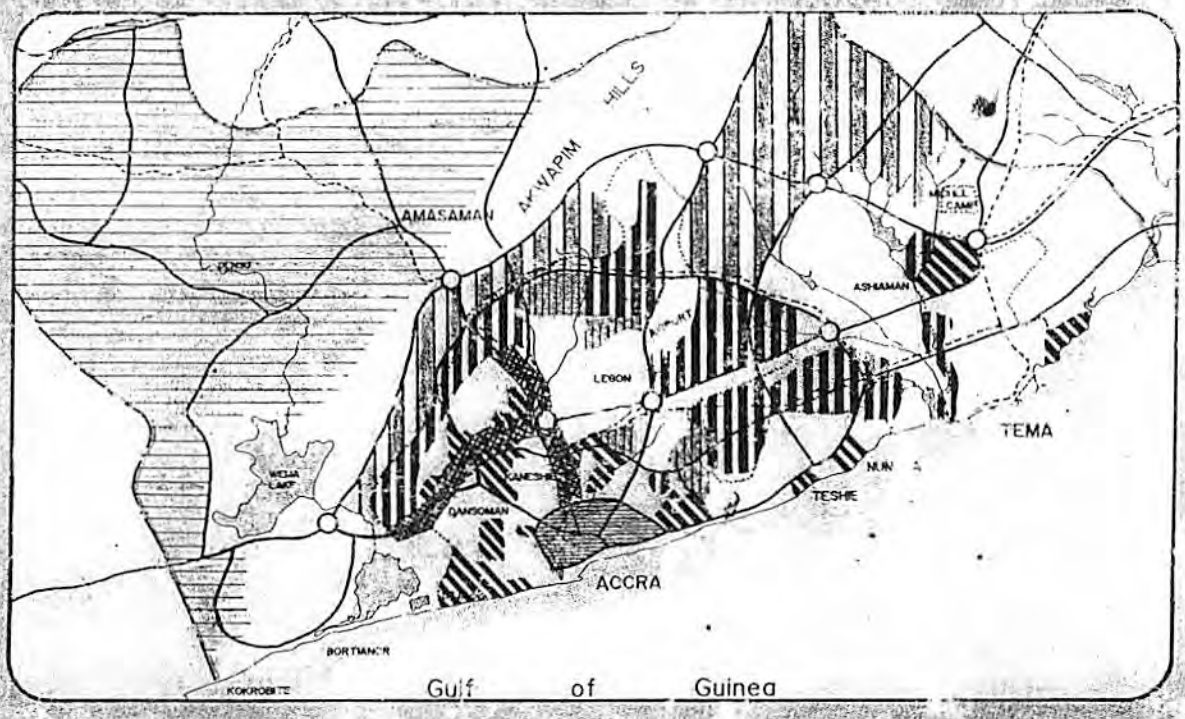
MINISTRY OF LOCAL GOVERNMENT
DEPARTMENT OF TOWN AND COUNTRY PLANNING



STRATEGIC PLAN FOR THE GREATER ACCRA METROPOLITAN AREA

VOLUME 2

STRATEGIC PLAN

DRAFT FINAL REPORT

December 1991

Prepared by the Accra Planning and Development Programme in associataion with the
United Nations Development Prorgramme
and the United Nations Centre for Human Settlements (Habitat)

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THE STRATEGIC PLAN

1.1 INTRODUCTION

It is over 30 years since the last master plan was prepared for Accra. At that time the country was enjoying a period of rapid economic development and political stability. The expectations for the future were high as Ghana maintained one of the highest standards of living in Africa. After the fall of Nkrumah's government in 1966 the country began a long period of economic decline and political instability. Planning for development became impossible under successive regimes of uncertainty. As a result most of the proposals in the 1961 Accra-Tema Master Plan have not been implemented. Urban development has become haphazard and uncontrolled, much of the city's infrastructure has deteriorated or broken down, environmental conditions in inner city areas are very poor and traffic congestion a major problem.

The population of the Greater Accra Metropolitan Area (GAMA) has grown from 449,430 in 1960 to an estimated 1.7 million in 1990. By the year 2010 it will exceed 4.0 million creating a demand for a further 400 km^2 of land for urban development and about 180,000 new units of accommodation, together with the requisite supporting engineering and social services. Given the current level of resources available for development and the inherent problems with land litigation, shortage of materials and manpower, lack of planning and coordination between agencies, GAMA will be hard pressed to meet the needs of its population in future. Urgent measures are required to establish more efficient and effective management systems to address the serious problems facing the development of GAMA.

The preparation of the Strategic Plan is an important step in providing a management framework to guide and encourage sustainable development and create a better future for the population of the metropolitan area. The plan represents three years of systematic studies and research into a range of topics by the Accra Planning and Development Programme (APDP). It is intended to facilitate the implementation of the Local Government Law 1988 (PNDCL 207) and the National Development Planning Law which is awaiting final approval. The programme has had the technical support of the United Nations Development Programme (UNDP) and the United Nations Centre for Human Settlements (Habitat) and has worked closely with numerous agencies and organizations responsible for developing the urban environment and the delivery of community services.

The Strategic Plan is a new initiative in planning in Ghana. Previously, master plans were the basis of planning. These were primarily concerned with landuse planning and development control. Most were unrealistic in their expectations and in the assessment of the resources required to implement them. The Strategic Plan places greater emphasis on local economic and social development to generate the wealth, expertise and other resources needed to construct a better environment for the population of GAMA to live in. The Strategic Plan recognizes the limitations and constraints imposed by the development process and seeks to capitalize on opportunities which have strategic advantages in expanding the economic base of the city.

The Strategic Plan incorporates the Accra Metropolitan Area, Tema Municipality and Ga District, an area of approximately 1,520 km^2, which is shown on Figure 1.1. The influence of the plan goes beyond this boundary.

1.2 VISION STATEMENT

The Strategic Plan is expected to play an important role in moulding the future of GAMA. But depicting a vision of Accra 2 decades hence is very difficult, given the great uncertainties which face the country after a long period of decline and the hard road to recovery. Nevertheless, given stable government and a willingness to continue on the paths of political, social and economic reform, GAMA is expected to be a much better place to live in the future. Many parts of the city will have been improved through upgrading programmes, with some decongestion of inner city residential areas. The Central Business District will be undergoing a process of

redevelopment and new employment and business opportunities will have arisen in subregional business centres, Tema Town Centre and the industrial areas. Housing, transportation, and engineering services will still be deficient - especially in the newly developing areas, but traffic congestion and problems with communications in the inner city will be less serious than they are today. Community, emergency, medical and education services will have improved significantly, but these will still be short of what is required. Real wealth and spending levels will be higher with greater access to personal and corporate credit in an expanded financial sector. Pollution, security, and debt servicing will become growing problems for public organizations. The Greater Accra Metropolitan Area, as the national capital territory, will be administered under one local government organization, with significant decentralization of administration and policy functions to sub-districts and communities, and more efficient management systems operating for planning, coordination and funding of development and community services.

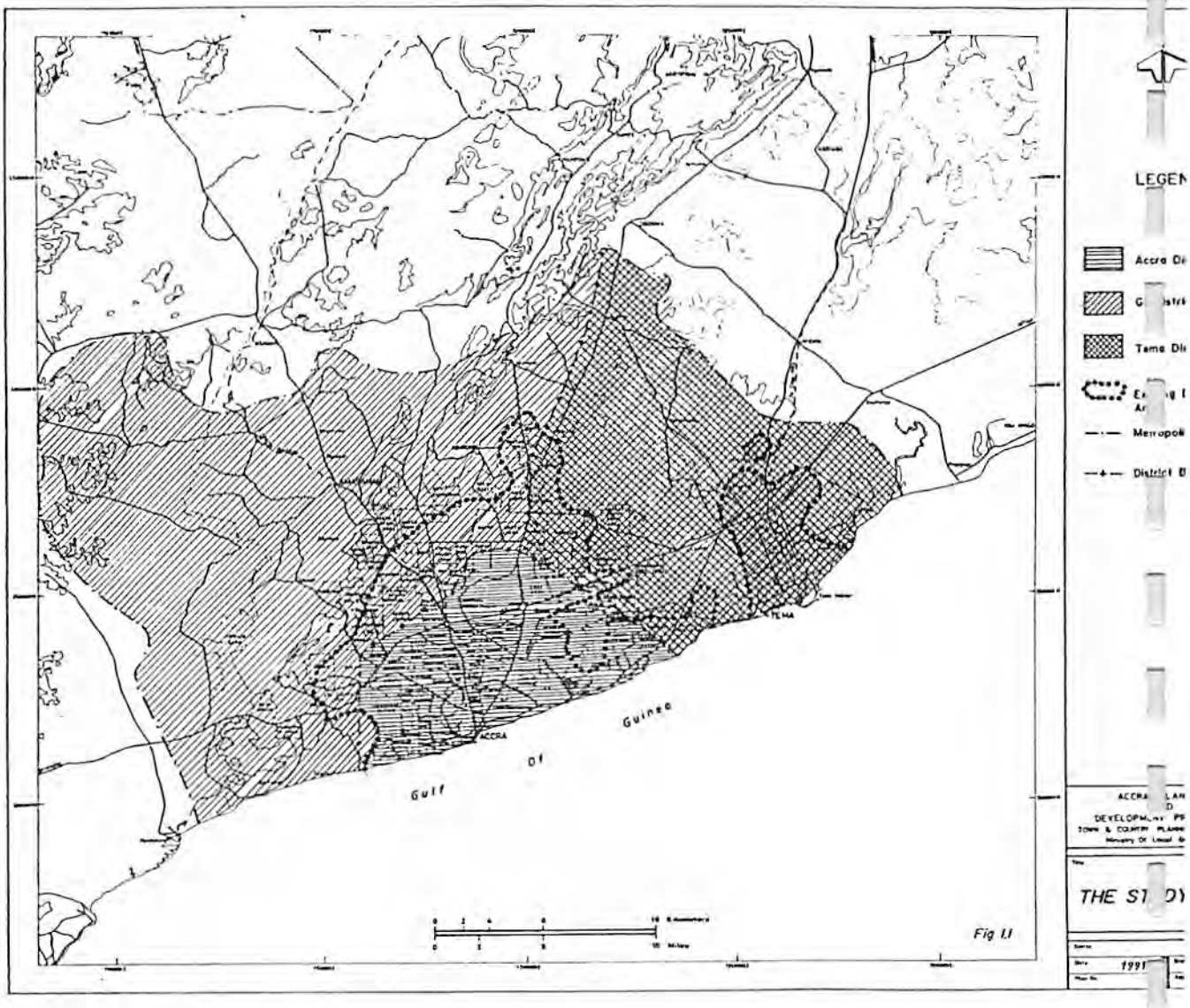


Fig 1.1 STUDY AREA

The Greater Accra Metropolitan Area will continue to attract International business and tourism. Ghana has taken important steps in reforming its economy, relaxing policies and liberalising controls on private investment and bringing macroeconomic stability, which have increased foreign direct investment in the country, a significant amount of which was made in GAMA. The transition to multi-party democracy will further attract both local and foreign investment to GAMA. The introduction of stock exchange in 1990 has been a major step in internationalising the economy of Ghana. These development will make GAMA the focus of international trade and finance in West Africa.

The significance of GAMA as a centre of trade and finance will encourage both convention and holiday tourism. GAMA and the surrounding areas offer an exciting array of tourist attractions: the National Museum, the Arts Centre, Forts and Castles, festivals, quiet sandy beaches, seashore bird sites, markets, etc. The tourist Infrastructural facilities are neither adequate nor satisfactory. Massive investments in hotels, beach developments, and transportation facilities will be needed.

Ghana's development programme started with a good industrial base which for various reasons did not perform well in the 1970's. Many of these industrial units have been undergoing rehabilitation to make them efficient and profitable. Given the right public policy and encouragement and support for the private sector, there are opportunities to attract foreign investment, thus making GAMA one of the major industrial centres in West Africa.

1.3 STRATEGIC GOALS

The vision statement creates a picture of what the metropolitan area could be like in the year 2010. The achievement of this vision will be directed by several goals which set desired outcomes for the metropolitan area by the end of the plan period. These goals provide a focus for specific objectives and sector strategies outlined in the plan. The eleven goals set for the plan are the achievement of:

- SUSTAINABLE ECONOMIC DEVELOPMENT
- LANDUSE PLANNING FRAMEWORK FOR THE LONG TERM DEVELOPMENT OF THE METROPOLITAN AREA
- AN EFFICIENT LAND DEVELOPMENT INDUSTRY
- AN EFFICIENT HOUSING ADMINISTATION AND DELIVERY SYSTEM
- AN IMPROVED QUALITY OF ENVIRONMENT
- AN ADEQUATE, SAFE AND EFFICIENT TRANSPORTATION SYSTEM
- BASIC, DEPENDABLE SOCIAL SERVICES
- REALIABLE BASIC PUBLIC SERVICES
- AN EFFICIENT AND EFFECTIVE METROPOLITAN MANAGEMENT STRUCTURE
- SUSTAINABLE RURAL DEVELOPMENT
- DEVELOPMENT OF HUMAN RESOURCES

1.4 THRUST OF THE STRATEGIC PLAN

The primary thrust of the Strategic Plan is directed towards strengthening the economic base of the metropolitan area through strategies designed to increase industrial output, improve land and housing

delivery, strengthen commercial business and rehabilitate existing infrastructure and services. Emphasis is also given to improving the efficiency of public administration, planning and coordination, revenue collectic and social wellbeing. By investing resources in the industrial, housing, business and capital works secto and concentrating on improving the management of delivery systems, it is expected that the economic base of the GAMA will expand in the long-term, resulting in increased capital flows into other sectors of the econom

1.5 ASSUMPTIONS OF THE PLAN

The Strategic Plan assumes that the programmes put in place for a more democratic governme decentralization, streamlining administration, restructuring and privatisation of state run concerns will continue. There is an implicit recognition that the changes needed to make the local economy more vibrant and efficient will come about slower than that of more developed economies, since the resources available to fu adjustment programmes, and the social consequences of them, will be relatively high. It is also expected take several years after changes have been made for investment confidence to be restored and cultivated. Thus, the impact the Strategic Plan will have in many sectors of the economy will not be immediate.

The private sector is expected to play a major role in implementation of the plan. However, it is recognized that the capital resources of this sector have been severely depleted and it will be some time before these resources are replenished and built up to a point where the private sector will play a dominant role in investme and development. Capital from local and foreign sources will be limited and related to the econom performance of the country as a whole. Business confidence needs to be restored through a sustained period of economic growth and political stability. This is essential to the process of generating capital and wealth for the benefit of all.

Government is expected to play a less leading role in the development process in future. Government financial support to rehabilitate the metropolitan area's infrastructure will be required in the short term. However, local government capacity to generate revenue improves, the dependence on state and overseas borrowin for capital works programme should reduce. This is one of the principal reasons for the thrust of the plan being directed towards sectors which will improve revenue generation by local government.

Government support for improved education, health and emergency services, the deregulation and streamlining of government services, legislative reform and enforcement backing is essential to provide the basic soft infrastructure to support development. It is expected that many of these functions will be transferred local government as part of the decentralization process and make for more efficient delivery of supportir services to the local economy. This transfer will not be immediate and the delivery of social services will continue under a decentralized ministerial structure for some time to come. It will be many years before local government will have sufficient resources to accommodate the transfer of social services to it.

1.6 THE STRATEGIC PLANNING PROCESS

The Strategic Plan is presented in this document in a draft form. It is intended that the plan should be circulated and discussed by all agencies concerned with its implementation as well as other interested groups and organizations. This will be done in a seminar, during which submissions and comments will be sought. Th plan will then be revised where necessary and formally adopted by the government and the district assemblie of GAMA.

1.7 HOW THE PLAN SHOULD BE READ

The Plan contains 5 volumes. **Volume 2, this volume, is the Strategic Plan**, which outlines the goals objectives and strategies of the plan. These strategies have been developed from extensive studies, researc and analysis of all sectors of GAMA's economy. Volume 1 is a summary of this research. The strategies in the plan are divided into sectors under different chapter headings. Many sector strategies are inter-related, collectively they provide a sound framework for improved urban management and coordinated developme within the Greater Accra Metropolitan Area. The urban management strategy has matters which must b

resolved at the highest political level, however, the interim arrangements will enable implementation of the plan to commence while other issues are being resolved.

Volume 1, The Planning Context, is a summary of data and information collected, researched and analyzed to prepare the first three volumes of the Strategic Plan. There are a substantial number of reports and studies produced by the Accra Planning and Development Programme which interested readers should consult for further details. These are referred to and listed in Appendix I of Volume 1. It is recommended that Volume 2 should be read after or in conjunction with Volume 1 which provides much of the information used to develop the various strategies, projects and programmes outlined in the other volumes.

Volume 3 contains the **Five Year Development Plan** and sets out details of projects and programmes for sectoral strategies between 1993 and 1997. The Plan will be revised and prepared annually on a rolling basis.

Volume 4 is the **Annual Action Plan** and contains details of projects and programmes to be undertaken during the first year of the Five Year Development Plan (1993-1997).

Volume 5, the **Investment Prospectus**, is intended to guide investment into areas with high opportunities.

1.8 ORGANIZATION OF THIS VOLUME

This volume is divided into 10 chapters. Chapter 1 traces the development of planning in and justifies the preparation of a strategic plan for GAMA. It provides a vision for GAMA and a statement of strategic goals to achieve it. It is assumed that many of the current social, political, and economic development plans will continue to 2010 and beyond. The strategies for economic development are covered in Chapter 2, and have been formulated within the context of the national economic development policy. The urban development chapter covers strategies for land, housing and the environment. It contains evaluation of the different structure plan concepts and outlines the preferred structure plan for GAMA.

Chapters 4 and 5 outline the strategies for developing GAMA's infrastructural services such as transportation, water, energy, drainage, solid and liquid waste disposals, and telephone and postal services respectively. Education, health social welfare, and emergency services are the topic of Chapter 6. Different management strategies for GAMA are given in Chapter 7. Over 90 percent of the population of GAMA live in less than 35 percent of the total land area. The rest is rural, dotted by villages and small settlements. The development strategies of the rural area of GAMA and its relations with the urbanised portion are covered under rural development in Chapter 8. The final chapter proposes an implementation strategy.

CHAPTER 2

ECONOMIC DEVELOPMENT

2.2 ECONOMIC DEVELOPMENT STRATEGY

The national economy of Ghana is heavily dependent on the export of gold and minerals, electricity, cocc and forestry products. The dominance of these sectors in the export economy is unlikely to change in the near future. Non traditional export such as fish, tropical fruits and receipts from tourism, however, are playing an important role in economic diversification. Manufacturing, petroleum processing, construction, tradin and services are the major contributors to the domestic economy and in particular to the economy of th Greater Accra Metropolitan Area (GAMA). However, the country experienced a long period of economic decline from 1970 to 1983 and this led to a sharp decline in production, investment in plant and equipment and emigration of much of its skilled and professional manpower These losses have greatly weakened th ability of the national economy to recover to levels experienced in the 1960's.

Government has introduced a number of macro economic measures under the Structural Adjustmei Programme (SAP) aimed at improving the performance of the economy. These have yielded promising resul with a steady growth in the GNP, exports and production over the last 5 years. Special projects such as PAMSCAD have endeavoured to provide assistance at the micro economic level. A substantial proportion of government outlays have been injected into infrastructure projects such as roads, ports and electrici distribution to support the economic development of the country as a whole. Despite these very promisin results, inflation remains high, finance for development is limited, wages are low and inefficiency within the public and private sectors is a serious impediment to improved economic performance.

It is against the background of national economic performance that the strategy for GAMA has been formulated. Accra is expected to maintain its leading role in the development of the domestic economy in the financial, services and manufacturing sectors. However, one of the basic problems facing the economi development of GAMA as a whole is the absence of an institution for economic planning, execution and/c coordination of public and private investment projects. There is also no governmental agency responsible for encouraging and/or guiding the contribution of the informal sector to better contribute to the economi development of GAMA. The industrial base is weak, with low capacity utilization, shortage of inputs, foreig exchange, and bank credit, and inadequate commercial space. These are matters which the strategy fo economic development will address.

2.2 GOALS AND OBJECTIVES

In preparing an economic development strategy for GAMA, it is recognisd that rebuilding the capacity support services needed to develop a strong export and domestic economy will take many years to achiev The thrust of the economic strategy for GAMA is, therefore, directed to the goal of:

> REHABILITATION OF EXISTING HARD AND SOFT INFRASTRUCTURE TO PROVIDE A SOUND BASE TO SUPPORT SUSTAINED ECONOMIC DEVELOPMENT AND CREATE A FAVOURABLE CLIMATE FOR INVESTMENMT.

This goal will be achieved through a focus on the following objectives:

> **The development of an adequate institutional structure to enable GAMA to function independentl efficiently, and responsively;**
>
> **Strengthening GAMA's economic base in order to grow, control, and compete both locally and**

internationally, and initiating and developing new economic development lines and projects.

Suport for the development of the informal sector.

2.3 THRUST OF THE ECONOMIC STRATEGY

In creating the right environment for economic development it is essential that the right physical infrastructure, financial, manpower, regulatory and promotional resources are in place to encourage investment in wealth creation activities. However, where there are not sufficient resources, it is necessary to target sectors of the economy which will result in more significant contributions to economic development than others. The thrust of the economic strategy is, therefore, primarially directed towards developing the housing, construction, manufacturing and finance industries, as well as local government and land management institutions. This should bring about steady growth in the wealth and revenue generation base, which will ultimately enable more resources to be injected to other sectors of the economy. The components of the strategy are outlined below.

2.4 STRATEGY FOR INSTITUTIONAL RESTRUCTURING

One of the basic weaknesses in the formulation and execution of economic development projects in the Accra Metropolitan Area (AMA), Tema Municipality, and Ga District is the absence of an institution charged specifically with the responsibility for overseeing the overall development of these areas. This is in spite of the provisions in the Local Government Law 1988 (PNDCL 207) which empowers all district assemblies to plan and execute local government services, because PNDCL 207 does not go far enough to entrust them with overall economic development of those areas. The weakness is particularly visible in three major areas:

2.4.1 Coordination of Public and Private Investment Projects

Each year government allocates billions of cedis for various social and economic inifrastructure in its annual development budget or the Public Investment Programme (PIP). However, each sectoral ministry plans, budgets, and executes various projects independent of other ministries investment activities. There is no agency responsible for coordination and execution of the various projects committed in the PIP. In addition, private sector and informal sector investment in the social and economic activities of GAMA are also carried out independent of any central agency responsible for the overall development of GAMA. Once approval is granted by the responsible agency, private sector projects are excuted without reference to the implications for other economic activities taking place or planned in the GAMA area. The strategy is to create an institution for the coordination of the execution of all public and private sector projects.

2.4.2 Economic Planning and Development

Each District Assembly is responsible for the preparation of its development plan, the formulation of strategies and projects, and for mobilisation of resources in the district. This is done with the technical advice of the district representatives of the sectoral ministries. The Regional Coordinating Council coordinates and integrates plans independently prepared by District Assemblies without either the power or the technical capability to prepare a unified economic and social development plan or ensure the acquisition of the necessary resources for the implementation of the plans. Economic planning and development requires collection and analysis of various social and economic data and information, evaluation, and preparation of development strategies and policies. It is also one of building coalitions among businesses and financial institutions, social organizations, the public, and local government. It involves the preparation of proposals to attract both local and international finance. There is a need for an institution to prepare development plans for the three Districts.

2.4.3 Promotion of Private Investment

Apart from lack of coordination of both the planning and implementation of development programmes and projects in GAMA, there is also the absence of a central agency for the promotion of overall economic development of the area through the attraction of both local and foreign investors. This is in spite of the heavy infrastructures, both economic and physical, which public investment has made possible over the years and will continue to make in the near future in the area. A major strategy for the development of GAMA will be to create an independent agency responsible for attracting investment in industry, commerce, finance, tourism, etc. for the development of the area.

A major bottleneck in the promotion of foreign investment in GAMA is the multiplicity of agencies which the foreign investor has to encounter to get approval for the start of a project in the area. In collaboration with other investment related institutions such as the Ghana Investment Centre and National Investment Bank, GAMA should actively promote and strengthen a one-stop investment advisory service. The one-stop investment promotion concept is applied in a number of developing countries where formerly an investor or prospective investor would have to visit several agencies to obtain simple investment information. In some countries, the concept is taken even further where the One-Stop Investment Centre (OIC) assists the investor right through to the investment decision and sometimes to installation and commissioning. The Centre also serves as an information centre for all trade related businesses, including networking with foreign investors regarding investment, technology, management, and marketing services and arrangements, etc. and providing information on avaiability of local resources and needs. An important strategy in the economic development of GAMA will be to create a One-Stop Investment Centre.

2.4.4 Accommodating the Informal Sector

Traditionally, the informal sector has been the main source of employment for unskilled and semiskilled labour. Recently, the informal sector has also become the receptacle for the redeployees from the public sector redeployment and divestiture programmes. Despite its contribution to the local revenue (82% of the total for licence and fees and 22% of the total revenue for AMA in 1989) and employment (40% of the total in 19[illegible]), the informal sector has neither a strong public support nor a recognition by local government. The sector is not organized to acommodate the demand put upon it by these and other forces, neither has there been any policies for their growth and development aimed at:

(a) Recognition of their contribution to the local economy:

(b) Providing support for their growth and development; or

(c) Preparing plans and strategies for maximizing their production and employment potential, which can be achieved by:

(i) creating an apropriate division whose function would be to regulate, monitor, and assist the sector and its activities to make it part of the economic planning process of GAMA, and coordinate various governmental assistance;

(ii) providing security of tenure, since 60% of them operate in stalls, kiosks, and street side open spaces, and often are targets for on-going demolition and eviction practices by local government officials;

(iii) linking them with the formal sector;

(iv) and providing various fiscal and financial incentives.

TRADING IN FRONT OF 31ST DEC. MARKET

STREET HAWKERS - CBD

ECONOMIC DEVELOPMENT

2.5 STRATEGY FOR STRENGTHENING THE LOCAL ECONOMIC BASE

The export employment breakdown given in Section 3.7 of Volume I provides a clue into the economic strength of GAMA, its built-in advantages and growth potential in order to formulate appropriate development policies and strategies. In the industrial sector, manufacturing emerges as a clear choice for further expansion, followed not so strongly by construction. The public sector is not as promising as it appears to be due to government's decision to reduce the size of its payroll (Section 3.5, Volume I). Transport, storage, communication, and finance have more potential for growth in GAMA than the wholesale and retail subsectors which appears to have reached its saturation point.

The potential for agricultural development in GAMA is not as much as in industry or service, although the former's contribution to economic growth of GAMA depends heavily on agricultural development in Ghana as the main source of raw material inputs. The manufacturing industry therefore holds the greatest potential for employment in the immediate future. In the long-run, this will only be possible if it can stay competitive economically and technologically. The growth of other industries such as construction depends also on land market situations and the effectiveness of the real estate industry. Finance, commerce, transport and communication are promising lines of activities in the service sector, although the stability of the financial sector and the public's confidence in it are not fully assuring; activities of the commercial subsector depend on the availability of commercial spaces in the CBD and other subruban market areas. There are four areas in which the local economic base can be strengthened:

2.5.1 The Manufacturing Industry

Since the Economic Recovery Programme (ERP) was launched in 1983, the Government has addressed the problems of the industrial sector through a number of policy measures and strategies. In the main these problems have had to do with the fluctuations in the sector's output, capacity utilization, product price and quality because of the mode of acquisition of raw materials locally or imported. In the case of imported raw materials, capacity utilization of a factory becomes dependent on its accessibility to foreign exchange, bank credit and suppliers. There is also the problem of obsolete machinery and equipment which makes the operations of most establishments uncompetitive. Most of these firms require large capital outlays for replacements. And because of the lack of linkage between local industries and other key sectors like agriculture, transportation, construction, etc. the domestic raw material base of most factories is either weak or non-existent. There is also the problem of the existence of several non-viable state enterprises that still pose difficulties for industrial recovery in the country.

The major policies that have been adopted by Government since 1983 have aimed at:

Discouraging government participation in industry;

Developing a local raw material base for existing industries;

Promoting industrial recovery by utilizing installed capacity;

Promoting agro-based industries to process agricultural raw materials;

Developing economically viable linkages among local industries and other key sectors such as agriculture, transport, construction, education, etc.;

Supporting private sector developmennt through improvements in the macro-economic environment;

Promoting the developmnet of small-scale industries; and

Developing the export of non-traditional products from the manufacturing sector.

For the development of the manufacturing sector in GAMA, four strategies, at different stages of implementation, are recognized. These are:

(a) Privatization

The post-independence leadership had two basic motivations in promoting public investment in industry. First, industrialization was seen as the key to rapid modernization and economic independence, and state investment as the only way to proceed rapidly without increasing dependence on foreign investors and without relying on Ghanaian private investors (whose resources were inadequate to the magnitude of the task envisaged, and who could pose a political threat). Industrialization was also viewed as a means of providing productive employment. Second, increasing state control of economic activity was favoured as the way to implement a socialist approach to development and to mobilize increasing financial surpluses for investment in both infrastructure and productive activities. The government therefore pressed forward vigorously with state investment and control as a means of promoting rapid indutrialization and of consolidating political power.

These industries did not live up to their expectations. A major reason for weak performance was that the objectives set for them were often in conflict. For example, rapid technological advance relied heavily on imported equipment intensive industries, which conflicted with the objective of reducing foreign dependence. It also led to highly capital intensive state industries, which conflicted with the employment objective. Efficiency was frequently relegated by pursuit of political and employment objectives. As a result, losses exceeded profits in most industries. Some services made profits because of high protection. Prices were held down in pursuit of the social objective of holding down consumer prices. Political interference, high management turnover, the overlapping and hierarchical organizations controlling these enterprises have been a problem of state enterprises. Low productivity of capital and labour, foreign exchange shortages, and economic inefficiency contributed to the non-profitability of these industries, leading to decisions for privatization. The main reason for which is to eliminate direct public subsidies and redeploy other resources which would otherwise have been used on these industries.

As part of the overall economic development strategy and the reform planned for the public manufacturing sector a carefully assessed and implemented privatization programme consisting of several approaches will be examined, including:

Strengthened management of public manufacturing enterprises (PMEs) with performane monitoring and a public acounting system installed;

Management contract of operational facilities, with the state continuing to own the assets;

Joint ventures with foreign partners where the technology and market development justify them;

Joint ventures with other state institutions or with national investors;

Mergers with other similarly composed enterprises for increased resource use and management efficiency; and

A clear-cut sale of enterprise. As discussed in Volume I, private ownership of state enterprises may not in the short or medium term lead to increased employment.

(b) Increasing Capacity Utilization

The manufacturing industries in GAMA are largely diverse and underutilized. In general excess capacity has been a feature of Ghanaian manufacturing since the mid 1960s. Capacity utilization worsened in the late 1970s and early 1980s as the country's ability to import raw materials and spare parts diminished. The most recent information shows that average utilization for large and medium scale industries was 40 percent in

1990, although it was much higher for some agro based industries such as rubber, wood processing, toba co and beverages, metals, etc.

Strategies for the problem in the long run include:

Closing down some of the least efficient capacity units;

Using the extra capacity for export markets and generating a major increase in foreign exchange earn gs from traditional and non-traditional exports;

Using some industries of marginal or questionable efficiency which have potential for using domestic aw materials (e.g. tyre) and/or important inputs into other industries (e.g. cement, plastic products, p per containers) and

Integrating agriculture with industry, which requires the promotion of specific programmes and pol es to urgently reactiviate the masive and largely idle industrial capacity.

The greatest part of employment in the immediate future will come from increasing the capacity utilizatic o these mostly large industrial units such as textiles, aluminium, chemical, and agro-based industries.

(c) Comparative Advantage

Ghana is endowed with natural resources (agricultural land, forest resources, mineral resources) and humar capital that, if efficiently exploited, can provide a strong base for the manufacturing sector. The country has agricultural land that is potentially capable of producing an agricultural surplus that can sustain the agr in dustries (food and vegetable oil processing, beverages and tobacco) as well as the textiles subsector. In spite of the potential, agricultural raw materials for important domestic industries continue to be in shor supply. The performance of the agricultural sector has not been satisfactory due to inadequate produce prices for export and industrial crops, inadequate transportation services, and the unavailability of inputs such as seeds, fertilizer, fuel and qualified agricultural labour.

Given its forest resources, Ghana is capable of providing adequate raw materials for wood proces ng enterprises. Forest products are the third highest earners of foreign exchange, behind cocoa and mine als The forests contain many species of hard tropical woods being exploited for export. It is possible to proces wood beyond logs and sawn timber for Western and other markets. Other processing industries based on tree products include rubber, vegetable oils and cocoa proudcts.

Food, beverages, tobacco, wood and paper products emerge as most consistent with comparative advantage largely due to high utilization of domestic inputs. Firms in metal products such as aluminium, machi ry electrical equipment show also high potential as do drug, rubber, cement, and clay products. In general he strategy will focus on industries with consistent long-run comparative advantage, preferably through genera policy measures that promote international competition.

GAMA is close to the source of power, rich agricultural areas of Ghana, the port of Tema, and has a good supply of manpower, transportation and communication networks to all regions of the country and to the countries of ECOWAS for location of various industries. This locational advantage will be fully exploited

(d) Rehabilitation and Restructuring

Ghana's industrial experience has been characterized by declining production and capacity utilization. In by inefficient and highly import-dependent invetments. The basic objectives for industrial restructuring ar to improve productivity generally and to shift production towards the most efficient activities. The strateg for rehabilitation will entail additional foreign exchange for imports, improvements in infrastructure to rer ov bottlenecks in the flow of domestic raw materials, provision of adequate working capital, and use of tech ca personnel to improve both the quality of raw materials and products. In this respect the Ghana Standard

Board, the various institutes of CSIR, the Technology Consultancy Centre In Kumasi have a vital role to play In the rehabilitation and restructuring of the manfacturing sector.

Raising capacity utilization through increased raw material supplies is only one step toward rehabilitation of the viable portions of Ghana's industrial structure. The deterioraton and inappropriateness of much of the Industrial equipment requires capital rehabilitation to buy additional spare parts to improve the maintenance and performance of existing equipment so as to avoid further detrioration and loss of capacity, replace critical equipment needed to break bottlenecks and avoid breakdown that would impede prompt utilization of raw materials, and better equipment to modify production line and improve practices so as to raise productivity.

2.5.2 Construction

The construction industry is of basic importance for economic development. In developing countries constructional and related activities employ between 5 and 12 percent of the total employment whereas in doveloped countries they represent between 15 and 20 percent of the total employment. In GAMA it was 3.7 percent in 1984. Over 70 percent of the labour force in construction worked for the export market. Since then cosntruction activities have picked up significantly, as a result of the Econnomic Recovery Programme (ERP). All economic indicators confirm its future growth both in the long-and short-run. Major programmes of housing are being initiated by both the public and private sectors in an effort to fill the housing deficit in GAMA which in 1990 was over 19,000 houses. The volume of rehabilitation and expansion of various infrastructural projects both in GAMA and outside are expected to increase considerably. About 65 percent of the PIP in 1991 reflects the need for more investment in infrastruture. The growth of the construction industry has, however, been constrained by various factors, including:

(a) Land Acquisition and Tenure

In GAMA, land acquisition and subsequent granting of secure tenure to households is encumbered with legal and traditional constraints that can effectively block construction. Clouded title, absence of official maps and registration, legal challenges to ownership, disputes over compensation, traditional land tenure or holding systems, and local complexities concerning sanctioned forms of land tenure have all served to thwart the start-up of urban housing construction in Accra and Tema. A major strategy in the growth of the construction industry is to improve the land tenure and delivery systems and procedures, incudling acquisition, titling, conveyancing, etc.

(b) Housing Finance

Interest rates are prohibitively high even for the middle income families. Getting mortages is a long and tedious process, and works often against the interest of the lower income households. Any real estate industry cannot survive without finance on which the stratgy will focus. This include: making low-interest and long maturation loans available; providing affordable housing and streamlining the mortage processes.

(c) Lack of Local Materials

Insufficient production of building materials is one of the most serious problems affecting not only the building industry but also the national economy. Building materials represent, on average, 50 to 60 percent of the total value of construction output. In GAMA building materials such as cement, steel, wood products, electrical and sanitary materials, etc. make construction prohibitively expensive for the large section of the population. The growth strategy of the construction industry should eliminate legal restrictions on distribution and pricing of cement and other products and remove all taxes on basic building materials.

(d) Use of Appropriate Technology

Design standards in most construction activities in GAMA are unnecessarily very high resulting in costs that are not affordable. Building codes and standards generally adopted from the colonial era are not only obsolete

but also turn out to be expensive. The strategy is to promote and adopt appropriate designs, construction technology and standards.

(e) Strengthening of the Real Estate Industry

The real estate industry is very young, unorganized and ineffective to make any significant contribution to the construction industry. There are no laws governing the operations of the real estate industry. The strategy is to make the real estate industry attractive through tax incentives.

2.5.3 Wholesale and Retail

Wholesale and retail is the largest activity in GAMA, employing over 290,000 people in 1990 and expected tc employ over 350,000 in 1995. Further expansion is inhibited by:

(a) Overcongested Central Business District (CBD)

All of the major financial institutions, industrial and commercial firms, large department stores, and other retail outlets are located in the CBD. These and the myriad of small scale and individual traders and hawkers make vehicular movement within the CBD very difficult, and there are no parking facilities. Despite this, the CBD remains the most attractive location for shopping. A very important strategy in the expansion of the wholesale and retail area is to redesign and redevelop the CBD and relocate certain activities outside the CBD.

(b) Inadequate Facilities at Suburban Markets

Inadequate facilities and choices of the suburban markets outside the CBD do not attract a large number o people outside the immediate surroundings. A strategy designed to make the suburban centres attractive tc a large number of people by providing additional facilities and services including improvements in transportation will help reduce attraction to the CBD.

2.5.4 Financial Services

Ghana's formal financial system is dominated by few banks headquartered in Accra. The financial difficulties arising mostly from a substantial non-performing portfolio, which most of them faced appears to have beer over with the implementation of the Financial Sector Adjustment Programme (FINSAC). However, the lacl of competition and high rate of interest (25-30%) and inflation (37%) affect savings and borrowers, especially the manufacturing industry, from obtaining financing for productive investment. Public confidence in the financial institutions has not fully recovered. The strategy for growth is to reform and create efficiency in the banking system, encourage greater competition among financial institutions, including entry of more domestic and foreign banks, and encourage private savings.

2.6 STRATEGY FOR THE DEVELOPMENT OF NEW LINES OF ACTIVITY

Although GAMA has a sound economic base on which to expand its economy, it should not entirely rely o the existing resources to maintain the advantages it has over other regions. Economic situations are dynamic habits and tastes are constantly changing; new technologies require new inputs, and vice versa; new player appear in the market, creating new opportunities for growth, or change, or for adoption of new and innovativ lines of activities. GAMA must therefore explore new opportunities which will utilize and take advantage of it resource, location, and available markets, and be designed to futher enhance and stabilize its economi potential and strength. This should be done in all sectors. In industry, these may include:

(b) Cold storaging of perishable goods

Most small and medium enterpriss lack facilities for cold storge of various agricultural and industrial products until they are shipped to their final destinations. Such facilities common in many tropical countries can fill a high demand for such services in GAMA, generating employment both directly and indirectly in ancillary actlvitles.

(c) A complete alr cargo service facility

There are plans to increase the share of non-traditional export of agricultural products from 5 to 15 percent partly by shipping horticultural products by air directly to various European destinations. The cargo facility can be designed and built as part of the new international airport.

2.6.4 Public Relations

Economic, social and political development programme create demands for various public relations activities such as marketing, sales, advertising, and printing. These services are needed by both the public and private sectors who, for various reasons, wish to get their messages across to the general public. The type of services envisaged include campaign planning and execution, political advertising, media monitoring, market research, prints and graphics, exhibitions and trade fairs, convention ogranizatlon, lobbylng and representatlon, polling, etc. The quality, speed, and variety of services available at the moment are neither adequate nor satisfactory.

2.7 INFORMAL SECTOR STRATEGY

Approximately 55% of persons employed in GAMA are in the informal sector. Most of these are involved in petty trading, hawking and small scale enterprises. Few pay tax and most operate on a precarious day to day system of cash transactions. The long-term strategy for the informal sector is to bring more of the working population from this sector into the formal sector and thus improve the tax revenue base, the capitalization of business assets and provide for greater stability of employment. In order to achieve this, the informal sector strategy requires:

(a) Recognition of the contribution of the informal sector by local governments by providing institutional and other support for it. This can be achieved by:

Formalizing the informal sector by making it part of the formal governmental organizational structure. This can be a unit in local governent which will be responsible for looking after the interests of its members.

Making the informal sector part of local government planning and management processes.

Assisting in the organization of the informal sector.

Coordinating available assistance programmes.

Regulating the activities of the informal sector.

(b) Pursuing programmes which maximize the informal sector's production and employment potential by:

Ensuring further integration with the formal sector from which over 36 percent of the inputs come fo informal sector's activities.

Developing economic cooperation among members of the informal sector.

2.6.1 Non-Traditional Industries

Despite some of the problems brought about by the ERP, structural adjustment policies over the last few years have opened several new opportunities, not only for the domestic resource industries, but for the new industries poised to take advantage of the comparative advantage and competitive price of domestic labour intensive indutrial operations. These include contract manufacturing, e.g. garments and textiles, electrical and electronic assemblies for both domestic and export markets, and numerous other low-level technology-based capital goods assembly and manufacturing plants.

With an appropriate incentive framework, GAMA can develop an efficient resource-based manufacturing sector. The region has a good potential to develop agro processing enterprises, given the demand for various kinds of fruits, vegetables, etc. Possibilities exist to significantly increase the value added to wood and agro-based products which also have export markets.

2.6.2 Tourism and Convention Business

As a result of the eocnomic success of Ghana since the launching of the ERP in 1983, Accra has become an international city. A wide variety of construction activities, including a new conference centre for the Non-Aligned Movement, are being undertaken. Despite these Accra requires a number of facilities to accommodate its role as an international city.

GAMA has sunny, sandy beaches, history, forts and castles, rich and panoramic sights, and a refreshing tropical climate, which has a potential to attract European tourists, particularly during the winter season. Accra is also the gateway for visitors heading out of GAMA. Its tourist business is in its infancy, lacking good medium priced hotels and recreational facilities, information centres, marketing and sales arrangements, etc. There are also a number of attractions for local tourists. GAMA needs to establish a centre, preferably with the cooperation of Ghana Tourist Board, which expects to provide over 18,000 hotel beds by 1995 for the 350,000 tourists expected that year. This will produce about 50,000 jobs in 1995. Apart from hotel and recreational facilities, the business requires:

The conference centre construction for the Non Aligned Conference should be convertd into a permanent International convention centre. Convention business is emerging as a source of income, especially foreign exchange. Hosting conventions need organizational and management skills and an efficient International communication systems, which are lacking in GAMA at the moment.

Tourism, convention, and economic development activities require fast, comfortable, safe, and reliable air transportation. Kotoka International Airport, built in 1962 is not equipped to handle large volumes of traffic. Furthermore, its present location presents a danger to persons and property within the aircraft flight path. Neither does it allow future expansion. A new international airport sited north of Prampram on Aflao road need to be built as soon as possible.

2.6.3 Storage and Transportation

GAMA is connected by a good network of roads to all the regions of Ghana and neighbouring countries. It has also an excellent deep sea port facility which handles greater portion of the country's import and export businesses. Although it is a central point for distribution of goods, its storage and distribution facilities are not yet developed. As a centre of trade and transhipment, GAMA needs to develop:

(a) Warehousing and distribution

This is a very well developd business in the industrialized countries and can have enormous growth potential in GAMA. When developed this will help bring down the cost of goods in Ghana. It can be extended to cover the warehousing requirements for imports destined for landlocked countries such as Burkina-Faso and Mali.

Providing security of tenure, including serviced land, work premises, and utility and related services. This needs to be considered during the redevelopment of the CBD and the subregional market centres.

Providing financial, technical, and managerial assistance.

Providing land and buildings for small startup enterprises which have the potential to develop into larger business concerns.

Chapter 3

URBAN DEVELOPMENT

3.1 INTRODUCTION

The Planning Context Report (Volume 1 of the Strategic Plan) documents a significant amount of information on the metropolitan area, as well as issues and constraints which will affect its future development and management. The lack of adequate planning and coordination of development, combined with an inefficient land, housing and infrastructure delivery system have resulted in a pattern of development which is haphazard, incomplete and expensive to operate and maintain.

