Natural Resources (DNR) is a department within the MET. It derives its mandate from the Natural Resources Act (NRA) and its activities are overseen by the Natural Resources Board, which is appointed by the Minister. The chief responsibilities of the DNR are:

- to exercise general supervision over natural resources,
- to stimulate by the dissemination of information etc, a public interest in the conservation and improvement of natural resources,
- to ensure that the provisions of the NRA are complied with.

The NRA is to be superseded by an Environment Act and a Bill has been in circulation for some years. The Bill seeks to broaden and update the NRA in areas of environmental protection. Among other things it will introduce Environmental Planning and the necessity for producing Environmental Impact Assessments (EIAs) for most developments. Environmental planning has been introduced in a number of districts, including Hwange and the outputs are called District Environmental Action Plans (DEAPs). Policy on EIAs has become a national requirement and several EIAs have been undertaken for development within the Plan Area.

The DNR has a Provincial Resources Officer (PRO) and several technical staff based in Bulawayo. They provide overall guidance, research and technical support to districts through a District Resources Officer (DRO). The relevant DRO for the Plan Area is based in Hwange.

25.10.1 Human Resource Profile of the DNR

The DNR human resource availability for the Plan Area has two levels, provincial and district. At the provincial level the department is staffed by a Provincial Officer and several technical staff. The role of the provincial office is to provide the management of district level staff and to conduct research and monitoring activities. They also manage the process of EIAs in the province and make comments on the EIAs when complete. At the district level there is a district NR Officer based at Hwange. His remit is to ensure that the provisions of the NRA are complied with, to liase with any Intensive Conservation Area (ICA) Committees and with the HRDC Conservation Committee. This officer will also monitor the natural resources of the district and recommend action to conserve resources, such as gully reclamation. This officer is also a key member of the District Training Team (DTT) which is active in the DEAP process and other community-based programmes.

In addition, the District NR Officer has to maintain an oversight of natural resource issues and problems in the urban areas. In this case the problem of gully erosion in Chinotimba has been of major concern and involvement of the Department. The list of responsibilities for one officer indicates that the capacity to deal with all issues is severely limited.

25.11 Zimbabwe Tourism Authority

The Zimbabwe Tourist Authority (ZTA) is a public body (parastatal) charged with developing national tourist strategies and the maintenance of appropriate standards. Their presence on the CPPA recognises the fact that Victoria Falls is Zimbabwe's tourism flagship. The ZTA has been charged with producing a National Tourist Strategy, which has the support of the World Bank.

The ZTA used to be the Zimbabwe Tourist Development Corporation, which as well as the general management and overview of the industry, marketing and promotion also held a number of hotels of its own. However, these have since been privatised and the new body, the ZTA is only concerned with marketing, promotion , coordination and collecting the hotel levy. This latter levy is charged on each bedpsace that is let be registered tourist accommodation. The proceeds are intended to assist the ZTA promote Zimbabwe at home and abroad.

The ZTA has a headquarters in Harare and a regional office in Bulawayo. It also operates offices in selected cities overseas.

25.11.1 Human Resource Profile of the ZTA

The ZTA has a main office in Harare. It is headed by a Chief Executive and has important departments in marketing and promotion, research and finance. The research department is responsible for developing the national tourist strategy, which is underway.

The ZTA operates an office in Victoria Falls that is mainly responsible for promotional activity.

25.12 Zimbabwe Council of Tourism

The ZCT is an apex organisation for the tourist industry. It provides the overall co-ordination and representation of the tourist private sector and as such its members include all the various specific sector bodies, such as the Hotel and Restaurant Association of Zimbabwe (HARAZ), the Safari Operators Association (SAO), the Professional Hunters Association (PHA), and others.

25.12.1 Human Resource Profile of the ZCT

The ZCT has a small office in Harare headed by a Chief Executive. Ideally the head office would wish to develop special portfolios for specialist staff in such areas as marketing and

lobbying. The ZCT would also wish to operate a series of regional offices but lacks the resources for this type of structure. It relies on regional representatives to provide the local inputs.

25.13 Other Agencies

25.13.1 Zimbabwe/Zambia Joint Permanent Commission

The Zimbabwe/Zambia Joint Permanent Commission (JPC) is a bilateral arrangement between the two countries for discussing matters of joint concern. It has a number of Technical Committees. Issues of cross border interaction are discussed and the Strategic Environmental Assessment of Developments around Victoria Falls (IUCN, 1996) provided the institutional framework for the study. Part of the agreed conclusion of that study was that Master Plans for the area of the study on both sides of the border (Livingstone and Victoria Falls Combination Area) should be completed. The JPC will, therefore, have an interest in the production of this Master Plan.

25.13.2 Zambezi River Authority

The Zambezi River Authority (ZRA) is a joint Zimbabwe/Zambia parastatal organisation that was originally set up to manage the hydropower emanating from the Kariba Power scheme. Its primary remit is to manage the waters of the Zambezi so as to secure hydropower along its course between the two countries and it is empowered to introduce by-laws in this regard.

25.13.3 Traditional Authorities

The rural communities within the HRDC communal land areas of the Plan Area owe allegiance to a system of traditional leaders whose remit is governed by the Traditional Leaders Act (TRA). The hierarchical arrangement allows for Chiefs, Headmen and Kraalheads who have jurisdiction over a number of matters including land but whose special function is to provide for the protection and pursuance of spiritual; and cultural matters. Within the Plan Area Chief Hwange is the responsible chief for the Communal Land areas.

The TLA will provide for a new system of local community management by establishing Village and Village Assemblies. Whilst these are chaired by traditional leaders they may provide a new forum within which local villagers are able to share ideas and decisions concerning land and natural resource management. The process to bring the now organs into being has been slow and is in part hampered by a lack of resources. Under the new arrangements it is hoped to bring together the traditional structures and the administrative structures established under other legislation such as the Village and Ward Development Committees (VIDCO and WADCO).

25.14 Key Issues

- The Institutional Framework for the Plan Area is complex. There are 6 agencies with responsibility for managing different land areas and they are linked to 4 separate Ministries. The Combination Authority for the Master Plan comprises 9 agencies. This will require a special focus on implementing the Master Plan.
- The NRZ has expanded its activities to develop its land for purposes other than operational uses linked to railways.
- Responsibility for the Victoria Falls Monument area within the Victoria Falls National Park is contested between the DNPWLM and NMMZ.
- The creation of Village and Ward Assemblies has been much delayed. It is not known how they will affect such issues as natural resource management, but the hope is that by giving increased power to villagers to manage these resources for themselves greater protection and conservation will be achieved.
- Victoria Falls Municipality lacks a number of key professional staff that are critical to the planning, development and management of the town. The lack of a civil engineer and a professional planner are serious drawbacks to sustainable management in these areas.
- The VFMC also requires considerable capacity enhancement in the maintenance of good data bases and record keeping. Information systems are poor and there are no established monitoring systems. As a result management lacks effective tools for decision-making.
- HRDC lacks professional staff in the fields of engineering and planning. This weakens their capacity to intervene effectively in development matters and lessens their ability to maintain a sustainable economic and physical infrastructure.
- The District Centre in Lukosi is situated a long way from the people in the Communal Lands of the Plan Area rendering access to officials and the redress of problems more difficult.
- The lack of women councillors on either of the elected local authorities reduces their representative nature and weakens their capacity to draw upon all the talents and skills in their areas. Similarly a lack of women in key executive positions sets a gender imbalance that weakens the councils.
- There is a general weakness in the planning and management capacity of agencies who have to manage large tracts of land in the Plan Area. The FC and NRZ operate from a relatively weak professional base in this regard and have no officials on the ground with this type of responsibility.
- The DNPWLM has lacked planning expertise in the past and has found it difficult to engage in joint planning activities. However, this may be changing as re-organisation takes place and World Bank support enhances management and planning capacity.
- The technical support agencies of DNR and DPP lack the manpower and other resources to provide a full service to the Plan Area. The DNR has only one local officer based some 100 km away and DPP has no locally based officers and lacks capacity to visit the area on a regular basis

- The NMMZ has no locally based staff and lacks the resources to conduct effective research work in the area. There is, consequently, a lack of well founded knowledge of the archaeological heritage in the area. Their capacity to manage and monitor the WHS is also weak. If they are to be given responsibility for managing the Victoria Falls site they will need to enhance their staff and management capacity in situ.