Despite the scale of problems facing the metropolitan area, there are opportunities for improving the management of urban development. But solutions to problems will take time to emerge and the process of creating a better environment and more efficient delivery systems will be slow and constrained by resources. There are no instant remedies to problems facing the metropolitan area, thus the overall urban development strategy must be directed towards long term solutions. This will involve steering the local economy, development and delivery processes towards the achievement of clearly defined goals, and objectives intended to create a better working, living and prosperous environment for all.

This chapter sets out the strategy for urban development. More specifically it addresses metropolitan structure plan , land development, housing and environmental management.

3.2 METROPOLITAN STRUCTURE PLAN

3.2.1 Development of the Structure Plan

The preparation of the preferred structure plan has involved examination of five different alternative concepts for the future development of GAMA *(See Volume 1 Chapter 4)*. These concepts were: Urban Consolidation, Multi City Structure, Twin City, Satellite Towns and Laissez Faire (no change). The concepts presented different development scenarios by projecting from the existing urban structure using current development trends, land availability, economic and financial parameters. The major consideration in reaching the final concept has been the relation between the population needs and the resources available to satisfy them.

The current population of GAMA is estimated at 1.7 million which is expected to increase at a rate of 4.4% per annum. By the year 2010 it will be around 4 million. The predicted increase in population will have a significant impact on the environment. According to the Environmental Study of Accra Metropolitan Area the natural environment of GAMA cannot sustain this growth without proper planning and land use management. The major effects of urbanization will be felt on the natural resources of land, water, soils and the coastline. Other man-made environmental impacts will be felt from the demands created for the provision and maintenance of shelter, infrastructure, waste management and employment by the doubling of the population by the year 2010. These issues require careful planning and policies to encourage development, but at the same time do not destroy or continue to make inefficient use of precious resources. It is against these considerations that the structure plan for the metropolitan area has been formulated.

3.2.2 Goals and Objectives of the Structure Plan

A Structure plan ia a tool of modern planning. It differs from a conventional master plan by being less specific and deterministic in approach. The Strategic Plan is a policy framework document indicating the desired form of development, providing clear guidelines on landuse and outlining policies on the management of development. In formulating the goal for the structure plan these principles have been embodied. The goal for the plan is to establish:

However, in establishing new city centres it is essential that the commercial office, specialist retail and services do not compete to undermine investment in the CBD. The multi city centres should, therefore, be scaled down to a sub-regional business centre of limited size with activities that are intended to serve day to day convenience shopping and business needs of populations of up to 350,000.

The strengthening of Accra and Tema business centres is important to the overall economic development of the city. Both centres are under developed, unable to attract investment and slowly under capitalized. The strategy of a Twin city was endorsed in the 1961 plan of Accra and Tema and is still sound. It is essential, however, that each city be kept functionally different, in terms of their economic base, but that some shared regional services should be located on the undeveloped land between the two urban areas. This would avoid unnecessary duplication of regional type facilities in the separate districts within the metropolitan area.

These elements of the alternative structure plan concepts provide a framework for the structure plan. The preferred Structure Plan *(see figure 3.1)* sets out the long term physical Land-use strategy for the development of Greater Accra Metropolitan Area. Many details of the plan cannot be specified at this stage and will evolve as the plan is implemented. The Plan presented would satisfy the metropolitan area development needs for the next 20 years and provide for a population of about 4 million.

(b) Description of the Structure Plan

The alternative concepts were examined from the point of view of policy implications, implementation at a metropolitan scale, and effects on various urban sectors. None of the concepts investigated was envisaged as being acceptable in itself, as they were primarily established to highlight the advantages and disadvantages of the policy directions in each. From the analysis of the concepts, various principles were derived for identifying a preferred urban structure for GAMA. As discussed earlier, no single structure plan concept could fulfill all the requirements of the Metropolitan Area. Therefore, elements from four alternatives are to be found reiterated in the preferred structure proposals.

This has led to the development of a consolidated urban growth system with its main thrust towards north-east. As indicated in the physical constraints, the areas comprising the north-west hills and beyond has been excluded from the urban development. These hills will form the north-westerly boundary of urban development and are designated as green belt. The plan incorporates all the area under the currently approved planning schemes though it is presumed that some of these commitments will have to be abandoned or amended in order to make structural adjustments.

The land area, consisting of some 81,630 hectares, on which urban development is to take place, includes extensive wetlands and water bodies which mainly dominate the Tema district. The plan is designed to incorporate this intervening area between Accra and Tema as open space to provide a structure for recreational need, and where practicable, to provide for appropriate institutional uses. The structure concerned with movement and open space can be varied to improve strategic location of certain land uses. This open space, stretching from the sea to the heart of the urban area, will be the principal separator between the two cities and is going to be a major landscape element giving form to the urban area. In the long-term future, when the Metropolitan Area grows beyond 2.5 million population mark, the twin cities of Accra and Tema will merge into one urban mass growing mainly in the east and north-east direction.

The proposed transportation network provides the basic structural formation of the Metropolitan Area. A system of highways and major arterial roads divide the whole planning area into different components which can be treated as major structural elements for planning and development purpose, wherever possible. In the proposed structure, a new expressway replaces the Motorway to serve as Trans West African Highway circumferencing the entire urban development up to 2010. The existing Motorway will, in the long-term future assume the role of a major arterial which should be developed as a Parkway with enough green reservation to further safeguard its quality as a high standard route.

A new east-west route is proposed in line with Doxiadis plan of 1961 between the Motorway and the coastal route connecting the centres of Accra and Tema across the rivers draining into Sakumo Lagoon and providing relief to the coastal route. The major east-west axes are interconnected by regional routes which are radi

In nature and would serve as major arterials. A detailed description of the road network is given in the section dealing with Transportation System.

The importance of railways, in terms of passenger as well as freight traffic, is expected to increase steadily with metropolitan growth. Its capability to provide mass transit between sub-regional centres and CBD's of Accra and Tema cannot be underestimated. As it is unlikely that realignment and shifting of the railway line and other installation can be justified physically and economically, their present positions in the structure, with slight modification here and there have been retained. The incoming lines from Kumasi and Shai Hills will join the circle line along which stations and interchange facilities at strategic locations have been proposed. The central line connecting the CBD's of Accra and Tema will follow the existing right-of-way and will connect with Kotoka International Airport.

The existing Kotoka Airport lies directly in the path of imminent urban expansion. This factor, plus its proximity to the present city, demands that it be relocated as soon as possible. The location for a new international airport has been identified by Civil Aviation Department about 16 km east of Tema on Trans West African Highway, which is indicated on the plan.

The positions of the CBD's of Accra and Tema are of significant importance to metropolitan development. Accra CBD is Ghana's principal administrative, financial and commercial centre. It is intended that it will continue to be developed as the main regional commercial centre and administrative centre of Metropolitan Accra and will be encouraged to provide for further specialization of national and regional business, retailing and community services. The town centre of Tema provides community focal point for its own residents and offer a wide range of employment, shopping, educational and social opportunities. The future scale of provision of these facilities will be related to the needs of the town and its respective catchments. It is intended that the two CBD's should develop on the basis of the twin city concept and should not compete with each other.

The structure plan also indicates approximate locations for four sub-regional business centres at strategic points. It is considered that within the existing setting and proposed principal transport network, these centres could be developed to serve a population of 250-300,000 with their complex and changing network of social, commercial and industrial services. These centres will play a pivotal role in decentralization of employment opportunities which would help to disperse traffic flows and avoid undue congestion of the main centres.

In the development of the preferred structure, it has been considered that maximum integration between new and existing development is essential for the full physical and social needs of the Metropolitan Area as a whole. The pattern which has evolved in considering the aforementioned factors together with other planning criteria is that of an informal system of axes which achieves a high degree of integration between the existing and future urban areas with minimum possible cost.

In summary the key elements of the Structure Plan are:

Consolidating development within the existing urban areas and promoting the orderly expansion of new urban areas.

Comprehensive upgrading of inner urban areas.

Encouraging the development of Accra's central area as the National Capital Centre and the main metropolitan centre (CBD).

Encouraging the development of Tema as the principal harbour and industrial centre of the metropolitan area.

Development of Tema CBD as a competitive centre with Accra.

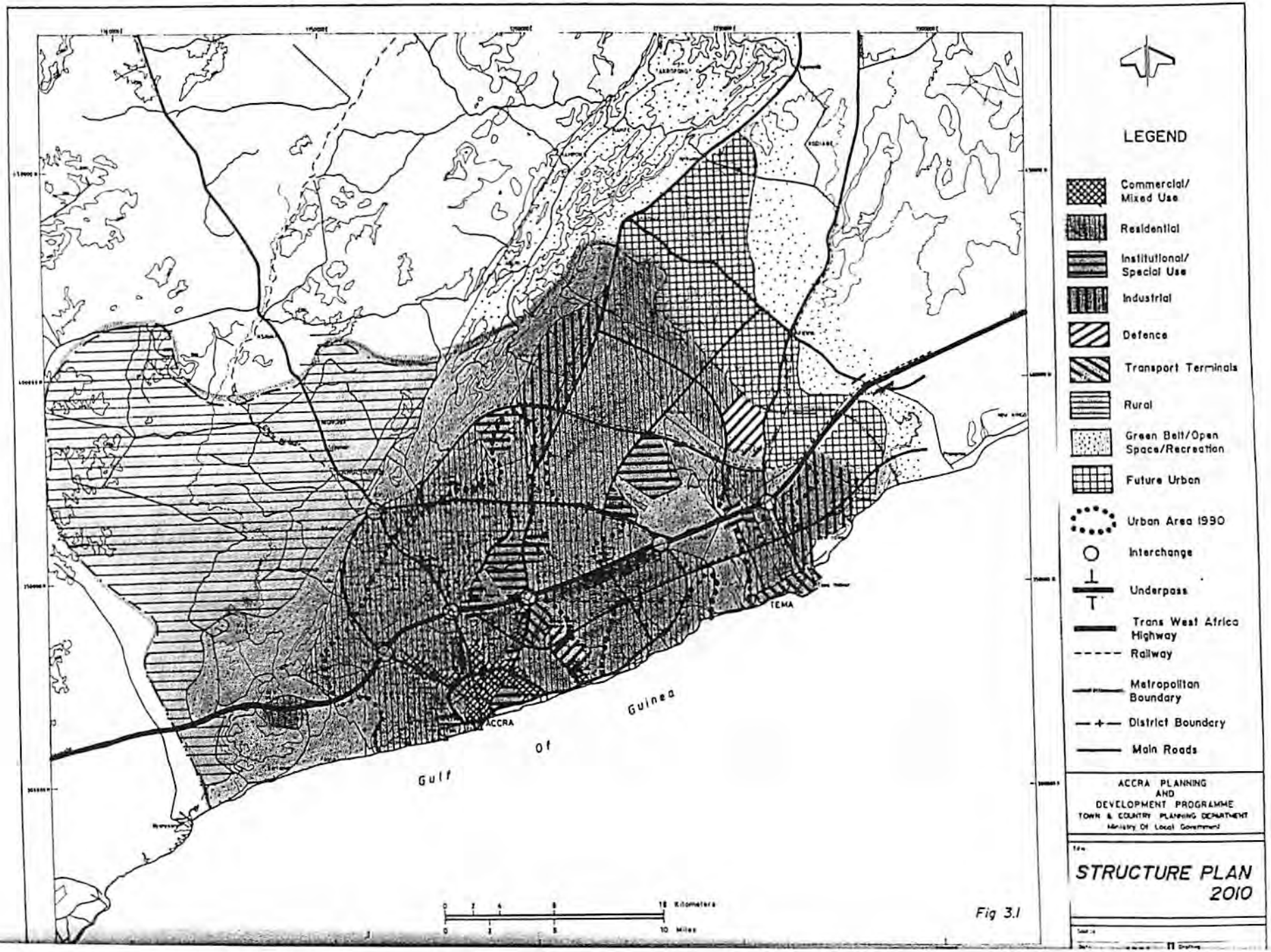

LEGEND
Commercial/ Mixed Use
Residential
Institutional/ Special Use
Industrial
Defence
Transport Terminals
Rural
Green Belt/Open Space/Recreation
Future Urban
Urban Area 1990
Interchange
Underpass
Trans West Africa Highway
Railway
Metropolitan Boundary
District Boundary
Main Roads
ACCRA PLANNING AND DEVELOPMENT PROGRAMME
TOWN & COUNTRY PLANNING DEPARTMENT
Ministry Of Local Government
STRUCTURE PLAN 2010
ACCRA
TEMA
Gulf Of Guinea
0 2 4 6 10 Kilometers
0 2 5 10 Miles

Fig 3.1

Provision of sub-regional and district centres at strategic locations to meet the more day to day needs of the local community.

Provision of adequate transportation system including road and rail network and terminal facilities which will facilitate improved traveling within the metropolitan area and maintain traffic flow with the region.

Designation of special facilities zones for institutional, recreational and defence purposes.

Designation of industrial zones at appropriate locations with respect to access, services, employment and environmental factors.

Development of metropolitan open space for recreational activities consistent with the landscape and environmental objectives.

Designation of green belt to constrain long-term urban expansion and to ensure the conservation of important landscape and environmental areas.

Enhance and improve the recreational potential of coastal areas to provide adequate recreation facilities for residents and visitors.

3.2.5 Land Use Allocations

The overall land use requirement of the structure plan has been calculated on the basis of a population growth rate of 4.4% per annum for the total plan area. If the future population as projected for 2010, is accommodated on a collective gross residential density of 90 persons per hectare (gross), the total land requirement for residential purposes by 2010 will be about 42,000 hectares. The current metropolitan residential density is in the order of 65 persons per hectare (gross), and the increased density is intended to constrain the pace of new residential development on the periphery of the urban area and encourage greater intensification of existing residential land - especially in the mid and fringe city areas. The future residential area is expected to cover almost 32 percent urban land in GAMA, but this would have increased to almost 50% if current policies are allowed to prevail. The overall land requirements of the structure plan in 10 yearly intervals is shown in Table 3.1.

Table 3.1 Summary of Land Use Requirements

Land Use	Area in Hectare		
	1990	2000	2010
Commercial	1,650	2,050	2,250
Civic & Cultural	130	150	180
Institutional/Special Uses	4,280	5,550	6,980
Residential	26,350	33,380	41,940
Industrial	2,690	5,190	7,690
Defence	1,640	1,640	1,640
Major Roads	1,460	1,950	7,200
Transportation (Terminals)	920	920	1,200
Open Space/Recreation	2,000	11,250	12,550
Urban Total	41,040	62,080	81,630
Rural Total	110,880	89,920	70,370
GAMA Total	152,000	152,000	152,000

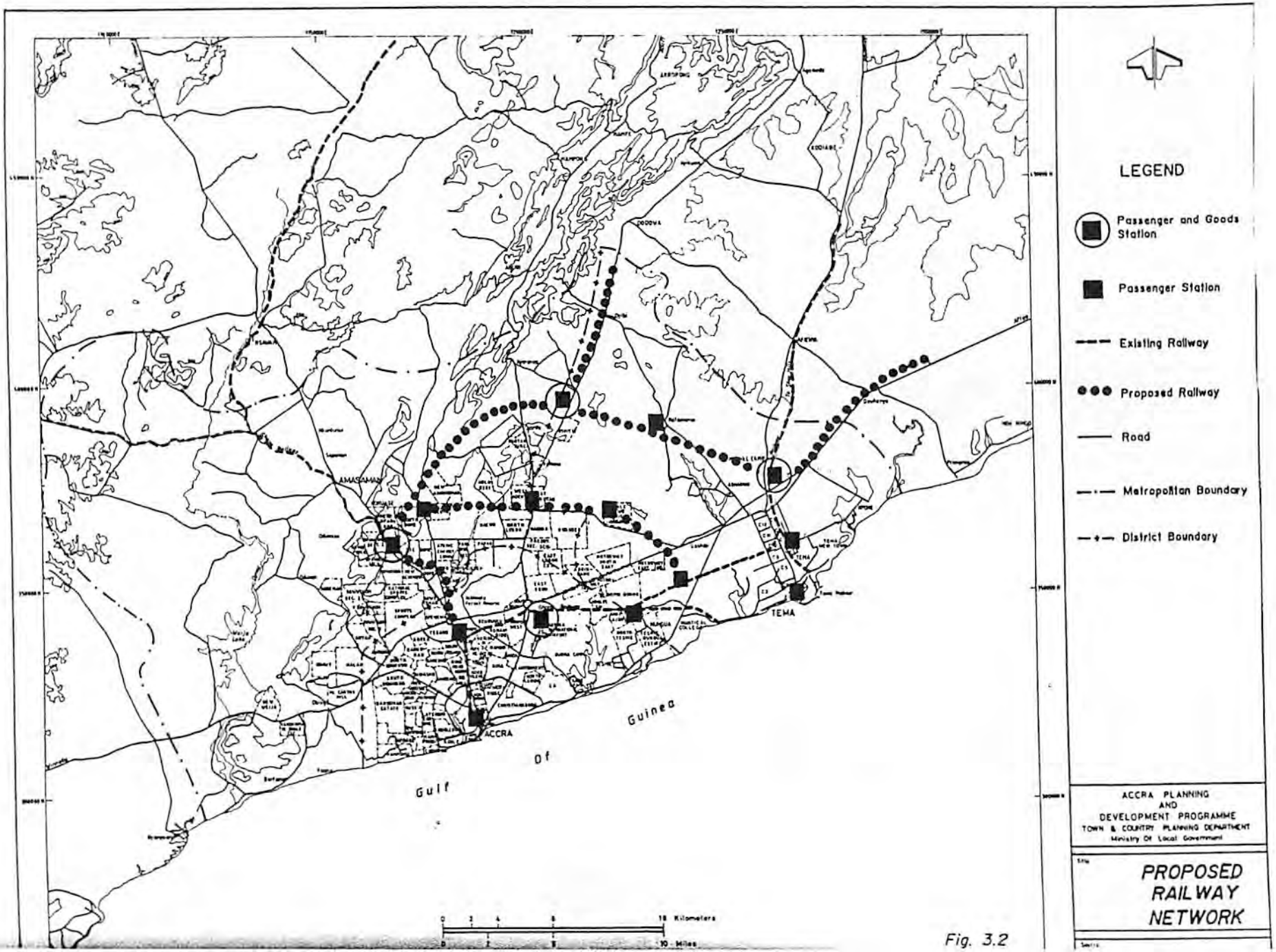

LEGEND
Passenger and Goods Station
Passenger Station
Existing Railway
Proposed Railway
Road
Metropolitan Boundary
District Boundary
ACCRA
TEMA
Gulf
Of
Guinea
0 2 4 6 10 Kilometers
0 2 5 10 Miles
ACCRA PLANNING AND DEVELOPMENT PROGRAMME
TOWN & COUNTRY PLANNING DEPARTMENT
Ministry Of Local Government
PROPOSED RAILWAY NETWORK

Fig. 3.2

3.2.6 Land Use Policies

The Structure Plan (Figure 3.1) shows essentially the broad preferred uses of land in specific zones, though an intermix of activities with the predominant functions can take place depending upon the situation. The general intent of the structure plan can only be achieved if the major landuse proposals are strictly followed. The specific details of the plan will evolve as detailed town planning schemes and plans of subdivision are prepared for newly developing areas. Existing residential areas will be managed by existing town planning schemes - although many of these will have to be upgraded in the next 5 years. The major land uses and the policies to guide their development within the framework of the structure plan are as follows:-

(a) Residential Development

Section 3.4, Housing, sets out an overall strategy for housing development.

(b) Commercial Development

Accra and Tema have developed on a basis of discrete towns. An important planning objective is that both urban centres should remain relatively self-contained within one metropolitan structure, in order to meet the needs of their inhabitants in relation to employment, retail, services, trade, leisure, recreation and community facilities though the economic base of the two urban centres may be different.

Within the metropolitan structure, a hierarchy of centres will be maintained, with Accra Central Area as the highest order commercial, entertainment and tourist centre in the Metropolitan Area followed by Tema and the sub-regional centres at the next level of shopping, financial and community services. This plan will be consistent with the government policies involving decentralization of employment and economic opportunities. The plan proposes to develop the following centres.

(i) Accra Central Business District

This is the heart of the National Capital. The area is roughly bounded by the Ring Road, and accommodates many functions relating to the nation's capital including administrative, financial and commercial activities. It is intended to be the highest order commercial, entertainment and tourist centre in the metropolitan area and will be encouraged to provide for further specialization of business, retailing and community services. Special regard will be given to the quality of the overall environment and to transport and traffic management.

In order to provide a strong physical structure to symbolise the role of Accra as the National Capital, major national uses with strong symbolic character will continue to be located within this area while other National Capital uses of lesser importance could be allocated other suitable locations around the Central Area but south of the Motorway.

This is the area where greater intensity and height of buildings will be encouraged and highest standards of urban design will apply to create a visual and symbolic impact.

As a component of the Strategic Plan, a plan for the improvement and development of the CBD area is currently underway with the following objectives:

develop a strategic planning data base for the Central Area;

examine the issues which are impeding development and investment in the CBD;

formulate a plan which should clearly spell out strategies that will redress the problems affecting the area and assist in achieving other plan objectives;

prepare a 5 Year Development Programme for the CBD outlining specific projects and programmes be executed during the period;

prepare an Action Plan for priority improvements specifying works to be undertaken in the short te period;

prepare an Investment Prospectus that will highlight opportunities for public and private investment.

The plan will propose an overall structure in relation to land use, traffic and transportation, engineer services, landscaping and environmental improvement and spell out strategies for:

- Land use Planning
- Urban Design and City Image
- Environmental Improvements
- Transport and Communications
- Engineering Services
- Upgrading and Redevelopment of Housing
- Economic Development and Employment
- Planning and Development Control
- Conservation and Heritage

(ii) Tema Centre

The town centre in Tema is provided as a linear zone which runs north-south right through the reside communities. The centre is not yet developed, and the smaller commercial centres in the various commun are presently providing the required services and fulfilling the role of the Town Centre. Community One Ce is the most popular of all the centres due probably to the early start it had at the initial stage of developm

With the population growth proposed, the New Civic Centre, already planned and in course of construct is expected to expand and develop and it is anticipated that it will become a major office, shopping commercial centre serving the needs of the town related to its functions.

In terms of the range of services and quality of traded items, Tema is not significantly different from Accr is, however, the scale of provision of these facilities which will be related to the needs of Tema town. future town centre will provide community focal point for the residents of Tema catchment and offer required services commensurate with the size of its population. In no way, however, will it be allowe compete with the Accra City Centre where the scale of the facilities will be related to the needs of the wi Metropolitan Area and the nation.

A consultancy project, similar to that of Accra, is proposed to investigate the underlying problems which constraining the development of the Tema CBD and to prepare a plan to guide and encourage the appropr development. The plan will define strategies, programmes, and an investment plan having regard to specific role Tema CBD has to play in the hierarchy of metropolitan centres.

The proposed plan should clearly spell out strategies to:

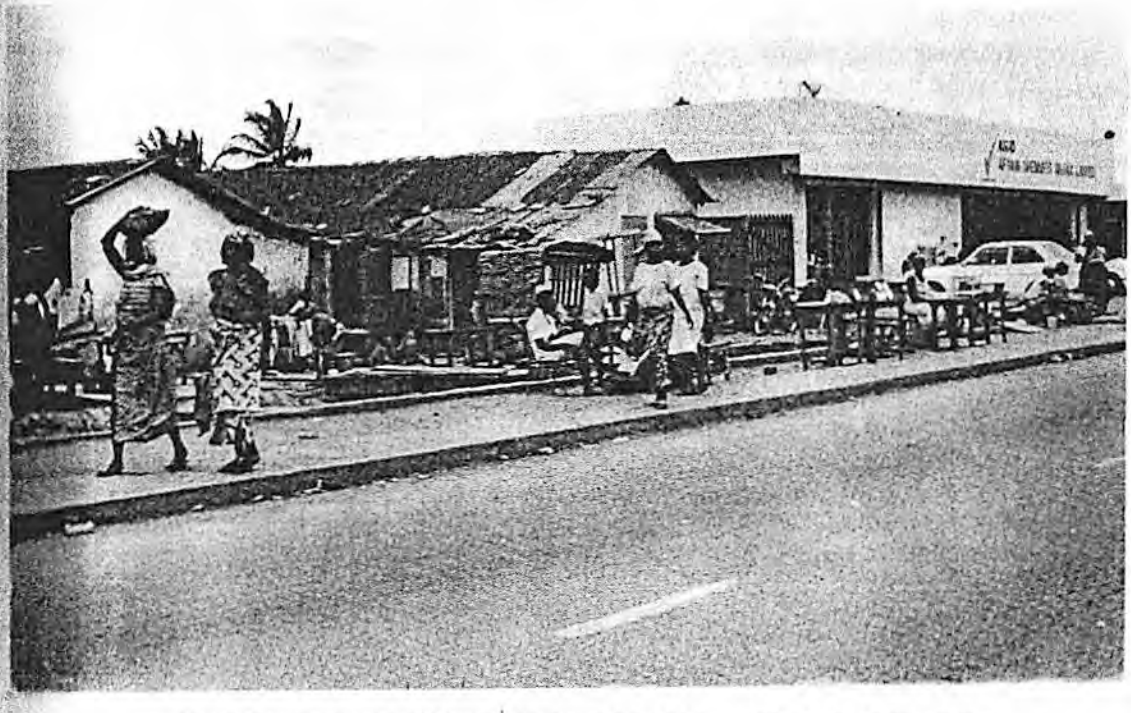
provide adequate commercial and retail functions

develop the centre as focal point for public transport networks and services

encourage growth of entertainment/recreation, social and community facilities

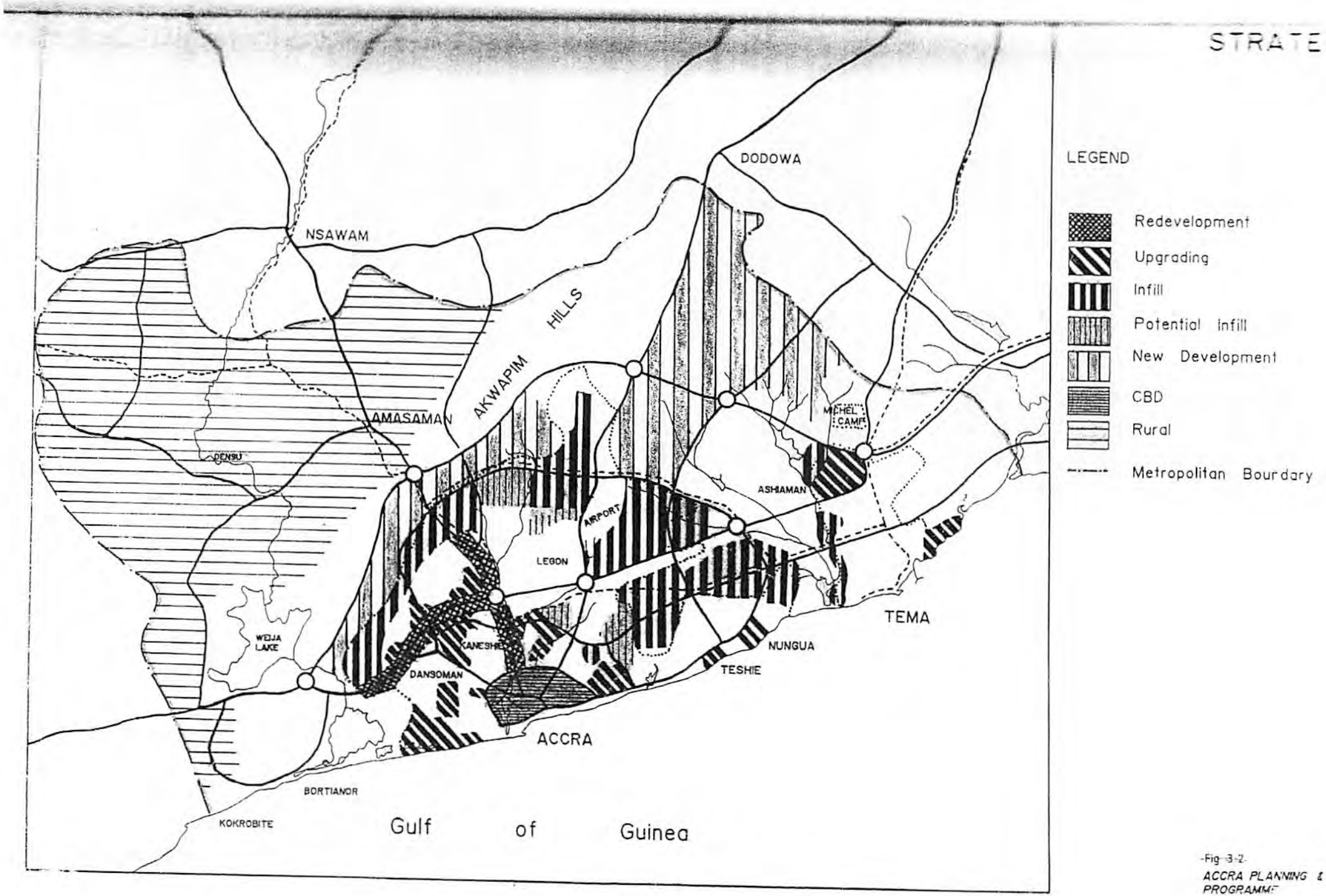
encourage development of storage/warehousing and service industries in order to support Tema port city

ACCRA INTERNATIONAL CONFERENCE CENTRE AND ITS ENVIRONS



THE CHANGING TOWNSCAPE OF NIMA, LOW-INCOME AREA

URBAN DEVELOPMENT



-Fig 3-2-
ACCRA PLANNING & DEV
PROGRAMME

promote and encourage growth in local and subsidiary office employment in accordance with the policy of decentralisation.

(iii) Sub-Regional Centres

These are the next level of shopping, commercial and financial centres and would be geared to the provision of local population oriented services to meet the needs of urban populations of about 250-350,000. Approximate locations for five sub-regional centres are shown at five strategic points at Madina, Amasaman, Olankor, Teshie/Nungua and Ashaiman. The tentative locations of these centers are based on the existing development potential and convenience of access. The final location and nature of growth and how this is to be encouraged is contained in the study and action planning for the Sub-Regional Business Centres.

Each such centre would approximate 70-80 hectares in size of which 50% would be devoted to commerce and business and the remainder to local administration and social services. In addition to outlining design criteria for the centres, the study also proposed the need to address economic development and access and mobility issues.

(iv) Neighbourhood Local Centres

In addition to the higher ranking centres shown on the Plan, provision is made for a small convenience centre at the neighbourhood level to serve the needs of 5000-8000 persons. The exact locations of these centres will be determined during the preparation of detailed plans for residential areas. There will probably be not more than 8-10 shops serving the most immediate needs of the residents within a half to three-quarter of a mile radius, which will eliminate the need for vendors and garage shops presently very common in residential areas. In such locations, these centres would enjoy benefits of high accessibility and lower rentals, which would simultaneously derive commercial benefits rather than hardships from their presence.

(b) Urban Areas

Over the past thirty years urban development within the Metropolitan Area has taken place quite haphazardly, interspersed by open land, depending upon availability of land. Scattered development has given rise to dispersed retail development, all over the city resulting in ribbon commercial development along almost all major traffic routes. This development has been associated with displacement of older, less competitive uses which are thus considerably disadvantaged. Often, residential accommodation is replaced by non-residential activities.

The future development is designed to take place on the basis of discrete districts or urban areas defined by major roads, a natural barrier like a ridge, water source or by an open space. The whole Metropolitan Area has been broadly divided into six catchments or environmental areas on the basis of drainage and landscape. These environmental areas will be further divided into different urban districts for planning purposes. An important planning objective is that each town or district should be relatively self-contained in order to meet the needs of its inhabitants in relation to employment and other facilities as much as possible.

The present urban areas will be improved by urban consolidation and intensification without the congestion, pollution, environmental degradation and inconvenience so often associated with intensification of urban areas. For this purpose, separate planning standards and guidelines would be formulated for redevelopment, upgrading and infill development in order to enable a different kind of development to pursue different aims and objectives in varying ways.

(c) Green Belt, Recreation and Open Space System

Selected areas of open space which are considered to be of metropolitan or regional significance will be designated as part of a Metropolitan Open Space System. To this end, the hills and ridges to the north east of urban areas are to be kept free of urban development and designated as Green belt setting a limit to urban development and separating it from rural areas. The man made lakes, rivers and their flood plains, coastal

areas with lagoons also constitute a diverse ecological, scenic and recreation resource which justi preservation and reinforcement. Of significant importance in this respect is the area between Accra and Ten constituted by Sakumo catchment. All those areas with several other lagoons and streams will comprise th Metropolitan Open Space System.

It is estimated that an area of approximately 11,250 ha has to be retained as open space and undevelope breathing space. Some of these areas are presently under pressure for development. It would be appropria if all such areas are designated immediately to save them from encroachment.

If properly planned and maintained, this open space system will meet all the present and future needs metropolitan inhabitants and tourists for recreational, and educational open space and to reinforce ar enhance the setting of the national capital. The ultimate boundaries of the system will be establish progressively as the local plans for separate parts of the system and adjacent urban areas are finalised.

(e) Industrial Development

In 1990, industry occupied 2,690 hectares or 6.6% of the area under urban uses in GAMA, most of which w concentrated within the Ring Road West Industrial Area, North Industrial Area along Accra-Nsawam road, ar the South Motorway Industrial Zone. In Tema, major industries are located in the main industrial zone ea of the main residential areas and some are located in two smaller zones along the Motorway and south Ashaiman.

Some of these industrial locations were essentially fixed by existing development and commitments, wh other areas like along the Motorway were part of the Doxiades Master Plan. The Tema Industrial Area h been developed in conjunction with the harbour where all industry associated with the port complex is place.

Considering the planning implications of the spatial distribution and character of industrial activity, furth manufacturing industries in the North and West Ring road Industrial Areas are to be discouraged, allowi the usable land to be developed for activities associated with storage, service trades and for technologica based industries.

Major industrial developments along the Motorway have their environmental implications. The use of th area needs to be carefully controlled which may also form part of the buffer zone between Accra and Ten

The demand for industrial land for the future has been based on the projections of labour force in the econon development strategy using a density of 120 workers/ha and 2% growth per annum, it is estimated that additional 2,500 ha and 5,000 ha of land will be required by the year 2000 and 2010 respectively.

To meet the long term future needs, a large industrial area has been designated on the northern edge of t urban area with direct access to the arterial road network. This area is an extension of a small industr development near Aburi Road and Dodowa Road junction.

The large industrial area east of Tema which is in excess of the present needs will provide for the project industrial land requirements. All industries associated with the port complex and those affecting t environment would be located here.

(f) Institutional and Special Use Areas

Institutional and special use areas with a high component of government and other national capital us including areas of public utilities, etc. is the second biggest land use after residential, occupying about 10.(of the total urban area. Smaller institutional uses occurring within the residential areas are not included in t above category.

The single largest stretch of land devoted primarily to educational uses is the Achimota-Legon/Greenhill-Presbyterian Secondary School area north of Accra. Other large areas under institutional and special uses include Korle-Bu Teaching Hospital, Military Hospital, Trade Fair Centre in Accra and Radio Relay Station and a few educational institutions in Tema. Other government offices and public institutions are concentrated in the CBD and Cantonments areas.

The intention is to maintain the present special use areas and to provide others to meet the needs of the future growth of the Metropolitan Area. A special use area has been created within the metropolitan framework but outside the urban residential areas, comprising the presently open land in the Sakumo Catchment between Accra and Tema. This area may be used for national and metropolitan functions and may also form part of the buffer zone between the two cities to be maintained as part of the metropolitan open space system.

(g) Rural and Non-Urban Areas

About 73% or some 110.880 hectares of land within the GAMA is in agricultural and other non-urban uses. These uses presently occupy most of the Ga district and northern parts of Tema district.

Almost all Ga district comprises Weija dam catchment which is part of the Accra Water Supply System. There is also a very large portion of Tema district comprising Sakumo catchment having large man-made water bodies that should be assiduously maintained. The control of such lands in the immediate vicinity of water bodies is important to the maintenance of water quality.

It is intended that rural lands will continue to be used for rural and non-urban activities, unless required for other land use purposes associated with the growth of the Metropolitan Area. It is estimated that nearly half of this land will be converted to urban or other land uses associated with urban growth in the next twenty years.

(h) Military and Security Areas

An important component of Institutional and Special Use Areas are the Military enclave between Accra and Tema and other security areas within various commercial and residential areas scattered throughout the Metropolitan Area. These areas merit special consideration as their presence in the civilian urban areas affect the overall planning concept and impose limits on what can be done in the areas where they occur.

The 1,640 ha used by the Defence include those in Burma Camp, the range, the Naval and Airforce bases, and the Military Academy and Training School. There is no indication that more land would be required for the military purposes. However, due to their national and strategic importance, it requires careful and sensitive planning. It is assumed that some military functions will always stay in Accra, but a policy should be established to avoid creating any new defence areas or expansion of the existing ones in a predominantly civilian area.

A special military area is proposed north of Tema incorporating existing Michel Camp where all future defence functions should be located. This strategy is considered prudent, practical and realistic particularly in the short-term planning context and will complement preservation strategies by not precluding their existence in the long-range planning context.

(i) Principal Transportation Areas and Corridors

The recommended land use plan recognizes the existing roadway network hierarchy and suggests only slight modification or extension of the existing system to provide better service. The major elements of this system consist of the outer orbital highway bypass and the existing Motorway and a series of radial spines connecting different parts of the Metropolitan Area with the Central Area. The system of arterial and collector roads remain essentially the same with some alteration/modification toward the achievement of specific objectives which are discussed under Transportation.

Likewise, other requirements relating to the transportation system have to be met. Despite the curre difficulties of upgrading the existing railway facilities, it is nevertheless useful to identify a corridor sultable fo the location of a rail alignment, and to maintain its availability in the event that urban railway is found to b feasible as mass transit system.

The air transport for structure plan purposes is mainly relevant in terms of site requirements and its impac upon adjacent land use. Since an alternate location for a new International Airport has already been identifie the most important short- term concerns in this connection are the maintenance and protection of its fligh path, and to meet all passenger needs with respect to its link with the city and the rest of the country.

3.2.7 Development Strategy

A physical development strategy for GAMA is largely concerned with the future development, upgrading an improvement of the already urbanized areas, and maintenance and preservation of non-urban land. Th structure plan (Figure 3.1) and Table 3.1 provide the basis for how land is zoned for development. The lon term development strategy for GAMA involves a population of 4 million which is based on an average annu growth rate of 4.4%. It takes into account the strategic aim and objectives for urban development and mar of the factors identified earlier in this report as well as in Volume I.

In line with the plan objectives the overall development strategy is that which retains the basic principles an structure of the urban consolidation concept with adjustments to the structure having regard to the princip components of the plan - a metropolitan structure which emphasizes the role of Accra as the capital of Ghan and a major commercial centre, and Tema as a harbour and industrial centre, with a policy of parti decentralisation which places greater emphasis on the sub-regional centres, and on district centres whic provide smaller scale facilities serving a more limited catchment.

It is expected that all urban development during the first ten years will be absorbed into the existing urb areas. It will be many years before all development in this area can be fully serviced and it must be expect that this situation will continue at least until end of the century, unless resources to meet the infrastructu requirements are available. There is a need, therefore, to prepare a development strategy which will allo infrastructure and other services to be provided in a sequential manner. Dispersed development on seve fronts will be avoided as it reduces the economies of scale which can be achieved by concentrati development resources in fewer areas.

Figure 3.3 reflects a development strategy to the year 2010 indicating the potential Action Areas where t nature of existing development or the existence of specific local issues warrant comprehensive action by n development, redevelopment or improvement. The list at the end of this section implies no order of prior or programme but it can be used as a basis for preparing five year implementation plans.

(a) Urban Consolidation

In developing a medium and short term strategy, for implementation during the first ten years, priority sho be given to urban consolidation depending primarily on the utilization of existing infrastructure services, soc services and transportation improvements within the CBD and the inner urban areas south of the motorw There are several methods available for pursuing urban consolidation objectives, including infill, conversi redevelopment which are discussed in greater details in the section dealing with housing strategy.

(b) CBD Redevelopment

The impact of an urban consolidation programme on the CBD trading position is difficult to assess at t stage, pending the completion of the central area study. It is, however, expected that in the CBD commer and cultural/institutional uses will continue to dominate where major infrastructure and transportat improvements are needed. Any improvements in its commercial activity will depend not only on the succ of the programme in providing for additional population, but also on the extent to which CBD's retail struct is modified or supplemented. If urban consolidation policies were implemented, residential redevelopm

in or around CBD would offer the opportunity to increase population in its catchment which would be of grea benefit to CBD employment and trading position.

(c) New Development

New urban development should not be allowed to take place in a spread out manner. Inapprop ate premature development of open lands could result in a loss of future opportunities, or introduce long-t constraints to the efficient development of the metropolitan area. Timing of development may be a key fa in efficient development of land and to prevent its premature break up or development for inappropri e

Priority should be given to concentrating development in one major corridor over the next ten years, wl should preferably take place in the following order of priorities:

(i) Development of Teshie-Nungua vacant area south of the motorway up to the outer ring road.

(ii) Extension of Mccarthy Hill-Ofankor area to the limits of the Structure Plan.

(iii) Extension of Ofankor-Oyarifa sector to the urban limits bounded by the outer orbital road up to A Road.

The area comprising (ii) and (iii) above is already allocated to some planning schemes which should redesigned to accommodate structure plan requirements. Once development in these extended urba a is complete, the development in the new areas in Tema North could be undertaken.

It is estimated that the maximum population increase which might be achieved through urban consolida and development activity within the whole of the existing urban area is not likely to exceed about 00 persons. The remaining increase has to be accommodated in new areas in Tema districts such a situ tic expected to arise within six to seven years unless steadily declining population growth rates can be achie as discussed in Volume I (section 4.1).

In order to provide flexibility and opportunity for monitoring and on-going analysis, especially in the later y of the implementation period, the recommended strategy provides potential for continuing implementa over the twenty year period while giving more precise commitment during the first ten years.

(d) Priority for Services

Just as there is a need to set a strategy for development, an appropriate strategy is also required for provision of services. The priorities given in this section are designed to ensure orderly and econo development within the objectives set for the plan. There will be a need to review these priorities from to time, however, they do provide a sound basis for future planning and development.

(e) Planning and Development Control

New Planning standards will be introduced in 1992. These will replace outdated and inconsistent p an standards and zoning practices. The standards will be supported by measures to streamline the prepara and approval of town planning schemes and guidelines to assist developers in preparing and submitting pl Many of the approved town planning schemes for the metropolitan area bear no relationship to w al taken place on the ground. A programme has been initiated to upgrade all existing town planning sche over the next 5 years. The revised plans are intended to be much more simple, with less attention to d Detail plot layouts will no longer be shown on plans, as it is expected that individual developers be gi e responsibility to prepare plans of subdivision and to discuss these with the Town and Country P ar Department before submitting them for approval.

Development control has proved totally ineffective because of the lack of manpower, logistical sup or political will to enforce laws and regulations, coupled with an overloaded court system. It is intended

much of the responsibility for development control will now be given over to community leaders to ensure land for community facilities is protected and roads are not encroached upon. A programme will be run by the Town and Country Planning Department to inform and advise community leaders on how best to manage development in their areas. Community leaders will then advise the Planning Authority of any support they may need to ensure development which does not comply with a plan is stopped particularly public use areas.

Most of the day to day services of town planning and development control will eventually be transferred to the sub district offices of the Assembly. This is to ensure improved services at the local level. Only more complicated plans and proposals will be referred to the main department. This should enable applications to be dealt with much more quickly.

All land developed in the national capital should have formed road access with adequate provision for engineering services and drainage. In the short-term few newly developed areas will be capable of being fully serviced at the time of development.

9.2.0 Action Area Planning

The strategic plan sets out the broad long-term aims, objectives and policies, and suggests possible actions suitable to consider to implement these policies. It does not give detailed and specific recommendations and programme priorities to pursue the proposed strategies. Implementation of many of the strategies will require detailed studies and planning which should take place several years ahead of development.