PART F

MANAGING THE AREA

26. FINANCIAL RESPONSIBILITIES AND REVENUE RESOURCES

Acknowledgement: *This chapter utilises and reproduces material from the report, "Municipal Management, Mandates and Revenue Sources in the Victoria Falls Municipality and Hwange Rural District Council" (January 2001), by K2-TechTop Consultants.*

26.1 Financial Responsibilities of the Victoria Falls Municipality

The municipality has the following financial responsibilities:

- Preparation of annual budgets for approval by Council and by the Minister of Local Government;
- Billing and collection of revenue including rates, rentals, and fees from residents and ratepayers; and
- Prudent application of funds collected so as to effectively and efficiently deliver services to the residents and ratepayers.

Provision also exists in the Urban Councils Act for the municipality to borrow money for capital projects (e.g. housing development, roads, water treatment works) and for the purchase of plant and equipment. But these borrowing powers can only be exercised with the approval of the ratepayers and residents and the Minister of Local Government. The Council may borrow from a number of sources specified in the Act such as the state, the Local Authorities Pension Fund (LAPF), or a municipal medical aid society. Alternatively, it can raise capital through the issuing of stocks and bonds. Recently, the United States Agency for International Development (USAID Harare Office) has been assisting local authorities to develop appropriate financial disclosure procedures to enable them to borrow from the open financial markets. The manual was approved by the USAID, the Ministry of Local Government and selected local authorities (both urban and rural) in mid-2000.

The Victoria Falls Municipality's financial burden has been compounded by the rapid expansion of population in the town during the past decade. The town has grown from 16,830 people at the 1992 census to an estimated 45,000 today. Both revenue growth and available services and infrastructure have not been able to keep pace with the growth in population and demand. As the tourism industry has expanded, it has attracted more people from the surrounding rural areas and other regions and towns. In essence, many of these people are what may be described as "free-riders" with respect to municipal services, especially people living in informal housing. They use Council facilities but they cannot be levied for those services like everyone else because taxing them would require legal recognition of their informal housing status by the municipality. Yet they cannot be denied services as long as they stay within the Council's area of jurisdiction.

26.1.1 Existing Revenue Sources for the Victoria Falls Municipality

The current revenue sources of the Victoria Falls Municipality include:

- Rates levied on land and improvements;
- Service charges;
- Licences;
- Fees;
- Interest from cash investments and debtors;
- Sales from the liquor undertaking and other income generating projects;
- Grants and donations; and
- House rentals.

Tables 52 and 53 show the revenue sources and the amounts raised under each account during the two financial periods, July 1996-June 1997 and July 1997-December 1998. The two periods represent the last audited financial results that were available at the time of the study. The 1997-1998 financial period covered 18 months as it was the time when all public institutions changed their financial year-end to coincide with the calendar year in line with the change in the government's financial year. Also shown against each account is the amount of expenditure incurred by the local authority, including salaries and wages. From the revenue generated and the expenditure, it was possible to identify those accounts that were operating a surplus for the municipality and those that were running a deficit. Examination of the statements of accounts and the latest (2000) budget statement also enabled the consultants to assess the types and extent of cross-subsidisation that has been taking place between the various municipal accounts.

The two accounts that operated with a substantial surplus during the two financial years under review were the Rates and General Account and the Rest Camp and Caravan Park Account. In both years, the Rates and General Account accounted for 46-53% of total revenue, while the Rest Camp and Caravan Park contributed 18-23%. Surpluses in these two accounts are used to subsidise those running deficits. For instance, during the 1997-1998 financial year, $5.65 million was transferred from the Rates and General Account to the Housing Account (i.e. subsiding the residents of Chinotimba), while another $703 189 went towards Social Welfare. In the previous financial year, $1.6 million was transferred to the Capital Development Fund. Likewise, surplus revenue from the Rest Camp and Caravan Park Account is transferred to other votes. In 1996-1997, $1.77 million was transferred to the Capital Development Fund, $286 000 to the Housing Account, and $110 000 to the School Account. The following year, $1.6 million was transferred from the Rest Camp and Caravan Park Account to the Capital Development Fund, $713 666 to the Housing Account and $407 812 to the Clinic Account. The Liquor Account has also been used to subsidise other poorly performing accounts, although the amounts involved are much less. Thus, in 1997-1998, a sum of $165 000 was transferred from the Liquor Account to the

Housing Account, $605 000 went to Social Welfare, $265 942 to the School Account and $200 000 to the Capital Development Fund.

26.1.1.1 Sales revenue

Sales revenue is the principal source of income for the Victoria Falls Municipality, accounting for 39% of revenue in 1996-97 and 32% of revenue in 1997-98 (Tables 52 and 53). The provision of accommodation in the municipal Rest Camp and Caravan Park is the principal source of sales revenue, followed by municipal trading activities in its liquor undertaking and the water account. The Rest Camp and Caravan Park seem to be a very strong revenue source, with great potential if properly managed. The 1998 audited accounts showed that the facility made a surplus of $5.1 million from an income of $11.9 million and $6.8 million expenditure. As explained in the previous paragraph, the surplus was used to subsidise other less performing accounts and to provide for capital development.

However, something seems to have gone amiss during the past year, 1999. According to the unaudited 1999 accounts, the Rest Camp and Caravan Park was expected to change from a surplus position in 1998 to a deficit of $453 826 in 1999. In presenting the 2000 budget to Council, the Chairperson of the Finance Committee attributed the poor performance of the Rest Camp to "unbudgeted expenditure on security, overstaffing and largely poor planning and management".

Municipal trading in liquor usually realises trading surpluses and during 1999 it was expected to generate a surplus of $3.92 million. As shown above, the surplus is used to support other under-performing accounts. However, we were informed that revenue from the municipal liquor outlets has declined recently as people's disposable incomes have shrunk. However, there is every indication that prudent management of these revenue sources will generate more revenue for the municipality to enable it to meet its mandates.

Revenue from water sales appears erratic, apparently because of the municipality's inability to operate an efficient billing system. Water is supposed to be sold at cost, with tariffs set at a level to achieve break-even. According to the PSU International report on behalf of DBSA, 44% (or $2.8 million) of the water bill for the commercial sector in 1999 was not collected. However, the Town Treasurer argued that the main reason was the failure of his department to bill consumers on time. Faulty water meters are not replaced on time so that charges are based on historical estimates. In 1996-97, the Water Account had a trading surplus of $1.29 million, but this turned into a deficit of $1.45 million in 1997-98. In 1999, the account was expected to make a surplus of $4.89 million. This was due to a 50% increase in tariffs during the first half of 1999 and another 20% increase in the second half of the year.