The following list provided a basis for preparing the Action Area Programme aimed to provide a balanced contribution towards satisfying the needs of the city related to both the existing population and the forecast population increase:

UPGRADING

Mallam
Awoshie
Apenkwa-Akweteman
Bubiashie-Darkuman-Abeka-Kwashieman
Nukuru-Russia-Sempe New Town
Nkrabon Zongo
Dbegbeyise-Mpoase-Mamponse-Chorkor
Alajo Pig Farm-Maamobi-Nima
Labadi
Teshie Old Town
Nungua Old Town
Ashaiman
Tema New Town/Kpododome

REDEVELOPMENT

Nsawam Road corridor (Avenor-Akweteman)
Motorway Extension corridor (Apenkwa-Mallam)

INFILL

McCarthy Hill-Mallam-Anyaa-Sowutuom)
Tema Hatcho-North Legon-West Adentan
East Legon Ajiringanno-Ogbodzo-Ashalebotwe
Developments

Okpoi Gonno-Naaflajor-Hedzoleman
North Ashaiman
Western part of Tema

POTENTIAL INFILL

Atomic Energy Commission Kwabenya
Legon (North West of the University Campus)
Burma Camp

NEW DEVELOPMENT

The extension of existing urban area (Gbawe-Abbeman-Ofankor) along the foothills
Tema North

3.3 LAND DEVELOPMENT

3.3.1 Land Issues

The delivery of land for development in GAMA has been plagued by problems of litigation, institutional deficiencies and disreputable land dealings, all of which are a constraint upon economic growth. If this situation is allowed to continue the gap between supply and demand for land will widen; land prices will escalate; illegal development, occupation and construction on disputed land will continue and housing delivery will slow down. The current institutional mechanisms are incapable of increasing the delivery of land and therefore, a strategy which overrides many of the incumbent problems and frees up the process of land delivery is essential.

3.3.2 Objectives

In setting objectives to improve the land delivery process, it is important to recognize that land in GAMA is not simply an economic commodity which can be used or exchanged. There are many cultural factors which are intricately bound up in the ownership of land. Solving land problems will require a careful blend of traditional and modern customary approaches to land settlements. However, the demand for land in GAMA is growing and the impasse which currently prevails in the land delivery process cannot continue if economic development and increased prosperity are desired. The goal of the land strategy is therefore to achieve:

AN EFFICIENT LAND MANAGEMENT AND DELIVERY SYSTEM

The objectives of the strategy are targeted at specific elements of the delivery system; namely to:

Maintain an adequate supply of land for urban development

Develop an efficient land administration system.

Reduce land litigation

3.3.3 Thrust of the Strategy

The primary thrust of the land strategy is to remove, as quickly as possible, constraints and encumbrances which are preventing individuals obtaining access and title to land. The strategy is primarily directed to problems of litigation, but this will require action at the national level as well as less formal approaches to dispute resolution. By removing many of the more serious problems associated with tenure, land can be

developed and sold in a more manageable way; infrastructure services and community facilities can be provided before development takes place; land will become a basis of collateral for the construction of houses and buildings and control over development will improve. The following elements of the strategy are intended to support the objectives outlined above.

(a) Adequate Supply of Land

The need to ensure an adequate supply of land is essential if development costs are to be kept low and inflationary spirals in the land market are to be constrained. The following initiatives should be adopted to ensure adequate supply of land that can be maintained for urban development.

(i) Urban Land Development Programme

There is no coordinated release of land for development in GAMA and this results in sporadic settlement; an inefficient and costly transportation system and expensive lines of trunk infrastructure being extended to new areas with comparatively low levels of utilization and returns on investment. To ensure better management of development, the Department of Town and Country Planning should prepare and review annually a 5 year land development programme. This should be included in the 5 Year Plan and provide details on the projected amount of land required for release on a year by year basis, the location of releases and expected sales and construction starts.

The urban development strategy indicates the long-term development pattern for the metropolitan area. The estimated requirements for new urban land to be released and developed in accordance with the plan is shown in Table 3.2. It is recognized that litigation problems will continue to constrain the efficient release of land - especially to the north and northeast of Accra and, therefore, short-term actions should be taken by Government to release more government land for development. This will involve development being directed to Tema (where there is large areas of vacant land free from encumbrances); State Housing Corporation Lands and small pockets of infill development within the existing urban area. This must be preceded by a programme to restructure the Lands Commission, Survey Department and Land Title Registry to improve their efficiency.

Table 3.2 Additional Demand For Land

Land Use	1990-2000	2000-2010
Commercial	400	200
Civic & Cultural	20	20
Special Uses/Institution	1,270	1,430
Residential	7,030	8,560
Industrial	2,500	2,500
Major Roads	490	5,250
Transportation	-	280
Open Space/Recreation	9,250	1,250
Defence	-	-
Total	20,960	19,490

(ii) Repossession of Undeveloped Land

There may be in excess of 2000 plots of government land in private hands in the metropolitan area which for various reasons have either remained vacant or have partially been developed for over 15 or more years. In most cases the conditions on the development lease have expired. These vacant lands are a valuable resource which are currently frozen for development. The Lands Commission does occasionally repossess vacant land

but this is a very low proportion of actual vacant plots. As an initial step to unfreeze some of this land for development, the Lands Commission should document all land for which development lease conditions have not been met. All leases with conditions which have been breached for over 10 years should be repossessed, unless a lessee can demonstrate he has the resources to complete a development within one year. The Commission should auction repossessed plots and give some compensation for the resettlement of legitimate inherited occupiers of plots who will never have the means to complete the development of the land they occupy. Further steps should be taken to eventually recover all land where development lease conditions have not been met.

(iii) Land Bank

To provide an asset which could be used by local government and any future development corporation to raise capital, consideration should be given to the establishment of a land bank. All under-utilised or surplus land held by government or corporations, land held in trust under Law 123 for urban development purposes, and repossessed land should be transferred to the Land Bank. The Assemblies or a development authority would have trusteeship of this land. The enabling authority acquiring or transferring land to the bank would, for the time being, be the Lands Commission.

(iv) Tax on Vacant Land.

All land in the Accra Metropolitan Area and Tema District have recently been revalued by the Land Valuation Board. A new valuation should be undertaken every 5 years in order to maintain a realistic value of property. There are, however, over 6000 plots in Accra and Tema which are vacant and upon which no property taxes are paid. Many of these are valuable inner city sites. Consequently, there is no incentive to develop vacant land but it still continues to increase in value. The District Assemblies should introduce a tax on vacant land as a means of generating additional income and forcing owners to use it for some economic purpose. Differential land taxes should be applied on all innercity commercial land to encourage redevelopment to a higher or more intensive use.

(v) Amalgamation of Land in the Inner City

Large areas of the inner city are held in small holdings by private, corporate business, government and state corporations. Much of this land is underutilized or surplus to need. It is a valuable asset which is undercapitalized and generates very little or no revenue. A computerized inventory of all land holdings in the CBD should be prepared by the Lands Commission in a form that can ultimately be linked to a spatial data base. Public land should be transferred to the Land Bank. The Lands Commission or the district assembly could then amalgamate land and release consolidated land packages for development to developers. Land not required for immediate development should be held by the Bank and temporary use permitted upon it for car parking and retailing to generate revenue. Some proceeds from the sale of land should go to government as a means of revenue generation. The balance would be used to cover amalgamation and site development costs. In this way local government would not have to seek government funds to provide essential infrastructure services.

(vi) Local Government Purchase of Land.

Local Government Law 1988, PNDCL 207 authorizes local government to purchase land or enter into joint ventures with developers. It will be many years before the Assemblies will be in the position to purchase land. However it should, where possible, enter into joint venture agreements providing land and infrastructure as equity. Where joint ventures are entered into, development, management and operations should rest with the developer to minimize the exposure of public funds. Opportunities for joint ventures may be sought in the development of markets, transport facilities, commercial office developments, hotels, private medical and recreation facilities.

(vii) Development of a Real Estate Industry

The real estate industry is comparatively new in Ghana. GREDA (Ghana Real Estate Developers Association) has been set up to assist in the development of a real estate service. However, few of the operators in the industry are professional and this does not inspire confidence. A well developed real estate industry is essential to the efficient lease or disposal of land and property. To professionalize and strengthen the real estate industry in GAMA, GREDA in association with the Ghana Institution of Surveyors, Lands Commission and Land Valuation Board should prepare proposals which define the role of the industry, conditions for registration of agents, prescribed fees for the services of selling or letting property and the methods to be used to determine the value of property for compensation, taxation and rating purposes. The establishment of clear guidelines for the industry will reduce many of the disreputable practices which have developed. Once the proposals have been received and discussed by government, legislation supporting the industry should be prepared. This would introduce standards and codes of conduct to the industry which would remove some of the disreputable practices which currently take place in the industry.

(viii) Establish Estates Departments in District Assemblies

Estates Department should be established within the assemblies to manage all assembly lands. It would be responsible for acquiring, leasing and selling local government land held in the Land Bank to individual private developers, large public and co-operate sector developers and individuals. The Works Department, Tema Development Corporation or a future metropolitan corporation could develop land for sale, however, this would be restricted to the development of public lands or trust lands under a joint development agreement.

(ix) Development Corporations

Tema Development Corporation (TDC) was established to build Tema township. In recent years it has become run down. The Corporation has a severe cash flow problem and it does not have the resources to develop land and houses in accordance with its original mandate. The corporation has substantial land assets and if some of these could be capitalized, it could be restructured and rejuvenated to play an important role in the land delivery system. Depending on the future structure of local government in GAMA, Tema Development Corporation could be expanded into a metropolitan development corporation if a single local government structure is adopted or additional development corporation could be established if a multi local government structure prevails. As a result of a recent consultancy study for the restructuring of the TDC, current thinking in Governmental circles is along the lines indicated above.

(b) Improved Land Administration and Management

The current land administration and management systems are weak and seem incapable of being improved without significant changes in the way they operate. The centralization of decisions on land matters; an unnecessary complicated land administration system; lack of policy and effective enforcement mechanisms have led to indifference by those expected to abide by the formal system. In many cases the formal system is completely bypassed or disregarded in order to get things done. The following actions are designed to improve the land administration and management system and to encourage people involved in land matters to use the formal structures.

(i) Preparation of a National Strategy on Land.

The need for a national land strategy is long overdue. The strategy should be prepared by the Lands Commission during the first 5 year programme. The strategy should deal with matters of land reform, ownership, use, conservation and the legal process. The strategy should be prepared in consultation with interest groups, the National House of Chiefs, authorities and institutions involved with the administration, development and management of land. Clear simple policies and guidelines should be developed to implement the national strategy.

(ii) Review of the Lands Commission

The Lands Commission was initially established as an extra-Ministerial body to hold and manage any public lands vested in the President by the Constitution, develop and allocate lands on behalf of the State. The provisions of PNDC Law 42 allows the government the power of disallowance to be exercised on some land allocations. In recent years the Commission has become highly centralized and this adds significantly to land transaction costs in other parts of the country. Its own charges and lease payments are substantially below market rates. In line with government policies on decentralization and improved efficiency and accountability in government, there is a need to review the operations of the Lands Commission. An independent review should be made of the operations of the Commission with firm recommendations on its future, decentralization, restructuring and income earning capacity. Donor assistance to strengthen or revamp the Commission should be sought if necessary.

(iii) Strengthening the Survey Department and Land Title Registry for a systematic land titling project in GAMA

The Land Title Registry, with assistance from the World Bank under Urban II is now reasonably well equipped to pursue the land titling project in Accra. Its major constraint is that of recruitment of professional staff. The present delays in the land titling project appears to be associated with the Survey Department who are alleged not producing the requisite parcel plans on time. Under World Bank II project the Survey Department is to receive assistance for the provision of medium scale mapping from satellite imagery at 1:25,000 for Accra, Tema (and other big cities). This programme should be expanded over the next 5 years and both the Survey Department and Land Title Registry should be run on commercial basis so as to generate funds for their operations.

(iv) Mapping Programme for GAMA

Current and up-to-date maps and plans are essential to represent information geographically for planning, management, service delivery and monitoring purposes. Very few maps, plans or aerial photographs have been produced for GAMA and for that matter in the country since the early 1970's. The latest aerial photographs for parts of Accra and Tema were produced in 1986 but town sheets based on these photogrametry maps are yet to be produced.

A comprehensive mapping programme for GAMA is therefore required within the next five years to produce both medium scale maps (1:50,000, 1:20,000) and large scale maps (1:2500, 1:5,000 and 1:10,000) if any meaningful planning and management of GAMA is to be done. New aerial photography at the appropriate scales for the production of the paper maps should be produced. The Survey Department which is charged with this responsibility has not got the required resources to do this now, and international donor assistance is needed. It is important that Government pursues the already initiated World Bank assistance for the department under the Urban II programme for the mapping project.

- The possibility of using current map production technology such as digital cartography should also be explored for ease of updating and production of maps.

(v) Registration of Land

The Land Title Registry and Survey Department are currently conducting a pilot project to register and issue title to stool and family land in Accra. The programme is concentrated mainly in the inner city area where there are a large number of small land holdings. Each title requires a significant amount of research before full title can be issued. Only a very small number of plots have been issued with title to date. There are, however, large areas of land on the periphery of the urban area which will be developed in the near future. Much of this land will be subject to dispute once development occurs. In order to reduce future litigation on peripheral urban land, larger areas of land in these areas should be targeted for title registration under the Land Title Registration Law (1986) instead of emphasis being placed on the inner city areas. This action should slow down the rate of disputes arising in future and enable other actions proposed in the strategy to clear the backlog of outstanding disputes.

(vi) Moratorium on Illegal Settlement.

Large parts of the urban area have not been developed in accordance with town planning layouts or have developed as encroachments on government or vested stool lands. These developments are illegal. There are over 13,600 plots of land in these two categories and a large proportion have been built upon. Most of this land was developed by chiefs and families, who because of the lack of compensation paid by government for vesting or acquiring these lands, have considered it their right to continue to sell land to individuals, most of whom have purchased with a genuine belief that they have a right to secured occupancy. This security is often shattered by actions taken from time to time by the Lands Commission and the AMA to demolish illegally erected structures.

The continual threat of demolition or eviction by the authorities does little to encourage people in these development areas to get on and make improvements to their dwellings and the local neighbourhood. It should be recognized that these structures, whilst illegal, are playing an important role in the provision of accommodation. Further demolitions of structures - except where they cause a major obstruction to access - is futile. These areas should be brought into the formal housing sector, so that basic services can be provided, roads and community facilities constructed and revenues collected from rates and other taxes. Government should give consideration to a 5 year moratorium on demolition or repossession of developed land in these areas, with a proviso that owners of land take steps to register their interest in the land under the Land Title Registration Law (1986) before the moratorium ends. Government should charge a development levy on owners for the right of title. This fee would pay for registration and the purchase of land for community facilities, such as school, clinic and parks. A special unit should be established in the Land Title Registry and Survey Department to handle applications. This unit should be self financed, but donor assistance should be sought for its initial establishment and training costs.

(vii) Improved Revenue Collection from Land

Many taxes and rents are in arrears, others are never collected because of disputes over ownership. The government is losing significant revenue from capital gains when government plots are sold. In order to generate sufficient funds to develop and service land, revenue collection systems within the assemblies and the Lands Commission should be improved. A report into ways of improving revenue collection from land should be commissioned by the Lands Commission and its findings implemented.

(c) Litigation and Compensation

There are reported to be over 17,300 disputes of all kinds affecting land in the metropolitan area relating to delineation of boundaries, ownership, access, compensation, legality of executive instruments and interpretation of legislation. The net effect of these actions is a very long settlement procedure and much grievance with the current land administration system. The following actions are intended to redress the more serious problems of land litigation.

(i) Comprehensive Land Act

There are many laws affecting land in Ghana which are out dated or are contradicted by other legislation. Most land laws are in need of revision. Enforcement of land laws is proving difficult and common or case law has been inconsistent as the result of contradicting judgments in the High Court. There is a need to prepare a comprehensive land act which would bring together the many land law matters in the different parts of the statute book and remove inconsistencies between the different legislation. This should be included in the legislative drafting programme in the next 5 years.

(ii) Establishment of an Accra Customary Land Trusts

The issue of vested stool lands and the rights of traditional owners to develop stool land is a major problem in the land delivery system. The current procedures are unworkable and have led to a great deal of mistrust by chiefs of the government, and many cases of litigation over compensation matters. To ensure that stool and major family lands remain in perpetual traditional ownership (as was traditionally the custom) considera-

tion should be given to all vested and family lands and stool lands (including unallenated stool land) being incorporated into traditional or customary land trusts. (Such a proposal has already been made in the new Constitution with the objective of enabling stools to manage their own land but under a more formal framework than was practiced traditionally.) Trusts should be administered by traditional rulers, appointed trustees and advisors. The trusts would have authority to sell or lease land for development; make payments to individuals, and families whose land has been developed and sold; and hold a proportion of revenues from the sale of disputed land in trust until the dispute is resolved, at which time the trust would make payment to the rightful owner.

The establishment of customary land trusts would enable land to be released for development (which may be the subject of dispute) without the risk of a developer or purchaser loosing a claim to good title. All land allocations made by a trust would have to be certified by the Lands Commission and Department of Town and Country Planning to ensure it complied with development conditions. The introduction of trusts will ensure customary owners maintain control over traditional lands and continue to generate revenue from it; trusts could undertake development of larger packages of land using revenue from land sales; more effective control would be maintained on development as there would be fewer, but larger, developers involved in the various negotiations with development agencies; compensation matters could be dealt with without delay, and government would be able to collect taxes and ground rent more efficiently.

(iii) Streamlining Procedures for Litigation

There are in excess of 17,300 cases pending in the courts involving disputes on land or title in the metropolitan area. The current court system cannot clear this backlog of cases and new procedures are required to deal with litigation on land matters. The Land Tribunal and the Stool Lands Boundaries Settlement Commission have not succeeded in sorting out and reducing the backlog of land disputes. New and less judicial approaches are required to settle land disputes.

As a short term measure the Ministry of Lands and Natural Resources in collaboration with the Ministry of Justice should commission a study to identify ways of eliminating the backlog of unresolved disputes. As a long-term solution a series of district and regional courts should be established to deal with land related matters. Only appeals on a point of law would be dealt with in the higher courts. This strategy would remove most of the litigation from the courts. The regional and district courts should be composed of experts in land matters (not necessarily lawyers) in the locality. As the first step to implementation, the Ministry of Justice and Attorney General should appoint a working group to examine means of streamlining the litigation process involving land disputes and draft legislation for the setting up of a more local court system.

(iv) Legislation on Strata and Condominium Title

Current real property law does not provide for the issue of secure title for flats, apartments and office space in multi- storey buildings. Persons who have entered into agreements to purchase flats, therefore, have no security of title to land upon which the flats are constructed. There are also serious problems over who is responsible for the maintenance of the building structure. This is likely to give rise to a substantial number of new cases in the courts in future. New legislation is needed urgently to provide for the issue of strata and condominium title. Government should convene a committee to examine similar legislation from other countries and draft an appropriate law for this country. It is likely that amendments to other legislation will be necessary and these should be drafted at the same time.

(v) Compensation Payments

Non-payment of compensation in compulsory acquisition cases by the acquiring authorities is a major contributory cause why many plots, not only on stool and family lands, are developed without obtaining development permit, building permit and other by-law consents. When a notice of acquisition is published under an Executive Instrument, claimants with compensatable interest within the acquisition area are expected within six months from the date of publication of the instrument to submit in writing to the Minister (a) particulars of his claim or interest in the land (b) the manner in which his claim or interest has been affected by the

instrument (c) the extent of any damage done (d) the amount of compensation claimed and the basis for the calculation of the compensation.

Where there is a dispute as to the right or interest claimed by reason of conflicting claims or interest, or any person is not satisfied with the compensation assessed by the Minister, the Minister may refer the matter to the Tribunal.

If so happens that invariably the various interests involved in the acquisition claims are involved in land title conflicts: when this is discovered, the conflicting claims should be forwarded through the Minister to the State Land Tribunal for adjudication. The paradox is that the State Lands Tribunal has never been put on a continuous working basis, that is. it is seldom ever in session. On occasions, it is an extremely difficult proposition to obtain the requisite acquisition funds from the Ministry of Finance and Economic Planning to pay compensation to various claimants.

Government should pay particular attention to the hardships of claimants arising from the non-payment of these acquisition compensation since if compensation remains unpaid claimants also feel that they are morally free to reverse the occupation of their land included in the acquisition instrument.

The setting up of customary land trusts will help to resolve some problems with payment of compensation. However, for vested lands held in trust for development, compensation matters will have to be deferred until the time subdivision takes place. A proportion of revenue generated from the sale of land at the time of development would be used to make payment for compensation. Land owners whose land is held in trust by the land bank and for which there is no immediate use, should be given the right to continue to utilize land for the purpose for which it is zoned. Owners could then continue to enjoy the right to use their land for productive purposes until it is needed for urban development. This is referred to as a deferred acquisition scheme.

3.4 HOUSING STRATEGY

3.4.1 Issues

The provision of shelter is the most pressing development issue facing the metropolitan area. The current housing deficit is estimated at 19,135 units (based on the UN recommended guideline of 2.5 persons per room and an assumed average of 6 rooms per house) and this will increase to 130,234 by 2010. The current housing delivery is less than 2,500 units per annum in GAMA, 2000 units short of requirements to stabilize the occupancy rate. Occupancy rates exceed 30 persons per dwelling in many inner city areas of Accra. The housing delivery system is plagued with problems of land delivery, finance, shortage of building materials, inappropriate building technologies and entrenched attitudes on house design and size. The current housing institutional mechanisms are weak and the government is withdrawing its active involvement in housing construction. Much of the government housing stock is deteriorating through lack of maintenance, and state houses often occupy large areas of ground which are completely underutilized. Infrastructure costs to service new development areas exceed by a factor of two those for redevelopment projects, in inner city areas, yet large areas of land in the inner city remain underutilized or occupied by run down buildings. A major initiative to support the housing sector is required by central, local government and the private sector if some of the serious issues facing the housing industry are to be redressed; and more innovative and less conventional approaches to the provision of houses must be adopted.

3.4.2 National Policies and Initiatives

Government is very much concerned with the problems of housing in the country and is introducing a number of measures to improve the delivery system and reduce the very high costs of maintaining the public housing stock. Government policy has shifted away from national mass housing projects to an infrastructure supporting role by providing funds, land, services and expertise to the housing industry. Some of the existing housing stock will be divested because of the very high maintenance costs and poor economic returns created by rent control and high subsidies. The National Shelter Sector Strategy currently being prepared by the Ministry of Works and Housing with UNDP/UNCHS (HABITAT) support, reflects this shift in policy. The strategy is expected to address issues of home finance, building standards, affordable housing, manpower requirements, building and materials technology, land delivery and institutional reforms.

3.4.3 Formulation of a Metropolitan Housing Strategy

Housing is recognized as one of the leading stimulators of investment and employment in the economy. For this reason it has been targeted as one of the principal thrusts of the economic strategy for the metropolitan area. There is not, however, a significant amount local government in GAMA can do to increase the volume of housing construction, (it is not directly involved in housing delivery), but it can improve administrative procedures, revise land use controls and lend support to initiatives to stimulate investment in the housing sector. Most of the initiatives to improve delivery will have to come from central government and the private sector. The national strategy framework provides the base upon which the metropolitan strategy for housing has been formulated. But government support is required for selected components of the strategy, especially, in the strengthening of the institutional mechanisms to improve the delivery of houses.

3.4.4 Goals and Objectives

The formulation of goals and objectives to redress the serious problems facing the housing industry is not easy. Housing delivery is a complex process with many linkages and dependencies on other sectors of the economy. The goal for the housing strategy is to achieve:

AN EFFICIENT HOUSING ADMINISTRATION AND DELIVERY SYSTEM

Specific sectors of the industry are targeted as the focus of the objectives which provide the framework for the housing strategy. The objectives are:

To make efficient use of residential land for housing

To improve housing conditions in depressed areas

To provide an adequate supply, choice and standard of housing

To improve building and materials technologies

To improve access to housing finance

To improve construction capability and capacity

To maintain the housing stock

3.4.5 Thrust of the Housing Strategy

The primary thrust of the housing strategy for GAMA is to establish a more efficient housing administration and delivery system. There is a realisation, however, that this will take time to be achieved since it is dependent on reforms in the land development, registration and housing finance sectors. The immediate priority of the strategy is to concentrate on initiatives, mainly by the private and corporate sectors, to improve the utilization of the existing housing stock and residential land - with particular emphasis being given to increasing rental accommodation. This should enable sufficient accommodation to be provided to reduce the current increase in household and room occupancy levels until the initiatives outlined in the land strategy, improvements to the housing finance, building materials and construction industry are in place. Thereafter, the strategy would concentrate on streamlining the delivery process to reduce the large backlog of houses required to accommodate the population in acceptable living conditions.

The following initiatives support the objectives of the strategy.

(a) Efficient Use of Residential Land

The overall density of housing in the metropolitan area is approximately 8 dwellings per hectare (d.p.ha(net)). In the more intensely developed inner city areas densities of 18 d.p.ha (net) are experienced, but in the newly developing areas densities of less than 5 d.p.ha (net) are occurring. The continuation of this form of development will reduce overall population and residential densities which will lead to an increase in the operating costs of the metropolitan area. In line with the strategy of urban consolidation overall density should be increased. It is intended to introduce measures to increase overall residential development to 10 d.p.h (net) by 2010. These measures include revision of density and other planning standards in new residential areas; and in redevelopment, and infilling schemes. Measures to ensure more efficient use of residential land are outlined in detail as follows:

(i) Revised Density and Planning Standards

The overall desired form of residential development for the city is low rise housing averaging 20 dwellings per hectare net. Very low density residential development of less than 10 dwellings per ha net will not be encouraged. In line with the Structure Plan strategy for urban consolidation and limited expansion, all residential areas will be zoned according to density, building type and function. New planning standards will be introduced outlining spatial, access and development requirements to be met in each zone. The overall density for newly developing residential areas will increase under the new standards. This may be achieved through reduced plot and room sizes. Housing will however remain predominantly detached or compound type - except near proposed major sub-regional centres and selected localities where more intensive housing accommodation is planned. The intended intensification of development in many established low density residential areas should lead to increased availability and choice of housing close to the CBD, better use of existing services and infrastructure, improved local business opportunities and economies on transport costs.

(ii) Redevelopment

Initially redevelopment is expected to contribute in a small way to increasing the housing stock. Much of the early redevelopment will be directed to the inner city areas of Cantonments, Ridge, and Kanda and take the form of detached and town house development. Revised town planning schemes should be prepared for the Ridge, Kanda, and Cantonments areas as a matter of priority. In the long term more intensive medium rise flats development should be permitted along major arterials and collectors. Redevelopment of many of the older residential areas, such as Usher Town, James Town, Tudu and Osu will prove difficult. However, the conditions of much of the housing stock in these areas are deteriorating and some carefully managed community housing redevelopment projects will be necessary to replace many old run down houses in this area.

(iii) Infilling

Within the inner city area and newly developing residential areas, there are sites of varying sizes which remain vacant or partially developed. In some cases the land is subject to dispute, in others the owner has insufficient capital to complete a development. Under the proposal outlined in the land strategy, the Lands Commission will be charged with the responsibility of preparing a register of all land in this category. Where necessary, acquisition of land and assets should be considered to formulate infill housing schemes. Priority should be given to the promotion of infill schemes in the inner city areas where services can be provided easily.
An estimated 800 plots or 200 hectares may be available for infill and redevelopment in the Cantonments, Ridge and Kanda areas.

(iv) Reduction of Conversions

It is estimated that up to 3% of the housing stock is lost annually through abandonment, collapse, demolition and conversions. The conversion rate has been increasing steadily. The most prominent areas undergoing conversion usually to retail trading is in the inner city. However, in recent years houses in Airport Residential Area, Labone and Ridge have undergone change of use to office and commercial development. Most of these latter conversions are illegal. While it is difficult to prevent conversions taking place in the older inner city areas, stricter planning controls should be imposed to phase out commercial and office development in higher income areas once more office space and improved communications are available in the CBD.

b) Improving Conditions in Depressed Areas

(i) Upgrading

One of the common results of redevelopment is that apart from high redevelopment costs resulting from large scale demolitions, long-standing residents are forced to move. Communities are disrupted and social problems are created. In order to avoid some of the negative effects of redevelopment, gradual and incremental improvements to depressed residential areas by upgrading is preferred. Therefore in line with the strategy of consolidation the following areas are scheduled for upgrading by the year 2010.

- Labadi
- Accra Central (James/Ussher Town)
- North Kwashieman
- Abeka
- Osu
- Mataheko
- Sukura
- Teshie (Old Town)
- Chorkor
- Kotobabi
- Nungua (old Town)

- Darkuman
- Bubuashie
- Russia
- Sabon Zongo
- New Fadama
- Kpehe
- Alajo
- West Mamobi
- Abossey Okai
- Mpoase
- Kwashieman
- Sports Complex
- Lashibi

Upgrading will result in some demolition, relocation and resettlement. Where possible, resettlement should be directed to infill and redevelopment sites. Targets for demolition are set at no more than 5% of dwelling stock. The upgrading programme is intended to improve the well-being and conditions of over 460,000 people. In formulating plans for upgrading schemes in future, funds should be made available for housing improvements. Informal economic activities predominate other economic activities in such areas. Upgrading schemes and funding for implementation should include provision for making informal activities more effective and financially rewarding to reduce the level of poverty in these areas and facilitate cost recovery. Also the strategy should allow for community participation in the planning, implementation and maintenance of upgrading projects. This may be achieved through community organisation, education and related programmes to win community support.

(ii) Formalizing Illegal Settlement

The land strategy proposes measures to formalise illegal settlement which has taken place on encroached lands and areas without planning schemes. These measures should bring about a more rapid consolidation of residential areas which have been developed in contravention of approved zonings; or spontaneously and made detail planning of such areas difficult. The implication of the strategy is that extension of engineering and social infrastructure services will be made with minimum disturbance of community life similar to the upgrading strategy.

(c) Improve the Supply and Choice of Housing

The constraints in the housing delivery system have created a situation where there is a serious shortfall in the supply of houses and this will take many years to rectify. The choice of housing by type and location is also very limited and constrained by the high cost of entry into the market. Urgent measures should be taken to improve the house construction delivery process and the choice of houses available according to income means. Table 3.3 indicates the estimated number of new dwelling units required by the various income groups in five yearly intervals from 1990 to 2010. These estimates are based on a standard of 2.5 persons per room and an average of 6 rooms per housing unit.

Table 3.3. Estimated Housing Requirements 1990 - 2010

Category	1990*	1995	2000	2005	2010	Total
Low Income	11,098	16,163	20,261	24,708	30,005	102,235
Middle Income	6,123	8,917	11,179	13,632	16,555	56,406
High Income	1,914	2,787	3,493	4,260	5,173	17,627
Totals	19,135	27,867	34,933	42,600	51,733	176,268

** Back Log as at 1990, Source: Accra Planning Development Programme 1991*

The above targets will be difficult to achieve in the short term until macro level policy changes introduced by government have had time to take effect. However there are several areas where the strategic plan can influence the delivery process. These measures include:

(i) Phased Release of Land for Housing

New town planning schemes should be prepared and existing plans reviewed for all land on the urban fringe. Land intended for future urban use should be shown clearly on each new or revised plan. The Department of Town and Country Planning should prepare a 3 year plan for the scheduled release of land for urban development. Land will be released by approval being granted for a change of zoning to a prescribed residential use defined in the new Town Planning Standards. The Town and Country Planning Department will be responsible for the review of existing planning schemes, but preparation of new planning schemes and change of zoning should be undertaken by qualified and authorised persons and paid for by the beneficiaries of the plans. The success of this strategy depends on an effective forward planning by the Town and Country Planning Department supported by implementation of sites and services schemes outlined below (iv).

The following land areas are planned for release for residential use for the 5 year intervals to 2010. Areas to be released are shown in Table 3.4.

Table 3.4 Hectares of Land to be Released for Housing

Density Category	1990	1995	2000	2005	2010	Total
Low (100 ppha)	284	414	518	633	796	2,645
Medium (175 ppha)	519	757	949	1,157	1,405	4,787
High (250 ppha)	660	960	1,203	1,468	1,782	6,073
Contingency 10%	163	237	297	362	440	1,499
Total	1,626	2,368	2,967	3,620	4,423	15,004

Source: Accra Planning and Development Programme (1990).

(ii) Improved Housing Mix

The perspective of this strategy is to alter the present largely monotonous single detached housing development in newly developing areas in GAMA. From points of view of economy of land use, housing development costs and choice of housing, it is prudent to adopt this strategy. The absence of an effective housing market in GAMA is partly the result of absence of alternatives. Its adoption will facilitate choice and also alter the rapid horizontal spread of the metropolis and improve the urban townscape.

While accepting the important contribution of individuals to housing delivery (about 66% of current stock), implementation of the strategy is expected to be mainly by the Real Estates Development sector and corporate bodies.

The Real Estates sector could be better organised and, with possible teaming up with and flow of capital from foreign investors it may be in a better position to implement housing programmes spelt out in development plans. The chances of implementation conforming with approved planning schemes are also higher. The following, taking a cue from findings of the Housing Needs Assessment Studies, is a suggested mix to be achieved by the year 2010.

Detached houses	25%
Compound houses	40%
Multi Storey Tenement	10%
Semidetached houses	10%

Row/Terrace houses	5%
Flats/Apartments	5%
Mixed Use Development	5%

It must be observed that while the compound house has a tendency to forment friction and overcrowding among occupants, these may be overcome or reduced considerably through the strategy of improved building design. The compound house remains one of the most effective ways of providing rented accommodation for the middle and, especially, the low income. The current trend towards development of mainly 2-3 bed room self-contained units definitely excludes the low income and most middle income earners. This is evidenced by the Sakumono and other recent housing projects. This trend must be consciously altered.

Table 3.5 Housing Production Targets by Mix and Income Group

House Type	High Income	Middle Income	Low Income	Total
Detached	4,983	17,130	21,151	44,064
Compound House	2,535	19,815	48,160	70,510
Multi Storey Tenement	3,276	4,404	9,944	17,624
Semi-Detached	2,644	6,946	8,038	17,628
Row/Terraced	1,096	1,584	6,134	8,814
Flats/Apartments	2,036	4,070	2,708	8,814
Mixed Development	1,096	1,658	6,060	8,814
Total	17,666	56,407	102,195	176,268

(iii) Increasing the Stock of Rental Accommodation

There is a very serious shortage of rental accommodation in the city and it must be realised that not many households will be able to build for themselves, at least, in the short run because of various bottlenecks. This is so in the case of the middle income and particularly, the low income. The practices of landlords who exploit this situation only aggravate the financial burden of those who can least afford to pay crippling rental advances. There are two ways the stock of rental accommodation may be increased:

1. Extension to Existing Buildings

There is little that can be done in the short term to construct new rental housing, but there are in excess of 25,000 houses in the residential area, mostly in the lower density and consolidating fringe areas, which have sufficient land to add additional rooms for renting. To encourage more house owners to add a room or two to their houses for rental or extended family accommodation, additional funds could be released in the short term for this purpose by the Home Finance Company. Buildings to which extensions have been made would be used for colateral security for funds. The Planning Standards should be amended to increase site coverage to encourage extensions to the existing dwellings.

2. Rent Decontrol

The removal of the rent control law is essential to encourage private investors back into the rental market. Many of the illegal practices associated with the residential market, such as 5 years rent advances, good will and drinks money, stem from the provisions of rent control. The removal of rent control is a national policy issue, but its impact on investment in the local housing market is quite significant and remains the only logical way of increasing the stock and thereby halting the escalating rent levels through the interplay of market forces..

(iv) Sites and Services

In the long term, it is intended that all newly planned residential lands should be serviced by a developer before being sold. The development costs would be recovered from the sale of the plots and/or houses. A proportion of profits from the sales would be retained as working capital to fund the development of new areas or redevelopment projects. This practice will take some time to become accepted as the standard; and a phased introduction will be necessary because of the limited resources available to the private sector to fund and recover development costs on residential land. The public sector should take the initiative in the short term by undertaking small sites and services projects. It must create the enabling environment by increasing access to funds to support such schemes.

As part of a short term strategy to provide housing land for middle and upper income groups, the State Housing and Tema Development Corporations, after restructuring, should embark upon an expanding programme of sites and services projects on suitable land within the metropolitan area. This should, in the case of Accra, be targeted at infill development sites and at Tema on some of the uncompleted community areas. The initial developments would be no more than 30 plots to minimise capital exposure, but this should increase by up to 150 by the larger corporations and development companies and 30 to 50 by small scale private sector developers by the end of the plan period.

(v) Sites Only and Minimum Shelter Programme

Less than 20% of the population have the means of entering into the private home ownership market. In order to reduce the threshold and encourage more low income groups into the home ownership market, consideration should be given to sites only and minimum shelter schemes. These programmes involve the setting out of plots and roads, with roads graded to provide proper access. No services would be provided, but the road reserve would allow engineering services to be installed later. A roof and foundation area plan, capable of being extended later, would be the requirement for development approval. Planning and building standards would be relaxed for wall, roof and fittings to enable simple and some recycled materials to be used in construction. But roofing material should be similar for all houses for aesthetic purposes. The house structure could then be improved and the house expanded as the person's means improve. While this will result in less than acceptable standards initially, it relies on the premise that most individuals, once they obtain a house of their own will take every step to improve it. Site only and minimum shelter programmes ensure that services can be installed in future as opposed to informal sector development of lesser or better quality housing where considerable disruption and relocation is required when services are installed.

(vi) Mixed Use Dwellings

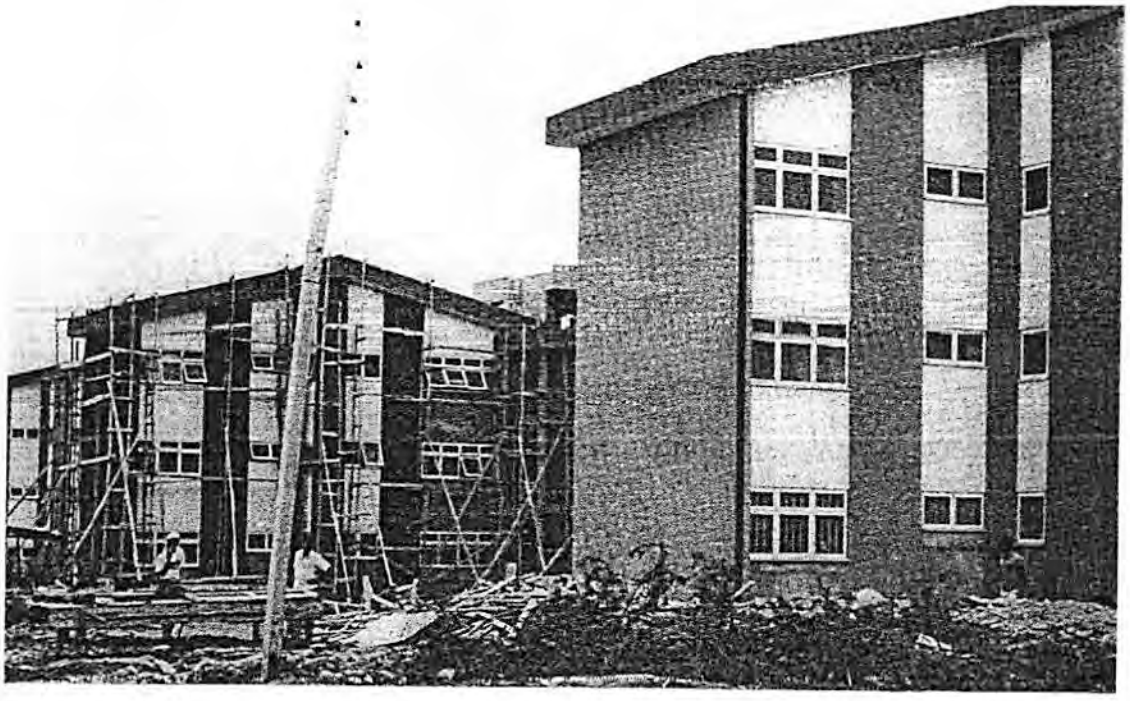
Within the inner city areas, redevelopment should encourage ground floor and perhaps first and second floor commercial/office and top floor residential accommodation mixed development. This policy is intended to reduce migration to outer areas owing to accommodation loss through a change of use. The new planning standards provide for greatly improved site coverage to encourage this form of development in the central area. The Central Area Redevelopment and Investment Plan will outline more specific strategies and policies to stimulate this form of development.

(vii) Flexible House Design

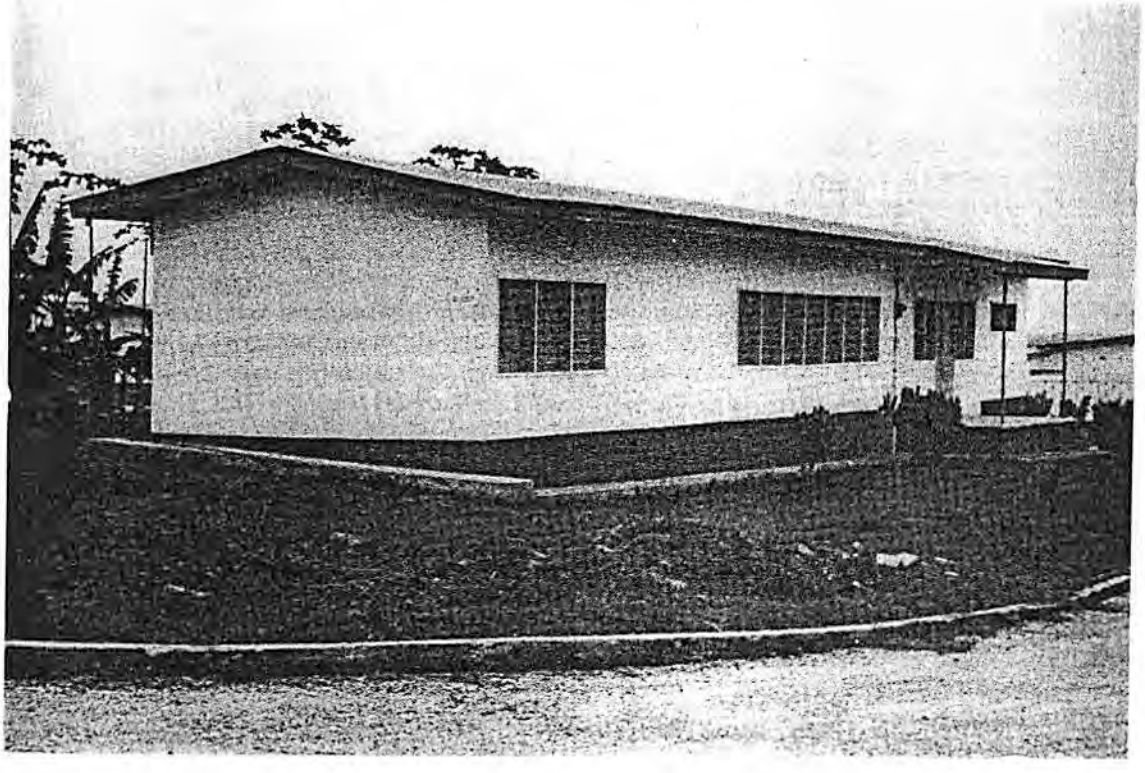
Building designs in GAMA do not generally facilitate compact housing development. They also do not allow for incremental housing development by developers who have limited resources. Furthermore building construction methods do not permit flexibility in the use of floor space in a house. Each room or enclosed area is purpose built and partition walls are of permanent construction. An approach which ensures flexibility and compactness in building design should be adopted to meet the needs of occupants.

(viii) Prototype Design

A prohibitory factor among would-be home owners, particularly the middle and low income, is the high cost of building plans. This problem may be overcome through the preparation and sale of prototype designs



NEW FLATS DEVELOPMENT IN TEMA



DETACHED HOUSE AT TEMA

HOUSING

cheaply on the housing market. Those who can afford, may consult architects to design purpose specific units to meet their status and taste.

(d) Improved Building and Materials Technology

Over the years sandcrete block wall, concrete floors and metal or asbestos roof sheeting are the most common materials used in house construction in GAMA. Most of these materials have a high import component. The techniques used in construction are labour intensive, require expensive castings and fittings and the lack of standardization results in unsatisfactory improvisations being made in the use of materials and design. This more often results in houses being constructed to poor quality standards at a high price. The long delays in construction, caused by inappropriate building technology and lack of adequate project management expertise, adds significantly to the real cost of housing. Support should be given to improved building and materials technology if housing costs are to be moderated. Such support may include:

(i) Promotion of Local Building Materials Projects

There has been a reluctance to use local materials in housing construction due to, tradition, public authority standards and perceived status of what is seen as inferior quality materials. Amongst the high income these attitudes will remain for some time, but for medium and low income groups the use of more local materials in house construction may enable more people of lesser means to enter into the housing market. As a means of promoting and demonstrating the greater use of local construction materials, consideration should be given to supporting a selective number of pilot projects for housing. Suitable sites capable of accommodating up to 25 houses should be identified by the Town and Country Planning Department. Assistance from an international aid agency or NGO should be sought to back the programme. The projects should demonstrate the cost effectiveness of alternative materials and the sustainability of a programme to support the development of local construction materials in the metropolitan area. The Economic Development strategy seeks to encourage improved local building materials production as part of the thrust to stimulate the local construction industry.

(ii) Improved Building Technology

Most houses in the metropolitan area are constructed to custom built designs. This is a very expensive means of providing housing, as every operation from design to the provision of fittings has to be tailor made. The introduction of standard design housing, standardised production of materials, castings and fittings should be encouraged and more rigorous enforcement of building regulations, approval procedures and industrial design standards imposed as part of development control. Prefabrication should be encouraged to accelerate construction and reduce building costs.

(e) Access to Finance

One of the most serious problems facing the housing industry is the shortage of finance - in particular long term mortgage funds. Less than 2% of home owners in the metropolitan area have access to mortgage or other forms of home finance. The major financial institutions have shown a reluctance to participate in the housing finance industry - preferring short-term and commercial/industrial investment where returns are higher and foreclosure risks are lower. For the foreseeable future, most capital for housing will have to come from private and cooperative sources. Steps have been taken to improve access to home finance by government in setting up the Home Finance Company, but unless the funds available from HFC or BHC are increased, this will not make a significant impact on the home finance industry. New and more innovative means of increasing housing finance from the private and business sectors must be found. Government's role in this is critical. Measures independent of government which are supported to improve housing finance in GAMA include:

(i) HFC Funding to Dwelling Completion and Alterations.

The HFC was established to improve finance to the new home industry and completion of existing houses. Disbursement to the new housing markets have been slow because of inherent problems in the delivery system. The HFC should be encouraged to increase, in the short-term, its commitment to loans for housing improvements and completions. This would make a valuable contribution to increasing the existing housing stock.

(ii) Building Societies and Cooperative Housing Funds

The need for the development of building societies is important to expand the home finance industry. This will take time to develop, as current levels of domestic savings are very low and it will take many years to redress the suspicion that the public has about the security of investment in formal savings institutions. As an initial step to developing a building society service, business and public interest groups should be encouraged to develop their own cooperative housing funds - some of which could be developed into full building societies in future. Sectors of business which could be encouraged to establish housing funds are the market women, traders, transport operators and fishermen.

(iii) Encouraging Major Institution Investment in Housing

The major financial institutions have shown a reluctance to enter the long-term housing market. Profit margins are low, foreclosures under unstable political and economic and political conditions have been high. With the improvements in the economic situation, a reduction in interest rates and a regaining of investor confidence, the local banks should be encouraged to assign some of their loan portfolio to the housing sector. The introduction of short-term roll over construction loans is one form of financial assistance to housing construction industry that may prove attractive to the banking sector. The funding of cooperative housing is another area which reduces the risk of foreclosure.

(vi) Rate Incentives

As a means of stimulating housing development in inner city areas, local government should consider rate rebates or deferred payment schemes. In mixed commercial developments rates on above ground floor residential accommodation should be discounted for this type of development.

(f) Construction Capability

The housing construction industry is dominated by a large number of small scale builders, three major government corporations SHC, SCC and TDC and one small private developer. The industry is constrained by the lack of skilled manpower, poor and inefficient plant and equipment and poorly managed development companies. The change in government policy which has led to a shift from direct housing construction, places a greater burden on the private sector. Given the current resources and management capabilities of the private sector it will be very hard pressed to deliver houses efficiently or economically. Technical assistance is required to train and equip a strong and well organised private sector. Initiatives and programmes supported by the plan include:

(i) Construction Companies

The lack of large or medium scale private building companies in the metropolitan area is an impediment to the development of any large scale housing projects in the metropolitan area. Most builders are incapable of constructing more than 3 or 4 buildings at a time and the larger estates which have been erected by the private sector for SHC or SNITT have involved a consortium of builders. Project management of these consortiums have been very poor. To improve housing delivery, support is required to establish a small number of development companies capable of producing between 60 and 250 houses per annum. Attempts to merge several companies into a single development company are unlikely to succeed, since most have little expertise in management to be able to operate under a large company structure. An alternative is to

encourage foreign housing construction companies to establish in Ghana under conditions which assure certain levels of production and the transfer to local management after an agreed period. This has the advantage of importing new and improved building construction technology which would be transferred to smaller companies, economies of scale in construction, improved project management and quality of finish.

(ii) Project Management

The management of housing construction is poor - especially at the middle management foreman and works supervisor level. The Education strategy will support training programmes designed to improve project management skills.

(iii) Improving Master Craftsmen Skills

There are few master builders, plumbers, electricians, technicians, etc. who can ensure quality production, and performance. These are quality skills learned by a combination of practical experience and technical training. The TUC, and building trade federations are encouraged to raise the standards of excellence by recognising the role of master tradesmen. A tradesman with a master status should be certificated. Where necessary planning and building regulations can be revised to stipulate which work must be carried out under the supervision of a certified master tradesman.

(iv) Standardization

Section 3.4.5 (d) ii above outlines provisions for greater standardisation in material, design and construction techniques.

(v) Prefabrication

Prefabrication, together with standardization would lead to a significant reduction in building costs. The greater use of prefabricated structures and fittings should be encouraged.

(vi) Plant and Equipment

There is an urgent need for modernised plant and equipment to support the housing construction industry. The Government through bi-lateral arrangements may secure funds to support the construction companies. In addition companies that are able to import their own equipment and plant should enjoy tax reliefs.

(g) Maintenance of Housing Stock

Large numbers of buildings in the inner city areas have deteriorated to the point where they are no longer habitable. Maintenance is so often neglected because of priorities given to other basic needs. Initiatives to encourage the rehabilitation and repair of the existing building stock and promote a "maintenance culture" are as follows:

(i) Housing Maintenance Manual

The Accra Planning and Development Programme has prepared a simple guide for home maintenance in GAMA - targeted primarily at low income housing areas. It is intended that this document be translated into several locally spoken languages to encourage home owners to undertake regular maintenance and repairs to their houses.

(II) Maintenance Culture

The need to develop a maintenance culture, not only for housing, is vitally important to protect existing fixed assets and investment. Proposals are put forward in the Urban Management Strategy to increase public awareness for the need for improved maintenance and protection of real estate investment.

3.5 ENVIRONMENTAL MANAGEMENT

3.5.1 Issues Affecting the Urban Environment

The appearance of the Accra Metropolitan Area does not befit its status as the national capital city of Ghana. The deterioration of the physical environment, which has resulted from rapid population growth over the last two decades, has had a major impact upon the quality of life of the population living in the metropolitan area. Most of the drainage and coastal lagoons are heavily polluted; the coastline has become a receptable for rubbish; sand and gravel winning are destroying the landscape and contributing to accelerated erosion - especially along the coastline. In residential areas poor waste disposal services lack of drainage and deteriorating housing; incompatible landuses; lack of access roads and lack of education on maintaining the environment, have all resulted in appalling living conditions in some areas. To redress this situation there is a need to develop an environmental strategy that would concentrate on enhancement as well as protection of the urban environment.

3.5.2 Goals and Objectives

The appearance of a city in many people's minds is a reflection of the quality of life and the attitude of society towards the environment in which they live. Improving the quality of life for many people living in the metropolitan area will take time, nevertheless, the long term goal for the strategy is to achieve:

A SAFE AND IMPROVED QUALITY OF URBAN ENVIRONMENT

The main purpose of the environmental protection strategy is to mitigate and prevent the adverse impact of urbanisation on the environment and the health of the people and to introduce adequate environmental considerations into physical development policies. The objectives to achieve this goal are:

Assessment of the present environmental situation and evaluation of the main issues for environmental protection management and pollution control.

Formulation and implementation of a comprehensive environmental and pollution control management system and establishment of a monitoring mechanism.

Formulation and adaption of appropriate legislation to make such system effective.

Strengthening of planning and development control mechanisms.

Public education and awareness.

3.5.3 Thrust of the Strategy

The economic decline of the past two decades has resulted in the neglect of maintenance particularly of infrastructure, housing, open spaces and the coastline. The structural adjustment and other economic reform programmes are aimed at restoring basic services, but public funds and other resources necessary to upgrade the run down appearance of the city will continue to be limited for many years to come. Improvements to the city's appearance will therefore be dependent on the efforts made by individuals, the business sector and community organizations supported, where possible, by programmes of public assistance. The primary

thrust of the strategy is directed towards measures to improve conservation, rehabilitation and maintenance of the existing environment and to effect stricter control upon predominantly new development. There is the recognition that resources available in the short term are limited and that these should be utilized to prevent new development from generating future environmental problems and to alleviate more serious existing ones. The approach to environmental management should be more incremental in recognition that the community as a whole will take time to be educated and to comply with desired standards.

(a) Enhanced Urban Landscape

The need to improve public awareness of the value of enhancing the landscape is an important objective of the strategy. There is the need to give the city a softer green appearance. The Department of Parks and Gardens has responsibility for directing landscaping policy and its resources should be directed to enhancing and maintaining the appearance of prominent public spaces, parks, forests and play areas. However, local community landscaping schemes and encouraging the development of private gardens are the only feasible means to improving the overall urban landscape. The following initiatives are part of the strategy to enhance the urban landscape:

(i) Public Awareness of Landscaping

A greater awareness of the need for individuals to plant trees should be encouraged through publicity and education programmes supported by the Department of Parks and Gardens and the Forestry Department. Schools should be encouraged to introduce courses to create an awareness of the importance of trees and shrubs in making Accra a more pleasant place to live.

(ii) Capital City Landscape Plan

A landscape plan should be prepared for the metropolitan area by the Department of Parks and Gardens. The plan should define the overall metropolitan landscape structure and a 5 year development programme for landscaping, maintenance and operations of the Department. This plan should also outline an improved organization structure for the Department and examine means of making it more self financing.

(iii) Landscaping Guidelines

New landscaping guidelines will be released in 1992 by the Accra Planning and Development Programme. The guidelines will indicate landscaping techniques to be used for tree planting, public open spaces and parkland. Details of species of shrubs and trees to be selected for local climatic conditions will be specified, together with ground preparation and maintenance. The guidelines are intended for use in landscaping formal and informal public and open spaces. They will also be useful for landscaping of private yards and gardens.

(iv) Green Belts and Buffer Parks

In order to protect any part of the natural environment it is necessary to create a network of green areas in the city and around the city. Parts of the network vary from buffer zones, urban parks and open spaces to larger areas of ecological importance and areas of natural resources.

(v) Urban Parks

There are not many urban parks and open spaces in the city and there is always pressure for development. There must be strong policy to resist loss of existing open space. The temporary use of suitable vacant sites for public opens space and recreational activities should be supported and, where appropriate, encouraged to be made permanent open spaces.

Korle lagoon together with Odaw River and its streams form a series of open spaces in the heart of the city. The potential of this open space network should be exploited in urban design.

Many of the open spaces in the metropolis which are used for cultivation and cropping should be allowed to continue until funds are available for landscaping these areas.

(vi) Tree Planting Campaigns

Support should be given to the promotion of tree planting campaigns undertaken as part of community beautification schemes. Support should be provided by the Department of Parks and Gardens to assist communities and individuals to help select appropriate tree species for planting schemes. Such schemes should be included in areas designated for urban upgrading with a special emphasis given to child participation in planting. Children should be encouraged to adopt the tree they plant as part of an educational programme that helps to create an early awareness of the importance of looking after trees. This programme ensures a higher survival rate for young trees. Support should also be given for the importance of planting trees.

(vii) Expansion of Nursery Industry

The private nursery industry has expanded in response to a growing demand for trees, shrubs and house plants. Several areas of the city which are flood prone should be set aside for the expansion of these small scale enterprises. It is expected that the private sector should be the main supplier of landscape materials and plant. The Department of Parks and Gardens nurseries should be expanded.

(b) Townscape

The spatial arrangement, form and appearance of buildings, roads and public spaces in urban areas is collectively referred to as townscape. The townscape of Accra is diverse, ranging from intense urban settlement, to sporadic urban fringe developments and villages. A diversified townscape is encouraged under new planning standards for the metropolitan area, but an emphasis is placed on urban development being more intense, low rise and softened by landscaping. The following initiatives are designed to encourage an improved quality townscape.

(i) Urban Design Guidelines

The new planning standards, outline the parameters for defining the spatial arrangement of buildings and other structures to be constructed in the metropolitan area. These standards should be incorporated into revised town planning schemes. Special urban design guidelines will be prepared under the Central Business District and incorporated in the plan for this area. Other guidelines should be prepared for the design of residential, commercial, mixed use and industrial areas during the first five years of the plan. These should be made available to potential developers and architects and published in several local languages.

(ii) Conservation of Historic Areas

Special emphasis is placed on retaining the townscape of historic areas of the city - especially Old James Town, Ussher Town and Osu. These areas make an important contribution to the overall character and ambience of the city.

Conservation areas have a special architectural or historic interest, the character or appearance of which is desirable to preserve or enhance. These areas vary greatly in their townscape character. They range from those containing individual or grouped buildings typical of the period they were built to other areas which are important and interesting because of their life patterns.

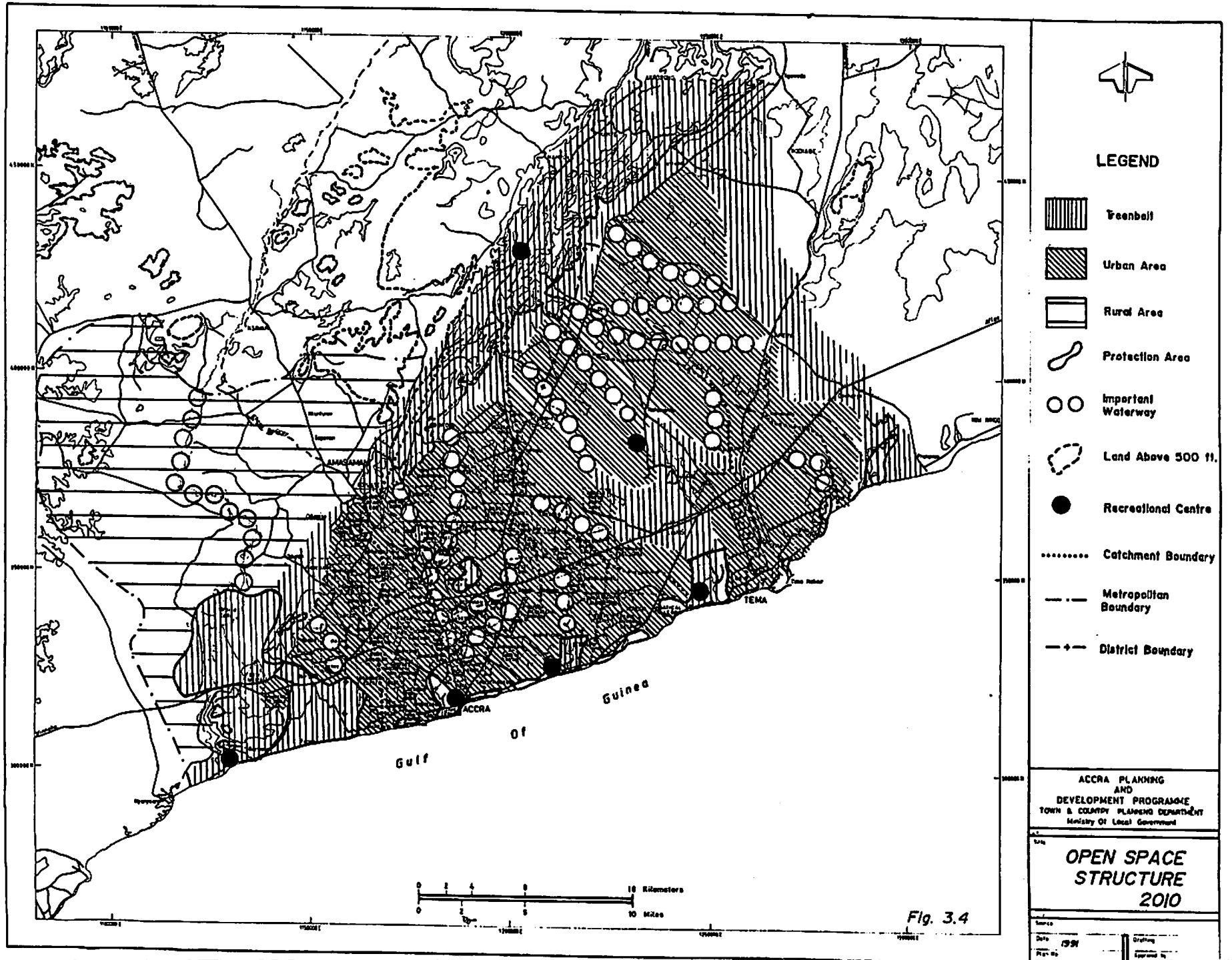
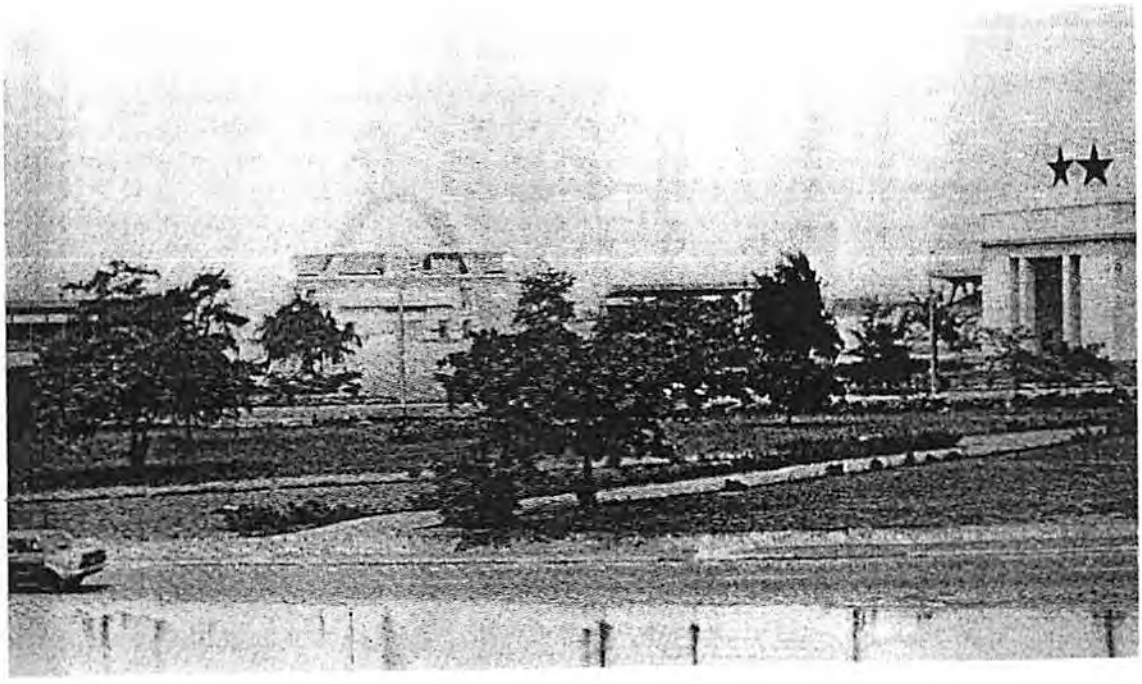

LEGEND
Treenbelt
Urban Area
Rural Area
Protection Area
Important Waterway
Land Above 500 ft.
Recreational Centre
Catchment Boundary
Metropolitan Boundary
District Boundary
ACCRA
TEMA
Gulf
of
Guinea
0 2 4 6 10 Kilometers
0 2 5 10 Miles
ACCRA PLANNING AND DEVELOPMENT PROGRAMME
TOWN & COUNTRY PLANNING DEPARTMENT
Ministry Of Local Government
OPEN SPACE STRUCTURE 2010
1991

Fig. 3.4



INDEPENDENCE ARCH AND INDEPENDENCE SQUARE

UNIVERSITY OF GHANA - LEGON

URBAN ENVIRONMENT

The preservation and enhancement of conservation areas will be achieved through a combination of selective retention and improvement by way of new development. The special character of these areas makes it essential that the new development accords with their architectural and visual qualities as well as life patterns so that old and new produce a harmonious whole.

(iii) Improvement to Public Buildings

For public buildings, open spaces and monuments, public funds will only be available for the improvement of features of public prominence. For business, commercial and industrial areas planning measures should be introduced to improve the appearance of some areas. Major Private enterprises should be encouraged to upgrade the appearance of property as part of public relations and promotion.

(iv) Advertising

Poor control over the siting of sign boards adds to the visual pollution of the city. Planing regulations should be prepared to control the form, location, duration and appearance of public notice boards and signs. Special attention should be given to the location and design of traffic and direction signs.

(v) Street Furniture

Bus shelters, public seats, post office boxes, waste disposal bins are all part of street furniture. The location, design and siting of these should be carefully planned. Design guidelines should be prepared during the first five year plan for the Department of Town and Country Planning and issued to public authorities involved in the provision of street furniture items.

(c) Conservation of the Natural Environment

Natural environment is the carrier of human activities and the supply of material and energy. Development must respect the constraints set by the environment and natural resources. Prevention of negative environmental distruption is more efficient than repairing damage and cleaning up the polluted environment.

Development must be restricted or prohibited along the coast, selected waterways, the hills surrounding the Metropolis, mangroves, lagoons and areas immediately bordering the Densu. With the exception of Korle Lagoon and its river in Accra and Chemu Lagoon in Tema these areas are still unpolluted but in many cases threatened by the pressure for development.

(i) Coastline

There are 88 km of coastline in the metropolitan area which have been experiencing a period of intensive erosion at an average rate of 0.5m per year. Many of the low lying areas under the tidal influence of the lagoons have been built upon and experience severe flooding when the entrances to the lagoons are closed. Over 80% of the coconut palms planted in the early part of this century have disappeared and excessive fishing has severely depleted local onshore fish stocks. Sewerage and rubbish are disposed of without control. Yet the coastline has enormous development potential for recreation and tourism which could be of great benefit to the local economy. To resolve these conflict a coastal management plan has been prepared for this area. The plan sets out strategies to manage the future use of the coastline. Specific policies covered in the plan are:

Environmental Pollution
Coastal Erosion Management
Lagoon Outlet Structures
Fishing Activities
Development and Investment
Sediment Management and Drainage

Land Use
Land Tenure
Disaster Planning
Administration, Education and Implementation

The Plan will be implemented through local coastal management committees of the district assemblies reporting to the regional coastal management secretariat under the Environmental Protection Council. Funds for projects and programmes are expected to come from a variety of sources under the PIP and from the Global Enablement Fund set up to provide assistance to developing countries requiring assistance to alleviate problems in natural habitats of international significance.

(ii) Lagoons

Korle Lagoon is being fouled by the discharge of sewerage onto the shore becuase of malfunctioning outfall pipes. This area poses a health hazard to bathers and other beach users. The practice of using human excreta, hospital wastes and sawdust for landfilling on the western bank of the Korle Lagoon is unsatisfactory. These are likely to rapidly decompose and leach out into the already overburdened lagoon and also into groundwaters.

The lack of adequate sanitary facilities in the various communities means the continuous use of the beaches and other (isolated) spots for open range defaecation. This is especially serious in the poor and depressed areas adjacent to the coastline and in the shopping districts. Sanitary facilities and infrastructure for waste disposal need to be improved and expanded.

(iii) Escarpment

The Akuapim Hill forms a natural escarpment which divides the coastal plain from the hill country of Eastern Region. Much of the natural vegetation on the escarpment has been removed and the area comprises predominantely regenerated shrubland and subsistent farming plots. The area is unsuitable for urban development because of geological, slope and soil erosion problems. The plan provides for the designation of the escarpment as part of the metropolitan area green belt. Replanting and permenant fallowing of more steeply sloping areas should be undertaken as conservation measures in future.

(iv) Erosion Control

There are three principal forms of erosion affecting the metropolitan area. Sheet erosion resulting from the stripping of land for agriculture, stream and coastal erosion. The rural strategy provides measures to reduce sheet erosion through improved landuse practices. The drainage strategy outlines measures that should be taken to slow down run off and to improve the overall management for surface water run off. The Coastal Management Plan outlines a number of measures including: the designation of a coastal protection zone; replanting of coconut palms; coastal engineering works and better control of sand winning to slow down the process of coastal erosion.

(v) Afforestation

The loss of trees in the metropolitan area through careless felling for use as fire wood has had a significant impact on environmental degradation. Apart from performing the important functions of maintaining soil stability and slowing run of, they provide shelter from the sun, habitats for bird and insect life, food and help to soften the appearance of the urban landscape. There is a need to stabilise many of the steeper sloping land along the escarpment, Achimota, Malam and Medie area of Ga District by introducing forestry projects. In the erosion prone areas of the metropolitan drainage system and around future open storage water supply reservoirs, afforestation projects should be undertaken to reduce run off and siltation buildup. A programme for the long term develoment of afforestation areas within the metropolitan parkland system should be prepared by the Department of Parks and Garden and the Foresry Department for inclusion in the Metropolitan Landscape Plan.

(iv) Education and Conservation

In precolonial times traditional land owners adopted sound conservation practices to protect and manage land, water and wildlife resources. With the rapid development of the metropolitan area and its demand for resources, many of the traditional ways have disappeared. The net impact of these heavy demands on the metropolitan area's natural resources has been the despoiling of the landscape and a seemingly careless attitude about improving it. For many people there is a sense of hopelessness in being able to do anything. Such attitudes require change which can only be brought about through improved education, information and a community responsibility to want to improve the environment in which they live. A multi-sectoral strategy targeted at the school, work, home and business environments should be developed by the Environmental Protection Council (EPC) as part of a local - and national - programme of awareness of the importance of maintaining and improving the quality of the ennvironment in which they live. This programme should be reinforced by giving publicity to community initiatives for improving the environment, outlined elsewhere in the plan.

(d) Management of Pollution

In Accra most of the industries are situated within the catchment of the River Odaw and Korle Lagoon while in Tema the Chemu Lagoon is most affected. In Tema a lot of industrial wastes are also discharged into the underground sewerage system which discharges through an outfall one kilometer offshore which has been non- operational for sometime now.

Since most of the industrial wastes ultimately reach the water bodies - fresh and coastal - they are the most affected. The effect both on land and in water is localised. The river Odaw - Korle Lagoon complex is grossly polluted. This contrasts with for example the Kpeshie and Sakumo II Lagoons which are only slightly polluted and the Mokwe which is unpolluted.

Industrial wastes do not have a very widespread effect on the metropolis. With the anticipatd increase in industrial activities, more wastes are likely to be discharged.

(i) Environment Protection

The Environmental Protection Council (EPC) has been set up by government to monitor, guide and report on the management of the environment. Local Government will have a role to play in pollution control through enforcing various bylaws and standards. There should be established, within the district assemblies, a policy body to work with the EPC to ensure greater control over business and other enterprises which pollute the environment. Enforcement of pollution control should be decentralised, as far as possible, by delegation of certain responsibilities to sub district or local councils.

(ii) Pullution Control Standards

These should be developed by the EPC and distributed to the district assemblies. There is the need for the assemblies to have trained staff to advise on enforcement of pollution control standards. Pollution control standards will be very difficult to enforce over the whole of the metropolitan area, and therefore these should be initially directed at new development, industrial areas and specific offending landuses as determined by EPC and the assemblies. The time of compliance should also be phased because not all industries will have the capital necessary to invest in plant and equipment to comply with the pollution control standards.

(iii) Environmental Impact Assessment

Urban development consist of a multitude of activities and is more than the sum total of number of separate activities. The impacts of the activities should be assessed in context with each other.

Presently there is no legal requirement for filing an Environmental Impact Statement before the commencement of developmental activities. The Investment Code requires that the environnmental effect of an enterprise should be taken into consideration before approval is given by the National Investment Centre. For the effective implementation of this, there is a need for legislation on developmental activities. This should not cover only industries but should be widened to cover all aspects of development.

The general EIA of urban develoment should be areawide and process - oriented rather than site - sector - or project-specific. Areawide impact assessment removes the necessity to carry out baseline studies repeatedly for each separate proposed activity. It also diminishes the possibility of differing and mutually inconsistent baseline studies. Also the decision making process on specific project is simpler as certain proposd activities can be approved or dismissed immediately on the basis of areawide information.

(iv) Community Monitoring

As outlined in (i) above the delegation of certain responsibilities to sub districts or local communities will enable much more effective control over pollution within the metropolitan area. Appropriate guidelines for the powers and authority vested in the sub districts and local councils should have to be drawn up by the assemblies.

(v) Use of Biodegradable and Hazardous Products

The strategic plan seeks to promote the use of products for washing and packaging which are biodegradable. Where desirable byelaws should be drawn up to ensure the public are protected against dumping or use of materials that endanger public health. In particular the use of asbestos materials should be banned from further use in buildings in the metropolitan area. Programmes of public awareness on the use of dangerous materials should be developed by the Health Department.

(e) Energy Conservation

The current pattern of urban develomnt is expensive in terms of energy consumption. The Struture Plan recognises the need to reduce energy consumption per capita by reducing commuter travel distance and time, increasing the use of telecommunications and encouraging the use of mass transit facilities. It is acknowledged that consumption of petrol will rise as private car ownership increases but improve consumption can only be brought about through stricter policies on vehicle operation, engine capacity and pricing policy. There are, however, other measures which local government can take to support or influence improve energy conservation.

(i) Traffic Management

Congestion in the Central Business District is a problem which adds significantly to energy costs. Long-term consideration should be given to eventually restricting entry of private vehicles to the CBD during certain hours by increasing day long parking charges as part of improved traffic management measures. This should coerce single occupant commuters to use public transport which will help fuel conservation.

(ii) Reduction in Wood Fuels

Electricity and bottled gas are currently being promoted by the Energy Board as the most efficient sources of energy used for cooking in the metropolitan area. This policy is endorsed by the plan and the process of converting from wood fuels to either gas or electricity should be accelerated by introducing a byelaw prohibiting the use of charcoal fires for domestic cooking purposes. This should be enforced on an area by area, basis so that the whole of metropolitan urban area is switched to gas or electricity for domestic purposes by the end of the plan period.

Chapter 4

TRANSPORTATION

4.1 INTRODUCTION

The problems associated with the transportation system in GAMA are all too familiar to those who travel to the centre of Accra on a regular basis. The 1961 Master Plan provided for an extensive network of roads to be constructed to service the anticipated expansion of the metropolitan area. However, many of the proposed major roads have never been constructed and the parts which were, have deteriorated to the point that major reconstruction work is now required. The current public transportation system, which operates with a small number of buses and a fleet of over 20,000 taxis, is inefficient. Lack of planning control has given rise to land use activities and encroachments upon road corridors which have contributed to heavy traffic congestion. Traffic management is poor, bus and taxi stations are inappropriately located and pedestrian movement is severely constrained by narrow footpath, uncovered drains and streetside stalls. The dangerous condition of many roads is resulting in an increasing number of accidents, wear and tear on vehicles and high fuel consumption. These serious problems have contributed to the poor state of the road transportation system in GAMA and this is having a very detrimental effect on economic development and the efficient operation of the city.

Other transportation systems, such as the railway, have been grossly neglected and underutilized, with some railway corridor land having been leased for development. The national aircraft fleet, is inappropriate, ageing and in need of replacement, aircraft noise levels in the flight path crossing established residential areas are above internationally accepted standards and airport facilities - especially cargo handling - are inadequate. Port facilities are in good condition, but major works are required to dredge the harbour to maintain adequate draft for larger container vessels.

While these issues pose a formidable task to planners on how best to find solutions to the problems affecting the transportation systems in GAMA, much could be done during the life of the plan to improve the existing situation. In developing a strategy for improved transportation, it is recognized that funds for major road projects will be limited and that priority must go to rehabilitating and maintaining the existing network. There is also the need to adopt non engineering solutions to help solve the traffic and transportation problems. Most importantly, however, there is the need for a fundamental shift in the mode and pattern of the transportation movement. This will require a long-term change in employment location, travel habits and landuse.

4.2 NATIONAL STRATEGIES

In preparing a transportation strategy for GAMA proper recognition must be given to national strategies and policies as they affect the national capital. The Ministry of Transport and Communications executes current national strategies for transportation services in Ghana. These are divided into five principal transportation sectors - road, rail, air, sea and transmission lines. The structural adjustment and the public investment programmes, in the absence of a national plan for transportation, define the national strategy. Government is currently in the process of formulating a new national transportation strategy. A summary of national strategies for each sector as it affects GAMA is given below:

4.2.1 Road Transport

The national strategy for road transport is divided into three components: national road network, urban roads and feeder roads. These respective components are administered by the Highway Authority and Departments of Urban and Feeder Roads. The Highway Authority is continuing with a programme, as funds permit, to upgrade all regional roads to asphalt or sealed standard by the year 2000. Government is also committed to improvements to the Trans West African Highway conecting Togo with Cote d'Ivoire for the development of trade between the ECOWAS group of countries. The urban roads strategy is more selective. Four cities,

Accra, Kumasi, Tamale, Sekondi-Takoradi are included in a special World Bank assistance programme. The main emphasis of the urban programme is the upgrading of selected major arterial roads in these cities. The feeder roads programme is designed to upgrade important roads within regions which are playing an important role in the economic recovery programme. Accra is receiving a greater proportion of the urban funds because of it size, rate of growth and importance as the national capital. Further urban roads programmes are planned for other urban centres of the country with funding assistance from the World Bank.

4.2.2 Railway Services

The national railway system has been neglected and is in a poor state of repair resulting in greatly reduced efficiency of this service. Government has provided funds to improve engines, rolling stock and signalling, but the overall national transportation strategy is directed primarily towards the improvement of road rather than the rail network. This is reflected in the public investment programme. Long term, the rehabilitation of the railway to introduce wider guage track and faster electric train services might be considered as economic conditions in the country improve.

4.2.3 National Aviation Strategy

Ghana Airways is the sole operator of domestic air services within Ghana. It is in competition with several other national airlines with International routes to Europe and other African countries. Ghana Airways fleet of aircraft is ageing and will soon be in need of replacement, the Corporation's operational costs are high and passenger carrying levels on most international services have remained stable and low. The government in a move to reduce operational costs in 1989 cut drastically internal air services such that the country now has only a skeleton airline service and most of the F28 fleet are mothballed. There is currently no strategy for revitalizing the internal air services or re-equipping the international aircraft fleet with more modern and appropriate short haul low passenger aircraft. This makes it very difficult to determine the investment required to support the operation of Kotoka Internatioonal Airport and regional airports. There is an immediate need for government to develop a strategy for the national airline and aviation services to be provided in the country.

4.2.4 Ports and Harbours

Government has continued to support the development of the nation's coastal ports of Tema and Takoradi through a substantial programme of upgrading, expansion and improvements for the export of agriculture, mining and forestry products. The national strategy also places a strong emphasis on the development of the Akosombo port on the Volta Lake. There is a strategic relationship between the Akosombo and Tema ports which the government is seeking to strengthen since the Volta Lake can be navigated for almost two thirds of the country. Improving the efficiency of the lake service and a rapid link by road and possible rail with Tema will have significant cost savings and eonomic benefits to the north of the country.

4.2.5 Transmission Lines

The only major transmission systems in the country are water supply and electricity systems of which GAMA has the most extensive network. There is no national strategy on a national oil, gas or water pipeline network system - although a fuel pipeline between Tema refinery and Akosombo port is under consideration. For irrigation projects gravity flow systems are preferred to mechanical pumping to reduce energy and operation-costs.

4.3 GOALS AND OBJECTIVES

Good transportation services are essential to facilitate the economic development of GAMA and to ensure convenient and efficient movement of people within the metropolitan area. The transportation goal seeks to support the underlying economic thrust of the Strategic Plan by aiming to:

"MAINTAIN AN ADEQUATE, SAFE, AND EFFICIENT TRANSPORTATION SYSTEM FOR GAMA"

To support the achievement of this goal, objectives have been defined which give focus to the strategies outlined for road, pedestrain, rail, air and sea modes of transportation below.

4.4 Road Transportation Strategy

4.4.1 Objectives

To develop an efficient road transport system.

To improve mobility and access to urban and rural areas.

To develop improved road transport facilities.

To develop an integrated landuse and transportation system.

To develop an efficient public transport system.

To provide for long-term transportation planning needs.

To improve vehicle safety and performance.

4.4.2 Thrust of the Road Transportation Strategy

The principal thrust of the road transportation strategy is to rehabilitate, rationalize and improve the efficiency of the existing road network and to reduce the dominance of the centrally orientated movements system to a more efficient intra-city transportation system linking major employment and activity centres under a more decentralised land use structure. Strong emphasis is also given to improvement of the public transport system with the long term progressive development of a rapid mass transit system in the early part of the 21 century. The following are key elements of the road transportation strategy.

(a) Development of an Efficient Road Transport System

The road system in GAMA can be divided into two levels: the rapid mobility roads comprising the Accra-Tema motorway, regional roads, trunk and arterial roads; and local service road networks comprising minor arterials, collectors, distributors and local access roads. Both levels of the system are in a serious state of disrepair, are incomplete or being encroached upon. There is congestion on many sections of the inner city road network created by growing traffic volumes, uncontrolled development, missing links, poor traffic management and inadequate parking and inconveniently located terminals. To deal with the situation, it is necessary to rationalize the existing road network into some form of hierarchy or structure, determine priorities for improvement to the network; develop and upgrade important major roads and construct missing links and finally ensure the network is efficiently maintained. The following matters should be undertaken.

(i) Rationalization of the Existing Road Network

The Accra-Tema Master Plan recognized the need for improved lateral movement in the transportation system. In an attempt to reduce the foreseen increase in vehicle numbers additional ring roads and a third arterial link with Tema was proposed. Provision was also made for the expansion of carriageways on all major roads leading into or out of the city. However, most roads designed to direct traffic away from the CBD have not been constructed and with the rapid expansion of Accra and Tema the current network is incapable of meeting the demands placed upon it. The CBD orientated movement of 74% of vehicle passenger trips cannot be sustained for much longer before this area becomes choked, business and trading declines and more

investment is attracted to sites with better access away from the CBD. In these new peripheral areas business development will eventually become as congested as the CBD.

Major refinement in the way the road transportation network operates is essential if traffic conditions are to improve in future. The refinement would involve predicting more accurate traffic flows in order to categorize the roads into a hierarchy or functional structure, and to provide adequate capacity and pavement strengths to meet anticpated traffic flows. Design standards should be adopted for the various categories of roads sufficient to meet functional requirements. To this end a comprehensive compendium of design standards and guidelines prepared by the Accra Planning and Development Programme in consultation with the Department of Urban Roads and GHA should be adopted.

(ii) Development of a Metropolitan Road Network

In order to rationalize and improve overall traffic circulation in GAMA, a new transportation structure is intended and this is intricately linked to long term changes in the overall landuse structure for the metropolitan area. New arterial roads linking the main corridor roads are required to give more structure and choice of routes within the road network. Figure 4.1 shows the proposed transportation plan for GAMA. More specifically the plan provides for:

An outer orbital road around the city. This is designed to reduce the load on the existing motorway whose function has already been down graded because of development abutting the carriageway in many areas. This road will also enable Tema Port and Winneba Road bound/origin traffic to bypass the urban area. Provision should be made to secure and define this road corridor until funds become available for its construction in the first decade of next century.

Additional ring roads and links in the existing network road should be provided to improve the efficiency of orbital movement. These corridors should be surveyed, planted and protected. The link between Madina and Teshie should be given high priority for construction.

The 1961 Accra-Tema Master Plan provided for a third link road between Accra and Tema. This road should be retained as per the original plan and constructed to 2 lanes (later 4 lanes) as soon as funds permit. This will reduce the current heavy volume of traffic on the Coast Road.

The Nsawam Road and Independence Avenue from the motorway to the Liberia Road in the CBD should be upgraded to 4 lanes capacity as well as Giffard Road to accommodate the expected increase in traffic flows on this route as the result of the strategy to encourage the bulk of new development in the next. decade.

The plan also makes provision for a rapid transit system as discussed below.

Linked with the development of the transportation network is the development of more decentralised business and activity centres as outlined in the Structure Plan. These centres are intended to be developed as magnates to attract much of the day-to-day business activities normally conducted in the CBD to more convenient and accessible locations close to the place of residence. It is intended that major transportation terminals will be located adjacent to or within these new centre in order to maximise the potential for exchange, trade and business.

(iii) Priority Road Improvements Programme

The priority for the road improvements programme should be on upgrading the primary network of arterial roads and immediate maintenance of the surfaced road network - especially at the local access road and street level. The Department of Urban Roads has a programme for rehabilitation and improvement for 70 km of major roads in Accra over the next 3 years. The provisions of this plan are endorsed. However, with respect to the CBD, this programme must be reviewed once the Central Business District Redevelopment and Investment Plan is completed in January 1993.

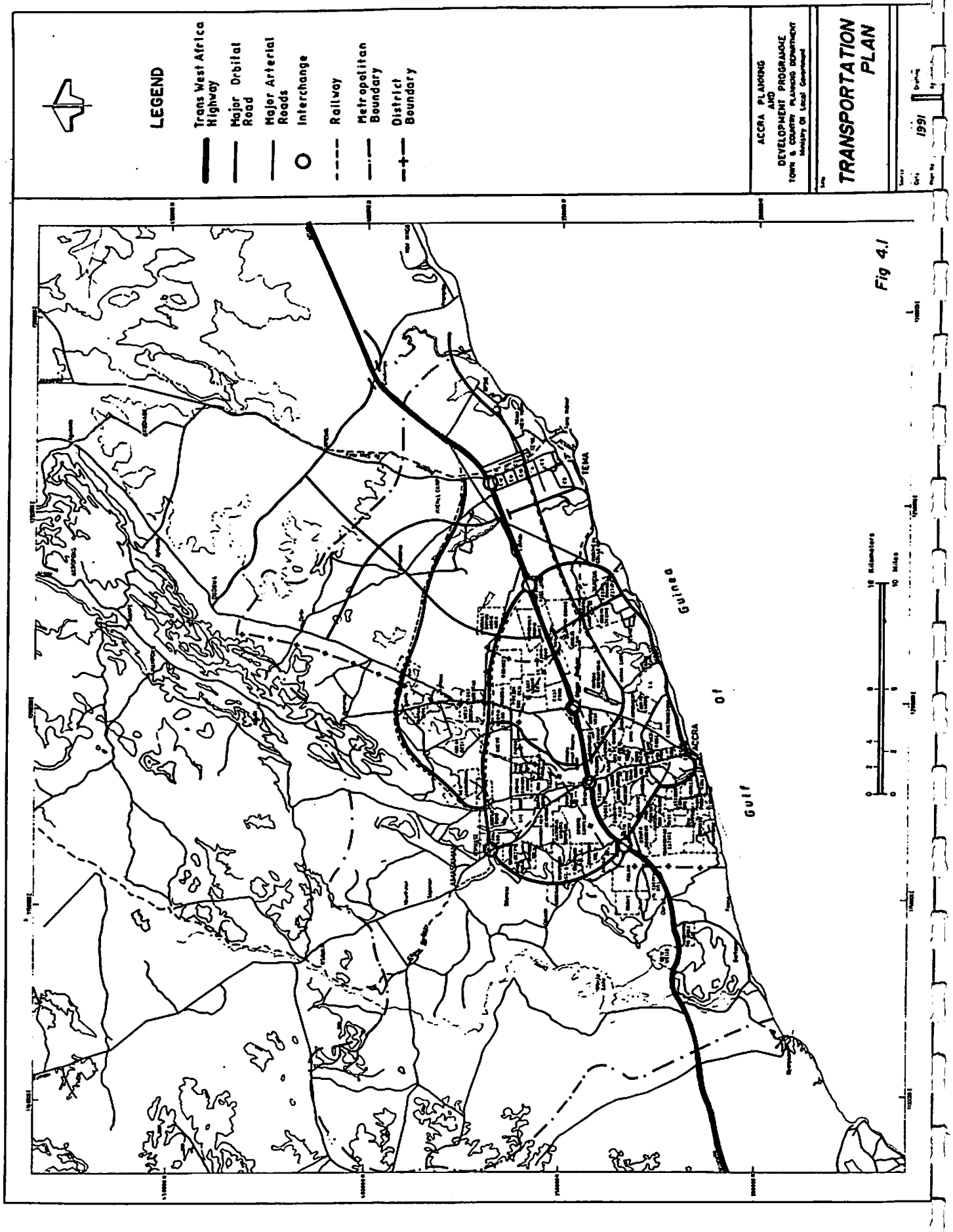

LEGEND
Trans West Africa Highway
Major Orbital Road
Major Arterial Roads
Interchange
Railway
Metropolitan Boundary
District Boundary
ACCRA PLANNING AND DEVELOPMENT PROGRAMME
TOWN & COUNTRY PLANNING DEPARTMENT
Ministry Of Local Government
TRANSPORTATION PLAN
1991
TEMA
ACCRA
Guinea
Of
Gulf
10 Kilometers
10 Miles

Fig 4.1

ACHIMOTA ROAD UNDER CONSTRUCTION

APENKWA INTERCHANGE

TRANSPORTATION

The main elements of the three year plan are:

Upgrading of Liberation Road, Independence Avenue, the High Street, 28th February Roads Labadi - Nungua, Accra New Town, Dansoman - Sakaman and Kwashieman .