Table 56: **Revenue sources for the Victoria Falls Municipality – compiled from the audited accounts for the financial year July 1996 to June 1997 (Z$'000) (excludes inter-departmental charges)**

	Rates & General Account	Rest Camp & Caravan Park	Water Account	Clinic Account	Chino-timba Housing Account	Mosi-oa-tunya Sec. Sch. Account	Liquor Under-taking Account	Social Welfare Account	Total Revenue	
									Total Z$	% of Total
Rates	7 684	-	-	-	-	-	-	-	7 684	24.9
Service charges	4 089	-	-	-	-	-	-	-	4 089	13.2
Licences & fees	1 916	-	-	459	-	461	-	325	3 161	10.2
Sales revenue	-	6 976	2 037	-	-	-	3 019	-	12 032	39.0
Rentals	87	-	-	43	2 453	-	-	-	2 583	8.4
Other revenue	559	251	18	2	35	1	-	-	866	2.8
Grants	7**	-	-	453	-	-	-	-	460	1.5
Total revenue	**14 342**	**7 227**	**2 055**	**957**	**2 488**	**462**	**3 019**	**325**	**30 875**	**100.0**
% of total revenue	46.4	23.4	6.6	3.1	8.1	1.5	9.8	1.1		100.0
Total expenditure	11 272	3 493	762	1 226	4 124	605	n.d.	248		
Surplus (Deficit)	3 070	3 734	1 293	(268)	(1 636)	(143)	n.d.	77		

Other Revenue mostly represents interest received plus sundry income

** Donation, not a grant

Table: 57: **Revenue sources for the Victoria Falls Municipality – compiled from the audited accounts for the 18-month period to 31 December 1998 (Z$'000) (excludes inter-departmental charges)**

	Rates & General Account	Rest Camp & Caravan Park	Water Account	Clinic Account	Chino-timba Housing Account	Mosi-oa-tunya Sec. Sch. Account	Liquor Under-taking Account	Social Welfare Account	Total Revenue	
									Total Z$	% of Total
Rates	17 715	-	-	-	-	-	-	-	17 715	27.4
Service charges	9 138	-	-	-	-	-	-	-	9 138	14.1
Licences & fees	2 522	-	-	847	-	728	-	1 298	5 395	8.4
Sales revenue	-	11 630	802	-	-	-	8 146	-	20 578	31.8
Rentals	300	-	-	80	4 481	-	-	-	4 861	7.5
Other revenue	4 717*	278	74	11	422	100	-	63	5 665	8.8
Grants	89**	-	-	1 204	-	-	-	-	1 293	2.0
Total Revenue	**34 481**	**11 908**	**876**	**2 143**	**4 903**	**828**	**8 146**	**1 361**	**64 646**	**100.0**
% of total revenue	53.3	18.4	1.4	3.3	7.6	1.3	12.6	2.1		100.0
Total expenditure	26 017	6 843	2 325	4 110	8 354	1 420	n.d.	779		
Surplus (Deficit)	8 464	5 066	(1 449)	(1 967)	(3 451)	(592)	n.d.	582		

* Interest receivable being $4.65 million; for other accounts, Other Revenue mostly represents interest received plus sundry income

** Donation, not a grant

The report by PSU International proposed that the commercial sector in Victoria Falls should contribute at least 65% of the revenue into the Water Account. But it did not explain the rationale or origins for this ratio. Enquiries with other urban authorities in Zimbabwe and with the Urban Councils Association of Zimbabwe showed that there was no set ratio between commercial/industrial and domestic consumers. The relative shares differ by town, depending on the size and structure of its industrial and commercial sectors. All the revenue from the sale of water simply goes into one account without any disaggregation by source or sector of origin.

26.1.1.2 Rates

Rates are based on property values (land and improvements) in the commercial sector and the low density/high income residential suburb based on the existing valuation roll. In both 1996-97 and 1997-98, rates were the single most important source of income for the municipality, accounting for a little over one-quarter of total revenue (Tables 53 and 53. At present, the municipality's rates are based on an out-dated valuation roll whose property values do not adequately address the revenue requirements of today. Previously, the Council has attempted to increase revenue from rates by adjusting the rating factor upwards. But this has the effect of creating distortions and inequities between different properties and leads to a loss of revenue for the Council over time, especially between old and new properties. In order to address the problems and raise more revenue, a new valuation was undertaken in 1999 and, after some delay while negotiating with stakeholders for its adoption, the new valuation role and rating factors will come into effect as from January 2001. The Council management is optimistic that it will be able to generate more revenue for the rates account. Although the proposed rating factor may be adjusted downwards from the present, it is anticipated that the new higher property valuations should bring in more revenue.

26.1.1.3 Service charges

The income in this category derives from the provision of services such as refuse removal, street lighting and sewerage. The money raised goes into the Rates and General Account. The amount of revenue realised from this account was $4.1 million in 1996-97 and $9.1 million in 1997-98, or about 14% of total municipal revenue. The municipality reviews these charges at least once every year, usually at the time of preparing the budget. The charges are supposed to be determined on a "cost recovery" basis. However, the municipality's failure to meet the residents and ratepayers' service needs in terms of waste management suggests that the application of the "cost recovery" concept is probably faulty. It also reflects the increased pressure being exerted on these services as a result of the rapid growth of the population over the past decade. According to the 2000 budget statement, the refuse collection service incurred a deficit of $89 804 in 1999 and had to be subsidised from rates. The sewerage service on the other hand had a surplus of $6.6 million in 1999. The municipality is again facing problems of billing for these services, primarily because of inadequate capacity in the Town Treasurer's Department.

26.1.1.4 Licences and other fees

Licence fees include business or trading licences, motor vehicle licences, bicycle licences and dog licences. Revenue from fees for services provided by the municipality includes plan approval fees, building or development levies, administration fees, school fees and levies, school general purpose fees, ambulance and clinic fees. The fees charged are meant to cover the Council's cost of providing the particular services. However, given the shortage of suitably qualified accounting staff, it is possible that the municipality is not charging the full cost of providing these services. Cost accounting for services provided is one aspect of capacity enhancement that will require attention, as recommended at the end of this report and in the report of the human resources development consultants. For instance, the call-out fees for the fire brigade are acknowledged as being too low for the service to sustain itself. Likewise, clinic and ambulance fees, school fees and library subscriptions are too low such that these services have to be subsidised from other accounts.

Licences and other fees constitute about 8-10% of the Victoria Falls Municipality's total revenue. In the 1998 financial year, the principal revenue source from licences was building fees payable for new developments. The Victoria Falls Municipality charges 1% of the value of the project costs at plan approval stage. The development levy is in addition to any costs that the Council may incur in order to bring infrastructure and services to the property, which are passed on to the developer. Obviously, the income from building fees will fluctuate from year to year, depending on the amount and value of construction activity by private developers, especially in the commercial and industrial sectors. Thus, in the 1996-97 financial year, income from building fees was only $489 273, compared with $1.38 million the following year. Building fees were followed by administration fees which generated $537 752 for the municipality in 1998, shop licences ($350 079) and income from the curio market ($85 440).

The $1.3 million income in the social welfare account came mostly from market fees ($998 594), followed by pre-school fees ($181 953).

26.1.1.5 Rentals

Rentals are charged on property owned by the municipality and rented out to tenants, either for accommodation or for business purposes. Victoria Falls Municipality's rental income comes mostly from domestic house rentals, primarily in Chinotimba suburb. Rental income constituted about 8% of total revenue in 1996-97 and 1997-98. Rentals are mostly intended to cover the repayment of any outstanding loans related to the acquisition or improvement of the property concerned as well as the associated general maintenance and administration of the property. However, a major complaint reported during our interviews was that the municipal houses in Chinotimba were very old and dilapidated, some of them dating back to the 1920s. It is therefore very difficult to justify rent increases for such houses on the one hand in order to raise money for

their upgrading. At the same time, the Council does not have surplus funds available for rehabilitation works. Rent arrears under the Chinotimba Housing Account more than doubled from $722 335 in 1996-97 to $1.9 million in 1997-98.

According to the Executive Mayor's budget statement for 2000, although it had been intended to increase rentals by 50% and 20% for the first and second half of 1999 respectively, the move was resisted by the residents. Consequently, the increases that were effected were 30% and 15% for the first and second half of the year respectively. Furthermore, because the tariffs were only gazetted in May 1999, the municipality had lost 5 months of revenue. Until the recently announced relaxations by central government on tariff increases, the municipality was not allowed to increase its rentals by more than 40%, resulting in a perennial deficit in the Housing Account. For instance, the deficit for 1997-98 was $3.45 million and $2.27 million in 1999. Hence the need to subsidise the Housing Account from other accounts.

26.1.1.6 Grants and donations

Grants used to be received regularly from central government for revenue purposes or capital projects. However, this source of funds for local authorities is no longer reliable and has been drastically reduced in recent years. Consequently, it has now become an insignificant revenue item for the Victoria Falls Municipality. Where a grant is received from government or other sources, there are usually specific conditions attached to its application or use, such as the purchase of drugs and other supplies for municipal clinics, staff salaries and so forth.