Development of missing link roads including Graphic Road, Kanda Highway, Second Circular-Airport Road, Liberia Road, Castle Road and Guggisberg to Dansoman Roads.

Improvement to Kwame Nkrumah, Danquah, Tetteh Quarshie, and Sankara circles.

(iv) Development Area Road Improvement Programme

Large parts of the metropolitan area have unformed roads which greatly restrict access and mobility. Proposals have been put forward to upgrade several low quality housing areas as part of the environmental improvement programme *(see section 3.5)*. A programme should be drawn up by the development agencies for the coordinated development of residential areas to provide proper roads and services. Areas which have been planned and developed legally should be given priority in the programme.

(v) Local Road and Street Maintenance

Large parts of the local access road and street network have been neglected in recent years and each wet season the amount of surface lost increases. Funds for maintenance have always been limited, but it is essential that the AMA and Department of Urban roads increase the budget allocation to this activity. The length of minor roads in GAMA is twice that of major roads and the cost of holding the surface by regular maintenance is insignificant to that for reconstruction. Local street and drainage maintenance should be undertaken by establishing community maintenace gangs under the supervision of AMA and Urban Roads. Each gang should be provided with basic equipment and materials for repairing holes in roads and culverts. Assistance from a donor agency to establish and equip small teams, with materials drawn from AMA and the Department of Urban Roads should be introduced as a matter of urgency.

(vi) Rural Roads Within the Metropolitan Planning Area

Within GAMA there is an extensive network of rural roads which connect rural market centres to Accra and Tema. There are however several missing links and water crossings which need to be constructed to ensure all year round accessibility to district headquarters and main traffic corridors. One important missing link involves construction of a bridge across the River Densu near the village Ashalaja. Construction of this link will eliminate a detour from the south to Amasaman the Ga District Headquarters. A bridge over the River Dobro is also required on the route Oduntia to Amasaman and a further bridge on the Oduman - Ablekuma road which connects up with Odorkor in Accra. The strategy for rural development outlines in more detail the intended development of road communications in the rural sector.

(b) Improved Access and Mobility within Residential Area

The overall proposed transport plan provides for greatly improved mobility at the metropolitan scale. At the local residential level access and mobility remains a problem. Measures to ensure more effective local management of development have been outlined in the urban development strategy, while new planning standards will ensure all plots have legal access to a public road or vehicular width accessway. In the urban upgrading areas special attention should be paid to providing access to within 60 metres of every dwelling for emergency, waste collection and service connection purposes. Much more rigorous standards will be applied to upgrading areas. In many established areas access and mobility will continue to be a problem, even after road and service improvements have been made. Where possible however, planning and development control means should be used to improve the level of accessibility and mobility and between residential areas.

(c) Develop an Efficient Public Transportation Facilities

A very important aspect of any transport system is the availability of effiecient facilities where traffic originate, terminate and/or are interchanged in the process of the road haul movement. The following facilities are essential in any transportation system.

(i) Terminals

Most of the existing city bus and taxi terminals are poorly planned and located, and this compounds traffic congestion on narrow streets and poorly designed intersections. The intra-city transit facilities are patronized mainly by the "trotros" (mini- buses) and shared-ride taxis. They operate specific short distance routes which necessitate passengers to change at transit points to continue their journey. Intra-city transit facilities should be placed at selected convenient positions. Whilst the Ghana Private Road Transport Union (GPRTU) and the Accra Metropolitan Authority have identified such transit points it will be necessary to conduct studies and confirm suitablity of these sites. Some existing transit stations cause considerable congestion and the long-term suitability of the following transit points should be examined.

Kwame Nkrumah Circle area,
Independence Avenue/Kinbu/Barnes Road area,
The UTC area, and
Kinbu Road/31st December Market/Kojo Thompson Road area.

Further sites should be identified during the preparation of the Central Business District Redvelopment and Investment Plan for inter-regional and intercity terminals. Provision should be made for a taxi/bus terminal in every residential area. These would be used as collection points feeding to major intra-city terminals located at subdistrict centres, major road intersections and large employment centres such as the university and ministries area.

(ii) Carparks

Most car parking in the metropolitan area is on the street or wherever convenient on a plot. Few businesses make provision for carparking spaces and where these are provided, most are inadequate with very little room for manoeuvring. The new town planning standards make carparking compulsory for all new development. However, in established residential areas it is recognized that onstreet parking will increase and traffic management measures such as one side only street parking, no parking areas, one way parking streets and communal parking facilities will be required. In the CBD restrictions will be placed on parking and variable fees should be applied to discourage long-term parking. Developers will be required to make a contribution to parking in this area. As part of a longer term strategy basement and car parking buildings will need to be provided in the CBD.

(iii) Loading Stations

Loading and unloading stations for passengers and freight are essential to prevent blocking or temporary obstruction of roads and streets. Provision should be made for bus and taxi stops at intervals of not more than 1 km on all major public transport routes within the metropolitan area. These should be clearly defined and set back from the carriageway where possible. Provision should be made for loading bay or docks for all businesses receiving or distributing goods. Where off street loading is not possible provision of temporary or time restricted loading zones will have to be introduced and policed as part of long term traffic management in the CBD and other business centres.

(iv) Park and Ride

Long term provision should be made for park and ride centres on the periphery of the CBD and outer rapid transit centres. It will be many years before such facilities are required in the metropolitan area but sites should be secured for long term provision of park and ride stations. Consideration should be given to the permission

of temporary uses on park and ride station sites such as car sale, nursery and other outdoor display businesses.

(v) Improved Telecommunications and Traffic Information Service

The upgrading and expansion of post and telecommunication services would signifcantly reduce the high number of trips made to deliver messages or do business within GAMA. Provision should also be made for mobile telephone services for private vehicles and two way radios for taxis and mini buses to avoid the practice of roving and maximise the use of the commercial passenger traffic vehicles. The provision of regular radio reporting of traffic congestion, roadworks and accidents would enable drivers to select alternative routes at peak traffic times. These are all transport related services which should be developed in the course of implementing the plan.

(vii) Sign Posting and Street Maps

A major problem with driving in Accra is orientation. Until recently there were very few street signs in Accra and route signs - except on the motorway - are nonexistant. There are very few street signs in Tema. This creates confusion - even to the most experienced drivers trying to find an address in the metropolitan area. Street signs are also important for postal delivery and emergency services. A comprehensive street map of the urban area should be prepared by the Survey Department. Authority should be given to community councils or representative groups to name all unnamed streets in different residential areas and for these to be provided to the AMA and district assemblies to document. These should be reviewed to reduce too many commonly occurring names and published in revised versions of the street map. Computerisation of the map as outlined in the management strategy will ensure ease of updating.

The district assemblies should also establish a route signposing system to assist drivers who are not familiar with the layout of the city. As the urban area expands new names should be added to the route signs. Sign posting and street marking should be installed for all one way streets, parking and loading zones, bus stops and emergency stopping areas. Major public buildings should also be signposted. The sign posting for the metropolitan area will be an expensive exercise and will take at least the full period of the plan to complete. Priority should be given to signposting all major access roads first, followed by the Central Business District. Initiatives by community and town councils to paint street names on buildings should be encouraged, but this should be coordinated by the assemblies.

(d) Integrate Landuse and Transportation System

The structure plan provides the framework for improved mobility and convenience of movement in GAMA by setting out a framework for reducing many of the conflicts between landuse and movement systems. It is recognised that it will take many years to remove some of the worst conflicts, as there will be insufficient resources to acquire land, enforce curtailment, prohibit or relocate many landuse activities. Only priority areas, such as encroachment on major roads, illegal accessways to high capacity roads or streets, poorly designed and located bus and taxi stations and closing of inappropriate retail activities on major roads will be dealt with during the short and medium term. In the process of reviewing the town planning scheme for every established residential area in GAMA, a traffic management plan should be prepared. This plan should be used as the basis of allocating funds to remove more localized transportation/land use conflicts.

The overall thrust of the Structure Plan is to encourage more consolidated development through increased density, more intensive redevelopment, infilling of vacant and underutilized land and upgrading and alteration of existing dwellings to increase overall levels of occupancy. A more intensive landuse pattern would ensure higher patronage and more efficient use of public transport. The transportation plan for GAMA will form the basis for directing urban expansion whilst the minor arterial and collector roads will define the various communities/estates to be developed in conformity with the land-use proposals of the structure plan. It is important that the right-of-way for the new network be safeguarded by early acquisition, demarcation and strict monitoring against encroachment.

(e) Develop an Efficient Public Transport System

At the current rate of increase in vehicle registrations, the road network now developed will reach saturation point in the inner city by the year 2000 with average speeds of less than 10 km per hour. Financial, technical and legal constraints will curtail significantly the capacity to meet traffic flow requirements if growth in private vehicle usage for commuting is not curtailed. A shift in policy in line with most major cities of the world is required to discourage private vehicles entering the inner city to protect the economic viability of the Central Business District. The opportunity must be taken to start to rebuild a more environmentally acceptable Central Business District with a more rational transportation and communication network. To deter private vehicle usage in inner city areas during peak traffic hours, measures should taken to encourage greater use of public transport. These include:

Establishment of defined routes for bus and other public transport; provision of bus laybys on all arterial and collector roads; provision of transit terminals for all public transport (buses, trotro, etc.) and para-transit services (taxis, etc.) in convenient and easily accessible locations.

Continued support for the privatisation of the public transport system. This includes improvements to business operations and services, encouragement of smaller 15 to 24 seater buses, possible sales tax exemption and financial support to increase the mini bus fleet.

Progressively restricting access and parking by private vehicle in the core of the Central Business District during week day business hours but at the same time making provision for secure park and ride facilities on rapid transit routes on the periphery of the Central Business District. Policing of restrictions would be undertaken by issuing different coloured number plates to private, commercial and public transport vehicles.

Developing high capacity mass transit systems like railway and tandem motor buses/trolleys. The first stage of this process will be the progressive designation of 30m corridor system and future transit stop centres. Incremental acquisition of the corridor should commence primarily in the inner city area as funds provide. Strict planning control must be applied over redevelopment of and within the corridor.

(f) Improve Vehicle Safety and Performance

Most motor vehicles on GAMA roads are in poor condition. Although all vehicles are required to have a certificate of road worthiness the standard of testing is well below accepted international safety standards. Regular police and city guard patrols stop vehicles, but seldom are vehicles taken off the road. While low standards can be tolerated and vehicle speeds kept low because of road conditions and congestion, the improvements to the roads network over the next 20 years will bring about a marked increase in traffic speeds - especially during off peak times. Serious accidents arising from vehicle defects and overloading will occur on these roads.

To improve vehichle safety the following measures will need to be introduced:

The standards for the issue of certificates of registration will have to be increased and the driving code more rigorously enforced.

Load and axle weight standards will have to be enforced not only for public safety reasons but to protect road pavements from being damaged by excessively heavy axle loads.

Additional subdistrict vehicle inspection stations will be requried to meet the demand for more rigorous vehicle inspections.

Improved mobile policing of traffic speed offenders will be necessary, including the introduction of radar speed trap systems.

Fines should be increased in relation to the seriousness of offenses for driving a defective vehicle.

The fitting and wearing of seat belts for vehicles and crash helmets for motorcycles should be made compulsory in line with internationally accepted standards of safety.

A mobile police tow truck services should be introduced to remove broken down vehicle causing obstruction to traffic flow. The service should also contain emergency equipment in case of accident.

Introduction of education progammes and use of publicity to develop a better attitude to safe driving habits and the need to maintenance vehicles for driver safety.

4.5 STRATEGY FOR RAIL AND RAPID TRANSIT SYSTEM

4.5.1 Objectives

To develop an effective railway system

To provide for the long-term development of a rapid transit system

4.5.2 Thrust of the Strategy

The role of the railway system in passenger and freight transport in GAMA is small and declining. Unless substantial funds are injected into the urban railway system it will not be able to contribute significantly to improving the public transport system. For the duration of the Strategic Plan no expansion of the railway network is intended. In the longer term there is a need to make provision for a rapid transit system which may involve the use of the rail system. The components of the strategy for the rail and rapid transit system involve:

(a) Accra-Tema Rail Services

The Accra-Tema railway remains a greatly underutilized transport link in the metropolitan area. The line should be upgraded and realigned to carry increased volumes for freight for the mainline. The Ghana Railways Corporation should undertake a study to improve the operation of a more efficient and regular service. A bus terminal should be constructed at Tema Station so that bus services can be linked to train arrival/departures. An efficient rail that will run non-stop train service between the Accra and Tema centre would be an attraction provided travel times and fares could be kept below that for buses and taxis. There may be some advantage to privatising this service, but this will only be possible if track and signaling equipment are improved.

(b) Mass Transit System

Experience worldwide has shown that there comes a point in the development of cities where transportation problems cannot be resolved by simply providing more roads to be filed by ever increasing numbers of private cars travelling to and from a central destination. Even with improved management the centres of cities become choked with traffic and private use of motor vehicles has to be constrained. Following the accepted principle that congestion is created by putting too many people and too much economic activity in one place the Structure Plan makes provision for decentralized business and industrial centres. But these cannot exist in isolation and must be connected with a fast transit system for which the railway or other rapid mass transit systems must be constructed.

Much can be done to improve both the road network and management of traffic in the metropolitan area. The strategy to improve motorised public transport will hopefully lead to more efficient use of the existing network. There will come a stage when this will not be able to cope with passenger demand and a fast efficient mass transit system will have to be developed . The provision of such a system, which may involve rapid rail, mono rail or rapid bus or combinations of each will have to be decided in future. It is not envisaged that construction

of the system will begin within the life of the plan, but designation and protection of a 30m corridor and transit stations for a future rapid rail system should be made now.
Figure 4.1, the Transportation Plan indicates the approximate allignments of the corridors and transit stations. The principal features of the system are as follows:

(i) Corridors

A central line connecting the Central Business Districts of Accra and Tema. Except for the Tema end this will follow the existing right-of-way and will have a short spur to connect up with Kotoka International Airport. Other spurs or loops will connect up the new estates at Sakumono and Lashibi, Teshie-Nungua, etc.

An upper line inter-connecting the outer sub-regional business centres.

The new international airport line which starts from the end of the central line at Tema and runs along the Tema-Aflao Road to the proposed new airport.

Apart from the above it is proposed that a rapid mass transit system be extended along:

The radial major arteries such as Independence Avenue/Liberation Road, Nsawam Road and Kaneshie-Mallam Road.

The new north-south major arterials.

The east-west major arterial corridors such as Ring Road, the Accra-Tema motorway, the proposed Upper Ring Road, the Accra-Tema Coastal route, the proposed Accra-Tema Central Route.

(ii) Transportation Terminals and Transit Facilities

Inter-city road transportation terminals may be distinguished from the normal intra-city facilities. The former should be located in the CBD (as it is now). However, the present facilities, while recently upgraded, will not be capable of meeting long term interregional transportation needs and a new site and large transit centre will be required in future. The CBD Redevelopment and Investment Plan should identify a site. The intra- city terminals should be located at the sub-regional business major employment centres, and on the periphery of the CBD. The intra-city terminals would form part of an integrated urban mass transit system. Rapid transit transfer centres should also be provided at major intersections throughout the metropolitan area. The rapid mass transit system should have parking (Park and Ride) facilities to encourage individual travellers to the city to leave their private cars behind at the sub-regional business centres to carry out businesses elsewhere in the city using public transport.

(c) Akosombo Line

The Shai Hills railway line is no longer in use and most of the track has been removed. It is for consideration by the National Planning Commission and Ghana Railways Corporation whether this line should be extended to Akosombo Port and upgraded to handle freight to the from Tema Port. A railway sidings can be developed at a suitable point to handle stone from Shai Hills for the construction industry when and if this line is reconstructed.

(d) Railway Crossings and Sidings

Even though the urban rapid transit network is a long term proposal, provision should be made at all interchanges/intersections to acommodate grade separation crossings. All existing crossings on major roads within the metropolitan area should be grade separated during the period of the plan. Consideration should be given to sidings in the various industrial areas. This should be examined in much more detail during the upgrading of town planning schemes.

(e) Goods Handling Centre

The in-coming regional line from Kumasi and Takoradi would teminate at Ofankor where freight and storage facilities would be provided. Only freight destined for Tema harbour would continue beyond this point by way of the central line. Otherwise the line to the current central railway station would be part of the urban passenger railway network.

4.6 STRATEGY FOR IMPROVED PEDESTRIAN AND CYCLEWAYS

4.6.1 Objectives

To provide for safe and convenient pedestrian movement

To develop pedestrian-only streets.

To develop facilities to encourage greater use of bicycles.

To provide for the mobility needs of the handicapped

4.6.2 Strategy

The thrust of the strategy is to improve the management of pedestrian movement through better street design, a more defined pedestrian circulation system, removal of major traffic/pedestrian conflict points and the provision of convenient transport mode interchanges such as, letdown and pickup areas, bus stops and taxi stands. The strategy elements are as follows:

(a) Subways, Overhead Bridges, and Pedestrian Crossings

The provision of crossing, bridges and subways is essential for effective management of both traffic and pedestrians. The metropolitan area has a substantial number of pedestrian crossings, but driving habits tend to disregard the rights of pedestrians on crosswalks. The recent installation of pedestrian overhead bridges across the Kaneshie-Mallam Road, Motorway extension and Barnes Road has generated considerable public outcry against them. The argument against them is that children, the aged and people carrying loads, or those afraid of heights would not use them. Similar arguments were raised when pedestrian over- bridges were introduced in Lagos, Nigeria, but their use now is readily accepted. There are no pedestrian subways in the metropolitan area. These are expensive to construct, can have drainage problems, and are notorious for criminal activities. The alternative to overhead bridges and subways are the less capital intensive barriers, police/city guards/traffic warden controlled crossings and traffic control lights/signals.

Whilst subways and overhead bridges are basically the safest means of reducing traffic accidents their use cannot be guaranteed, even in conjunction with barriers designed to obstruct the most agile pedestrian. Nevertheless, if traffic movement on the major roads is to be constrained and accidents minimized a policy of constructing overhead bridges in preference to subways should be maintained. Overhead pedestrian bridges should be provided at the points along the main corridor arterials and ring roads where pedestrian flows converge, at major transport interchanges on dual lane roads and at major business centres such as markets.

At all signalled intersections in the central area controlled pedestrian crossings should be provided. Signalled pedestrian crossings should be installed on all major arterial roads at convenient intervals when funds are not available for the construction of overbridges. All other pedestrian crossing on arterial and major collector roads should be beaconed to warn drivers that pedestrians may be crossing. There is also the need to ensure proper sign posting of pedestrian crossings. All decisions taken to introduce pedestrian crossings must be based on proper vehicular and pedestrian traffic studies. Where studies indicate an intractable problem,

serious consideration should be given to altering the landuse pattern which generates the pedestrian or vehicular traffic conflict.

(b) Pedestrian Streets and Accessways

Many streets in the Accra CBD are heavily congested with pedestrian and traffic movement. In order to improve both pedestrian and vehicular flows, consideration should be given to turning some streets into pedestrian areas only. The Central Business District Redevelopment and Investment Plan will make recommendations on streets to be pedestrianised in this area. There may, however, be opportunities to develop pedestrian streets outside the CBD and these should be identified during the process of reviewing the town planning schemes for different residential areas. Provision should also be made to upgrade and introduce new access lanes in residential and business areas of the city. Particular attention should be given to the development of improved accessways in areas undergoing upgrading.

(c) Bicycleways

The bicycle is one of the cheapest and most underutilized forms of transport in the metropolitan area and the topography and climate of Accra are most suitable for this mode of transport. Its use, however, is dissuaded by poor roads, driver attitudes and purchase costs. The strategy to encourage this alternative form of transport requires a commitment to the provision of cycle paths along the major road corridors and in areas of greatest bicycle use. There are also attitudinal problems to be overcome before the population as a whole can accept the use of bicycles.

The greatest bicycle concentrations in the metropolitan area occur in Nima, Mamobi and New Town - traditional northern migrant centres. The cycleway network in this area should be developed as the initial phase of an expanded cycleway network. A link between the Achimota road and the Ring Road along Nima Creek would greatly facilitate both pedestrian and cycleway movement in this area. The route system could be expanded along the Ring Road and Independene Avenue. An overall plan for developing the bicycle network in the Innercity areas should be prepared for implementation during the life of the Strategic Plan.

(d) Provision for the Mobile Handicapped

Scant regard has been given to the needs of handicapped persons who depend on wheel chairs, walking aids, specialized motorized or hand powered vehicles to get around. Planning and building regulation should include mandatory requirement for the mobility needs of the handicapped - especially the provision of access to all newly constructed public buildings, places of assembly, medical and social facilities. Provision should be made for car parking for disabled persons.

4.7 STRATEGY FOR AVIATION SERVICES

4.7.1 Objectives

To provide for the long-term needs of aviation facilities

To improve existing aviation facilities and airline services

To improve aviation support services

4.7.2 Thrust of the Strategy

Air transport continues to play an ever increasing role in improved communications and the economic development of the country. The role of Kotoka Airport as the international gateway for Ghana is expected to grow in importance as passenger numbers, aircraft flights and cargo movements increase. The aviation strategy supports the continued development of existing aviation facilities until new improved facilities for

domestic and international services can be developed in the long-term. This is in line with economic strategy for export development of specialized agriculture and value added manufactured products and the promotion of tourism in Ghana. The following components are included in the strategy.

(a) Provision for New Airport Facilities

The present position of the Kotoka International Airport (KIA) within a built-up area poses a hazard to persons and property within the flight path of aircraft: the north end is close to the Accra-Tema Motorway and East Legon Residential Area, whilst the southern end is close to Giffard Road, Cantonments, Osu and Labadi residential areas. Furthermore expansion of the airport is constrained on the east by a military enclave and on the west by the main north-south road traffic corridor to Accra and the Airport Residential Area. The current site has little room for future expansion. From environmental, safety, and development concerns, a new airport site should be acquired within the time horizon of the Plan.

The Civil Aviation Authority has considered various proposals in the Afienya and Prampram areas and chosen one site north of the Tema-Aflao Road in the Prampram area. A study should be carried out on the preferred site taking into account the topography, geotechnical and other physical conditions, environmental convenience, accessibility, availability of services, opportunities for expansion etc. This study should be conducted during the first phase of the Plan. The site should be acquired and development within its environs strictly controlled.

(b) Improvement to Existing Airport Facilities

The Civil Aviation Authority is currently embarking upon a substantial renovation plan of Kotoka International Airport. This involves improvements to cargo and passenger handling facilities, runway maintenance and rehabilitation, new aviation and servicing equipment. These improvements should enable the airport to accommodate adequately the projected passenger increases into the first years of the 21st century. Provision should be made for the introduction of small private regional commuter aircraft during this period. Additional hanger space may be required for both fixed and rotor aircraft for storage and maintenance. The extent to which services at the airport will be privatised in future is unknown, but the possibility of private airlines making use of Kotoka Airport facilities must be considered in any short or medium term improvement plan for the airport. When a new international airport is built KIA can be turned into a light aircraft airport operating regional domestic, emergency and small cargo delivery services. It will continue to be used as an airforce base - preferably for rotary winged aircraft.

(c) Improvement of Aviation Support Services

Many of the support services for the airport are very poor. Information on arrivals and departures by phone is unreliable, taxi services to hotels are poorly organized, hotel booking, tourist and business information is usually not available and the exchange of currency when leaving the country is often impossible. These are essential services which not only service the aviation industry but also the tourism and the business sectors. There should be a comprehensive survey made of aviation supporting services undertaken by the Civil Aviation Authority to determine services in need of improvement and how these can best be met. Direction signs at the airport should be improved and important signs and notices in the international terminal written in English and French to assist travellers from the ECOWAS group of countries transiting through the airport.

4.8 STRATEGY FOR PORTS AND HARBOURS

4.8.1 Objectives

To develop the full potential of Tema harbour and port

To improve access to the port

To redevelop old Accra Port for the fishing industry

To provide for improved (fishing) canoe landing facilities

4.8.2 Thrust of the Strategy

Tema Port is the main port of entry for goods into Ghana. The Port will continue to expand as the country develops and sufficient land is available for its development well into the 21st century. The thrust of the port facilities strategy is to ensure that supporting infrastructure for the Tema Port can continue to operate efficiently to service the country's principal port. This is essential for the economic development of the country and GAMA. The strategy also supports the improvement of fishing landing facilities at Tema, Accra Old Port and other coastal locations and the naval operations from the naval base. The components of the strategy are as follows:

(a) Tema Harbour and Fishing Ports

Tema port and harbour handles most of the import and export traffic for the eastern and northern sectors of Ghana as well as transit traffic to and from Niger, Burkina Faso and Mali. Major rehabilitation of port facilities was completed in May 1991. This forms the first phase of a programme aimed at increasing the efficiency of the port to cope with the expected increase in export output following the introduction of the Economic Recovery Programme. The impact of the improvements have been remarkable with ship turn around improving from 10 days in 1983 to about two-and-half days at present. Ship productivity in terms of tonnes of cargo per ship-day has increased from 800 in 1990 to more than 1000 in 1991. However, in spite of an increase in container space from 45,000m^2 to 200,000m^2 the port still experiences some congestion in the container yard. This is attributed to slow customs procedures for examination of containers. It is necessary to introduce a more efficient process of examination and clearing of containers and for an additional dry container yard to be developed outside the harbour area.

The inner as well as outer harbour has been completed. The past practice of towing vessels just out of the harbour should be discontinued, as there are over 40 wrecks east of Tema and some of these in the process of breaking up have released contaminating substances into coastal waters. If the boats are to be abandoned these must be towed well out to sea and sunk. The congestion in the fishing harbour necessitates the removal of many old and unseaworthy vessels.

(b) Access to Port Facilities

The coastal route to the harbour is not designed to take heavy axle loads into the dock area. The more suitable access is from the motorway, but the route should be rehabilitated and a stronger pavement provided to take the heavier anticipated traffic.

(c) Redevelopment of Old Accra Port

The old port of Accra continues to be used as a landing stage for small fishing boats and canoes owned and operated by the fisher-folk of the local community. It handles considerable tonnage of fish a year, but facilities are poor. The jetty needs to be rehabilitated and put to use. The boat-yard including the slipway also needs to be rehabilitated. A fish market, an ice block plant and cold store facilities are important for the operations of the port; and so are parking lots. All these can be provided within the space available. The port occupies a picturesque site which can be a tourist attraction. A couple of restaurants at vantage points are likely to be well patronized. Electricity, water and sewerage are readily available.

(d) Development of Landing Facilities

Fishing is an industry which employs over 20,000 persons in GAMA. The commercial catch is all landed at Tema fishing port, but a substantial amount of fish is landed at Accra old port and at beach landings at Bortianor, Gbegbeyise, Osu, Mongwe and Kpone. Facilities for landing, repairing, servicing and transporting canoes are very poor. There are no storage facilities at these locations and this results in significant harvest

losses. In line with the provisions of the coastal management plan, there should be funds allocated to establish basic servicing facilities at these landing sites.

4.9 STRATEGY FOR TRANSMISSION LINES

4.9.1 Objective

To provide for safe and convenient location of transmission and pipe lines

4.9.2 Thrust of the strategy

The provision of corridors for the laying or construction of infrastructure is essential for the transmission or conveying of electricity, telecommunication, water, fuel and other products needed to service the metropolitan area. It is intended that the structure plan and detailed town planning schemes will define the specific location of these service corridors and provide protection from encroachment by incompatible land activities. There are several important corridors which should be provided for in the plan. These include:

A 100m corridor for all 33 kV and above electricity transmission lines

A corridor for a proposed water supply irrigation canal to ensure the long term supply of water to the metropolitan area and the development of irrigation projects on route.

A fuel pipeline from Tema oil refinery to Akosombo Port

Clear lines of sight between microwave telecommunication stations.

Chapter 5

ENGINEERING SERVICES

5.1 INTRODUCTION

5.1.1 Issues

The provision of safe, reliable water supply, disposal of liquid and solid waste and good drainage are essential services to maintain public health and sanitation. Electricity, telecommunication and delivery services are essential for carrying out basic day to day activities in the work and home environments. In the last 20 years, engineering services have deteriorated to the point where many are no longer operating. Shortage of funds has been a major problem in reestablishing even basic services, but lack of resources, poor planning , lack of coordination between agencies, poor management of corporations and shortage of materials and skilled manpower resources have contributed to the current poor state of services. Under the structural adjustment programme a number of improvements have been made to rehabilitate existing services, but there is still a lack of long-term planning, development programming and coordination between service agencies. The latter situation has resulted in some very expensive repair work to damaged services. These are matters that the strategy for engineering services must address.

5.1.2 Goals and Objectives

In developing an overall strategy for engineering services, there is a need to recognize that the capital outlays required to meet expected levels of service demanded by the public are well beyond the capabilities of government to fund from internal or external sources. Therefore, it is essential to set achievable levels of service which will satisfy basic needs of public health and safety and also encourage economic activity and investment. The Goal for Engineering Services Sector Strategy is to provide:

RELIABLE, SAFE AND BASIC ENGINEERING SERVICES TO THE METROPOLITAN AREA

This goal applies to a number of engineering service sectors. Specific objectives are set out for these different sectors below.

5.1.3 Thrust of the Service Sector Strategy

The overall thrust of the services strategy in the short and medium term should be directed to the continued rehabilitation and improved utilization of engineering services. Expansion of services into newly developed areas should only be contemplated if the development is planned, there is a willingness to meet the cost of extending services by the community and/or there is significant revenue generation potential to the service agency by expanding the network into new areas. Overall, the individual strategies seek to establish a basic level of service for different parts of the metropolitan area by the end of the planning period. These may be below public expectations, but services will be affordable, functional and maintained.

5.2 WATER SUPPLY

5.2.1 Issues

The supply of potable water is essential as a basic necessity of life and for the maintenance of public health. The city is currently dependent on two supply sources, Weija and Kpong. Weija supplies about 30% of the metropolitan areas water and Kpong the balance.

Much of the infrastructure for distribution of water for the city is old, and in need of replacement. This gives rise to problems of inadequate water supply and pressure in densely populated areas, leakages, and inadequate distribution. Problems of damaged pipes, illegal connections, non standardized fittings and faulty metering are also common.

The management of water supply services in the metropolitan area has been affected by manpower, finance, material and equipment resource problems. Revenue is collected for only 60% of treated water because of water losses arising mainly from illegal connections and unwillingness of consumers to settle their bills.
In formulating a strategy for water supply, there is the need to recognize that there are major problems which require substantial public investment if the level of service provided in some parts of the urban area are to improve. Demand for water will increase significantly as standards of living improve and the need to ensure adequate supply must have a high priority. This should go hand in hand with measures to improve the efficiency of the existing network and the management of the service itself.

5.2.2 Objectives

The following objectives provide the framework for the formulation and implementation of the water supply strategy. The objectives are to:

Provide a safe, reliable water supply for the metropolitan area.

Improve the efficiency of water supply distribution.

Improve the management of water supply services

5.2.3 Thrust of the Strategy

The primary thrust of the water strategy is to secure a reliable water supply, storage and distribution system for the metropolitan area. The current supply system is at risk should a major breakdown occur on the Kpong transmission line and provision of a long-term supply for at least the early to middle part of the 21st century is required. The other key area of concern in the strategy is to improve the efficiency of the existing network, reducing losses in the system; improving pipeline and storage capacity; and rehabilitation of utility equipment. Only when this is achieved can the network be expanded to newer residential areas. Emphasis is also given to improving revenue collection and management to generate the capital required to undertake improvements to the supply system. The overall strategy comprises three components.

(a) Water Supply

To ensure the metropolitan area can be provided with reliable potable water and that all urban areas have a basic level of service the following measures are proposed:

(i) Protection of Water Catchments

Intensive farming activities in the Densu River catchment with the application of artificial fertilizers is causing increased pollution through chemical seepage into the Weija lake. This has increased water treatment costs. Weed growth has increased significantly through nitrogen enriched water flowing into the lake. If this is not checked the cost of treatment of Weija water will rise to an extent that it will not be economical to use this source. The shortfall in supply arising from the loss of this source of supply cannot be met from the Kpong source. The current GWSC proposals continue to rely on the Weija source and unless there is improved management of the catchment in future alternative means of getting Kpong water to Accra will have to be found. The Water Resources Research Institute, GWSC and Ministry of Agriculture should prepare a management plan for the Densu River catchment. International assistance should be sought to help implement the plan.

(ii) Improved Transmission from Kpong to Accra

The high cost of pumping treated water from the Kpong Treatment plant, coupled with the present poor condition of the Kpong-Tema-Accra pipelines requires that a safer, more reliable and economical means of water transmission should be investigated possibly using an open raw water canal. This would bring water to the Accra plains for irrigation and to a large open storage reservoir close to Tema where treatment would take place before distribution. This proposal will reduce considerably the high pressures in transmission with attendant increase in operational costs and water losses and also provide irrigation water for the plains. This plan was initially proposed, and feasibility studies conducted by Kaiser Engineers in the late 1950's. The canal proposal should be investigated by GWSC as part of a review of the water supply plan which should be undertaken within the period of the first five year plan.

(iii) Increased Storage Capacity

The total storage capacity in the existing reservoirs in the Accra-Tema Metropolitan Area is 180ML, which is about half a day's storage of treated water, and satisfies GWSC's criterion for storage. The primary problem of water supply in the metropolitan area is due to inadequate production capacity at the Kpong and Weija water treatment plants,as well as transmission capacities from the plants. This causes the reservoirs not to fill up and to balance demand against supply as they should.

To rectify this problem, GWSC is in the process of increasing the water production capacity at the Weija water treatment plant by 15mgd, together with the construction of a 22.7ML ground level reservoir at McCarthy Hill under an African Development Bank funded project. This will improve the water supply situation especially in the western and central parts of Accra in the short term (1995). There are plans of a further increase in storage capacity of 22.7ML at McCarthy Hill.

The water storage reservoirs in the eastern section of Accra, namely; the Accra Terminal and MPZ reservoirs at Okponglo, the HPZ reservoir at Legon, and the Mile 4 reservoir are underutilized due to inadequate transmission capacity from the Tema Terminal Reservoir to the Accra Terminal Reservoir. Studies to solve this problem are to be undertaken soon. Tema township which is supplied from the Tema Terminal reservoir does not have any problem with storage.

Should the raw water transmission canal prove viable, a potential reservoir site has been identified near Afienya/Doryum which would be capable of meeting several months of supply in case of a disruption to the transmission source. This would ensure a long-term source of raw water closer to the intended direction of growth in the metropolitan area.

(iv) Increased Level of Pressure

Large parts of the city have very low pressure and supply is limited. There is the need to alleviate this by introducing local tower reservoirs on high points to service areas with poor pressure. These should be night storage reservoirs of 10 m head with sufficient capacity to supplement the existing supply for the average daily demand for water in the area being served. The location of reservoirs should be identified in the revised water master plan discussed below. In the CBD, provision should be made for night storage for all tall buildings above 15 m to supplement the day supply and provide sufficient head for fire fighting purposes. In order to overcome low day pressures in individual houses, roof tanks of 500 to 1000 ltr could be installed.

(v) Treatment

Cost of treatment from the Densu is rising as indicated above. Water loss in the transmissions and distribution network is also significant and this adds to overall operational costs. Measures are proposed below to redress water loss, but treatment upon reaching Accra urban areas would have significant cost savings.

(vi) Level of Service

There is great suppression in demand for water due to poor reticulation of pipes and water loss through leakage as well as low production at source. Many of the older parts of the Accra network have pipes which need changing. Many new areas particularly on the outskirts of the city have no distribution network and rely on water tanker service. In order to ensure that all parts of the metropolitan area have at least a basic service by the end of the plan period, levels of service are proposed for different parts of the metropolitan area. These are as follows:

Level of Service A	225 litres per person per day (lppd)
Level of Service B	150 litres per person per day (lppd)
Level of Service C	50 litres per person per day (lppd)

Figure 5.1 shows the proposed level of service for the different parts of the metropolitan area. Level of Service A is primarily intended for lower density residential areas, Commercial parts of the Central Business District, and high water demand land use activities. Level of Service B includes most of the inner-city residential, urban upgrading and some medium density peripheral housing areas. Level of Service C will be confined to stand pipe services in the inner-city where level of service B cannot be provided, and tanker services to areas without a reticulated water supply. In rural areas Level of Service C is proposed for most small towns and B in Pokuase and Amasaman.

(b) Efficiency of Distribution

Much of the existing network in the metropolitan area - with the exception of Tema - is over 30 years old. In the inner city many of the pipelines are corroded or heavily encrusted restricting flow. Water loss in the system exceeds 35% of supply. Many parts of the city have less than 2 hours supply in the night because of the low pressure in the existing pipe reticulation. In order to redress some of these problems and make provision for the future on the basis of new landuse proposals,the following measures should be undertaken.

(i) Revised Water Supply Master Plan

A review of the population growth and demand projections of the 1981 revision of the Accra Tema Water Supply and Sewerage Master Plan was undertaken in 1988 based on the results of the 1984 population census figures. This review revealed that the in-migration rate into GAMA asummed to be 11% in 1981 was very much on the high side and that the population forecast in 1984 arising out of that assumption was higher than observed.The population and demand forecasts were therefore accordingly adjusted downwards. The redevelopment and investment plan for the CBD is likely to project a significant long-term increase in demand for water supply in this area. There is a need for GWSC to commission a further revision of the 1981 Master Plan. This revision should take into consideration the intentions of the strategic plan and the CBD Redevelopment Plan.

(ii) Rehabilitation of Network

With the increasing population of the GAMA the old pipelines have become inadequate to satisfy the demand for water and are in need of replacement. In aiming to meet the level of service proposed for the metropolitan area, priority should go to the rehabilitation of inner city services. This is essential to stimulate redevelopment, reduce network extension costs, increase revenues and provide sufficient flow volume for the central area's sewerage system. Only when the inner city areas have been rehabilitated will there be sufficient funds generated to begin a progressive expansion of the network to improve the level of service to outer urban areas.

In the Accra central area many of the tertiary and secondary lines are cast iron of 75 mm diameter which are encrusted thus reducing the bore capacity. All these pipelines should be replaced with larger bores of more durable corrosion free materials. The Central Business District Redevelopment and Investment Plan should outline a programme to improve progressively the water supply in this area.

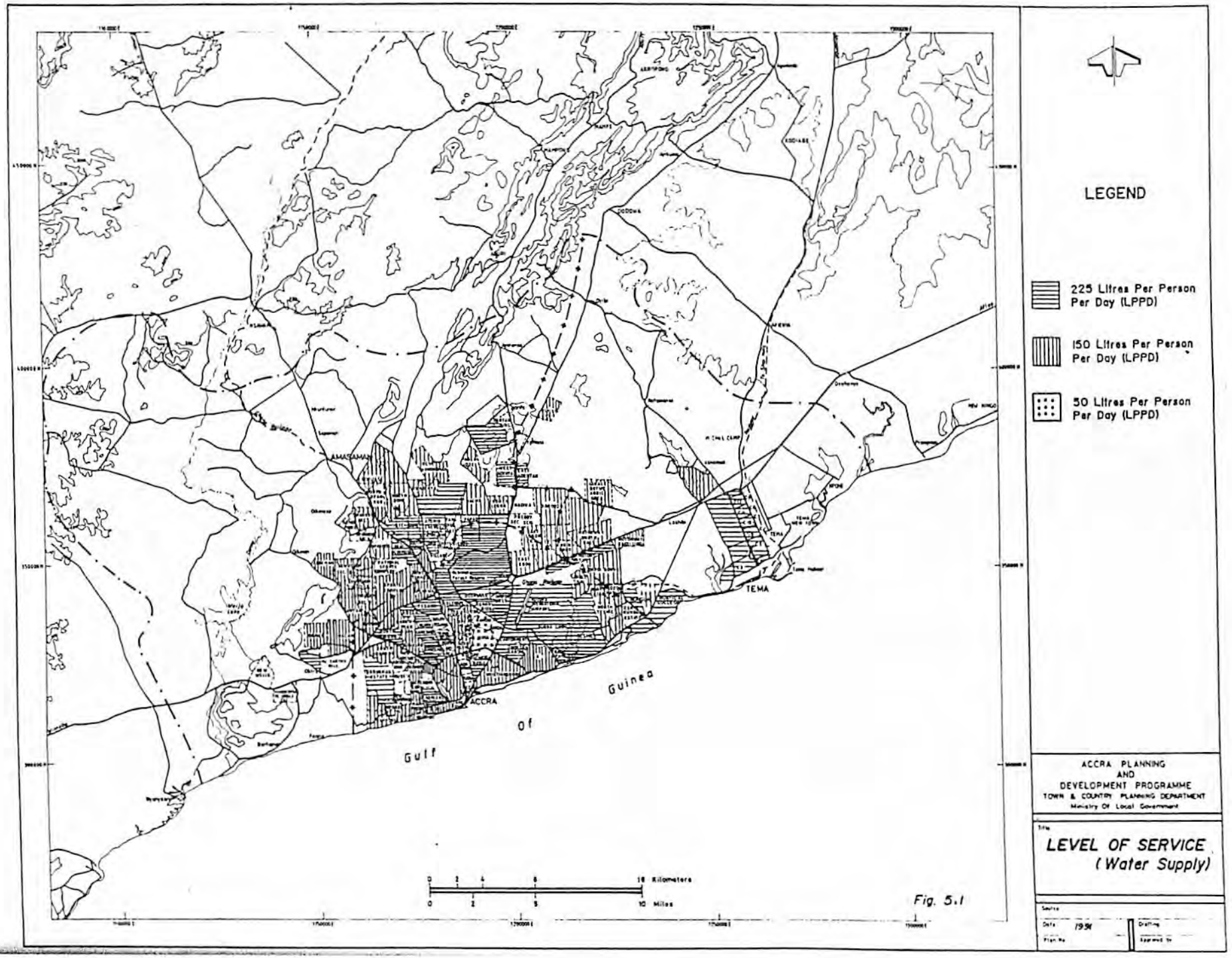

LEGEND
225 Litres Per Person Per Day (LPPD)
150 Litres Per Person Per Day (LPPD)
50 Litres Per Person Per Day (LPPD)
ACCRA
TEMA
Gulf of Guinea
0 2 4 6 10 Kilometers
0 2 5 10 Miles
ACCRA PLANNING AND DEVELOPMENT PROGRAMME
TOWN & COUNTRY PLANNING DEPARTMENT
Ministry Of Local Government
LEVEL OF SERVICE (Water Supply)
Date 1991

Fig. 5.1

(iii) Reducing Water Loss

Water loss through leakage is a very serious problem in the supply system which has to be tackled scientifically if loss of revenue is to be reduced. Although leakage occurs in the main transmission lines from the headworks, the worst losses are in the local distribution networks. The following are intended to reduce leakage in the distribution system.

GWSC needs to acquire leakage detection equipment with training to ensure these are properly operated.

The reporting system for leaks and damages should be streamlined and emergency and other repairs privately contracted.

Greater surveillance of illegal connections is required through improved reporting procedures and publicity.

(iv) Standardization

Only standard fixtures and fittings as determined by GWSC should be installed.

(v) Maintenance

Maintenance procedures which are already in place should be revised where necessary and rigidly enforced

(c) Management

The overall management of water supply rests with the GWSC. The Corporation has experienced a number of difficulties and some of the management functions should be decentralized to enable GWSC to function more efficiently. There is a special need to concentrate on improving revenue collection, planning and policing of illegal connections. Measures proposed to improve overall management of water supply services include:

(i) Decentralization

There is a need to separate the water production component of GWSC from the distribution and sales operation, just as VRA is separated from the Electricity Corporation of Ghana. ATMA should be established as a separate authority from GWSC. GWSC would produce, distribute and sell water in bulk from the Weija and Kpong sources to the principal reservoirs.

In line with proposals put forward in the liquid waste and drainage strategies a Metropolitan Water and Drainage Authority should be established incorporating ATMA. This proposal should be investigated further by the Joint Development Planning Board for GAMA (see urban management strategy) and GWSC. The separation of ATMA or a future Metropolitan Water and Drainage Authority should result in greatly improved efficiencies and opportunities to further decentralize, privatise revenue collection, maintenance and some operations. The Authority would be forced under the proposed structure to concentrate on improving revenue collection, controlling leakages and operational inefficiencies.

(ii) Privatisation of Services

There are distinct advantages in privatising some components of the water supply system. Three areas should be considered for privatisation: Revenue collection, distribution to areas having a large number of illegal connections and maintenance. Revenue collection is a high administration expense and in many cases is not cost effective. Full or partial privatisation of this service could have significant cost savings. This should be examined on a trial basis once the AMTA Authority is established. Parts of the metropolitan area have a large number of illegal connections and collection of revenue from these areas is very poor. Consideration should be given to franchising revenue collection and connection charges to private companies who would buy bulk water from ATMA. The companies would then sell water to people and collect a fee from each household.

Revenue charges and profit margins would be set and reviewed in order to ensure that there is no exploitation of buyers. The third area which should be considered for privatisation is maintenance and minor repairs. This would ensure more regular attendance to exiting plant, equipment and minor repair services.

(iii) Improved Revenue Collection

The above steps (i) and (ii) should lead to improved revenue collection by GWSC and less frequent tariff increases. If water losses in the system are removed and costs savings in administration achieved, tariffs should remain the same to enable an increased build up of capital to undertake improvements to the network without having to revert to the use of borrowing.

(iv) Enforcement

The enforcement of by-laws affecting the supply and distribution of water is poor. This has been primarily a resource problem and an unwillingness to prosecute. Decentralization of responsibility for surveillance and privatisation should enhance by-law enforcement as illegal connections result in a loss of income which in turn affects profits. There is a lack of awareness of by-laws and procedures required for making connections. Improved publicity and, in particular, improvement in the time taken to connect house mains where water is available should help reduce the level of by-law contravention.

(v) Planning and Development

The planning and development functions of GWSC are heavily centralized and coordination with the regional office is oftimes poor. There should be a planning and development unit established in the GWSC regional office. This would transfer to ATMA or the new authority once established. The decentralization arrangements outlined above would then enable the local planning and development unit to concentrate on dealing with problems of distribution and repairs to the network leaving the head office of GWSC to get on with policy and supply matters.

5.3 LIQUID WASTE MANANAGMENT

5.3.1 Issues

The safe disposal of sewage and sullage wastes is important to maintaining basic standards of health and hygiene in the metropolitan area. More than 700,000 people have inadequate or infrequent means of disposing of human waste - which is often left to decompose in drainage channels, streets and upon vacant land in congested residential areas. Surveys undertaken for the APDP indicate there are areas of the city where one toilet is expected to serve over 35 person. The overall deficit of toilets to provide a basic standard of 1 per 7 persons exceeds 80,000.

Sullage (domestic kitchen and washing waste) is most commonly disposed of by discharge into open drains, streets or open ground around a dwelling. In many low lying parts of the urban area this gives rise to saturated soil conditions and a polluted water table. When these conditions combine with impeded surface water drainage, parts of the metropolitan area become a breeding ground for disease and illness. Epidemics of cholera, typhoid and other gastric illnesses have occurred.

The overall administrative responsibility of liquid waste disposal is also confused. The cost of developing the Accra central sewerage system to service the entire urban area is no longer affordable and the existing system in Accra, Tema and several package stations is not functioning.

The problems of liquid waste disposal appear insurmountable, nevertheless, solutions must be found if public health is to improve and the risk of disease, created by insanitary conditions, is to be significantly reduced. The basic infrastructure exists to enable liquid waste to be removed from the most heavily congested inner areas of Accra and Tema, but less capital intensive means of collection and disposal must be introduced to service the rest of the metropolitan area. In preparing the strategy for liquid waste disposal there is the need

to introduce appropriate technologies which ensure a basic level of service can be maintained according to conditions prevailing in different parts of the urban area. Such technologies, however, should be capable of being upgraded in future to a more efficient overall disposal system.

5.3.2 Objectives

The objectives set for the strategy below are intended to provide a sound framework for improved planning, development and monitoring sanitary of services in GAMA. The primary objectives of the strategy are to:

provide basic sanitation services in all urban areas

ensure safe treatment and disposal of liquid waste

improve public sanitation

maintain efficient management of liquid waste services

5.3.3 Thrust of the Strategy

The primary thrust of the strategy is to ensure that all urban areas within GAMA have some basic form of safe sewage and sullage waste disposal as quickly as possible. While it is desirable that the whole of the metropolitan area be serviced by a reticulated sewerage system this is not affordable, therefore areas which can be serviced within the existing capacity of the Accra and Tema sewerage systems should, as funds permit, be brought onto the system. In the balance of the metropolitan area disposal will have to be by the means of communal or private septic tank. Funds will not permit local government or GWSC to construct septic tank facilities and this will have to be carried by the community and private individuals. Priority funding will go into rehabilitation and limited expansion of the existing Accra and Tema sewer systems to ensure they operate at an efficient capacity; the provision of basic disposal services to congested inner city areas until night soil services can be phased out; and improvements to the administration and management of liquid waste services agencies in GAMA. The four components of the strategy are as follows:

(a) Levels of service

The level of sewerage service provided in the metropolitan area ranges from house connection to a water borne system to irregular night soil pan collection for large parts of the inner city. About 9% of the population have no service at all and use open ground for basic toilet needs. The target for the strategy is to achieve by the end of the plan period a basic level of service in the metropolitan urban areas of a pit latrine, but preferably septic tank. The level of service proposed for both sewage and sullage waste are described in more detail as follows:

(i) Sewerage Systems

Accra Central Sewerage System

The Accra central sewerage system was designed as a three stage scheme, the first stage servicing an area of 1000 ha. The existing system has the capacity to accommodate 1,500 houses, offices and public institution connections. Less than 1000 connections have been made to date. The system has the capacity to be extended to include Central Business District within the Ring Road and the Industrial and intensively developed areas in the vicinity of the Accra North Post Office. Because of the density of development in this area, the underutilization of the system, and the impracticality of alternatives, the central area sewerage system should be progressively extended into the above area once all existing houses and major institutions - including Korle Bu Hospital are connected. Provision should be made to raise a loan for these to be connected immediately with the costs recovered through higher water and sewerage charges in the CBD.

The original design for the Accra sewerage system should be reviewed in lieu of the strategy to confine it to the central area. A revised plan outlining the phasing of extensions should be prepared and incorporated into the overall revised sewerage master plan to be prepared for the metropolitan area for GWSC. Special attention should be given to reducing the number of pumping stations in the network to minimise operating costs.

Institution and Local Area Sewerage Systems

The separate institutional sewerage systems of Burma Camp, Legon University, Teshie and Korle Bu have either broken down or are not operating properly. These should be taken over by GWSC and funds allocated for their immediate repair and maintenance. The Korle Bu system should be brought into the Accra central system just after the outfall until an alternative form of disposal is determined. There are over 14 package plant systems operating to support various institutional premises. Plants servicing over 500 people should be rehabilitated before being taken over by GWSC. As a general policy all public institutions, businesses or activity centres with over 100 employees should provide on-site reticulation and treatment of sewerage in future. This should be imposed as a condition for planning approval. GWSC should ensure appropriate standards of design, capacity and maintenance, and undertake regular checks on small private systems to ensure they are operating efficiently.

Tema Sewerage System.

The Tema sewerage system has the capacity to service all the development area south of the motorway. Once repairs have been effected to the pumps, outfall and several trunk mains cleared, the systems should be extended to service communities 9 and 12. Funds will constrain the expansion of the network in the foreseeable future and communal septic tanks should be used as the basis of collection until sewerage services can be extended to different communities.

(ii) Communal Septic Tanks and small bore sewers

For most of the inner-city areas and more densely populated middle and lower income areas, the basic level of service desired is the communal septic tank. These may service just a few houses or a flat or row house complex. The tanks should be designed with a minimum capacity of 1 year - but preferably a 3 year is desired. Ground conditions, socioeconomic status and available water supply will have a significant influence on design. In the long term it is desirable for communal septic tanks to be connected by small bore sewers which will enable some areas to have the waste water discharged and treated at local treatment facilities before being discharged into the drainage system.

(iv) Septic Tanks

For most newly established and future low density residential areas, septic tanks will be the principal means of collection and disposal. All building plans in areas north of the motor way should be required to show the location and provide the design of septic tank facilities. GWSC should provide basic design criteria for simplified low cost systems to be made available to the building and housing industry.

(v) Pit latrines

As a general policy pit latrines are to be phased out in the urban area by the end of the plan period. However, it is recognized in newly developing areas the use of pit latrines may need to continue until individual or communal septic tanks can be installed. A programme should be drawn up for a phased withdrawal of pit latrines from residential areas, commencing with those areas with the most serious sanitation problems. This should be developed in more detail in the Sewerage master plan and successive five year plans.

(vi) KVIPs

Kumasi Ventilated Improved Pits have been installed in several locations in the metropolitan area. Unfortunately because of soil conditions, person habits and maintenance these have not been successful. It is intended

that existing KVIP should be phased out of the urban area and be replaced by water borne public ablution facilities. In the rural area and towns KVIP systems have been shown to be very successful. Accordingly, provision should be made for KVIPs in the following rural centres: Amasaman (2 KVIP), Kwashikuma (1 KVIP), Pokuase (1 KVIP), Ofankor (1 KVIP), Medie (1 KVIP), Afuaman (1 KVIP), Gbawe (1 KVIP), Bortianor (1 KVIP), Gyeikrodua (1 KVIP), Kokrobite (1 KVIP), Adusa (1 KVIP), Obuom (1 KVIP), Osuobli (1 KVIP), Kofi Kwei (1 KVIP)and the Legion village close to Amasaman (1 KVIP).

(vii) Night Soil or Pan Latrines

About 30,000 households are serviced by pan latrine in the metropolitan area. This is collected by the Department of Waste Management. The service is not reliable and is planned to be phased out in 1995. This target date is unrealistic given that a programme to bring pan latrine areas onto the central sewerage system or communal septic tanks has to be developed. The phasing out of pan latrines should be coupled with the programme of area by area connections to the central system or compulsory septic tank installment. The pan latrine service may need to be extended into the early part of next century until the effective transfer to other collection systems is achieved. There is, however, a need to improve upon the current method of collection and this should be investigated by the Waste Management Department.

(b) Treatment of Liquid Wastes

With the exception of septic tank systems and the small package treatment plants, most sewage and sullage waste in the metropolitan area remains untreated and is discharged into drainage channels, the beach front, open ground and night soil heaps. The failure to treat effluent has resulted in the biological degradation of most of the water way and lagoon systems in the metropolitan area and the cost and time involved in cleaning these will be very high. Urgent measures are required to set in place a programme to remove sources of serious pollution arising from untreated effluent discharge and unsatisfactory disposal of liquid wastes. Measures included in the programme should be:

(i) Treatment

Accra Sewerage System

The original plan for the Accra sewerage system provided for treatment using oxidation ponds sited on the eastern edge of the Sukumo Lagoon. While full treatment is preferred as a policy under the plan, the costs and implications of treatment at this site as compared to the development of new sewer outfall - especially for Accra - requires more detailed investigation. This matter should be covered in considerable detail in the investigations during the preparation of the sewerage master plan for the metropolitan area.

Local and On-site Treatment Plants

In the long term provision should be made for more local area and site treatment of effluent. Effluent should be treated secondary level with a BOD count of not more than 100. Treatment plants servicing small bore sewers should be introduced initially into areas where there are serious problems with impeded drainage and permanently saturated soils. Generally, plants servicing populations of 5,000 to 10,000 people will be most economical. Sites of between 0.5 and 1 ha should be identified for local treatment facilities during the review or preparation of town planning schemes. For small on-site treatment plants, site area requirements will vary according to the institution or activity being serviced. GWSC should prepare overall guidelines for the design, operation and site planning requirement of package treatment facilities.

(ii) Outfalls

The outfall in Accra and Tema systems are no longer functional - the latter will be repaired in 1992 with external funding. The decision on whether to construct a new outfall will be dependent on the recommendations of the sewerage master plan. Immediate priority must be given to the investigation of a temporary measure to prevent further discharge of effluent onto the beach. This matter should be given priority status in the sewerage master plan review.

The location of future outfalls along the coastline or drainage system should be approved by GWSC and district assembly with clearance from the EPC. An environmental impact assessment and engineering report should be prepared for all proposed outfalls.

(iii) Disposal of Sludge Waste

Sludge disposal from septic tanks is disposed of at two sites in the metropolitan area. The Plant at Achimota provides for full oxidation with solidified organic waste being transferred to Teshie for compost enhancement, and the Korle Gonno plant which has been recently established but only partially treats effluent before it is discharged onto the nearby beach. In order to accommodate for increased use of septic tank with the phasing out of the pan latrine service, additional treatment sites will, be required in West Accra, and Teshie. These sites will not be capable of meeting long term demand in inner city areas serviced by septic tank, and waste receptacle centres should be established on the periphery of the CBD and these hooked onto the central sewerage system. The collection centres would provide underground storage capacity for septic tank waste during the day which would be discharged into the trunk main during the evenings to maintain flow levels and pumping capacity during off peak hours. Suitable sites along the Ring Road should be identified and secured for this purpose once the requirements for septic and communal septic tanks become known. The collection centre would significantly reduce travel time and overall serving costs.

Large parts of Tema and Ashaiman will be serviced by private and communal septic tanks. Provision should be made for oxidation pond treatment on the eastern edge of Sukumo lagoon. Sites have already been identified for this purpose. This treatment station should be capable of accommodating water borne sewage from all development in the Sukumo II lagoon catchment south of the motorway. An oxidation treatment station should also be developed south of Ashaiman capable of meeting the long-term needs of this rapidly growing area.

The decision to establish waste stabilization ponds at Sukumo Lagoon has yet to be determined, but if this should be recommended, disposal of solid organic matter will need to be considered. Research should be undertaken into possible markets for organic waste in the Weija and upper Densu irrigation projects. Waste from the Achimota treatment plant and others proposed should be utilised in the compost industry.

(iv) Chemical and Industrial Wastes

The issue of industrial and chemical waste disposal is covered in the solid waste management strategy. A treatment centre will be sited east of the Motorway Industrial Estate. On-site storage of chemical and dangerous industrial liquid waste should be in secure containers. GWSC in association with the EPC should determine site criteria for on-site storage and treatment of chemical and industrial liquid waste.

(v) Sullage Waste Disposal

The majority of liquid waste produced in the metropolitan area is derived from sullage. Disposal of this is a serious problem - especially in impeded drainage areas. The basic level of service for sullage disposal should be a simple soakaway hole or pit with overflows being piped to a nearby drainage channel. AESC and GWSC should prepare simple designs for soakaways allowing for such variables as soil conditions, flows and trapping of organic wastes. In the areas serviced by a water borne sewerage, sullage should be drained into the sewerage system. In areas with communal and private septic tank, sullage should be drained in these systems provided soil and drainage conditions permit. Otherwise, sullage should drain via a shallow pit into the nearby drainage channel. Ultimately, small bore sewers should be introduced into unimpeded drainage areas to ensure proper disposal of liquid waste.

The need for improved local drainage to handle sullage waste has been addressed in the drainage strategy. For areas expected to be connected to a water borne sewerage system, but currently without a channeled stormwater drainage system, soak aways should be introduced.

The cost of installing a soakaway will have to be borne by users. GWSC and local government do not have the funds to meet construction costs. Soak aways should be made compulsory, and this should be introduced

on an area by area basis with priority given to areas with the most serious drainage problems. The sewerage master plan should identify priority areas and prepare a programme for their introduction.

(c) Improved Public Sanitation

The practice of people defecating and urinating in public is frowned upon by public authorities, but with such poor public facilities this practice is not unexpected. There is an urgent need to improve facilities and to create a greater awareness and sense of responsibility to refrain from relieving oneself in public. This practice will be difficult to stop but it can be changed. Measures proposed to improve public sanitation include:

(i) Street latrines

In many southern European countries street latrines are part and parcel of street furniture. Although these are being phased out as the result of changed attitudes to public toilet habits, they were introduced initially to remove the practices of open public toilet. Consideration should be given to introducing simple, but discretely sited and screen public toilets in the central business area and at all major bus and taxi stations and markets in the metropolitan area. Those latrines in the CBD should be designed with a simple automatic flush mechanism which would enable excreter to be disposed of directly into the sewerage system or septic tank. Public wash tapes should also be provided to enable hands to be washed. The facilities should be capable of being washed down in the evenings with a high pressure hose from a wash truck.

(ii) Public Ablution Houses

A limited number of public ablution facilities have been constructed in the metropolitan area. Most are heavily used. There is an urgent need to provide additional public ablution and toilet facilities - especially in the inner city and traditional settlement areas of Teshie and Nungua. These could be constructed and operated on a private basis. The sewerage master plan should identify areas needing improved public ablutions, together with a programme for funding and installment.

(iii) Public Hygiene Programmes

Public health and hygiene standards will improve not only by providing facilities in convenient locations throughout the metropolitan area. Many habits are life forming and these can only be changed through programmes of education and awareness, making examples of offenders of poor public conduct and enforcement of public health and decency bylaws. The assemblies, through their information service should develop education programmes on a general and area basis informing people of the whereabouts of facilities and of the need for improved public hygiene habits. Children should be specifically targeted to ensure they have a basic grounding in public hygiene and toilet habits.

(d) Management of Services

The management of sewerage facilities and collection services within the metropolitan is in the hands of a number of organizations. In many areas, it is not clear which organization is responsible for maintenance, and as a result this is often neglected. The cooperation between the organisations is poor and the operation of many of the services inefficient. The following measures should be introduced to improve the management and efficiency of liquid waste services:

(i) Administration of Liquid Waste Services in GAMA

GWSC is responsible for operation and revenue collection for Accra central sewerage system. AESC are responsible for design and construction of sewerage facilities and maintenance of the main drainage channels carrying sullage waste. TDC is responsible for the construction and provision of liquid waste services in Tema. Tanker and pan latrine services are the responsibility of the Waste Management Department. Operation of the separate sewerage systems are the responsibility of the SHC, University of Ghana, Ministry of Health,

Armed Forces and Public Works Department. This gives rise to a great deal of confusion over who has overall responsibility for liquid waste services in the metropolitan area.

As part of the management strategy, it is intended that all liquid services should transfer to the authority of the district assemblies. In the short-term this is not practical, as the assemblies lack management and resources to fully take over this service. As an interim arrangement GWSC regional office should be strengthened to manage water borne systems in Accra, leaving TDC to operate the service in Tema. Liquid waste and pan latrine collection should remain the responsibility of the assemblies. Accra waste management services should be expanded to cover Ga urbanised area since Ga District does not have the resources to establish its own waste management service. Details of management structures and transferring of responsibilities are given in the urban management strategy.

(ii) Septic Tank Collection Services

The current operation of septic tank collection services in Accra and Tema is very inefficient. The fleet will be expanded significantly to accommodate the increased level of waste resulting from the strategy to introduce septic tanks as the basic level of service by 2010. The Waste Management Department should prepare a management plan for improving collection services, including the introduction of area based fleets, early morning collection to increase run times in the inner city areas, truck radio communications systems to advise drivers of other collections to be made in the area of operations and the technical skills to introduce a single driver operator service. In the long term consideration should be given to privatisation of the service on an area basis.

(iii) Pan Latrine Services

The management of pan latrine services has proved difficult for the Waste Management Department. The privatisation and reliability of the service has run into problems. However, the service will be required for several years to come. A management study into how this service could be operated more efficiently should be undertaken. Surveys into user requirements and ability to pay should be included in the study to see what incentives are required in the private sector to improve the performance of pan latrine collection services.

(iv) Revenue Collection

Revenue collection of waste management services is a problem since there is consumer resistance to pay for a service that is not considered by many as essential. Water is an essential service for which people pay private vendors high prices to deliver in areas without reticulation. The cost of the Accra Sewerage system is met out of water charges. The expansion of the Accra and Tema Sewerage systems will have to be met out of water supply charges. Areas serviced by a water borne sewerage system should have a differential rate applied for sewerage services. This rate should be set to cover fully the operating cost of the sewerage system.

For Septic Tank Services this should be collected by an on the spot payment basis with the issue of receipts. Bonuses should be paid to drivers on the number of collections. To ensure a quality service, customer satisfaction should be recorded on the job completion form submitted with the revenue collected and receipt books. The bonus incentive scheme should with improved management of the service increase revenue and ensure less abuse and private use of vehicles.

(iii) Monitoring of Sewerage Effluent

In order to test and monitor effluent levels at treatment plants, outfalls, lagoons, saturated soils areas and other liquid sanitary waste disposal centres, a small laboratory should be set up by the Department of Waste Management Department.

(iv) Maintenance

The lack of maintenance is a serious problem, with most of the metropolitan sewerage plants having broken down. Under the management strategy proposed, maintenance programmes should be prepared for all liquid waste disposal services, plant and equipment. Details of types of maintenance required are outlined in detail in the urban management strategy.

(v) Financial Planning

There is complete lack of financial planning in organizations involved with sanitary liquid waste management. Technical assistance is required by GWSC, TDC and WMD to improve financial management and planning services.

(vi) Development Planning

The lack of coordination between development agencies creates serious problems in the provision and maintenance of liquid waste services. Means of improving development planning are specifically outlined in the urban management strategy.

5.4 SOLID WASTE MANAGEMENT

5.4.1 Issues

Quite a number of houses in the metropolitan area do not have access to a waste collection service. As a result, waste is thrown into drainage channels and upon open ground to decompose and this gives rise to unpleasant odour and creates a breeding ground for disease and vermin. Most rubbish collected in the urban area is by central container service, but containers are often over loaded due to delays in the collection. The existing dumps in the metropolitan area are nearly filled and new dumps will have to be developed in the next 5 years. Potential dump sites are limited in size, location and constraints imposed by environmental factors. Despite these problems, waste collection has improved significantly in the metropolitan area through a programme of assistance by the German government to the Waste Management Department (WMD). The service in Tema provided by the District Engineers Department (DED) is poor and the urbanized parts of Ga district have no service. There is an urgent need to provide waste management service to the whole of GAMA, but this will require that an agreed strategy for waste collection and disposal is developed and implemented. The following sets out the proposed strategy.

5.4.2 Objectives

The following objectives provide the framework for the strategy on waste management services in GAMA.

- To provide an efficient waste collection service
- To ensure safe disposal of domestic and industrial wastes
- To support waste recycling

5.3.3 Thrust of the Strategy

The primary thrust of the waste management strategy is directed towards the development of an efficient waste management system which should eventually be partially or fully privatised. To achieve this, substantial investment will be required by local government with further technical assistance from international sources, to provide basic infrastructure, plant, equipment and training to improve and expand the operational capabilities of local government waste management departments to service the urban areas of GAMA. Once this is achieved, privatisation of waste collection and disposal should take place on a phased basis. Full

privatisation is aimed to be achieved by the year 2010. The following components of the strategy are intended to support the achievement of the objectives outlined above.

(a) Provision of an Efficient Waste Collection System

The efficient collection of urban domestic and industrial waste is essential to maintain basic public health and sanitation standards. Accra is the only district in GAMA to have a good waste management service, but this services less than 80% of the population. There is need to develop ways of improving the collection service. The following initiatives are proposed to improve waste collection in GAMA.

(i) Collective Waste Management Service in GAMA

There are two organizations responsible for waste management in the metropolitan area: the Waste management Department of AMA and the District Engineers Department in Tema. There is no service provided in Ga District. In order to ensure that there is efficient collection and disposal of waste in the metropolitan area in future, a joint system of operation by all three districts is required. This would best be achieved by an expansion of the waste management programme for Accra, into Tema and Ga Districts. A joint waste management department should be established for GAMA with cost shared on a user basis. The three districts should jointly approach government with a proposal to seek further international assistance to develop a comprehensive waste management programme for the metropolitan area.

(ii) Collection System

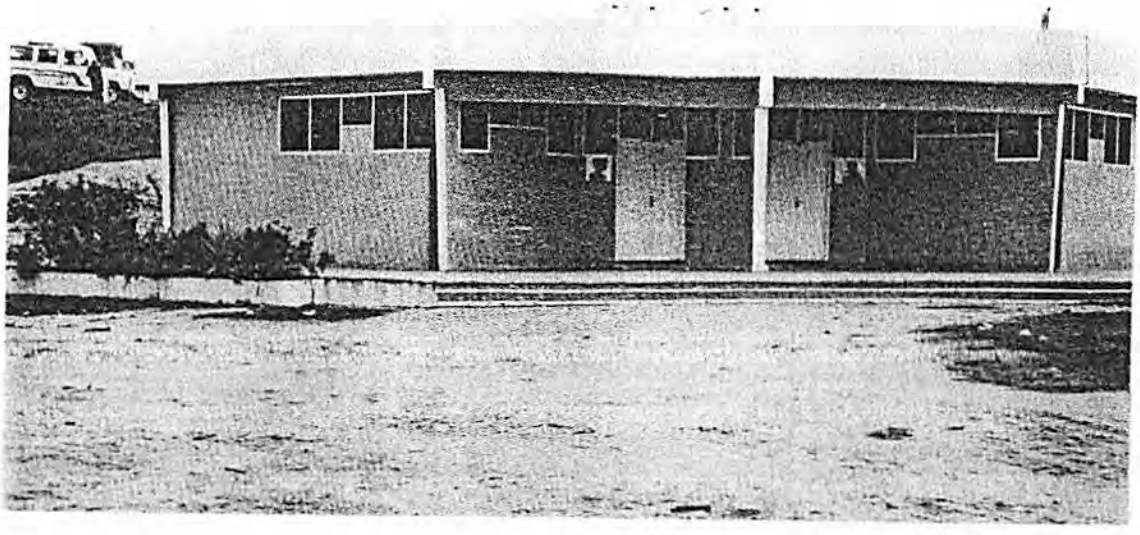
The long term strategy for waste collection will involve the establishment of a number of transfer stations, with rail access, where rubbish will be collected and compacted before railing to a major land fill site away from the metropolitan area. Domestic waste will continue to be collected on house to house and area container bases. Transfer station sites on the old railway siding for Accra Port, Alajo, Teshie/Nungua and Tema will need to be secured. For reasons outlined in the disposal strategy (b) below incineration is not an economic or practical method of waste disposal.

In the medium term, waste transfer centres should be established at convenient locations within a service radius of 10 km to reduce operating costs and travel time. Preferably these centres should be located at the transfer stations proposed in the long- term strategy. Domestic waste will be collected in containers and compacted to reduce transportation volume. The compacted waste will then be transferred by trucks using $30m^3$ containers to the two major dump sites identified in the short-term strategy below. The transfer centre sites should be developed until 1994 with plant and equipment secured and operating by 1995.

The current waste collection systems involve house to house and central container collection, with disposal at three dumps: Ring Road West, Mallam and Afienya, Tema. The short term strategy will continue to maintain and expand the waste collection programme in Accra, but be extended to Tema and Ga Districts, and the disposal by land fill at the above sites. A new land fill site should be secured at the eastern end of the motorway estate which will service the area east of Independence Avenue and all of Tema. The Afienya site should be temporarily closed. This site will come into operation when the Ring Road West site is closed in 1993. The Mallam site will service the central and western area of Accra. The two main dump sites should be capable of meeting the disposal of domestic waste until 1997/98. Should the sites be filled before then, there is a site 2 Km from the Mallam site and the Afienya site which can be used for 3 to 5 years until the major metropolitan dump site and the collection system proposed in the long-term strategy is in place. If the land fill at the eastern end of the motorway estate cannot be secured another option for medium term would be a site around Amasaman in the Ga-District. This would definitely require, however, the introduction of transfer stations.

Residential Collection

In the long term it is intended that there should be only two levels of waste collection service provided for residential areas: house to house collection and central container services. It is intended that a once weekly house to house collection service should be provided in all areas which have good road access and the service is affordable to residents. Two levels of house to house service will be provided: a truck service where



NEW PUBLIC TOILET

COMMUNUAL REFUSE COLLECTION POINT

SOLID WASTE

access roads are good and a tractor/trailer or truck in difficult areas. The compaction truck service currently operates for 3,000 houses in developed areas such as Airport residential, CBD, inner residential and Roman Ridge. This service should be gradually expanded to other developed residential areas and all accessible areas of Tema and Ga.

The central container service operates from over 180 collection points in the metropolitan area. Further expansion of this service is intended so that by 1995 all urbanized areas within AMA will have access to a rubbish collection service. Currently, 7, 10 and 16m^3 containers are in use, with between 1 and 3 containers placed at each station. Containers are collected on an area rotation basis. Problems of over fill have been experienced but this will be rectified by an increase in the vehicle fleet and the introduction of 10m^3 containers to replace the older 7m^3 containers. The Waste Management Department of AMA intends to introduce a pilot privatised house to container collection service. If this proves successful, it should be expanded to incorporate all areas where central container services are provided. The central container service is expected to remain in operation for most inner city areas for the duration of the plan and well beyond.

Commercial Service

The demand for commercial waste management collection services is expected to increase significantly in future. Currently 1.1 and 3.2 m^3 containers are provided to commercial, industrial, market, restaurant and hotel enterprises for the collection of rubbish. All development planning applications should include provision for a container bin standing area in proportion to the size of estimated waste generated by a proposed business, or a business undergoing expansion. The Waste Management Department of AMA and Tema District Assembly should devise standards for the Department of Town and Country Planning to enforce.

Street Cleaning and Public Rubbish Bins

Street cleaning has been neglected and this has created a very poor image for the national capital city. Neither WMD of DED have equipment to undertake mechanical cleaning and washing of streets. Provision should be made for equipment to enable more regular cleaning and washing of the streets which have been upgraded in the central area of Accra. More efficient methods of street cleaning should be developed for areas outside the CDB using private contractors with equipment possibly leased back to them by the waste management authorities.

Within the Central Business District (CBD) provision should be made for public rubbish bins in all public places especially major shopping areas, food outlets, transport stations and recreation centres. A daily collection should be introduced in the most intensively used parts of the CBD and a less frequent service elsewhere. Consideration should be given to seeking companies to sponsor the provision of public rubbish bins in the CBD as part of a "keep the city clean" campaign. Bins should be of a non removable type which can be emptied easily, otherwise theft may become a problem.

(iv) Privatisation

Schemes to privatise waste management services worldwide have had varying degrees of success. The long term strategy is for privatisation of the service, but this must be undertaken as part of a phased programme. The strategy for privatisation will involve initially house to container collection services and the donkey/cart or tractor/ trailer service. The privatisation of container collection should be introduced as a second phase. A study should be commissioned by WMD to determine the most appropriate means of privatising the bin collection and ultimately the house to house collection service. If successful privatisation is achieved to this level, the most efficient means of managing the disposal of waste should be examined.

(v) Standardization

Steps have been taken in Accra to standardize rubbish bins for house to house collection. New 120 ltr and 240 ltr bins will be distributed upon cash deposit to households in house to house collection areas. This should be introduced gradually on an area by area basis. Commercial bins have also been standardized. All plant and equipment for use in solid waste management should be standardized to reduce maintenance and

operations costs. In deciding on new equipment to purchase, standardization and compatability with other systems should be considered carefully.

(vi) Revenue Collection

Revenue collection for waste management services has proved difficult, so that the current operational cost of the service in Accra is not being fully recovered. To increase revenue and remove inefficiencies within the current collection system, responsibility for collection should be given to sub-metropolitan districts. Consideration should be given to allowing discounts for advance payment of waste management charges as this will help to offset arrears. A time value charge should be incorporated into waste management fees to reduce revenue loss caused by the large outstanding number of arrears. These measures should ensure improved cash flow for the waste management departments of the district assemblies. Incentives paid to individual collectors has had a mixed response, but this could be improved by giving the sub-metropolitan and sub-district councils powers to enforce regulations and fines for non payment of waste management charges.

(b) Waste Disposal

The efficient and safe disposal of waste is important to protect humans and the environment from the hazardous elements which often emanate from dump sites. Land fill will continue to be the principal means of waste disposal in the metropolitan area well into the early part of next century. Most of the domestic waste has a high organic and moisture content making incineration uneconomic. The following proposals are intended to ensure safe disposal of waste.

(i) Land Filling Sites

There is intended to be two large land fill sites for waste disposal in the metropolitan area. These are sited at Mallam, the other on a site to be investigated further at the eastern end of the Motorway Industrial Estate. The latter site will be developed after the Ring Road west site is closed in 1993. An additional site near Mallam and the site used for disposal of rubbish at Afienya will be utilized as overflow sites until a major solid waste dump with railway access can be found within 50 km of Accra. A suitable metropolitan dump site should be identified by a study to examine the proposed transfer station scheme to be introduced to the metropolitan area. Where it is desirable to fill holes created by quarrying or sand winning, isolated short-term dumping could be permitted, provided it can be demonstrated that no major environmental hazards will arise during the life of the dump, or after it is closed. An environmental impact assessment should be undertaken of any proposed dump site to ensure it is safe to use.

(ii) Hospital Waste Disposal

Previously, most hospital wastes in GAMA were disposed of by incineration, however, none of the existing hospital incineration plants are in operation. The plants are expensive and technically difficult to operate, and proper maintenance is essential. New less sophisticated technologies are available which can ensure safe treatment of hospital wastes before being disposed of by conventional means. A study should be conducted into the use of thermic disinfection of hospital waste. This involves a mobile or fixed apparatus which produces super heated steam used to treat infected waste products to kill bacteria and viruses. If this system is suitable it should be introduced without delay. The advantages of a central collection system with treatment at one of the dump sites, or hospital on-site treatment using a mobile unit should be investigated. Whichever method of treatment is more efficient and simple to operate should be installed.

(iii) Industrial Wastes

There is expected to be a significant increase in the amount of toxic wastes produced by industry in future. A site should be secured adjacent to the Motorway Industrial Area proposed dump where these can be treated through solidification, evaporation or special landfilling. The site should be capable of providing for industrial waste disposal for at least 25 years. A study should be commissioned by the Environmental Protection Council (EPC) into the estimated current and future industrial waste generation by category and volume for industry

in the metropolitan area. This will provide the basis for determining the size of site required and equipment needed for the industrial waste dump.

(iv) Waste Disposal in Rural Areas

The disposal of wastes in the smaller rural towns and settlements in GAMA is not a serious problem at present, but in the faster growing towns it will become a more serious issue in future. A waste management container service should be introduced at Amasaman and Pokuase and a privatised house to container collection service provided if viable. A small local dump site should be identified in this area to reduce haulage time to Mallam. A similar service should be introduced before 1995 at Bortianor with rubbish disposed of at Mallam. All other towns and settlements with populations over 500 should provide for a community dump. Other matters of rural waste management are outlined in the rural strategy.

(v) Rehabilitation of Land Fill Sites

All closed land fill sites should be properly sealed with at least 0.5m of top soil or earth covering. Slopes should be profiled to reduce erosion, planted and grassed with adequate provision for drainage where mounting of waste has occurred. All leachate should be captured, diluted and sprayed back over the land fill. A similar practice should be adopted for sites in current use. Land fill sites should not be used for intensive development purposes after closure, but maintained as open space.

(c) Waste Recycling

The recycling of waste is a practice which is becoming increasingly common and should, where possible, be encouraged. The metal, glass and paper content of waste in the metropolitan area is very low, so that commercial recycling is not economic. Organized scavenging at dump sites is currently ensuring the efficient recycling and use of most of the metropolitan area's waste. Other products gained from recycling which should be supported include:

(i) Composting

The WMD currently produces 3,000 tons of compost per annum at its Teshie site. While the cost of the service is marginal and the product inferior to fertilizer, the composting operation should continue at the current level as it does perform a useful function in reducing rubbish to be dumped and the foreign exchange that might have otherwise been used on imported fertilizer. A study should be commissioned by WMD into making the current process more economical. The study should examine current production, marketing, distribution and possible nutrient enhancement using waste fish, chicken or other manure to make it product competitive with imported fertilizer.

(ii) Methane Gas Production

The Ring Road West dump is due for closure in 1993. There is the potential to tap methane and other gases from the site which could be used in the running of the nearby Korle Bu hospital. The feasibility of this project should be investigated.

5.5 DRAINAGE AND FLOOD CONTROL

5.5.1 Issues

Over 230,000 people in the metropolitan area are subject to flooding because of the low lying nature of land where they live, inadequately sized drainage channels and culverts and obstructed flood ways. In many parts of the metropolitan areas, poor soils and underlying geological conditions create impeded drainage areas, which become water logged during the wet season and a general cess pool when used as a community dumping ground for rubbish and household wastes. The management of drainage in the metropolitan area

is confused, with no single authority responsibility for maintenance, construction and planning. Overall management of catchments is poor, and this has resulted in increased levels of erosion, siltation and development which has had a detrimental impact on down stream flooding.

A significant amount of work has been done to improve the major drainage channels in the last two years. Volume flow has been increased, but entrapped polluted waters within the lagoons has resulted in serious environmental problems - especially in Korle Lagoon. The need to improve the flushing of the lagoons, reduce the level of siltation build up and to bypass dry weather flows in the upper lagoon systems to maintain water quality is critical. Along the coastal zone the continued impact of erosion and the future rise in sea level poses a serious threat to coastal communities. The above are important issues addressed in the strategy.

5.5.2 Objectives

Flooding and Drainage are problems that have a major impact on the quality of life in residential communities. The following objectives support the strategy which is primarily aimed at ensuring more efficient management of drainage in flood prone areas in future. The three objectives of the strategy are:

To develop an efficient urban drainage system for the metropolitan area.

To alleviate flooding.

To improve the management of drains in flood prone areas

5.5.3 Thrust of the Strategy

There is already a well established network of primary drains within the metropolitan area, however, many of these are not running efficiently because of the heavy accumulation of silt and rubbish. The primary thrust of the drainage strategy is to clean all the main drainage channels; improve the efficiency of drainage structures and to prohibit further development on severe flood prone land. Once the main drainage system is operating more efficiently, attention can then be given to: improved management and training of stream systems outside the urban area to reduce run off and siltation; improvements to existing urban drainage network; rehabilitation and improved flushing of lagoons to reduce coastal flooding and pollution and improving the management of development in flood prone areas. The strategy addresses three target areas as follows:

(a) Efficient Drainage System

The lack of proper drainage, poor maintenance of primary drains, careless dumping of rubbish into the drainage system and poor planning have created severe flooding, siltation and pollution problems in many parts of the metropolitan area. The drainage plans prepared after the first years of Independence provided the basis of the existing drainage system but the metropolitan area has expanded well beyond the extent of these old plans and much of the current drainage system feeding in this network is creating serious flooding problems down stream - especially in the coastal lagoons. There is an urgent need to review existing plans and priorities for drainage improvements. The following measures are intended to help improve the efficiency of the Drainage system.

(i) Drainage Master Plan

A drainage plan prepared by NEDECO in 1963 provided a far sighted approach to the disposal of storm water and the alleviation of flooding in Accra. The Tema Master Plan made adequate provision for drainage in Tema New Town. A significant proportion of the drains shown in these plans have been constructed. An integrated drainage master plan has recently been completed for the Accra Metropolitan area. The plan was prepared for the Department of Urban Roads to assist with the design of culverts and other drainage structures associated with the road improvements programme. The Accra plan does not cover Odaw catchment beyond the AMA boundary or Tema District. Provision should be made for the preparation of a metropolitan drainage

master plan which extends beyond these areas. A separate plan should be prepared for the Densu River Catchment.

The Accra (1991) Drainage Master Plan has three major components:

Improvements to the Odaw channel involving dredging of Korle Lagoon.

Rehabilitation and completion of Priority 1 drains *(see network below)*

Rehabilitation and completion of Priority 2 drains *(see network below)*

The plan provides for a one-off programme of emergency desilting of drains which have particular siltation problems and a programme of routine annual maintenance for all drains. The plan is included in the 5 year development programme and is scheduled for completion by 2000.

In addition to the Accra Drainage Master Plan, the Coastal management plan provides for extensive drainage and protection measures along the coast line. These measures should be incorporated into the metropolitan drainage plan.

(ii) Drainage Network

There are seven drainage basins in the metropolitan area. Only in the urbanized areas of the Korle - Chemu (Odaw River), Kpeshie (west) and Chemu II catchments is there a well defined network of channels. There is currently no overall metropolitan drainage plan or classification of drains for purposes of planning, construction and maintenance. The urban drainage network should be categorized on volume flow into a three functional levels:

(a) Primary Drains

These are drains designed for high hydraulic capacity channels that mostly run along natural stream courses and capable of carrying with their banks the run-off likely to result from the highest rainfall intensities in their catchments that may be expected to occur on an average once in 15 years, with flood flows generally over 30 cumecs once per year.

(b) Secondary Drains

These are drains designed for medium hydraulic capacity channels that are capable of carrying within their banks the runoff likely to result from rainfall intensities that may be expected to occur on an average of once in 5 years. These drains discharge into the primary drains, and have a capacity of flood flows generally over 10 cumecs once per year.

(c) Tertiary Drains

These are drains which lie along service lanes and roads in developed areas (residential and market areas) discharging into primary and secondary drains. Normally these are drains designed for a return period of two years with flood flows generally less than 10 cumecs.