26.1.1.7 Interest income

This is minimal. The Victoria Falls Municipality derives its interest income from cash investments as well as from accounts receivables. There have not been much investment activities over the past few years due to cash constraints. On the other hand, interest charges on overdue accounts are limited by statutory requirements to only 1% above government lending rate to local authorities.

26.1.1.8 Overall assessment

Overall, the burden of generating income for the Victoria Falls Municipality through rates, levies, charges and other local taxes is being borne by the commercial sector and the more affluent low density residential areas. Rates from these two groups account for some 25-27% of the Municipality's annual revenue. The question that needs to be considered is whether the commercial sector in particular could absorb further increases in direct taxation through higher rates, or whether the Municipality should consider other more indirect ways of realising revenue from the business community.

Based on the audited financial results that were reviewed, income from rates and from the Rest Camp – i.e. the more affluent sections of the town - accounted for 48% of the total revenue for the municipality in 1996-97 and 46% in 1997-98. On the other hand, revenue raised from the poorer sections of the town will be reflected primarily in the Chinotimba Housing Account, the Clinic Account, Mosi-oa-Tunya Secondary School Account, the Liquor Undertaking Account and the Social Welfare Account. Together, these five accounts contributed 27% of the total income for 1998.

A review of the financial statements and our discussions with various informants revealed an urgent need for more efficient revenue collection from the existing sources. Residents and ratepayers can no longer be expected to pay for the inefficiencies of the municipality which, because it will have failed to collect the approved revenues, resorts to regular tariff increases. Finally, there is urgent need for municipal management to shift their orientation and begin to pay greater attention to effective cost management and value-for-money in the way they deliver services to the residents. Implementation of these two measures would (a) raise more revenue for the municipality without necessarily increasing tariffs, and (b) improve on service delivery.

26.2 Financial Responsibilities of the Hwange Rural District Council

The services that the Hwange Rural District Council provides have been outlined above. They include road construction and maintenance, social infrastructure, natural resources conservation, liquor sales, business promotion, water supply and refuse disposal. The Council collects revenue from a number of sources to enable it to provide these services. It is the Council's responsibility to ensure that all revenue sources are recorded and that the necessary billing and notification of debtors are done appropriately and within the framework of the Rural District Councils Act. The Council is required to prepare and present for approval by residents and by the Minister of Local Government, an annual budget to enable it to meet its commitments. It is also the duty of the Council to ensure that proper organisational and management structures are put in place to enable it to meet its financial responsibilities.

These are particularly evident in the types and levels of tariffs and charges that rural local authorities are allowed to raise from the two sectors. For instance, within the communal areas, a local authority may charge an annual development levy (usually charged per household), but no such levy is charged in the commercial farming areas. Instead, the commercial areas are charged a unit tax based on the amount of land owned or leased by the landowner or settler. Furthermore, money raised from the unit tax is deposited in a separate Roads Account and can only be used for the maintenance of roads in the commercial farming areas. The money does not go into the general account of the council. There is therefore little or no transfer of revenue from the wealthier commercial farming areas to the poorer communal areas that have the greatest need for development of physical and social infrastructure.

26.2.1 Existing Revenue Sources for the Hwange Rural District Council

Revenue sources for the Hwange Rural District Council are as prescribed in the Rural District Councils Act, but including a considerable proportion received as royalties for the extraction and utilization of natural resources occurring within council boundaries. The different sources are shown in Table 54 below. The statistics shown in the table were compiled from the 1999 unaudited accounts. The principal sources of revenue for the local authority are (a) income from the sale of the natural resources found in the district, especially river sand for the construction industry, sales of concrete building blocks and firewood, (b) liquor sales in the Council's liquor undertaking operations, (c) the 10% administration fee raised on CAMPFIRE proceeds in the district, (d) income from rentals of Council housing, (e) business leases and various licences.

26.2.1.1 Sales revenue

Sales revenue is mostly from liquor undertaking activities and other income generating projects such as sales of river sand, concrete building blocks and firewood. The liquor undertaking was the principal source of revenue for the Council in 1999, accounting for 14% of total revenue, according to the year's unaudited accounts. The unaudited results for 1999 show that the liquor undertaking operations just managed to break-even. Additional smaller amounts of revenue come from the sale of concrete building blocks made by Council employees at the Council offices (3.5% of income in 1999), and the sale of firewood.

26.2.1.2 Sand royalties

Sand royalties was the third major income source for the Hwange Rural District Council, contributing 12% of total revenue. The Council has a fixed charge, currently $60, for every cubic metre of river or pit sand extracted for construction use. The sand is sold locally, in the nearby town of Hwange and even as far as Victoria Falls. River sand is extracted from the dry bed of a river close to the main Council offices. River sand is abundant in the large riverbeds which have no flowing water for the best part of the year because of the low rainfall in the region. However, we were informed that the Council risked losing part of the revenue from sand sales because one or two private sand merchants had successfully applied to Administrative Court for "water rights" in terms of the Water Act, which also gives the holder of the "water right" to extract river sand in competition with the Council.

Table 58: **Revenue sources for the Hwange Rural District Council during 1999 – compiled from 1999 unaudited accounts (amounts collected are based on cash book transactions and do not include debtors) (Z$)**

Revenue Source	Admin. Account	Income Projects	Health Account	Housing Account	Roads Account	Total Revenue	
						Total Z$	% of Total
Sales of sand		643 838				643 838	11.8
Sales of bricks		188 266				188 266	3.5
Liquor sales		782 741				782 741	14.4
Unit tax					75 616	75 616	1.4
10% Administration fee (CAMPFIRE)	663 150					663 150	12.2
Communal Land Development Levy	6 549					6 549	0.1
Cattle levy	375 861					375 861	6.9
Hire of council transport	110 241					110 241	2.0
Leases	400 853					400 853	7.4
Beer levy	177 274					177 274	3.3
Licences (vehicle, shop, hawker, liquor)	319 166					319 166	5.9
Rentals	12 060			426 699		438 759	8.1
Service charges (water and electricity)	46 599			64 907		111 506	2.1
Other fees and levies			76 292			76 292	1.4
Interest on savings	277 521	623	293	423	369	279 229	5.1
Other income	32 343	5 480		221 044		258 867	4.7
State land (V)	260 000					260 000	4.8
Grants and donations			268 163			268 163	4.9
Total Revenue	**2 681 617**	**1 620 948**	**344 748**	**713 073**	**75 985**	**5 436 371**	**100.0**

26.2.1.3 CAMPFIRE administration fees

All 15 communal wards in the district are CAMPFIRE areas. The revenue generated in CAMPFIRE activities is handled through the Council, for which it receives a 10% administration fee. This amounted to $663 150 in 1999, making it the second most important revenue source for the Council. The 1999 unaudited financial statements showed total CAMPFIRE receipts at $4.3 million, with the bulk of the receipts coming from trophy fees. Discussions with Council officials revealed that there is considerable potential for revenue growth from the exploitation of the district's wildlife. Improved wildlife marketing and management skills to enable Council officials to interact more knowledgeably with safari operators could see the fuller exploitation of this revenue source to the benefit of the district.

26.2.1.4 Business leases and licences

Leases for business premises at rural business centres account for 7% of Council revenue, and a further 6% from the issuance of licences of various types, such as hawkers' licences, motor vehicle, bicycle, shop and liquor licences.

26.2.1.5 House rentals and service charges

Monthly rentals are charged for the occupation of Council houses and these are meant to cater for administrative costs as well as the recovery of related maintenance expenditure. The successful application of this "cost recovery" motive is a subject of debate since the assessment of the said "costs" might not be inclusive of all items due to poor costing techniques.

Water and electricity charges are also raised by the Council on a cost recovery basis. In the two peri-urban areas of Kamativi and Dete, the Council purchases water in bulk from the Department of Water Development for re-sale to the residents.

26.2.1.6 Hire of Council transport and other property

This is a good revenue source which tries to minimise idle time of Council property by hiring out such assets to private users. Council assets available for hire include tractors, lorries, community halls, boardroom and road maintenance equipment. However, the major limitation on this revenue source seems to be the lack of sufficient and reliable assets for hire.