All primary drains in urban areas should at least have lined channel bases, sufficient to handle dry weather flow, and stabilized batter slopes. Provision should be made for access by mechanical excavator for regular maintenance of these drains. The access way would also be used for pedestrian and cyclists. Only in areas of high velocity flow, intense urban development or confined channel space will full concrete lining or covering of the drains be considered. Secondary drains will primarily be open, natural drainage or earth drains - except where gradient slopes warrant the lining of the base. Stabilization of the banks and batter slopes will be essential to reduce meandering and undercutting of banks. Tertiary drains comprise, street, local area and

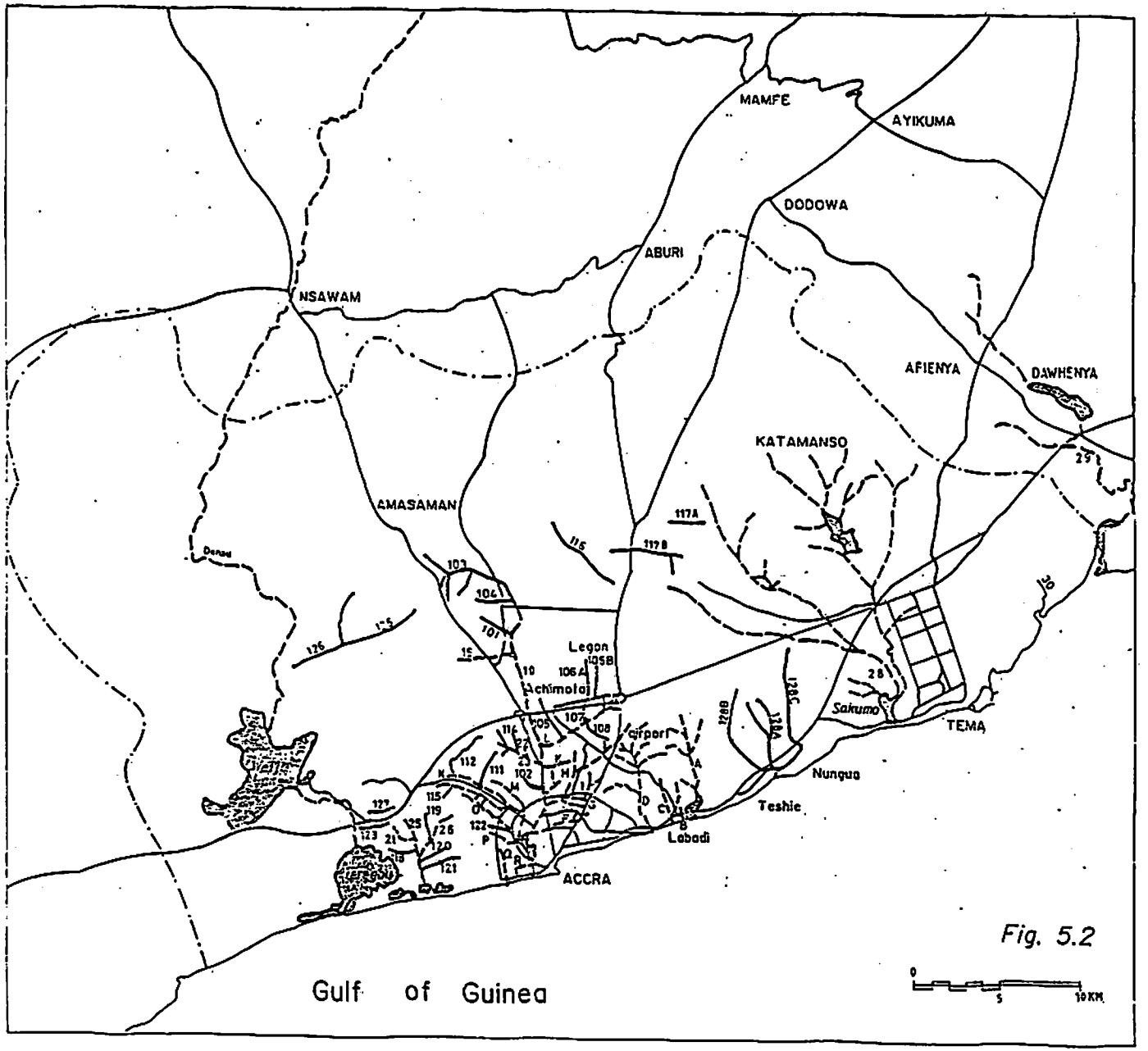


Fig. 5.2

LEGEND

MAIN DRAINS

A	KPESHIE MAIN
B	LABADI CENTRAL
C	SOUTH LABADI
D	OSU KLOTTEY MAIN
F	WEST RIDGE
G	CASTLE
H	NIMA MAIN
I	CIRCLE DRAIN
K	KPEHE
L	ODORWULU
M	AWUDOME
N	KANESHIE
O	MATANEKO
P	KORLE BU
Q	SOUTH LINK ROAD
R	KORLE GONNO
9	ADABRAKA
10	ODAW SIDE DRAIN
13	ODAW
16	TESANO
17	LOWER KANESHIE
21	DANSOMAN
22	POLICE DEPOT
23	MUKOSE
25	CHEMU STREAM
26	MAMPON STREAM
28	SAKUMO
29	LALOI
30	GAO

ADDITIONAL DRAINS

ODAW

101	APENKWA
102	N. KANESHIE
103	ACHIMOTA
104	AKWETEMAN
105	ABELENKPE

ADDITIONAL DRAINS

ODORWULU

106	N. ODORWULU
107	S. ODORWULU
108	AIRPORT RESIDENTIAL
109	DZONGLO
110	EAST LEGON

KANESHIE

111	E.KANESHIE
112	W. ODORNOR

MUKOSE

113	NEW FADAMA
114	ABENA

MATANEKO

115	WEST ABOSEY DRAIN

ONYASIA

116	UNIVERSITY OF GHANA
117	MADINA

CHEMU

118	OLD DANSOMAN
119	SUKURA
120	NYAMADRI
121	SPINTEX
122	WATERBOARDS-E

LAFA

123	DANSOMAN ESTATES
124	MADASE
125	KANESHIE
126	KANESHIE
127	S. ODORNOR

SONGO

128	TESHIE

ONUPKWAHE

129	NUNGUA

ROADS

METROPOLITAN BOUNDARY

ACCRA PLANNING
AND
DEVELOPMENT PROGRAMME
TOWN & COUNTRY PLANNING DEPARTMENT
Ministry Of Local Government

Title
DRAINAGE PLAN

Source

Date 1991

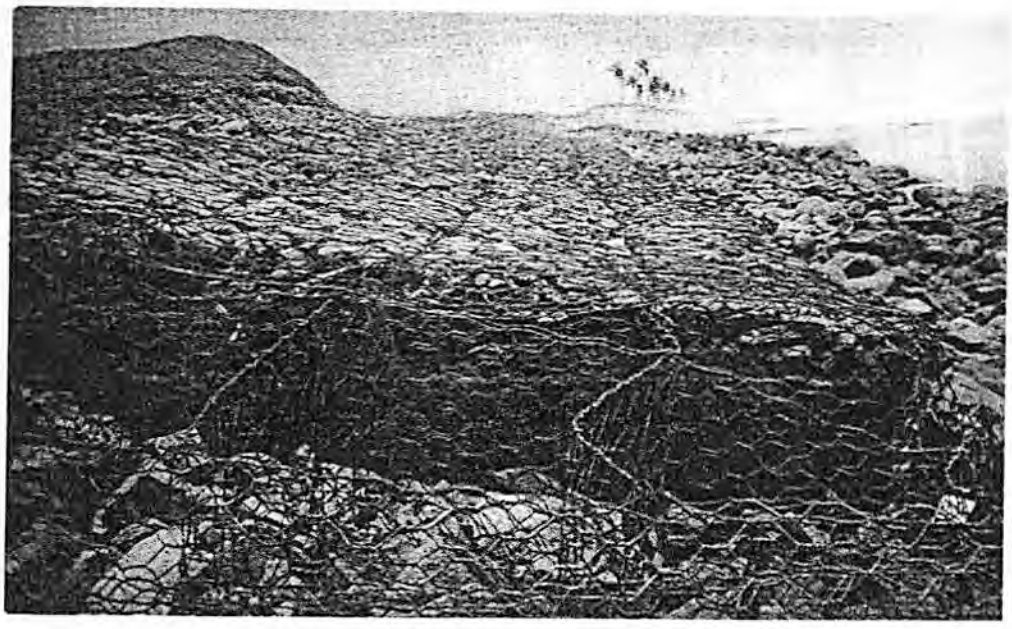
Drafting

Plan No

Approved By

103

Strategic Plan



PREVENTING COASTAL EROSION

NEW DRAINAGE WORKS

DRAINAGE

feeder drains. The standard of design will vary according to locality. It is intended that all drains in the central business area should be covered or piped.

Figure 5.2 shows the primary drainage network for the existing and future urbanized parts of the metropolitan area. The Accra drainage Master Plan provides for a two level priority programme of improvements of most of the primary and some secondary drains within the Odaw River, Kpeshie, Densu (West Accra) catchments. Priority works in order are: Sukura, Dansoman, Mampong stream, Mataheko, Tesano, Chemu Stream, Kaneshie, Mukose, Castle, Dzorwulu and Nima Tributaries. To these the following primary drainage works should be included in the metropolitan area: Mokwe, Songo (Teshie/Nungua) Dzorwulu (Tema) Lafa (N.West Accra). It is expected that more drains will be added to this list once the proposed metropolitan drainage master plan has been completed.

(iii) Design Standards

The cost of providing an efficient drainage system for the metropolitan area will comprise a significant proportion of the capital works outlays in the years to come. These cost, however, will be influenced by the standards used in the design and construction of the drainage system. While the use of concrete construction and underground pipes will significantly improve the efficiency and appearance of the drainage system, these are expensive to construct. Where possible, less expensive drainage systems should be designed and constructed - provided hydraulic efficiency can be maintained. These should be capable of being upgraded once funds permit. As a general policy, design standards for the Central Business District, densely populated or congregating areas, such as markets and transportation stations, will be higher. The Accra Planning and Development Programme has prepared, in conjunction with the service agencies, design guidelines for engineering services - including drainage - and these should be introduced and used as the design standards for all drains and other services in the metropolitan area.

Inspection will provide the opportunity for the consistent assessment of the entire system of primary drains. After inspection the study of hydrology of the area calculating peak discharges for control points along each of the main or primary drains and selected tributaries. This will then allow for hydraulic analysis leading to hydraulic capacity calculations for channels and structures identified in the inspection of the drains. Suitable computer programme may be used. Comparison of the earth hydraulic capacity analysis with the hydrological analysis helps to identify capacities of channels and structures. The cause of incapacity may be due to inadequate design or lack of maintenance leading to accumulation of vegetation silt or refuse. Where hydraulic and hydrological analysis fail to identify the scheme of approach, hydraulic modeling is applied, a model constructed for the flood problem around the Korle Lagoon and along the Odaw river permitted the inter comparison of schemes for flood alleviation. The above analysis permit the identification of schemes that would be required in order to satisfy the target standards.

(iv) Structures and Outlets

With the above approach to channel design, structures of adequate capacity will be constructed.Problems which typify many of the drains include:-

Accumulation of sediment and refuse both along and within drainage channels of all sizes;

Erosion of unmetalled road surfaces, leading to the redundancy of drains.

High sediment delivery from urban areas, and subsequent deposition in the drainage system;

Severe incapacity of drains and culverts at many locations.

Inadequate planning within the areas at risk from flooding.

Flooding at the margins of lagoons : due to the prevention of flood waters from escaping to the sea.

There is interaction of the drain channels design with road drainage design comprising drains constructed along the edges of roads (roadside drains); and culverts and bridges where roads cross major streams. Other sources of interaction relate to large cross-drainage structures, such as the outlet of the Korle Lagoon. At this location, plans to alter the bridge configuration could usefully be continued with the remodeling of the lagoon outlet.

The Korle and Sakumo II Lagoon outfalls are under size. These two outfalls must be enlarged and stabilised to increase the water exchange and allow sediment flow to the sea. The coastal management plan provides for the upgrading of the structures in these lagoons. This work will involve significant research and engineering studies in order to design and construct an entrance to maintain an efficient flushing mechanism and to prevent closing of the entrances by natural coastal deposition process. Assistance from donor agencies and the Global Enablement Fund will be sought for this work.

(b) Flood Mitigation

The lack of effective planning control upon development in low lying areas has been the principle reason for so many parts of the metropolitan area being subject to flooding. The relocation of persons away from flood prone areas would be desirable, but impractical and not affordable given the limitation of resources in the local economy as a whole. The strategy , therefore, concentrates primarily on programmes to alleviate the severity of local flooding in areas which have the highest cost benefit from new drainage works. At the same time constraints will be imposed on further development or redevelopment in flood prone areas to reduce future capital costs on flood protection works. Recommendations made by the Drainage Committee appointed by the NRC to study the Flood Drainage of Accra in 1973 should be enforced. It includes prohibition of building activities within 100 feet on either bank of major drainage channels. This reservation will essentially be a green belt which will contain maintenance of roads and public parks for recreational purposes. Similar reservations of 100 feet along the shoreline of the Korle Lagoon is required for re-dredging and maintenance activities.

With respect to other major drains the following specifications may be maintained:

Name of Drain	Reservation Required	
1. Odaw River	100 feet	(on both banks)
2. Onyasia Stream	60-80 feet	"
3. Nima Tributaries	40 feet minimum	"
4. South Kaneshie Drain (Graphic Road to Lagoon)	60-80 feet	"
5. Kaneshie Drain	60-80 feet	"
6. Awudome Drain and Tributaries	40 feet minimum	"
7. Klottey Drain	40 feet minimum	"
8. Kpeshie Drain	60 feet minimum	"
9. Others, and Smaller Tributaries	25 feet	"

The following measures may also be implemented to alleviate flooding:

(i) Flood Retention Basins

An effective measure of reducing rapid run off and flash flooding in urbanized catchment is the introduction of flood retention basins. These involve the construction of a low dam - generally made of earth - across a stream, which is allowed to fill and eventually discharge through a restricted flow flood gate. Within the existing urbanized areas there are very few opportunities to develop these structures. However, provision should be made for flood retention basins on the tributary streams of the Odaw River - especially along the centre of gravity of the catchment area and the Mamahuma, Dzorwulu and Orukpawahe streams which flow into the Sakumo II lagoon west of Tema. There are already a number of small dams on these streams. Retention basins

could be incorporated into the design of the orbital road proposed along the base of the escarpment in the transportation strategy.

(ii) Flood Gates

Where retention basins are provided, gates may be necessary to keep the flood waters in the basin until such time that the water can be released into the drainage system without significantly increasing down stream flow. Flood gates should be introduced where applicable to restrict the velocity flow - especially in small steep catchments. Where flood gates are introduced these should be designed to open by hydraulic rather than by manual means.

(iii) Stream Training

Stream training involves lining of the channel, removal of meanders and altering the gradient to accelerate or decrease flow. This may involve construction and or merely planting the stream channel or flood way. Many areas of Accra require training in order to reduce flow velocities, prevent incised erosion and increase the efficiency of channel volume. This is necessary in flood prone areas to avoid flooding even with light rain. The drainage master plan provides for stream training on all the major drains in the metropolitan area. However, provision should be made to introduce less cost effective stream training on all tributary drains of the upper Odaw River (Korle Catchment) and the Sakumo catchment. This will involve minor realignments and planting of trees to stabilize stream embankments and reduce the velocity flow in the stream channel. The low cost stream training with occasional drop structures should be undertaken during the plan period in order to avoid more expensive concrete construction works having to take place next century.

(iv) Coastal Flooding

A rising sea level is expected to have more serious impact on coastal flooding in future. Large parts of Sakummo I lagoon are at or slightly above sea level. When the lagoon entrances - especially the Densu become blocked - and heavy rain occur or the Densu spill way discharges, large parts of western Accra become flooded. The entrances of the Korle and Sakumo lagoons have been effectively closed and during heavy rain water in these lagoons backs up causing wide spread coastal flooding. There is little that can be done to prevent heavy flooding in the smaller catchments and breaching of the lagoons should be done at the beginning of every rainy season. The coastal management plan provides for extensive works to reopen the Korle and Sakumo lagoons.

(v) Dredging of Korle and Sakumo I Lagoons

It has been estimated that 67,000 tons of sediment is produced per annum from the 7 drainage basins in the metropolitan area. Over half of this silt is trapped in the Weija Lake. The balance is deposited in the other coastal lagoons - especially Sakumo and Korle which are now heavily silted. To reduce the sedimentation of these lagoons and minimize flooding along within the above two lagoons, extensive and more regular dredging should be carried out. The Coastal Management Plan provides for the regular dredging of the Korle, Sakumo II and Tema harbour.

(c) Management

The construction of major drainage works is expensive. The estimated cost of drainage works for Accra for the next five years is 14.182 bn cedis. The management of drainage channels and flood prone areas is also not under one authority, which makes for poor coordination, poor resource allocation and lack of planning.

There is, therefore, a need to introduce measures which will ensure both improved management of the drainage system and of development within flood prone areas. This is essential if resources allocated to alleviating flood and drainage problems are to be used expeditiously in future. The following measures are intended to improve the overall management of drainage in the metropolitan area.

(i) Water and Drainage Authority

The establishment of the authority by separating this from GWSC has been addressed in the Water and Waste Management Strategies. The Authority would ensure much improved management of local drainage services by taking control of planning, funding development and maintenance functions.

(ii) Management of Flood Prone Lands

There is an urgent need to prohibit further development on severe flood prone land, and in the long-term relocate persons living in areas to higher ground. If these actions are not taken, an increasing amount of property and the population who live in it will be put at risk from inundation, as there will be insufficient resources to do much to prevent this from happening. A comprehensive flood management plan should be prepared for the metropolitan area by the Town and Country Planning Department in association with all agencies and organizations involved with drainage in the metropolitan area. All land below the 1 in 15 year flood line should be included in special flood prone zone and further development prohibited within this area. The management plan should also provide guidelines for development in flood prone areas. The plan should recognize that the enforcement of the zone conditions will involve a phased relocation of many thousands of people over a period of time and that alternative accommodation for them will need to be provided. Measures to entice people to abandon property will need to be investigated, rather than forcibly removing people. In some areas compulsory removal may be necessary to provide adequate capacity for the drainage system.

The 1987 report of the Drainage Committee prohibits building activities within 100 feet on either bank of major drainage channels. For example, no development should be approved which falls within 100 feet (30m) on either bank of the Odaw River, from the Motorway crossing at Achimota through to the outlet point into the Korle Lagoon. Similar reservation of 100 feet along the shoreline of the Korle Lagoon is required for re-dredging and maintenance activities. The Committee also advises the maintenance of the following specifications for other major drains:

(iii) Erosion and Catchment Management

This will also be taken up by an Authority such as the above because catchment erosion and pollution contribute to flooding and pollution of water courses leading to high treatment cost of potable water for consumers.

(iv) Maintenance of Urban Drains

This has not been the responsibility of any particular organization and has therefore been neglected over the years. It is only when serious floods occur and the damage is already done that makeshift maintenance takes place. An efficient unit should be created within the Authority with the responsibility to undertake routine maintenance of all drains in the Metropolitan Area.

(v) Community Maintenance of Local Drains

is can be solicited in the more rural setting of the Ga District Assembly Nima and Ashaiman where the Community spirit is easily susceptible to appeal. In the high income, more sophisticated areas such a programme will not be acceptable.

(vi) Monitoring

Monitoring will be impossible without a routine maintenance system set up and also provision of adequate drains in areas prone to flooding.

(vii) Meteorological Records

Forecasting of stormy weather in the Metropolitan Area has been quite accurate and if the ideal situation with drainage and maintenance is obtained, flooding can be foreseen before it occurs. In this way adequate preparation can be made to mitigate its effect and save the affected people the damage they suffer.

5.6 ELECTRICITY SUPPLY

5.6.1 Introduction

The Electricity Corporation of Ghana (ECG) has a monopoly on the distribution of electricity within the metropolitan areas of Accra and Tema. The quality of electricity services within these areas is therefore related to the efficiency with which ECG functions. The period 1978-1985 saw a deterioration of electricity services to the metropolitan area. The ECG has since then undergone significant reorganisation and is now providing a better quality of service. Its intention is to consolidate the gains made in the last few years and to initiate additional improvements.

It is envisaged that demand for electricity will continue to increase at annual rates of above 5% for the remainder of the decade. It is also expected that consumers will become more sophisticated and will have an increased dependence on electricity. It will be necessary to implement a sustained program of expansion of capacity of electrical networks and improvement of quality of services.

ECG will require foreign financial assistance to implement major improvements in urban areas. In the past such programs have been partly financed by the International Development Association (IDA), commercial banks and foreign aid packages. Since the government obtains such finance on behalf of ECG, its economic policies influence the availability to ECG of finance for expansion of urban electricity services. Creditors insist on the achievement of a certain minimum level of profitability of the corporation. It is therefore necessary for the corporation to be allowed to charge an adequate tariff to recoup operating costs and allow for expansion of facilities. The government has on some occasions been reluctant to grant ECG increases in tariff because of perceived inefficiencies of the corporation. The successful financing of ECG programs is obviously not possible without governmental approval and active support. The ECG's highest priority is to implement programs to redress criticisms and thereby encourage public support. Such support should, amongst other things, include a timely approval of requisite tariff increases. It has been estimated that the current low electricity tariff is about 50% of the long run marginal cost of electricity. Since the ECG is obliged to repay loans used for implementing its programs, it is apparent that the current situation if allowed to continue, will weaken ECG's ability to sustain its programs of improvements.

The government has initiated a thirty year rural electrification program (1990-2020). The ECG is the implementing agency within its areas of operation. It has been predicted that this program will lead to a higher LMRC for distribution of electricity and will make necessary higher tariffs.

5.6.2 Objectives

The objectives of ECG strategy of electricity services in GAMA is to:

Provide service connections to its customers within one month of an application being made

Reduce losses to less than 12% within the distribution system.

Improve quality of supply and services.

5.6.3 Thrust of the Strategy

The primary thrust of the strategy for electricity services will be to concentrate on the programme to complete the rehabilitation of existing infrastructure to enable the distribuiton network to be expanded and the quality of services to existing consumer to be improved. This will be achieved through a series of measures designed not only to improved physical infrastructure, but the management and future planning of services by the Corporation. The following measures are intended as part of the strategy.

(a) Decentralisation of operations

As a result of rapid expansion of Accra, it is becoming more difficult for ECG to achieve acceptable response times using the existing organisational structure. This problem is felt most for metering and fault location and clearance. It is therefore intended to implement a decentralised system of operations. As a first step, the city of Accra has been sub-divided into 3 districts. District offices are to be constructed to serve as a base for district activities. Since the distances which crews have to move to will be shorter, it is expected that response times will be reduced. The ultimate aim is to achieve district organisations with decentralised decision making and reporting structures. In addition, studies will be carried out to determine the feasibility of providing fault reporting and revenue collection centers.

(b) Loss Reduction

The present level of losses (20%) in the distribution network is considered excessively high. In implementing the Fifth Power Project (P 5), an important side benefit will be the reduction of such losses. It will be necessary to reassess the level of losses after completion of P5 and to ensure that losses are reduced to economically acceptable levels. It is then intended to launch a continuous program of loss reduction. Such a program will be preceded by studies to determine the most economic loading parameters and network configurations. The loss reduction program will include reduction of both technical and non- technical losses in a systematic fashion.

(c) Institutional Development

Quality of staffing will be improved by means of training programs. Non-skilled staff levels will be reduced and replaced as much as possible with professionals.

(d) Planned Development of Networks

The history of ECG is made up of cycles of deterioration of services followed by massive rehabilitation and expansion programs. This leads to a higher cost of rehabilitation. It is intended to break from the past by instituting maintenance procedures to identify, at an early stage, any deficiencies and to initiate remedial measures. Such procedures will allow for the optimised development of ECG's networks. ECG intends to commission a System Development Study to produce plans for expansion of its networks for the period 1992 to 2002.

(e) Elimination of Suppressed Demand

This involves the provision of additional low voltage distribution capacity to improve voltages and to meet previously unsatisfied demand. It is intended to establish additional distribution substations, construct low voltage feeders and upgrade undersized conductors.

(f) Protection and Control

ECG intends to improve its system of protection and control. It will carry out studies aimed at the replacement of the Supervisory Control and Data Acquisition (SCADA) system for the Accra and Tema metropolitan areas. This will improve the ability to monitor and remotely control networks down to the 11kV level. Replacement of faulty protective equipment will continue. This will reduce damage to healthy equipment and reduce the incidence of unnecessary outages. Studies will be carried out to monitor the adequacy of the corporation's protection system.

It is intended to provide an improved system to radio communications. The aim will be to eliminate congestion and an increase in reception quality and range.

(g) Expansion of 33kV and 11kV Networks

In order to improve system reliability, the ECG intends to provide redundant capacity at the 33kv and 11kv levels. In addition, it is intended to increase 11kv inter-connection capacity between the primary substations. This will make possible the transfer of loads in the event of a fault. It is also intended to provide a 33kv inter-connection between Accra and Tema to reduce the incidence of total outages as a result of bulk supply point faults. A number of additional 33kv circuits are to be constructed in Accra. Additional 33/11kv transformer capacity will be installed at primary substations. It is planned to replace some obsolete 33kv switchgear to improve the safety of operations and reliability of supply.

(h) Construction of additional primary substations

The rapid spread of Accra and Tema is leading to extensions of the 11kv network. The lengths of some 11kv feeders is approaching the technical limits. It is envisaged that it will become necessary to construct additional primary substations within the Accra and Tema metropolitan areas. The most likely locations will be Ashaiman and Sakumono in Tema and Adenta in Accra. Implementation is likely to take place after 1996.

(i) Metering and Revenue Collection

It is intended to reduce commercial losses by implementation of a program of meter testing and replacement where necessary. ECG also intends to identify instances of power theft and to prosecute where necessary. The number of unmetered consumers is to be reduced to the barest minimum. ECG has initiated steps to improve its billing and revenue collection procedures. It hopes to reduce the rates of default of payment of bills. An additional benefit will be elimination of inaccuracies in bills.

(j) Additional Bulk Supply Point Capacity

Envisaged load developments in Accra and Tema make necessary provision of additional 161/33kv transformer capacity. Preliminary studies indicate that it will be more appropriate to meet Accra's requirements by the construction of a new 1332MVA capacity bulk supply point (BSP). A tentative site for the new BSP is in the heart of the city near the Graphic Road. It is hoped that construction of the BSP will be underway before 1994. It is intended to meet Tema's requirements by increasing the additional 161/33kv transformer capacity at the existing bulk supply point.

5.7 TELECOMMUNICATIONS

5.7.1 Issues

Like most of the other engineering services, telecommunications has suffered through the lack of resources for development, loss of managerial and technical skilled manpower, poor planning and uncoordinated development of the existing network. The Corporation, however, has benefited from an injection of foreign capital which will enable it to start recovering much more quickly. An extensive programme of works is planned

to improve existing services in Accra and to replace or upgrade old technology and equipment. There are still a number of constraints, such as management, maintenance and planning of services which will have an impact on the provision of customer services, and these are matters which the strategy should address.

5.7.2 Objectives

The strategy for the provision of telecommunication services has three objectives, namely to:

Improve the quality of existing services
Expand the network of telecommunication services
Improve management

5.7.3 Thrust of the Strategy

The poor condition of telecommunication services and the limited extent of the network results in thousands of people each day using the transportation network or postal services to deliver messages or transact business in different parts of the city. The cost of communications between people on a day to day basis is very high, and if vehicular congestion and transportation costs are to be reduced greater emphasis must go into the improvement of telecommunication services. The thrust of the telecommunications strategy is therefore to improve the level of service to heavy commercial and private users and the central business area, with improved links to new exchanges and public telephone services in outer residential areas. Under this strategy, Post and Telecommunications Corporation will be able to significantly increase revenue flows to enable services to be extended to many other parts of the residential area. The strategy along with other measures in the urban development strategy to decentralize day to day business activities should reduce the growth in traffic congestion in the CBD.

(a) Improvement to Existing Services.

Until very recently, few parts of Accra had telephone services which worked. Much of the infrastructure had broken down and fallen into disrepair. Posts and Telecommunications Corporation is now in the final phase of providing new services to many inner-city areas. The following measures will be applied to improve services to customers and the quality of services.

(i) Rehabilitation of existing network in CBD
(ii) Expansion of Exchange Capacity
(iii) Provision of Mobile Telephone Services
(iv) Installation of Public Telephones

(b) Expanded Network

The demand for telecommunication services is expected to grow rapidly in future in both the business and private sectors. The business sector is expected to experience a significant increase in the demand for facsimile and data transfers within company, banking and other business networks. In order to meet this increased demand the following measures are proposed.
(i) Expansion in Service Areas
(ii) Increased Satellite Transmission Capacity
(iii) Improved Inter-regional services

(c) Improved Management

In 1992, Telecommunication services will become a separate and autonomous corporation. There is however, a need for the new corporation to improve its management performance - especially in the planning, programming and revenue collection services. The following measures are proposed.

(i) Revised Planning Schemes.
(ii) Coordination of Development.
(iii) Decentralization of Operations.
(iv) Reorganisation of Revenue Collection.

5.8 POSTAL SERVICES

5.8.1 Issues

Postal services in the metropolitan area are poor. There is a waiting list of over 40,000 person seeking a private box; delivery services are slow due to inefficiencies in post office sorting operations, poor addressing of letters by the public and there is no street names and houses numbers in most residential areas. Most post offices in the metropolitan area are old, in poor condition and have no room for the expansion of additional boxes. The operation of an efficient mail delivery system in the metropolitan area is essential for modern communications and information dissemination. A substantial improvement in postal services is necessary within the metropolitan area and this will involve changes in operational systems, more trained manpower and capital investment in new facilities to enable quicker collection, sorting and delivery of mail.

5.8.2 Objectives

The two objectives for the mail services are to:

Provide a reliable postal service

Improve the range of postal services

5.8.3 Thrust of the Strategy

The primary thrust of the strategy for postal services in the metropolitan area is directed at improving the basic infrastructure and delivery system. This is necessary to reestablish confidence in the mail delivery system and to enable postal services to be expanded and made more convenient in future. Measures which should be introduced to improve postal services include:

(a) New Post Offices

The shortage of post offices and boxes should be rectified by a programme to construct new facilities in outer residential areas. New subdistrict post offices should be provided in the subregional business centres and near all major transportation centres. Postal agencies should be provided where demand is high as an interim arrangement before new post offices are constructed. Residential areas requiring additional post offices include, Sports Complex, East Legon and Dome.

(b) Post Boxes

There is very limited space to provide additional boxes at the Central or North Accra Post Offices and the waiting list for boxes is long. The demand for post office boxes many residential post offices is also high. In many cases applicants apply to several post offices in the hope of obtaining a box. The geographic demand for post boxes in the metropolitan area is unknown as the central post office does not collect and analyze information form subdistrict post offices. A study should be commissioned by the post office to determine geographic demand for post office boxes. New boxes could then be provided in more convenient locations closer to demand. The study should also determine future demand for post offices.

Once the additional sub district demand for post offices has been met, consideration should be given to rationalizing the box service at the General Post Office. There should be a gradual transfer of private to

commercial boxes by a steady increase in tariffs. In the long term the Central Post office should be primari a commercial centre and business post office.

(c) Post Codes

To assist the post office in sorting and delivery the metropolitan area should be divided up into postal distric and given postal code numbers. This will enable sorters to ensure that mail gets to a box number in the distric The persons collecting the mail may then recognize illegible hand writing and pass it on the person to who it was addressed. The post office should commission a study into the postal number of areas. This should b extended nationally to create a more efficient national delivery service.

(d) Street Numbering System

The lack of street names and numbers is a major constraint on the operation of the EMS. Provision has bee made elsewhere in the plan to begin a programme of street naming and numbering. The post office shoul work with the district assembly on the numbering system. It should follow the conventional system of od numbers on one side of the street, even on the other.

(e) Mail Sorting

Inward and outward mail is currently sorted at three centres in Accra. There is a need to rationalize and expar sorting operations. In the long term, the post office should construct a new mail sorting and distribution centi for international, national and local mails to replace the existing centres.

(f) Mail Security

Pilfering of mail has been a problem in the postal service, caused mainly by people sending money throug the mail. Steps are being taken by the post office to reduce this. However, there is a need to inform the publ about the danger of using light paper envelopes and packages which are semi transparent. Promoting th use of money orders should also be encouraged to reduce the temptation of theft.

(g) Mail collection Boxes

There once operated a very efficient collection service from residential post office boxes in the inner city area Many of the red boxes are still in place. In order to provide a more convenient local and after hours collectic service this should be reintroduced. Boxes should be introduced at major international hotels and touri centres.

(h) Planning for Mail Services

The current planning for mail services in the metropolitan area is poor. The post office should establish a sma planing unit which would advise the Director General on forward planning requirements. This would enabl the Post Office to provide facilities in advance of need, to rationalize the operation and improve the efficienc of the service.

Chapter 6

SOCIAL SERVICES DEVELOPMENT STRATEGIES

6.1 INTRODUCTION

6.1.1 Development of the Strategy

The social service delivery systems in GAMA face a number of constraints and problems in the process of providing local services such as education, health, and social welfare and emergency services like police and fire. These include: centralized system of management at the level of the central government; lack of forward planning; shortage of resources to extend services to all parts of GAMA; poor quality of services; and weak institutional development. The strategy for social services needs to focus on these major issues.

6.1.2 Goals and Objectives

While it is desirable that a high standard of public services should be made available to people living in the metropolitan area, the resources available to the service agencies to provide these are limited, and will continue to be for some time to come. It is therefore essential that the most efficient and effective use is made of existing resources so that the social services sector can deliver basic services to the entire population. Those who are willing and able to pay for better services can obtain these from the private sector. The goal of the social service sector strategy is therefore to achieve:

THE DELIVERY OF SOCIAL SERVICES WHICH ARE SUFFICIENT TO MEET THE BASIC NEEDS OF THE METROPOLITAN POPULATION

Supporting this goal are specific objectives for the education, health, welfare, emergency and recreation service sectors. These are covered in more detail in the following sections of the chapter.

6.1.3 Thrust of the Social Service Strategies

There are many problems associated with the delivery of social services in the metropolitan area. A real increase in expenditure in the social services sector in the medium term is not likely. This is because government is expected to continue directing much of its resources into providing infrastructure to support improved sanitation, water supply, housing and drainage as well as energy and telecommunication services to develop the economic base of the metropolitan area. The thrust of the social services strategy under these fiscal constraints will be primarily directed towards improvements in the delivery processes, rationalization of existing resources and services infrastructure, improved training and privatisation of services. Once the positive impacts of the economic development strategy have been felt in the longer term, it should be possible to expand the capacity and improve the standard of social services in the metropolitan area.

6.2 EDUCATION STRATEGY

6.2.1 National Policies and Strategies

The main focus of the current education policy is to provide nine years of fee free compulsory basic education for all children of school going age. It has the overall objective of exposing every Ghanaian child to a wide variety of areas and skills to build within him/her an attitude of creative handling of problems of his/her life and of the country. The strategy for the realization of this policy objective include: developing a new curriculum which de-emphasizes theory and makes learning activities relevant to the local environment, increasing the

number and quality of teachers, providing text books and educational materials, reducing government recurrent cost burden and ensuring that every Ghanaian child of school going age goes to school.

6.2.2 Thrust of Metropolitan Strategy

The student enrolment rate of GAMA is low. It also lacks standards and norms in the utilization of school facilities and their equitable distribution among the districts. The quality of education and the efficiency of the delivery systems are not adequate or satisfactory. Despite budgetary increases, financing education is a major problem in GAMA. The delivery systems are inflexible and lack planning and management capacity. The thrust of the education strategy will be: to facilitate a more effective use of all available educational resources in GAMA.

6.2.3 Goals and objectives

The goal of the education sector is:

To achieve high quality education and full enrolment for all children of school going age in GAMA.

It is supported by the following objectives:

1. To improve external, internal and qualitative efficiency.
2. To improve educational opportunities.
3. To increase financial resources.
4. To improve institutional development.

6.2.4 Improving External and Internal Efficiency

Educational investment decisions have to take into account both external and internal efficiency. The external efficiency of a school system is judged by the extent to which it improves students' employment prospects and productivity. Internal efficiency is concerned with the extent to which particular educational goals are achieved with a given input of resources; the goal is for students to flow through the system with a minimum of waste.

(a) External Efficiency

The external efficiency of an educational system depends on relationships between general and vocational education, and between school work opportunities. GAMA needs both technical and managerial skills necessary to sustain economic growth. This is a major challenge for the educational system, as well as for enterprises that could provide some of the requisite training. What educational planners need to do is to design an appropriate mix of education or training to meet the highly diverse industrial and service needs, and this can be done by:

(i) Studying the Labour Market

There are various possible modes of delivery from which to choose, and various possible combinations of general education, diversified schools, technical and vocational schools, on the job training, and non-formal educational programmes. In GAMA, most or all of these types of training will be needed at the same time. In allocating resources it is necessary to decide on the balance between general and specialized education, the various levels of schooling, and the alternative delivery vehicles or methods of teaching, all of which may differ with respect to both cost and effectiveness. Choices such as particular skills to be taught by a specialized institution in the public system, or by the private sector through on-the-job training, or in a proprietary school

are policy decisions which require analysis of the economic and institutional situations and comparison of alternative mixes of educational output.

(ii) Improve Demand Forecasting

The efficiency and success of the system will depend on how well it satisfies the labour demand needs, by producing a broadly appropriate pool of people with the required skills and professional and technical knowledge. The MOE has based its educational plans on forecasts of manpower requirement for Ghana. Despite the difficulty in forecasting manpower demands, it is still desirable to collect accurate and comprehensive information about the labor market including data on hiring, promotion, and termination practices, wage rates, international labor markets, and private sector earnings. Tracer studies can yield information about the employment and careers of small samples of labor force entrants or school-leavers and university graduates.

(b) Internal Efficiency

The efficiency with which a school system produces graduates can be improved in a number of ways. Some of these do not require significant investments of capital but are achievable through administrative action. They relate to the flow of students, class size, and the use of space and facilities.

(i) Increase Student Flow Rate

In the design of universal basic education, a student flow rate of 98 percent has been adopted. This is very low average. Repeaters account for nearly 2% of the total enrolment (62% were males). Both repeaters and dropouts consume scarce resources with low returns to the individual or sector.

(a) One of the most effective ways to reduce both is to improve the quality of education by providing better trained teachers who can use various high standard, pedagogical methods and better teaching materials, etc.

(b) Lack of parental control and motivation to educate their children is another important problem. It may be overcome through a strategy of public education of parents through PTA's, etc. on the benefits of a child's education.

(c) A reduction of students/minors exposure to and attendance at video houses through the re-orientation of children on the use of their time (in between shifts), may improve their academic performance, reduce drop-out rates and improve flow rates.

(ii) Increase Class Size

Research outside Ghana on the relationship between class size and learning achievement has demonstrated that if the quality of teachers and physical facilities remain unchanged, reducing class size does not necessarily improve educational quality. The converse is also found to be true; achievement does not necessarily drop if the size of class is increased up to a point short of overcrowding. In GAMA the class size varies from school to school and district to district with an overall average of 47 at the primary level. The average class size is 31.21 at the JSS level. Increasing class size to 50 in each case would yield a 6% and 36% increase in enrolment in the primary and JSS levels respectively. This would increase student intake and facilitate a more effective use of space at no extra cost to government.

(iii) Increase Pupil/Teacher Ratio

In 1990, the pupil/teacher ratio at the primary level was 40.20 and 24.14 at the JSS level. It will be possible to increase enrolment at the primary level by nearly 20 percent if the pupil/teacher ratio is raised to 50 and by about 47 percent at the JSS level if a pupil/teacher ratio of 45 is adopted.

(iv) Intensive Use of Space and Facilities

More intensive use of facilities allows an increase in enrolment without increasing capital costs. Greater use can be made of classrooms, laboratories, and workshops through rotation and staggered scheduling of classes. In Accra and Tema, where population density is high, double shifts should be introduced in all schools; this can mean two sessions a day, or attendance on alternate days, or staggering and overlapping terms. In 1990, the average classroom in GAMA was used 1.26 times out of a possible 2. This means that enrolment can be increased by 37 percent if there can be full double shifts at the primary level and by 13 percent at the JSS level. Whether or not more teachers will be needed for double shifts depends on how teaching loads are organized and on how teachers are compensated. An important problem to be overcome is the laxity and lack of control of students which the shift system encourages.

(v) Increase School Size

There is no correlation between the quality of education and school size. The size of the schools vary between districts and among schools within the same district. The average size of a primary school was 372 in 1990, whereas for JSS and SSS they were 232 and 980 respectively. Increasing the sizes of the schools to 600, 750 and 2025 for primary, JSS, and SSS can save up to 15 percent in construction and management costs.

6.2.5 Qualitative Efficiency

The current educational reform places less emphasis on general education by introducing job-related subjects on the premise that this would help school leavers find employment. This strategy will be greatly enhanced by improvements in the conditions which enhance the learning achievements of students, that is, qualitative efficiency. By this are implied: ensuring the development and use of appropriate curriculum; the engagement and maintenance of qualified teachers; and the supply of equipment and materials including text books. The following strategies will improve the qualitative efficiency of schools:

(a) Curriculum Development

Current educational reform places less emphasis on general education by introducing job-related subjects, on the premise that this would help school-leavers find employment. The strategy for curriculum development will involve the provision of the requisite support facilities and services. These include teaching materials and equipment, especially, at the technical and vocational schools and home economics and science classes, where there are serious shortages at the moment. It may be facilitated in GAMA through contribution/sponsorship by corporate bodies, NGO's (local and international), and private individuals.

(b) Teacher Training

Teachers' qualifications, experience, educational level, and knowledge have significant consequences on students' achievements. In GAMA, almost 11 percent of the teachers at the primary level, 29 percent at the JSS and 43 percent at SSS levels in 1990 were untrained. The senior and more qualified teachers are leaving the profession for better paying jobs. Ways to deal with some of the short comings include expanding training facilities, systematizing in-service training, improving the quality of training programmes, and providing teachers with resources and incentives that will help them to improve the quality of their instruction. As part of a short-term strategy to increase both the numbers and quality of teachers, retired teachers who are willing and able may be re-engaged on contract terms. Also local government in GAMA may organise seminars and other educational programmes for teachers on current trends in teaching in collaboration with GES, PTA's etc.

(c) Teaching Materials

Studies indicate that one of the most cost-effective determinants of learning achievement, particularly, in the lower grades, is the availability of text books. Yet, text books are not available for everyone and at all levels in GAMA. Owing to the newness of the curriculum, text books have not been prepared for some classes,

in GAMA. Owing to the newness of the curriculum, text books have not been prepared for some classes, especially for SSS. At the lower grades, the shortage is due to delay in publishing and distributional problems and curriculum development. There are a number of options. Government may prepare, publish and distribute textbooks free or at low prices. Or the private sector may be entrusted with the responsibility in which case the prices of books will be competitive. A third option is for government to seek private sector support in selected areas, for example, publishing and/or distribution. The last two options may be quite feasible in GAMA. Whichever option is chosen, however, it will be prudent to ensure some measure of cost recovery.

6.2.6 Improving Educational Opportunities

In the educational sector, certainly at the primary level, opportunities would be improved by making it easier for all prospective students in an area, especially a rural one, to attend school and by equalizing enrolment ratios between rural and urban children, poor and well-to-do children, and boys and girls. Efforts at both are hampered, not only by limitations on financial and human resources, but also by geographic and demographic conditions that make it difficult and costly to construct schools, supply learning materials, and provide qualified teachers. Ways to increase access and equity include improving mechanisms to meet basic educational needs, drawing on local resources, and building schools in areas where they are most needed.

(a) School Location Planning

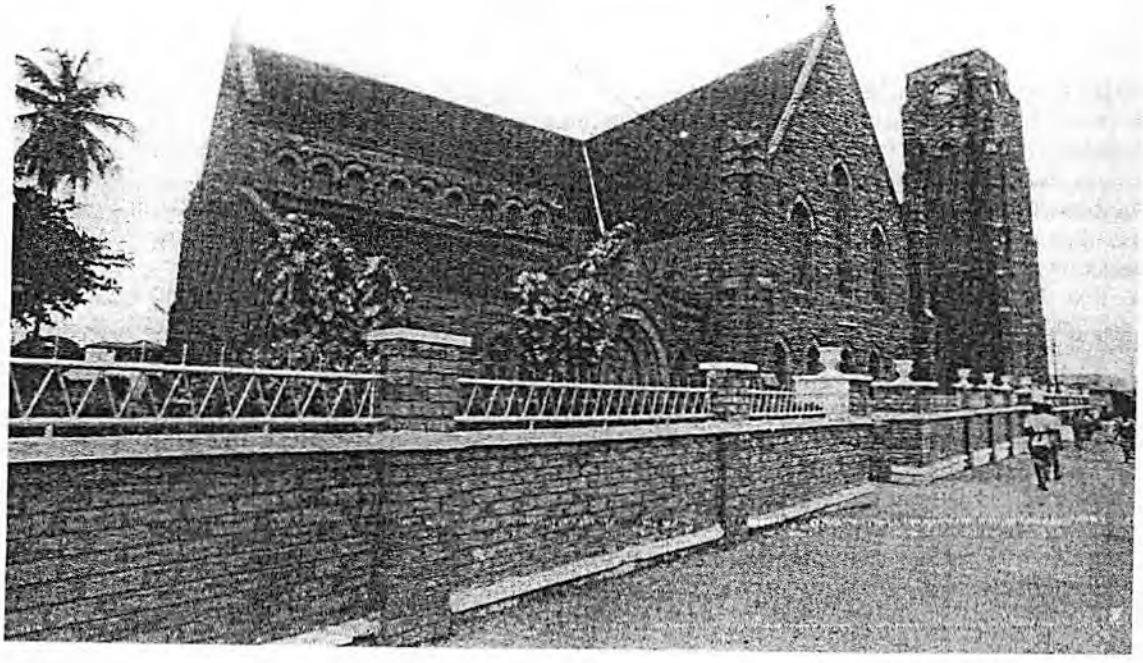
An obvious means of increasing enrolment in GAMA is to bring schools closer to those communities that lack facilities. Just as obvious, however, are the resource constraints on the number of schools that can be built, so it makes sense to determine where they are most needed. The distribution of school facilities in GAMA is uneven without adequate justification. Some communities with large populations have fewer schools than smaller communities. School location planning can be an efficient technique for determining the distribution, size, and spacing of schools and the kind of educational and related facilities to be provided. It requires, first, an inventory of present facilities and, next an analysis of a variety of data e.g. demographic, geographic, social, and economic. This strategy will help reduce transport costs, lateness and absenteeism on the part of some students.

6.2.7 Increasing Financial Resources

The level of funding necessary to move with reasonable speed towards the objectives of expanding the educational system and improving the quality of education is likely to be beyond the financial capability of the Government of Ghana through increases in budgetary allocations alone. New strategies for generating other financial resources to improve the efficiency of the system must be explored and developed. Education is heavily subsidized in Ghana. Studies from outside Ghana indicate that upper-income families are likely to benefit from educational subsidies to a greater extent than poorer families, especially at secondary and higher levels of education. Consequently, a larger share of educational costs could be borne by private individuals without prejudice to equity objective. There are five ways school revenue in GAMA may be increased. They include:

(a) Direct Taxes

The MOE estimates indicate that during the last decade educational expenditure in Ghana was 51 percent of the total expenditure of social and community services, and about 22 percent of total public expenditure and 2.7 percent of the GDP at 1990 prices. MOE also projects that public expenditure during this decade is not likely to exceed 2.7 percent of the GDP. If the projected cost of education is to be financed publicly from domestic resources, the GDP allocation will have to rise from 2.7 to 8.3 percent, which is neither feasible nor realistic. Neither is it possible for donor agencies to meet certain portions of the cost. Alternatively, the MOE estimates that the nation must be mobilized to contribute between 1,570 cedis (or US$ 5-8) per head per annum. This amount can be distributed based on income or some other criterion. A specified percentage of the funds generated from a particular Assembly area may then be ceded to it for educational development by the central government.