26.2.1.7 Development permits and related revenues

Fees for development permits are charges payable by a commercial stand developer after payment of other fees, related to the acquisition of a new commercial stand. Development permit fees are charged as a percentage of the value of the new development.

Other revenues related to the acquisition of new commercial stands include processing fees, pegging fees and plan approval fees. These charges are supposedly meant to recover service and other administrative costs.

26.2.1.8 Unit tax

Landowners in the commercial farming areas are required to pay Unit Tax, assessed on the size of the property owned or leased. There are currently some 17 commercial farming properties in the district. Until 1999, the amount of tax was $150 per Unit. For the year 2000, Council had resolved to raise the tax to $2 125 per Unit. However, the amount of income generated from the Unit Tax for the Hwange Rural District Council is insignificant, amounting to $75 600 in 1999. Furthermore, all the money raised through Unit Tax goes into a separate Roads Account for the maintenance of roads within the commercial farming areas alone. The Council receives a small administration fee from the Unit Tax raised. Therefore, this is of little consequence to the overall Council revenues and to the poorer communal farming communities. Furthermore, as commercial farmland is transferred to small-scale farmers under the government's current "fast-track" resettlement programme, there will be a significant reduction in Unit Tax receipts. The local authority will have to devise alternative means of taxing the resettled farmers who, in any case, are unlikely to be well-off especially in the initial stages, in order to provide them with social services and infrastructure such as schools, health centres and roads.

We were also informed that, although only one farm in the district has been earmarked for resettlement to date, most of the farmers had not paid their Unit Tax this year. This was partly out of uncertainty arising from the land acquisition process, but also in protest over what the farmers perceived to be a substantial increase in the tax between 1999 and this year, from $150 to $2 125 per Unit. A comparison with charges levied by other rural district councils shows that this amount is at the lower end of the scale. Some local authorities have been charging as much as $8 000 per Unit for the year 2000 (e.g. Chaminuka Rural District), $ 7 500 per Unit in Guruve and $ 6 300 in Muzarabani district.

Some commercial farmers are running safari operations on their ranches. But they do not pay any local taxes on these operations other than the Unit Tax. We were informed that there might be as many as 20 safari lodges on the commercial farms. The Council should consider re-classifying these safari activities as businesses so that the operators pay the appropriate licence fees.

26.2.1.9 Communal land development levy

Households within the Communal Land are required to pay a development levy of $30 per household ($10 per household up to 1999). However, collection of the levy has been very poor, with only $6 550 raised in 1999. It is hoped that the new arrangement under the Traditional Leaders Act whereby village heads will be responsible for collection of the levy from households

within their areas in return for a commission will improve the amount of revenue from this source.

The current development levy of $30 per household is relatively low in comparison with other rural local authorities. Elsewhere, households are being levied between $75 and $100, with Makonde Rural District charging as much as $150 per household. But, before the Hwange Rural District Council hastens to raise its levy, the ability of the community to pay has to be seriously considered. While communities in the higher rainfall and agriculturally better-endowed regions of the country may afford to pay higher levies, the same may not be the case in Hwange district.

26.2.1.10 Grants and donations

Grants and donations were traditionally received from central government for both revenue purposes and capital projects. However, over the past few years government has gradually reduced grant funding whilst emphasising self-sustenance of all local authorities. Grants received by the Council at present are primarily for medical drugs, plus salaries for staff in both schools and clinics. Consequently, there is urgent need for the Council to examine alternative revenue sources to cover the shortfall created by the withdrawal of government grants.

However, the Council is receiving some grants for donor-funded projects. For instance, it is receiving funds under the District Environmental Action Programme (DEAP), the Community Action Project (CAP), and the Rural District Council Capacity Building Programme. But these grants are given for a limited period of time, after which Council is expected to go it alone. It is important for the Council to ensure that maximum advantage is taken to enhance its capacity with the aid of these grants so as to be able to sustain the project activities alone after the expiry of the donor funded projects.

26.2.1.11 Overall assessment

The financial position and revenue sources for the Hwange Rural District Council are precarious. The sustainability of the current principal revenue sources – sand sales, liquor sales and the CAMPFIRE administration fee – is doubtful. The Council is already facing competition on sand sales from the private sector. Furthermore, the volume of sales depends on the performance of the construction industry which, unfortunately, has been on the downturn in recent times. Proceeds from CAMPFIRE activities depend on the performance of the tourism industry and the country's continued ability to attract foreign visitors to the wildlife areas. A traditional reliable source of revenue for most local authorities, the liquor sales, has not been performing as well in recent times because of shrinking disposable incomes for most people in the country while operating costs have escalated. Some of the tenants occupying Council houses have been retrenched from the local mines (e.g. Kamativi Mine). The tenants are increasingly unable to pay their rents and water bills. Meanwhile, revenue collection from the residents of the communal areas has been very poor, with income from the communal land development levy for 1999

implying that there were only 655 households in the district! One certainly hopes that the new system being introduced in 2001 will improve revenue collection in this sector. Overall, because much of the district is very poor, the threshold above which the residents are unable to pay for services is quite low, thereby limiting the possibilities for revenue generation by the Council.

26.2.2 Financial Resources for other Managing Agencies

26.2.2.1 Department of National Parks and Wildlife Management

The DNPWLM receives income from licenses, fees, accommodation bookings etc. Each National Park is now able to retain these incomes, which must then be used to operate a self-financing Park.

26.2.2.2 Forestry Commission

The FC has always operated on the basis of being a self-financing organisation. However, some divisions of the FC have the potential to be profit making, such as Ngamo Safaris and others, such as the Extensions Services are not. The FC ensures that profits from profit making branches sustain those services for which little or no income is received. Within the Plan Area the FC receives income from tourism, including hunting and license fees for logging.

26.2.2.3 National Railways of Zimbabwe

The NRZ has been a loss-making organisation for a long time, sustained by subsidies from central government until 1994. Since then NRZ has been commercialised and recent moves to venture into non-operational commercial developments on its land holdings can be seen in that context.

Any income from the new commercial operations is retained centrally. However, local budgets have increased to allow for an improvement of land surrounding the railway station.

26.2.2.4 Zimbabwe Tourist Authority

The ZTA receives the 2% levy charged on all tourists staying in registered tourist facilities. It is not clear what annual sum this represents but it must be considerable. The expenditure of ZTA is primarily on maintaining the staff and offices of the Authority in Zimbabwe and its few overseas stations, promoting tourism and certain amount of research. The Plan Area does not receive any direct benefit from the ZTA income.

26.2.2.5 Non-Government Organisations

There are a number of NGOs operating in the Plan Area who make a contribution to development and provide social support. Within the Communal Land Areas the following organisations have been active:

- CADEC
- ORAP
- Lubancho
- Campfire

Within the urban area the NGOs who have been active are:

- Elephant Hills Conservation Club
- Environment 2000
- Red Cross
- Zimbabwe Homeless Peoples Federation

26.2.2.6 Private Sector support

The private sector has been active in the urban area providing elements of support to various environmental and community work programmes.

26.2.2.7 Donor Support

A number of donors are currently, or plan to, provide support to projects and programmes within the Plan Area. The following are relevant:

- Canadians: for planning, capacity building, environment and gender
- JICA: for infrastructure in urban area
- DANIDA: for environmental work in urban and rural (DEAP)
- World Bank: for National Park infrastructure and management planning
- World Bank: Local Government Capital project (urban area)
- World Bank: Community Action Project (PAAP) in HRDC
- USAID for low cost housing in urban area.

26.3 Key Issues

- The Income of the VFMC is inadequate to meet their responsibilities under the UC Act and the reasonable aspirations of the community that elected the Council.
- The financial systems and management of the VFMC require improvement.
- The income of the HRDC is inadequate to meet their responsibilities under the UC Act and the reasonable aspirations of the community that elected the Council.

- The financial systems and management of the HRDC require improvement.
- Unit Tax is very low and is not being fully collected due to current uncertainties in the LSCFAs. However, due to the small number of commercial farms in the district the impact of this issue is not great.
- Development levies are very low and are not properly collected.
- Income from tourist levies, such as the Hotel levy, levies to visit the Falls, the National Parks, to operate on the River Zambezi etc are taken by the ZTA and the DNPWLM and there is no redistribution to local authorities who have to maintain services such as roads etc to tourists.
- Income from tourism and forestry in Forest Areas is all retained by the FC and there is no redistribution to local authorities who have to maintain services such as roads etc to tourists.
- Revenues from leasing NRZ residential and commercial space are retained by NRZ who in turn pay rates direct to the local authority. Consumers pay direct to the service providers for water and electricity, except where these are bulk metered. Payment of license fees is made direct to the relevant authorities by the commercial entrepreneurs.
- Government support to local authorities has virtually ceased.
- Donor support has increased.
- Need to develop an financial plan for the implementation of the Master Plan that will try and involve all managing agencies and a range of partners.

27. KEY ISSUES

27.1 Introduction

This Report of Study has identified a large number of issues, some of which have been highlighted previously by the residents and other stakeholders at various fora. Others problems have emerged from the analysis of the current and likely future situation according to the data collected and people interviewed.

27.2 The Big Five

The issues and problems are all significant but some are of a higher order and will require important strategies to deal with them. Among the "big issues" are the following five, posed as questions:

The Environment

How can we protect and improve the Natural Environment both in and around the urban settlement of Victoria Falls and in the Communal Land Areas?

This is the major question because the future of both urban and rural people depends upon protecting and sustaining the natural resource base. The urban area is dependent upon tourism, which in turn is based upon the beauty, the wildlife and the diversity of the local environment. In the case of the rural areas the communities depend for their survival on fragile soils and the vegetation that grows upon them.

Poverty

How can we address the problems of poverty evident in both the urban and rural areas?

The vast majority of people in the Plan Area, whether in urban or rural contexts are extremely poor. They lack access to important services and resources. Women are particularly disadvantaged. Unless poverty is addressed there will continue to be unmanageable pressure

on natural resources that poor people require to survive. Improving rural and urban livelihoods is a key requirement for long term sustainability of the Plan Area.

The Movement of People into the Plan Area

How can we prevent unplanned and unwanted in-migration into both urban and rural areas?

Victoria Falls town has been one of the fastest growing settlements in sub-Saharan Africa. The unplanned in-migration of people, most of whom are poor and lack jobs and resources, has added a huge burden to the housing and social service provision of the town. It has also strained the infrastructure of water and sewerage systems to the limit. There has also been some unplanned in-migration into the Communal Land areas of the Plan Area. This has added to the pressure for good land in an area, which is generally lacking in land suitable for agriculture.

Land Needs

How can we provide for the land needs of the people currently residing in the Plan Area, both urban and rural?

Even if it is possible to maintain the population of the urban area at current levels there is a major need for further development land. This is largely to ensure people currently living in shacks within existing housing stands and in other inadequate areas are properly located and given a long term opportunity to improve their housing condition. These people will also require schools, clinics, shops and places for employment activities. Some of this need is catered for in planned layouts but more is required. If such needs cannot be met within the existing Municipal area then additional land will have to be found. However, there is no easy answer to such a situation.

Within the rural area, although population densities are on average relatively low people are settled in higher densities along rivers and close to the better soils. Population pressure is however, forcing people into ever more marginal areas. There is a demand for resettlement under the Government's resettlement scheme but there are no opportunities for this within the Plan Area.

Financial and Manpower Resources

How can we ensure sufficient financial and manpower resources for the managing agencies, especially the local authorities so that we ensure a sustainable future for the Plan Area?

Any solutions to the above problems will require financial resources and human resource skills. The Local authorities of VFMC and HRDC will bear the burden of the costs because they have to provide services to the people and businesses in their areas. Managing a complex area like the Plan Area, that is also one of the country's most important resources from a tourist point of view, is a critical task that requires an important blend of skills. The capacity of the managing agencies, which includes all the members of the Combination Authority, and others, will require enhancing and ways will have to be found to do this.

27.3 Other Issues to be addressed in a Sustainable Vision for the Plan Area

27.3.1 Environment Issues

Development within the Plan Area over the past decade or more has had serious repercussions on the quality of the urban and rural environments. But, more than that the totality of the environment, which is an interlocking whole, has been affected such that the very basis of sustainable life in the area is under threat. The following key issues developed in the Report underline the seriousness of that threat.

- An overall reduction in tree and woodland cover has exposed fragile soils, limited habitats and reduced biodiversity.
- The incursions of urban areas into former wildlife domains undermine one of the main reasons tourists come to the area: the wildlife experience.
- The increase in river craft affects the stability of the river bank and the riverine vegetation along such banks. This together with increased pollution impacts negatively upon wildlife, both land-based and aquatic.
- Noise pollution from helicopters, aircraft and jet boats reduces the sense of wilderness and upsets non-users of these facilities.
- Selective cutting (poaching) of trees for curio wood reduces tree cover and undermines sustainability of income from curio making, as well as damaging the environment.
- Gully erosion on the edge of the gorges threatens the stability of the east side of Chinotimba.

- Increased white water rafting leads to more people using Gorge paths, leading in turn to erosion.
- Overuse of valley soils in communal areas diminishes fertility, increases erosion and affects agriculture output.
- Rapid, ad hoc urban development that lacks harmony and integration leading to a loss of urban form and poor sense of place.
- General development has outpaced the provision of infrastructure, especially water and sewerage systems in the urban area, leading to overloading, shortages and pollution.

The main factors that have caused these adverse changes are:

- Increased tourism, the repercussions of which are building new hotels, attracting new migrants looking for work, strain on infrastructure and placing strain on certain key habitats such as the Rain Forest, the River Zambezi and its banks and wildlife routes to the river.
- Lack of overall planning and management.
- Increased population

These changes have led to some sharp conflicts between:

- People and wildlife
- Different types of tourism
- Development and habitats

27.3.2 Social Issues

The quality of social conditions for the overwhelming mass of people in the Plan Area is poor and has become worse over the past decade. The reasons for this state of affairs are largely national and relate to a decline in the national economy and the affects of HIV/AIDS. The decline of the national economy has reduced employment and weakened buying power through inflation. Whilst these adverse factors affect all poor people they impact more sharply on women, who bear the brunt of child rearing, family care and managing the household.

- Health indicators show increases in infant mortality, declining life expectancy and poorer health generally.
- HIV infection is among the highest in the country and since the area stands at the crossroads of three of the highest HIV infected nations this situation may get worse. HIV infection is greater among women.
- Housing conditions are chronically poor for over half the population.
- Education facilities are inadequate, with poor secondary school access and a virtually non-existent tertiary sector. The girl child is often denied secondary schooling due to cultural factors, especially in rural areas.

- Crime is on the increase and the law enforcement resources are unable to match this challenge.
- Some women are forced into prostitution as a means of maintaining themselves and/or their families and this brings increased risk of infection of HIV/STDs.
- Many in the rural communities lack proper sanitation. As populations increase and bush cover diminishes this becomes a serious problem. The large number of squatters has added to the strain on urban sewerage systems and an increasing number of people lack access to such facilities. The risk of cholera and other diseases is thereby increased.
- Many in the rural communities lack easy access to potable water supplies. There are boreholes but many are old and require frequent maintenance, which is not available. This impact especially on women who have to travel long distances to obtain safe water.

27.3.3 Economic Issues

Economic life for the majority of people in the Plan Area is a struggle for survival. Formal employment in the urban area is probably less than 40% of the labour force and many people have to adopt a number of strategies to maintain themselves and their families. For those in work life is easier but many still earn at levels, which do not allow them to buy, even the most basic house. There are a few who have a very high standard of life. In general they either own or have access to important resources. The inequity of this situation threatens long term sustainability. The communal land areas of the Plan Area are very poor and the potential for improving agriculture is limited due to adverse ecological and climatic factors. There are no major settlements in the Communal Area and little prospect for major investment except for tourism. The key issues are:

- Tourism brings riches to a very few who own the key resources. The major players are big corporations and most profits are not retained in the Plan Area.
- Lack of formal employment for the majority of the urban workforce has led to a growth in informal activity, some of which borders on the illicit and illegal.
- Each new investment in the urban area leads to a flood of people seeking work and adds to the town's social and housing problems.
- The economic base for the urban area is unlikely to be broadened significantly due to its peripheral position and small local market.
- Any new economic activity will need to demonstrate that it will not harm the environment.
- Despite significant investment in new commercial activity in the recent years very little has been for the benefit of local inhabitants.
- Sustainable rural livelihoods are difficult to achieve due to the poor base for any economic activity.
- Agriculture is bound to be a marginal activity, except in small areas where some irrigation might be possible.
- Tourism can be a bigger force in the Communal Areas but will require acceptance of non-title investment.

28. OPPORTUNITIES & CONSTRAINTS

28.1 Introduction

This chapter seeks to draw up a balance sheet for the Plan Area, highlighting areas where positive features can bring benefits to the local area and the nation and those negative factors that either need to be overcome or to be taken into account in any new Plan.

28.2rtunities and Constraints

28.2.1 Opportunities

- **Environment**

The Plan Area has tremendous environmental assets that attract tourists. These include the Victoria Falls itself, the Rain Forest that accompanies it, the Gorges, the National Parks, the wildlife that is apparent in the locality and the general ambience of a wild and beautiful place.

The location of the Plan Area at the hub of a cluster of National Parks, Game Reserves and other protected zones in Botswana, Namibia, Angola and Zambia presents a major opportunity to market the area as a focal point for such environmental attractions.

It is in the interests of the nation as well as the locality that the environment of the Plan Area is conserved so as to ensure the sustainability of the tourist industry in the area.

The Master Plan represents an opportunity to develop an approach to managing the environment in a sustainable way that could have national and international relevance. The notion of the Plan Area as an "Eco-Zone" that views the protection of the environment as a primary goal and links all parts of the area and all sectors: social, economic and physical to this goal is one that can have application to many other areas.

- **Land and Development**

There are significant areas of developable land within the Municipal boundary that can be used to provide additional housing and other social infrastructure for the urban population.

There is scope for increasing small-scale environmentally-friendly economic activities in both formal and informal circumstances in different parts of the plan area.

There are opportunities within Chinotimba to increase the density of development, without damaging the environment. Many small areas could be used for various social, economic and cultural activities.

Some areas of land, that are not suitable for mainstream development, due to their rugged terrain may, nevertheless have a role to play for less intensive uses, such as poultry keeping, some type of sports facilities and so on.

Certain parts of the urban area have been earmarked for future development but no action has yet been taken. These areas represent opportunities for a re-assessment in the light of the Master Plan and the adoption of new Eco-Zone principles.

There are many attractive and interesting areas within the Plan Area that are not fully exploited for tourist purposes. This is especially the case in the Communal Areas. These areas represent opportunities to spread the impact of tourism and widen the base for benefits.

The previous Outline Plan was largely successful in preventing intrusive development close to the Falls and Rain Forest and along the Zambezi. This is a platform on which to build future protective zone policies.

- **Tourism**

The Plan Area is well endowed with a range of accommodation to meet different incomes and tastes.

Past investments in the area have established a range of activities that are attractive to a spread of tourists.

The area is accessible by road, train and air.

The close proximity of Communal Areas to Victoria Falls offers visitors the opportunity to experience traditional rural life in a context that is genuine.

Some of the scenery in the Communal Areas, especially near the Gorges is exceptional and provides the basis for further investment in tourism.

The area is rich in history and this could be developed and presented as another tourist asset, as well as providing an important educational tool for the nation.

The current reduction in tourist numbers, whilst damaging to a range of social and economic factors, has the benefit of reducing development pressure and enabling a more objective view to be taken of the future.

The planned development of new hotels on the north side of the Zambezi, whilst a challenge to the Zimbabwe tourist industry in terms of competition also provides a market. Most Zambian visitors will want to cross into Zimbabwe to view the Falls and experience the attractions. Moreover, the development outside the Plan Area reduces immediate land and population pressure on Victoria Falls.

The development of an "Eco-Zone" model for the Plan Area would provide the ideal basis for a long-term approach to sustainable tourism.

- **Gender**

There are important untapped resources among women in both urban and rural contexts that could be applied to building the human asset base of the community.

Women currently excluded from leadership could provide an injection of much needed new energy and outlook.

- **Management**

The area possesses some strong management arrangements designed to protect the environment. These include the National Parks, the Forestry Commission and the World Heritage Site. The protected areas that surround the urban part of Victoria Falls enable strong conservation policies to be implemented.

The creation of a Municipal authority for the urban area has the potential to increase effective planning and management of the area.

The creation of a Combination Master Plan Authority provides the opportunity to forge links between the managing agencies in the Plan Area that can have lasting benefits for cooperation and coordination.

The Master Plan process has involved a strong participatory approach among stakeholders that may strengthen the involvement and contribution of the private and community sectors to the management of the area.

- **Resources**

The Plan Area generates a lot of income from tourism and associated activities. Greater retention within the area and a more equitable distribution could enhance sustainability of services and livelihoods

There is about 680 ha of land that is available for development within the Municipal area. Some 200 ha of this has already been planned and layouts have been approved.

There may be some scope for development on the flatter parts of the Rural State Land, which is about 550 ha, but intensive urban development would threaten the environment and Fuller Forest.

There is considerable donor support to help build management and infrastructure capacity among the managing agencies.

International experience in protecting sensitive and fragile tourist environments can be drawn upon for the Plan Area, through the Victoria Falls Environmental Capacity and Master Plan Project.

28.2.2 Constraints

- **Environment**

The environment of the Plan Area is extremely fragile due to loose, sandy soils, heavy rain and periodic droughts.

The lack of fertile soils, coupled with difficult climatic conditions limits agriculture options in the Communal Areas.

Increasing poverty, from a growing population poses a threat to the areas natural resources as people struggle to survive.

Lack of resources for regular culling of elephants increases the negative impact the animals have on local vegetation.

Lack of environmental awareness among communities leads to ill considered actions that harm the long term interests of these communities.

Lack of political will to ensure environmental protection undermines the sustainability of the environment and the future of tourism.

- **Land and Development**

Large areas of vacant developable land in the urban area have already been committed for various types of development.

The failure to replace the Outline Plan with a new Master Plan at an earlier stage has resulted in an inevitable period of ad hoc planning.

There is no easy or logical area for the urban area to expand into beyond the current Municipal boundaries.

The Rural State Land is generally unsuitable for development. Development on the slopes and sandy soils would cause considerable erosion. Moreover, settlement in this area would threaten the resources of Fuller Forest.

There is a lack of capacity and access to clean water and sanitation in both rural and urban contexts.

Even the most basic house is unaffordable to the large majority of urban dwellers, 60% of who dwell in poor, temporary shacks.

The Plan Area is inappropriate for seeking general industrial investment due to its environmental sensitivity.

- **Gender**

Cultural values in both the rural and urban communities hinder the ability of women to participate equally in the decision-making process of local governance.

Lack of support systems for mothers hinder their full participation in political leadership.

Certain regulations, both traditional and modern, pertaining to women as heads of households hinder their access to key resources, such as land, finance and housing.

- **Management**

There is no long-term co-ordinating mechanism to bring the various managing agencies of the Plan Area together. The Combination Authority can help meet that gap but it has a specific function related to the Master Plan.

Mechanisms exist for cross border co-operation but they tend to be formal and rigid. The competition for tourism may limit future co-operation.

- **Resources**

Both local authorities find it difficult to attract and retain skilled, technical staff. Other managing agencies have been prevented from securing appropriate staff due to public expenditure constraints.

Both local authorities lack sufficient financial resources to meet their obligations.

PART G

KEY ISSUES AND THE WAY FORWARD

29. DEVELOPING A VISION FOR THE FUTURE OF THE VICTORIA FALLS AREA

29.1 Introduction

This chapter is not concerned to establish a fully furnished vision for the Plan Area. That is a task for stakeholders of the Plan Area and will be presented as the framework for the *Written Statement* of the Master Plan. Rather the purpose of this chapter is to provide the link to the next stage of the Master Plan process by raising some of the possible elements of a Vision. The previous two chapters have set out the key issues and the major opportunities and constraints revealed through the process of developing the *Report of Study*. These points lead inevitably to the need to establish a set of guiding principles for a Plan that will address the issues, overcome constraints and marshal the opportunities.

29.2 Building a Vision: Stakeholder inputs so far.

Several stakeholder workshops have already expressed their views on the issues and problems they confront in the Plan Area and their own expectations for the future. They have also sought to identify a future vision for the area. However, many of the elements of a vision are very detailed and are more akin to policies and steps towards achieving a vision. A Vision, from the point of view of a Master Plan, is a general statement that encompasses many different elements in an overview of how one would like to see the area in the long-term future. The Workshop at Mosi-oa-Tunya Secondary School produced two such Visions:

29.2.1 Vision Statements from Mosi-oa-Tunya Secondary School Pupils

In ten years time Vic falls should have more accommodation, better health facilities, more industries, more recreational facilities to uplift the standard of living for the residents in general.

In fifty years time the cost of living in Vic Falls should be affordable. There should be a well maintained, crime free environment, more people should be employed, smaller families and less dependants.

A Visionary Poem

The year is 0029;
And in Vic Falls the sun is beginning to shine.

The houses now don't look the same;

They reach to the sky and we go insane.

Computers now surround our beds;
We no longer scratch our heads.

The Falls now has a modern school
To teach us how to use the tool.

Computers, airplanes, cars and buses;
We can fix with no fusses.

All the roads in town have now been paved;
The drivers learn to drive and are behaved.

We now have swimming pools, video games;
Our heroes play football: we know their names.

The Zambezi it flows over the Falls;
The US dollar flows into our mouths.

The population grows but nobody cares
'cause housing, food and clothes are now everywhere.

Sadza and yama become such a deal
And we have dessert, a true 3 course meal.

These vision statements indicate some of the aspirations of young people in the urban setting of the Master Plan.

29.2.2 Vision Statements from Hwange RDC Workshop

The Workshop held in Hwange RDC did not arrive at vision statements but it is clear from the proceedings that their vision would be include:

- *A vibrant, local culture*
- *Improved health and education facilities*
- *Greater benefits from tourism*
- *Protection against wild animals*
- *Improved communications*

29.2.3 Vision Statements from Stakeholders Workshop

A Stakeholders Workshop, held in Victoria Falls in October, 2000 arrived at a number of Vision Statements for specific aspects of the Master Plan. In some cases these are expressed as an Objective. The workshop also arrived at a number of plan principles and objectives that provide useful insights into the details of their vision.

- **Protecting the Environment**

The Vision

To protect and conserve the natural environment and wildlife assets for sustainable social, cultural and economic development.

Plan principles and objectives

- Biodiversity
- Sustainable use of resources
- Aesthetic Quality
- High Quality Water, air and soil

- **Economy**

Vision Statement

Mobilise resources for sustainable tourism development and related support industries with local participation.

Plan Principles and objectives

- Employment creation
- Capacity building
- Training
- Skills availability
- Partnership
- Land ownership
- Management of land to optimum use
- Cognisance of development across in Zambia
- Bed and breakfast accommodation should be encouraged and restricted to locals
- Small to Medium Enterprises – Management contracts with locals

- **Improved social services and physical infrastructure**

Vision Statement

Victoria Falls should have more accommodation, better health facilities, more industries, more recreational facilities to uplift the standard of living for the residents in general.

Plan Principles and Objectives

- Better health care for all
- An improved education system
- Provision of more affordable housing
- Provision of more varied recreational facilities and to make the existing ones more accessible
- Provision of sufficient, efficient and sustainable public utilities and infrastructure

- **Gender Awareness**

Vision Statement

To build a sustainable Master Plan Project with Gender Equal physical, legal and organisational structures, systems and procedures for the environment, social services, the economy and management programmes; and to develop gender equal human and administrative capacity of key players and stakeholders to support capacity building programmes and activities in Greater Victoria Falls and its environs.

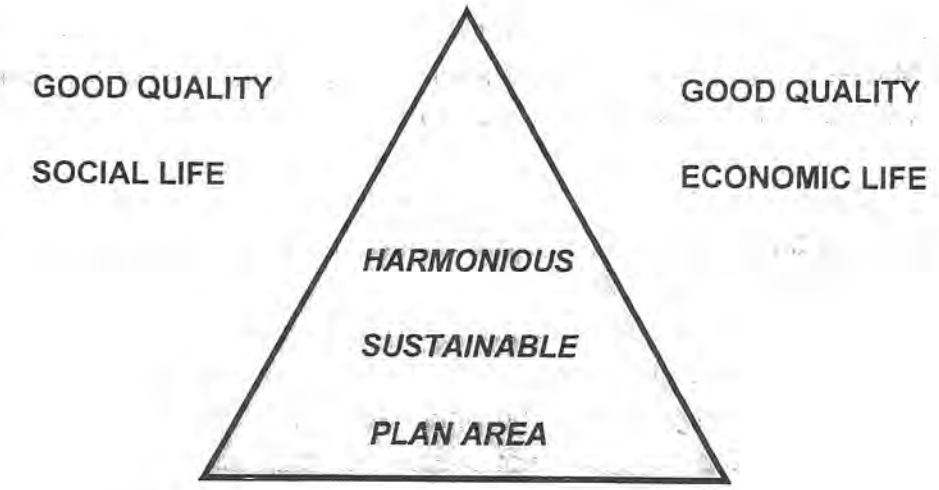
Plan Principles and Objectives

- Equal access and control to:-Housing; Land; Health; Education; Employment; Recreation; and Natural Resources benefits

29.3 Vision for the Plan Area: The Big Picture

A Vision is needed for the Plan Area that will provide a framework for all the strategies and policies covered by the Master Plan. This Vision will need to address the big questions that were raised as the "Big Five" In Chapter 29. Such a Vision will need to try and create a harmony between three main quality requirements for a decent sustainable life: the Quality of the Environment; the Quality of Social Conditions; and the Quality of Economic Life. This can be depicted as follows:

Fig 9: The Sustainable Triangle



The sustainable triangle will depend upon achieving qualities in the three sides but they cannot be pursued separately as they are inter-linked. There will be no point in achieving a good Quality of Economic Life if the result is the degradation of the Environment. Similarly there is no sustainable future in creating a Quality of Environment if there are poor social and economic conditions. The base of the triangle is the most important of the three sides. The Quality of the Environment is the starting point for any sustainable vision for the future of the Plan Area. The "Eco-Zone concept has taken this principle and sought to invest every aspect of planning and management with an integrated and holistic ecological approach.

29.4 The Eco-Zone Concept

An ecological approach to any sector or place, such as eco-tourism or eco-city, is more complex than simply applying the notion of a green or sustainable environment. An ecological approach to the Plan Area, for instance, would involve applying community empowerment to such matters as health, economic development and human rights. It would also seek to apply appropriate technology and to give respect and a place for traditional values and knowledge.

The Eco-Zone concept is therefore a set of reinforcing values that places people and communities at the centre. In Zimbabwe it is general policy to promote planning that is oriented to the needs and aspirations of the people. The Eco-Zone approach is therefore in line with such a policy and can help invest a Master Plan with strategies that will realise sustainable

development that is in the interests of and guided by the communities and stakeholders in the area.

The ecological concept is also an international concept that is being applied in many different cities, towns and areas all over the world. Should the concept of an Eco-Zone be a key vision for the Victoria Falls Master Plan this will send out a strong signal that one of the most important tourist destinations in the world has a strong and viable future.

The formal adoption of the term "Eco-Zone" is not essential. It provides a useful marketing tool, but what matters is that the Vision chosen for the Master Plan recognises the fundamental importance of preserving and improving the natural environment and building strategies that will address the issue in terms of the social and economic well being of the people. As well as embracing all the substantive issues the Vision for the Master Plan should also address process issues. That is, it should not just give direction on what needs to be done but on how it should be done. As already implied the Eco-Zone concept places this high on the agenda and seeks to make the planning process a people-driven one rather than a top-down, technical exercise.

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