CHURCH BUILDING IN ACCRA

CENTRAL MOSQUE ACCRA

SOCIAL SERVICES

(b) Real Estate Taxes

Charging real estate taxes is a common method of financing first and second levels of education by local governments. Such taxes may take the form of increasing property rates in a given community by say 1%. Then through an elected and/or appointed school board, opportunities are provided for the people to administer the education of their children.

(c) Introduce a Lottery System

One way of raising revenue is to introduce a lottery system, the profits of which should go directly towards the construction of schools and improvement of the quality of education. This system has been successfully used in the industrialized countries to help special target groups of people such as the aged or the disabled, and can be used to finance education in GAMA.

(d) Encourage the Establishment of Private Schools.

Given the current rate of enrolment and the financial and other educational infrastructural needs for universal basic education, the Government should encourage the participation of the private sector in public educational programmes at all levels. This would reduce the financial burden and increase access to educational facilities. Government needs to provide tax incentives such as making private schools tax-free and giving employers tax breaks for training of their employees or contributing towards certain training programmes or skills needed by the private sector. This will halt the progressive decline of the sector's proportion of school enrolment in GAMA from the 1987/89 school year figure of about 19%. An important issue will be ensuring the continuity of the schools even after the deaths of their proprietors. This may be achieved through running of the schools along strict business lines with limited liability, management teams and Boards of Directors.

(f) Community Participation

In various part of GAMA, communities contribute towards the construction of first level schools through direct cash payment, self-help efforts, or donations in kind. This is an important beginning towards a complete community involvement in the planning and management of the school system. As communities take more control of their children's education they would be willing to share the financial burden as well.

6.2.8 Institutional Development

MOE through GAREO, its district offices and the GES has decentralised the educational system in GAMA. Institutional development to support planning and management at these levels is, however, very weak. There is an urgent need to improve efficiency in the areas of administrative, managerial, data collection and storage, analytical, forecasting and planning capacities. There are a number of options for improving planning and management:

(a) Management

The local education office is managed by people from the teaching profession, who lack modern management training. In view of the constraints on financial, physical, and human resources, the need to make most effective use of whatever resources are available is urgent, and this requires good management. One approach is to have specialized management and planning institutes for education; another is to provide managerial training for educators at general management programmes of the universities.

(b) Planning

Planning for the education sector encompasses such varied subjects as student enrolment, teacher training, classroom size, location of schools, cost analysis, curriculum development, etc. MOE has established an effective planning unit, but planning in GAMA suffers from the common practice of making ad-hoc decisions.

without adequate data, information, consideration and/or appreciation of their impact on other issues of educational development.

Effective approach to education planning may be:

1. Planning officers to be offered opportunities to undertake training in planning.
2. The introduction of impact analysis of planning decisions on educational resources and quality.
3. The installation of information system technology to facilitate data storage, analysis and retrieval.
4. The dissemination of data and information among planning officers.
5. Setting of space standards for educational development.
6. Determination of present and future spatial requirements for forward planning purposes.
7. Inter-sectoral co-ordination and collaboration in the provision of educational facilities and services.

6.3 HEALTH STRATEGY

6.3.1 National Policies and Strategies

The twin objectives of the health policy are designed for health services to reach the majority of the people and to prevent and treat the majority of the preventable diseases afflicting the people. The principal means for implementation of the policy is through the primary health care system, the philosophy of which is to reduce the rates of mortality and morbidity for which prevention, easy treatment, and control exist. Also health strategies need to take into consideration population and nutritional activities. They have direct bearing on the economy of health services.

6.3.2 Thrust of Metropolitan strategy

Given the limited resources, the main focus of the health strategy will be to cut back, or at least, curtail growth in curative services. There is a need to restructure and re-channel the existing resources and plan expansion programmes efficiently towards realistic objectives more rapidly and at affordable cost.

6.3.3 Goals and Objectives

The overall goal of the health sector is:

To increase the efficiency, effectiveness and coverage of health delivery services in GAMA.

Specific objectives supporting this goal include:

1. Decentralising health delivery.
2. Emphasizing prevention in health delivery.
3. Ensuring effective cost recovery.
4. Strengthening health delivery systems.

5. Improving planning and management.

6.3.4 Decentralized System of Management

One pervasive problem is the centralization of health management at the MOH. Regional and District offices have no autonomy. Decisions about hiring, firing, and reassignment of staff, about budget requests and resources allocation, and about changes in procedures that might improve efficiency, planning, management, and design of health programmes, etc. remain highly centralized. Current on-going decentralisation efforts are progressing rather slowly. The result is a system without any sense of ultimate responsibility. The district and/or region should be the unit for health management and planning, budgeting, coordination and implementation. The MOH should ensure that the concerns of equity are addressed across all localities, defined objectives or needs are met and national policies are formulated. This separation of responsibility is in line with the concept and philosophy of the Local Government Law, 1988, PNDC L 207.

6.3.5 Emphasizing Prevention

The strategy of prevention addresses the issues of child health services, eradication of malaria, increasing family planning coverage, reducing teenage pregnancies and improving school health services, nutrition and environmental conditions.

(a) Improve Child Health Services

The child health service aims at protecting and promoting the optimal growth and development of children during the pre-school years (0-5) through a variety of activities. They include: immunization against the most prevalent communicable diseases of childhood, monitoring of infant growth, promotion of breast-feeding and better prenatal and postnatal care. The coverage of this service was only 13 percent in GAR, less than the national average of 16 percent in 1988. Also relevant to child health are improved water supply and sanitation. Most of the childhood diseases are preventable and relatively easy to treat if constraints such as insufficient manpower, transportation facilities, and supplies and equipment are removed. The public should be encouraged to participate in the child health service through well designed programme of education.

(b) Eradicate Malaria

In 1990, malaria was the number one disease in GAMA, claiming about 40% of all the cases reported in that year. Nationally, among the top 15 leading diseases treated at out-patient departments, malaria ranked highest with an average incidence of 73 per 1000. Obviously, malaria should be key to any consideration of health status improvement in GAMA as well as in Ghana. While the commitment of the neighbouring countries to eradicate malaria should be on top of the agenda, a concerted programme of public education and control of fresh water sources of the anopheles mosquitoe, which is the vector for malaria, should be intensified locally.

(c) Increase Family Planning Coverage

The family planning service is designed to assist couples to space their children, prevent unwanted pregnancies, manage infertility, and improve reproductive health. Although counselling and methods of family planning services are available at MCH/FP delivery points, the coverage or proportion of target population receiving such services is very low; 4 percent in GAR and 5 percent nationally in 1988. Only 62 percent of the target population is receiving antenatal care in GAR, lower than the national average of 65%, while 87 percent were receiving postnatal services, which is the highest in the country. Coverage can be improved by maintaining regular supplies at service delivery points, training adequate staff, and improving public education and outreach programmes.

(d) Reduce Teenage Pregnancy

Nationally, the proportion of pregnant teenagers increased from 21 percent in 1987 to 30 percent in 1988. Babies born to teenagers are at a higher risk of health complications and have a higher infant mortality rate than those born to women over age 20. Others are also at greater risk of pregnancy complication than women between 20 and 34 years of age. Reduction in teenage pregnancy may be achieved by:

1. Intensifying and increasing the coverage of public health and sex education in collaboration with the MOE.

2. Increasing access to and encouraging the practice of family planning.

3. Increasing access of teenage girls to vocational, technical and other institutions thereby raising their marriageable ages.

4. Encouraging parental support through public education and counselling on teenage problems.

5. Resettling, counselling and training/retraining of drop-outs from school due to teenage pregnancies. Such programmes may take place at the formal school system with the co-operation of MOE, the Social Welfare Schools or at NGO's like the Opportunities Industrialization Centre (OIC) which run relevant courses.

(e) School Health Service

The service is designed to promote the health of the school age population in school, including pre-school. The coverage of the school programme is very low, about 10 percent nationally. This is an important prevention programme which can have a long-term positive impact on the health of students. Coverage can be improved by increasing manpower, supplies and equipment, and transportation resources. The school service programme need also to cover drug abuse, which is rising among students at the SSS level; teach rudiments of nutrition and food hygiene and, ensure periodic medical examination of food vendors in the schools.

(f) Improve Nutrition

The objective is to reduce mal-nourishment and its hazardous effects on health, growth and productive activity. It will be achieved through incorporating nutrition education, targeted at mothers and young children, in health and school programmes such as antenatal and postnatal care services.

(g) Environmental Interventions

There should be the adoption of a multi-sectoral approach to environmental improvements, such as: regular clearing of choked drains and refuse, control of indiscriminate dumping of refuse, the construction of drains, prohibition of residential development in flood prone and high water table areas and the use of polluted water (eg. from drains) for gardening purposes. This will create friendly environment for a large section of the urban population, destroy the breeding sources of the culex mosquitoe, which is the vector for filariasis, and reduce the incidence of diarrhoeal diseases.

6.3.6. Cost Recovery

The Government has placed excessive reliance on direct public outlays, largely from tax revenues, to fund health services. Alternative approaches that would require users to share the cost have been viewed with disfavour, even though fees for public services are not uncommon in the health sector and are a regular feature of private practices. These attitudes should be reconsidered. While user charges are not appropriate or advisable for all types of public services, they are for some. Health planning needs to start, as in other sectors, from the dual propositions that concerns about equity and income distribution require that most

beneficiaries of a service contribute to its cost; and that efficiency is but served when prices cover costs. There are four ways in which service costs can be recovered:

(a) Little or No Charge for Public Health Services

First, services which might be provided at little or no charge to users include disease control programmes, mass immunization campaigns, and environmental intervention; education and promotion of health and hygiene through schools and other institutions and the media, control of malaria and pests, monitoring (such as for outbreak of communicable diseases), out- patient services for maternal and child care, family planning; and nutrition and rehabilitation.

(b) User Charges

There are two sources in which costs for medical services can be recovered: hospitals and drugs.

(i) Remove/Reduce Hospital Subsidies

Although fees collected for hospital services rose dramatically since the Hospital Fee Regulation Law of 1985, the health facilities in GAMA have been running very high deficits. For example, in 1988 the revenue for polyclinics ranged between 3 and 5 million cedis, while the cost of running them was between 9 and 14 million cedis. The average cost for an out-patient service was 215 cedis, while the actual fee for a visit has been 50 cedis. The revenue for GAMA hospitals ranged from 6 to 21 million cedis, while the expenditure was between 18 and 27 million cedis. Thus, both in and out-patient services were and are heavily subsidized by government. There are two options:

(1) User charges may be made to cover the cost of services received. But this raises the question of equity.

(2) Level of user charges may be related to affordability and thereby facilitate the principle of cross subsidies. This may be possible under the risk-sharing strategy, see (d) below.

(ii) Drug Costs

The proportion of the national budget allocated for pharmaceutical products has been increasing steadily since 1983. This is against a background of cumbersome procurement procedures, lack of consultation with those involved in prescribing and dispensing drugs and low rates of cost recovery. All of these contribute to increasing government's burden in the delivery of health services. There are a number of strategies for recovering drug costs; they include:

(1) Removing all institutional and financial obstacles to drug procurement processes; ordering only the essential drugs after full consultation with those who are involved in prescribing and dispensing them; and removing all subsidies.

(2) Integrating herbal medicine into the main stream of the public drug delivery system. This will, however, call for research to determine scientific approach to preparation, preservation and administration of such medicine.

(c) Cutting Management Costs

Personnel costs for both preventive and curative services accounted for 60-75 percent of the total expenditures in 1988. There are a number of people on the payroll of Greater Accra Regional Health Administration who if taken off would not affect the delivery of health services in GAMA. It is believed that these people make up to 10-25 percent of the total personnel costs.

(d) Risk-Sharing

Risk sharing through a system of health insurance or any other means may be a viable consideration for health sector financing. Preliminary studies suggest that there are enough people willing to subscribe to a private health insurance scheme. Such private insurance schemes may be targeted at the middle and high income groups. The Government may establish a public scheme to cater for the low income.

6.3.7 Strengthening the Delivery and Support System

Progress towards the achievement of health objectives and priorities is hampered by institutional weakness, including the delivery of infrastructural systems starting from the community health nurse at the bottom of the pyramid, through primary-level facilities, to higher-level facilities and support systems.

(a) The Community Nurse

The community nurse needs to be increasingly used to extend services into the community and home, reaching out beyond the formal delivery system, urging communities to adopt recommended practices, and monitoring or performing simple services such as administering malaria medicines. Although such networks are now widely accepted within GAMA for effective delivery of population, health, and nutritional services, they lack various institutional supports. Also lacking are clearly and precisely defined tasks to be performed, adequate supervision through frequent visits by supervisors, shortage of basic supplies, involvement of the community in the selection process, providing incentives to the workers and matching the characteristics of the workers, as they relate to the social norms and customs of the community, with tasks to be performed.

(b) Primary Level Facilities

The clinics, health posts, polyclinics, and other dispersed local facilities that are most families' first and sometimes only contact with the formal system fill a gap between the community- based workers and the higher-level facilities such as hospitals. A large part of the capital expenditure during the last 20-25 years in GAMA has been on extending, or upgrading the building of primary level facilities. Some considerations were left out, including the number of facilities, their mix (small and large) and locations vis-a-vis demographic situation; and, adequate and dependable provision of drugs and supplies. A thorough revision of the primary health facilities, the services they provide, their network with smaller and community based activities, and their effectiveness in providing primary health care should be evaluated in the light of available resources, including transportation, personnel, equipment and supplies.

(c) Higher-Level Facilities

District hospitals deal with the most complicated referral cases and often provide training facilities for the lower level facilities. However, these institutions encounter a number of problems, including overcrowding, shortage of physicians,etc.

The situation may be ameliorated by:

i) increasing coverage, efficiency and effectiveness of lower order health facilities.

ii) providing well equipped and staffed laboratories to facilitate quicker diagnosis and disposal of cases.

iii) increasing training and incentives to attract and maintain specialists and other medical staff.

(d) Strengthening Support Services

Pharmaceutical supply, maintenance of buildings and equipment (especially vehicles), financial management (billing, collecting, and record keeping), and training are among the many aspects of support systems in need of strengthening.

(i) Drugs

Most drugs are imported at considerable expense. Brand name products compete with much cheaper generic preparations. Cumbersome procurement procedures cause delay in acquiring needed supplies, storage facilities and transportation are inadequate to ensure efficient distribution. Poor inventory management leads to excessive supplies of some items and shortages of others. The importance of drugs to the quality of care and the credibility of the service makes it essential to develop better mechanisms for assessing requirements, reviewing procurement procedures, and improving inventory and quality control, storage, and distributional systems. Also there is the need for more intensive research on herbal medicine to make its integration into the public drug supply system safe and feasible.

(ii) Maintenance

Expenditure on maintenance of facilities, equipment, and vehicles is seriously inadequate. The condition of the health facilities, especially, those providing primary health care (clinic, polyclinics, health posts) is incompatible with the services they provide. The buildings are in bad physical condition: no water and electrical supplies; leaking roofs; and poor storage and communication facilities. A complete programme of rehabilitation is urgently needed for these facilities.

(iii) Financial Management

Financial management of health facilities is particularly weak and needs fresh thinking and upgrading. At the higher levels, record-keeping and reporting systems are inadequate for budgeting and monitoring of progress toward programme objectives. The financial management of facilities might be improved through the introduction and adoption of cost accounting principles, the engagement of appropriate accounting and other supporting staff; and timely analysis of accounts to facilitate sound financial policies.

(iv) Training

Although GAMA has more physicians and other health personnel on a per capita basis than any other region of the country, there are, surprisingly, very few specialists working in government facilities. The system of medical education is not sufficiently orientated towards the preventive health care needs of the country, thus making health services more expensive. There is also a need to produce specialized medical personnel and develop manpower plans that address both the short and long-term needs of medical services.

(v) Coordination and Integration

Better coordination among sectors and within the health sector (population, health, and nutrition) is critical to reduce duplication and inconsistency. While separation of responsibilities is not necessarily bad, especially among sectors, poor communication, unwillingness to cooperate, and sectoral rivalries have resulted in considerable overlap. The inherent complementarities among population, health, and nutrition interventions, and between them and investments in other sectors, are a further reason of improving coordination of investments.

6.3.8 Improving Planning and Management

(a) Planning

Planning is one of the weakest points of the health delivery service, both at the central and regional levels. At the regional level, planning is often equated with budgeting. There is no information and data for planning future activities, evaluating programmes, formulating objectives and targets, or preparing budgets. It is very important to prepare short and long-term plans, with possibilities for frequent revision and assurances that the main options on important issues have been adequately examined and clear-cut choices have been reached.

(b) Management

Underlying many of the current weaknesses is a generalized need for better management. Improvements may entail changes in organizational structure and management, incentive structure, programme design, personnel mix, promotion criteria, and organizational relationships.

(d) Privatization of Health Services

Encouraging the private sector to provide them can ease government's burden in the actual delivery of health services. It would free various governmental resources for designing and formulating good health policies, monitoring and evaluating programmes, and focussing on the actual needs of the country.

(e) Renting of Facilities

Closely connected with privatization is the introduction of renting hospital facilities such as operating theatres, x-ray and lab facilities, to the patients of physicians in private practice. This would allow the full utilization of facilities as well as build a revenue base for further capital investment in the hospitals.

6.4 WELFARE DEVELOPMENT STRATEGY

6.4.1 National Policy and Strategies

Social Welfare is an essential service in the process of industrial development. It addresses issues such as child abuse, juvenile delinquency, training and settlement of the disabled, non-formal education and other related problems of rapid urbanization. Current social welfare policy aims at promoting conditions which will safeguard and maximize the desirable consequences of development. It emphasizes prevention in the delivery of welfare services.

6.4.2 Thrust of Metropolitan Strategy

The delivery of welfare services is constrained by inadequate resources - both human and material; weak institutional development resulting in central control and delivery of services, inadequate preventive measures and lack of inter-sectoral approach to welfare delivery. The main focus of the welfare strategy will, therefore, seek to mobilise and make efficient use of available local resources.

6.4.3 Goals and Objectives

The goal for social welfare in GAMA is:

To create an efficient and effective welfare delivery service.

The objectives supporting this goal include:

1. Making decentralisation effective.
2. Strengthening preventive services.
3. Expanding Welfare services.
4. Mobilising and integrating local resources in delivery of welfare services.

6.4.4 Making Decentralisation Effective

Owing to the shortage of personnel and other resources, social welfare delivery centres in GAMA are few, understaffed, and ill-equipped to provide the necessary services. Decision-making is consequently centralized at the national and regional levels. Social welfare services are local in function and character and therefore should be handled at the local level. Decentralisation will be facilitated by the strategies of strengthened preventive services, increased community participation, involvement of voluntary organisations and the business community (see 6.4.5 and 6.4.6 (a), (b) and (d) below).

6.4.5 Strengthening Preventive Services

The number of social welfare cases has been increasing rapidly. The social and economic costs to society can be enormous if measures are not taken to reduce the causes for social problems such as loss of parental control, juvenile delinquency, neglect of the mentally retarded, etc. which necessitate social welfare services; and provide adequate services and on time. Preventive services may be strengthened through:

(a) Training and Retraining of Staff

The delivery of social welfare services is a specialised activity requiring specialist knowledge. This requires training and retraining of welfare personnel, increasing their numerical strength and incentives. Training facilities should be expanded at the welfare school to increase the number of students intake. This will enable the Department and delivery centres keep pace with the increasing complexities of welfare issues in GAMA.

(b) Extending Services to Public

Preventive services may be further strengthened by extending programmes to schools, communities, NGO's; providing family planning and various youth services and programmes at the door steps of the beneficiaries. It should be expected that the enlightened community would then propagate the benefits and usefulness of the services.

6.4.6 Mobilising Local Resources

The constraints of perennial shortages of personnel, logistics and other resources for delivery of social welfare services, coupled with the local nature of the services, are compelling reasons for looking within GAMA for solutions. This objective may be achieved through:

(a) Encouraging Voluntary Organizations

Voluntary organizations, charitable societies, mutual aid societies, and youth organizations should be encouraged to be involved in the provision of social welfare services. Some of these organizations are well connected with their richer and more influential counterparts abroad, and they can assist and cooperate with the Department of Social Welfare in providing specific welfare services.

(b) Involving the Business Community

Business organizations, privately or collectively, have certain responsibilities to the community in which they located. As part of this responsibility and business promotion, they should be encouraged to provide assistance by sponsoring social welfare organizations (e.g. children's home, juveniles clubs, vocational training centres) or to a group of people requiring special assistance (e.g. providing jobs for the disabled, juveniles, battered wives, etc).

(c) Cooperating with Other Agencies

Cooperation with social service organizations such as education and health and with the police service can save scarce resources which would have been spent on duplication of services such as literacy and family planning and school welfare programmes.

(d) Community Participation

The delivery of welfare services will be greatly facilitated by making it community based instead of institutional based. Identifiable groups like churches, community welfare groups etc. may be used as media of welfare service delivery.

6.5 RECREATION

6.5.1 National Policies and strategies

The policy on recreation aims at building a strong and healthy nation which can effectively participate in national development. It also seeks to train individuals to levels that can enable them compete in national and international sports to project a good national image. Key strategies for implementing the policy include: promoting and encouraging the development and popularizing amateur and professional sports, development and maintenance of playing fields, stadia and other sports centres and provision of financial assistance to recognized sports associations.

6.5.2 Thrust of Metropolitan Strategy

The promotion, development and popularization of recreation in GAMA have been characterized by limited and unreliable land supply, inadequate logistics, manpower and financial support; inadequate training capacities in sports institutions, lack of alternative recreational facilities and a general lack of commitment to the development of professionalism in sports. Recreation development has tended to be on ad-hoc basis in GAMA. The thrust of the metropolitan strategy will be to rationalize the planning process and mobilise local resources to support recreation development.

6.5.3 Goals and Objectives

The overall goal of the recreation sector in GAMA is:

To evolve an efficient and multi faceted recreational service adequate to meet the varied needs of the population. The following objectives support this goal:

1. To prepare long-term recreation plans.
2. To introduce new recreation service in GAMA.
3. To provide adequate trainers and sports infrastructure.

4. To diversify the sources of funding

5. To encourage community involvement.

6. To maintain existing facilities.

6.5.4 Ensuring Long-Term Planning

One of the main reasons for the weakness in sports and other recreation development is the shortage of land. Also land development has tended to be ad-hoc and centered mainly on sports. These problems may be overcome through effective planning and land acquisition and policing strategies.

(a) Preparation of Long and Medium-Term Plans

There is the need for the Town and Country Planning Department to know well in advance, levels of land requirements as well as the intended uses for incorporation in land use plans for GAMA. The Greater Accra Sports Council and the Parks and Gardens Department should, as a matter of policy, prepare long and medium term plans for recreation and sports to facilitate such discussions. One important area to be addressed by such plans is the planning and development of urban parks.

(b) Provision of Urban Parks

Except for the Children's Park, there are no significant public parks in GAMA. This is very unusual for a metropolitan area of the size of Accra. First, there should be a standard land allocation for parks and gardens on a per capita basis which should be planned as an integral part of urban planning and development, especially in residential communities. Secondly, the private sector may be encouraged to increase their contribution to the development of parks and gardens in GAMA. This may be achieved by allowing the sector to implement, own and maintain some of the parks zoned as open space in planning schemes.

(c) Acquisition and Policing of Land

The agencies for sports and other recreation should, in close collaboration with the Town and Country Planning Department and the Lands Commission, acquire and effectively police lands zoned for their development.

6.5.5 Introducing New Recreation/Sports

The limited resources for and diversified nature of recreation and sports, require that other pastimes and less expensive sports are developed.

(a) Choose Less Costly Sports

It is important to make sports and sports facilities available to as many people as possible. However, this may be beyond what GAMA can afford. One way of making sports available and accessible to a large group of people is to focus on less costly sports such as table tennis, volley ball, basket-ball; and as a means of recreation, such activities as drafts, chess, cards, etc. The development of the beaches is also an inexpensive way of accommodating large numbers of people for sports as well as recreational purposes.

(b) Other Pastimes

Sports and parks are not the only means of recreation. Historical, scientific, and cultural museums and libraries also provide both recreational and educational services. These centres need to be developed to meet the needs of the residents of GAMA. The existence of forts and castles, buildings of historical and cultural interest, a national museum etc. offer potentials which should be tapped.

6.5.6 Providing adequate Trainers and Training Facilities

This may be achieved through the expansion of the sports school at Winneba and, co-operating with MOE, GAMA improving and expanding its own training facilities at schools. Also the private sector should be encouraged to develop sports centres, gymnasia and sports clubs.

6.5.7 Diversifying Sources of Funding

Shortage of funds to support sports and other recreational development is a crucial issue in GAMA. Local initiatives to facilitate the situation include encouragement of private sponsorship, development of professional sports and providing incentives for sportsmen. These may be achieved by:

(a) Incentive for Private Sponsorship

The funds of the National Sports Council and the different sports associations are very small compared to what needs to be done. The NSC cannot compete with other development programmes for public funds, neither are the associations able to finance themselves, thus leaving private sponsorship as the main source of finance. Corporate bodies, private and public, should be encouraged to sponsor sports, special tournament activities, and associations as part of promoting their activities. These expenses should be tax deductible.

(b) Developing Professional Sports

The line between amateur and professional sports is getting thinner. There are several advantages to introducing professional sports: source of income (to clubs and players), recognition, promotion, wider participation through role models, etc., which can help in the provision of better sports facilities and equipment. Professional clubs/groups may also serve as pressure groups to speed up development of better and more effective sports facilities, or they may develop some of these themselves.

(c) Other Financing Methods

A variety of methods have been tried in other countries to finance sports activities: a special lottery just for sports; taxes on selected items for a fixed period; and awards and scholarships by various organizations. These are options which may be tried in GAMA.

6.5.8 Community Participation in the Development, Use and Management of Facilities

One sure way of ensuring effective development of sports and recreational facilities is community involvement in their provision and use. Once it becomes the norm for development, the community should be expected to take interest in policing allocated lands and mobilizing funds and resources for recreation development. Two ways of achieving the objective include:

(a) Community Involvement

It is necessary to get communities involved in the provision of sports, cultural, and other recreational facilities in their neighbourhoods. People should participate in selecting the type of sports, their location and, financing, as well as the management of the facilities for either competitive or non-competitive purposes. Business organizations should also be encouraged to sponsor sports activities in the districts or neighbourhoods in which they are located. This strategy may be further augmented by on-going public education on the usefulness of sports through Keep Fit Clubs. It must therefore be expanded to cover GAMA.

(b) Communal Use of School Facilities

Some schools have adequate sports and other potential recreational facilities which communities can use during the slack period, e.g. evenings and weekends. This can be achieved through the communities contributing financially towards the expansion and/or maintenance of the school facilities. The Assemblies and the GAREO/GES may support this approach by making it part of school development strategy.

6.5.9 Maintaining and Expanding Existing Facilities

GAMA is lucky to have located within it, a reasonably stuffed zoo and a game reserve just a few kilometres drive away from it. The metropolitan population will benefit greatly from these facilities if proper attention is given to their maintenance and expansion.

(a) The Accra Zoo

The Accra Zoo, located at the back of Flag Staff House, has been left to run down over many years. A voluntary group, with assistance from the private sector, has been endeavouring to improve the condition of the zoo. This initiative needs further support from other voluntary groups and public institutions. The Department of Game and Wildlife should take steps to review upwards fees paid by visitors to the zoo to strengthen the revenue base for the running and maintenance of this important city facility.

(b) Game Reserve

The Shai Hills game reserve, which lies outside the study area of GAMA, contains many species of birds and small animals. This area has the potential to be a regional park for wildlife. The park would provide an opportunity for people to travel short distance from Accra and experience wild life in their natural habitat. This project should be developed by the Department of Game and Wildlife in association with community interest groups, business associations, and GAMA and the Dangbe West Assemblies.

6.6 EMERGENCY SERVICES

6.6.1 National Policies and strategies

The policy objectives of the emergency services in Ghana may be broadly stated as the protection of life and property; and prevention and/or mitigation of the effects of disasters. The main strategies for implementing these objectives are: crime prevention and control, enforcement of law and order, fire prevention and suppression, and rescue operations and rehabilitation of victims of natural and man-made disasters.

6.6.2 Thrust of Metropolitan strategy

The delivery of emergency services in GAMA is constrained by inadequate manpower and logistics, poor system of communication, ad-hoc planning (in the case of disaster relief) and inadequate public education and support. The thrust of the metropolitan strategy will be: to concentrate resources on those services that will create public confidence and support.

6.6.3 POLICE SERVICES

The objectives of the police services strategy are:

1. To increase police presence.

2. To increase police effectiveness.

3. To emphasize crime prevention.

4. To restore public confidence.

5. To enhance police welfare.

These objectives may be achieved by:

6.6.3.1 Increasing Police Presence.

(a) Increasing Manpower

GAMA has the highest crime rates in the country. One way of ensuring the safety of the citizens is by increasin the number of policemen who patrol the streets and neighbourhoods of GAMA which at the moment is abo 1 officer for 625 citizens. The goal should be 1 for 500 by the year 2000, that is, increasing the force by abo 100 every year for 10 years beginning in 1990.

(b) Increasing the Number of Police Stations

The Greater Accra Metropolitan Area has 31 police stations, which is 1 police station for about 40,000 peopl Ideally, there should be 1 police station for every 10,000 people. This will be beyond the financial means the Police Services. The strategy will be to provide 1 station for 30,000 people by the year 2000.

(c) Location of Police Station

One of the constraints facing the police is the unavailability of adequate land for police stations and residenti accommodation. This is symptomatic of inadequate long-term planning which can be addressed satisfactori with the cooperation of the Town and Country Planning Department which is responsible for preparing urb land use plans.

6.6.3.2 Increasing Effectiveness

The effectiveness of the police can be increased through improvements in the supply of logistics and mea of communication. This will be achieved through:

(a) Vehicles, Equipment and Materials Supply

Shortage of transportation, lack of communication equipment and materials have prevented prompt inves gation of cases, crime detection and prevention. A forward planning strategy which facilitates gradual bui up of equipment and material supply, vehicles etc. should be pursued. The police needs as part of this strateg to investigate the practicality of using small motorcycles and bicycles for the purpose of patrolling neighbou hoods.

(b) Improve means of Communication

Inadequate access roads, street names and house numbers, and public telephones have prohibited t prevention of crimes, particularly, when they are in progress. The situation will be facilitated by street namin house numbering and improvements to telephone services. The extension of these facilities and services all parts of GAMA will not only facilitate effective functioning of the police, but also general busine communication.

6.6.3.4 Emphasizing Crime Prevention

(a) Establish Neighbourhood Watch Committees

The idea, used in some areas of GAMA, has shown some signs of success in prevention of crimes. The Police should encourage their establishment in all neighbourhoods.

(b) Public Education

Educating the public, especially students, about crimes and methods of prevention can be effective in the long run. This programme, used in limited areas and circumstances, needs to be expanded to all areas of GAMA and supported by the Assemblies through organisation of seminars, inter and intra school debates, etc.

6.6.3.5 Restoring Public Confidence

(a) Public Relations

Often, the police needs the cooperation of the public in criminal investigations. The public is, however, reluctant to provide information for fear of reprisal and lack of police protection and confidentiality. An effective public relations programme aimed at establishing true and good working relationships with the general public should be undertaken through the media and the neighbourhoods watch committees.

6.6.3.6 Enhancing Police Welfare

One area of improving conditions for the police which is considered a priority, is residential accommodation. The great majority of the police live with their families in one-room barrack accommodation. Others are housed in rented premises. The inconveniences of barrack accommodation: lack of privacy, congestion, environmental hazards; coupled with frequent harassments from landlords with ejection notices make present arrangements completely unacceptable.
The situation may be ameliorated by:

(a) Improving Quantity and Quality of Barrack Accommodation

A strategy of making progressive improvements to existing barrack accommodation, introducing innovations in design and increasing room sizes and numbers per officer in new barracks should be pursued by the Police. This way adequate provision may even be made for reserve barracks for use by the police when in GAMA from other parts of the region/country on emergency assignments. It is a policy of the plan to observe a minimum standard of a chamber and a hall per officer.

6.6.4 Fire Service

The objectives of fire service strategy include:

1. Increasing the effectiveness of fire service delivery.
2. Ensuring adequate supply of land.
3. Improving communication and accessibility.
4. Emphasizing prevention.

These objectives may be realized through the adoption of the following strategies:

6.6.4.1 Increasing Effectiveness

(a) Training

The Fire Service is going through a process of learning about ways and means of effectively delivering its services. As a result, the strategies need to focus more on the process rather than on the technology.

(b) Increase Manpower

There is one fighter for every 1540 residents of GAMA. This is very high. Owing to the poor quality or complete absence of fire prevention measures in most constructional works, expansion in industrial establishments and absence of fire codes, there should be one fire fighter for every 1000 residents of GAMA by the year 2000.

3. Maintain and Install Fire Hydrants

There are in about of 500 fire hydrants in GAMA. But the majority of these are choked or buried under silts as a result of poor maintenance. At the same time expansions in industry require augmentation of the numbers of fire hydrants. The strategy is to try and locate all fire hydrants that could be traced, maintain and make them operational. At the same time present and future needs should be assessed and progressively supplied.

6.6.4.2 Ensuring Adequate Supply of Land

(a) Get More Land

One of the problems facing the Fire Service in the establishment of fire stations is shortage of land. The solution lies in long-term planning and cooperation with the Department of Town and Country Planning to secure adequate and strategically located lands to facilitate delivery of fire services. Such lands should be acquired with the help of the Lands Commission and policed by the Fire Service.

6.6.4.3 Improving communication

(a). Provide Access and Telephones

Emergency fire services cannot be provided without street addresses and access roads to the place of fire. All urban renewal, upgrading, sites and services schemes and new development plans must, as a priority, provide street numbering and access roads to all houses. Telephone booths should be provided at vantage points for communicating information on fire outbreaks. Police stations may assist in this regard.

6.6.4.4 Emphasizing Prevention

(a) Develop New Fire Codes

The Fire Service uses British Codes which in most cases are irrelevant to the situation in GAMA. A new fire code must be prepared and regulated by appropriate legislation. The Department of Town and Country Planning and the Works Departments of the Assemblies in GAMA should ensure compliance of buildings to the code before the necessary permits and certificates of occupation are issued to developers.

(b) Public Education

The Fire Service has started a good public education programme on how to prevent fires and save life and property. This programme, though limited in its coverage, is an effective method of prevention which should be expanded to cover the whole of GAMA.

6.6.5 Disaster Relief And Rehabilitation

6.6.5.1 National Policy and Strategies

The nature of disaster relief and rehabilitation service in time of peace is a tricky issue. It addresses a 'what if' situation and, may hold up resources that could otherwise be used to meet pressing national needs. This may account for the tendency to wait till an emergency strikes before making effective plans in Ghana. But in the event of a major catastrophe that will be too late; the nation will be caught completely unprepared. This underscores the urgency for the formulation of a national policy on disaster relief and rehabilitation, the creation of an autonomous body supported by a secretariat, employment of the requisite technical and other manpower; and the preparation of a national disaster preparedness plan. The institutional, regional and other linkages of such a body with existing public and other agencies should be clearly defined and its role backed by an enabling legislation. Such a plan will provide a comprehensive framework based on which other areas of Ghana, including GAMA, may formulate their own relief and rehabilitation plans; taking into consideration their peculiar local conditions. The National Disaster Relief Committee or whatever body would be in charge, should then be in a better position to function effectively.

6.6.5.2 Thrust of Metropolitan Strategy

The recent spate of tremors being recorded in GAMA, coupled with the severity of the one in 1991 (4 on the Richter scale), are indicators that GAMA may be facing a high risk of a major earthquake. Also important are the flooding problems and the environmentally depressing conditions under which large sections of the GAMA population live, and increasingly face the threat of epidemics. These are compelling reasons for GAMA to formulate its own strategies for disaster relief and rehabilitation.

In the absence of the national preparedness plan, the main focus of GAMA's strategy will be on measures to control the causes and, reduce or mitigate effects of possible disasters.

6.6.5.3 Objectives

The objectives of the metropolitan disaster relief and rehabilitation plan will be:

1. To prepare a metropolitan plan for relief and rehabilitation.
2. To encourage inter-agency co-operation in tackling the problem.
3. To create public awareness.
4. To ensure compliance with zoning and building regulations.

The objectives will be achieved through the adoption of the following strategies:

(a) Prepare a GAMA Disaster Relief and Rehabilitation Preparedness Plan

(1) The GAMA assemblies (Accra, Tema and Ga) in collaboration with the National Disaster Relief Committee should take the initiative for the preparation of the plan. They should use the services of public agencies like the Town and Country Planning, Geological Survey and Metropolitan Works Departments, the Environmental Protection Council, the Regional Lands Commission etc with the responsibility of preparing the plan.

(2) The health and environmental aspects of the plan could emanate from or be integrated into the ones being prepared under the Healthy Cities and Sustainable Cities Development Programmes for GAMA.

(3) The plan should address the issue of funding and budgeting for disaster relief and rehabilitation. The two programmes cited in (2) above, the International Community, NGO's (local) and the Business Community in GAMA may be possible sources of funding upon appeals being made to them by the assemblies.

(4) Create a body to be responsible for disaster relief and rehabilitation. It should have the support of a reserve personnel that is adequately trained for such emergency operations. The Services of the Ghana Armed Forces and the Civil Defence Organisation (CDO) may be needed in this case.

(b) Increasing Inter-Agency Co-operation and Collaboration.

(1) The development and service agencies should co-ordinate and collaborate in planning, delivery and maintenance of services.

(2) Co-operation and collaboration should lead to the pooling of resources in public health programmes (eg. health education on environmental sanitation); enforcement of zoning controls - ensuring that unauthorised development areas are denied services by all agencies in favour of an approved direction of growth.

(3) Development and service agencies should make annual budgetary allocations to support disaster relief and rehabilitation preparedness measures, such as public education.

(c) Creating Public Awareness:- This will be through

(1) Public education on the causes of man-made disasters like war, epidemics and the risk they pose to the entire population.

(2) Education on the need to observe zoning and building regulations as effective tools of escaping or mitigating effects of disasters.

(3) Building regulations specifying appropriate designs for conditions like high water table areas, earthquake prone areas and certain soil types and, disseminating information on same.

(4) Education on what to do or not to do in the event of a particular kind of disaster. Specialist agencies like the Geological Survey Department may lead such education.

(d) Compliance with Zoning and Building Regulations

(1) Strengthen inspection teams by building them around the agencies responsible for planning and delivery of services rather than around individual building inspectors, as is the case at the moment.

(2) The agencies responsible for inspections and development control - Town and Country Planning, Metropolitan Works, Urban Roads, Medical Officer of Health Departments should pool resources, vehicles, etc. for their work.

(3) The GAMA assemblies should revise their by-laws on development control to increase their effectiveness. The regulations should make the observance of strategy (c)(3) above mandatory.

(4) Community support should be sought for the enforcement of the disaster plan and building regulations, especially, the aspects that have to do with preventive measures.

Chapter 7

URBAN MANAGEMENT

7.1 INTRODUCTION

7.1 .1 Background

Poor management at both macro and micro level has been a major problem facing the development agencies and service organizations in the metropolitan area. Planning, programming, coordination, manpower and resource management, budgeting, monitoring, controlling and marketing are skills deficient across all sectors of the local economy. Many of these skills were lost with the drain of intellectual capital from the country following the fall of the Second Republic. Rebuilding the management capability of the organizations responsible for development and the delivery of public services in the Greater Accra Metropolitan Area will be a very long term exercise, which will not be without its disappointments.

In setting a framework for urban management in the metropolitan area it is recognized that this must be set within the parameters of national objectives and the programme of reforms taking place within the country. The framework developed through the objectives and strategies supports these changes, but recognition must be given to the peculiarities of Accra and of the need for variance in some government policies with respect to the nation's capital city.

7.1.2 National Objectives and Strategy

Central government will continue to influence the management of the metropolitan area through its legislative, financial, security, construction, constitutional and other roles. However, events in the external environment and the performance of the domestic economy will influence significantly the financial management capabilities of government. Overall government policy for development in the country is set out in the Public Investment Programme. The National Development Planning Commission and the Ministry of Finance and Economic Planning are expected to revise and monitor macro economic policy and resource allocation, leaving government and associated agencies machinery to deliver public services. Delivery performance by government and associated agencies in the past has been poor and the Structural Adjustment Programme (SAP) and other reforms together with foreign assistance programmes are expected to improve management capacity and capability in future. Continued support should be given to these programmes.

7.1.3 Urban Management Goals and Objectives

Urban management is a term used to describe the procedures and practices used by organizations to make decisions, take actions, allocate and monitor resources for the development and delivery of public services to urban areas. Local government is the organization in which overall responsibility for urban management is vested, but many other organizations (both government and private) have specific responsibility for provision of specific services. In the past, local government's management role and authority has been undermined and this has led to the ineffective and uncoordinated delivery of services and haphazard development.

The existing urban management systems are heavily encumbered by ineffective procedures and practices, lack of policy and resources which hinder, rather than facilitate development. The goal for urban management is intended to redress this situation; namely to:

Establish and operate efficient and effective urban management systems and organizations responsible for delivering public services in the Greater Accra Metropolitan Area.

To achieve this goal, the following objectives are designed to give focus to the intent of the urban management strategies which will be outlined below.

strengthen the overall metropolitan management framework and organizations responsible for development and the delivery of public services

ensure greater decentralization, delegation and divestiture of responsibilities for urban management

ensure more effective coordination between agencies and organizations involved in urban planning and development

improve management systems

ensure more effective enforcement and control of urban development

improve revenue generation

improve maintenance practices and procedures

encourage more community participation and involvement in the development process

promote the image of the metropolitan area

7.1.4 Thrust of the Strategy for Urban Management

The primary thrust of the strategy for urban management is aimed at improving the efficiency and effectiveness of agencies and organizations responsible for urban development and the delivery of public services. A major component of the strategy is directed towards strengthening the role of local government as the main coordinating body responsible for the management of development in the metropolitan area. The limited resources of local government, however, restrict its role to that of facilitating rather than actively participating in development - much of which will be left to the corporate, central government and private sectors to execute. The strategy also places a strong emphasis on improving management systems, coordination, maintenance and revenue collection.

7.2 STRATEGY FOR URBAN MANAGEMENT

There are eight elements addressed in the urban management strategy.

7.2.1 Strengthening the Metropolitan Management Framework

The strategy for metropolitan management is developed around the provisions of the Local Government Law 1988 , PNDCL 207, and the yet to be promulgated National Development Planning Law. These two laws provide the framework for planning, coordination, execution of development and the delivery of public services in Ghana. However, the national capital city has functions which require special arrangements with the Government of Ghana and the international community. This calls for slightly different arrangements for the management of Accra than would be the case with other urban centres in Ghana.

The current arrangement for the management of development and the delivery of public services in the metropolitan area is not satisfactory. Nor is it believed that the current system could be made more efficient given the complexity and entrenched nature of the problems facing the metropolitan area - especially the disparity in the resources between the local authorities and organizations responsible for development. Nothing short of substantial restructuring and a long-term coordinated programme of technical and financial

support will be required to enable local government to become the principal coordinator for urban development and the deliverer of public services. This will involve a strong commitment initially by government, together with international assistance to strengthen the management capacity of local government and development agencies.

The following elements are included in the strategy for strengthening the metropolitan management framework.

(a) Establishing a National Capital Territory (NCT)

The urbanized area of Accra covers three local government districts. There is very little coordination between the districts in development matters, and in most cases the development agencies undertake work without consultation with local government. Because the authority of the assemblies in the metropolitan area is weak, local government has very little influence upon development policy nor control over it once it has taken place.

As part of the strategy to strengthen local government in the metropolitan area, the Accra Metropolitan, Tema and Ga Districts should be amalgamated and their combined area designated as the National Capital Territory (NCT). This is intended to give Accra special status as the nation's capital city and to ensure there is sufficient land for the long term development. There should be an interim coordinating arrangement for 3 years until a new assembly structure is in place. The Greater Accra Region would be dissolved and Dangbe East and West Districts incorporated into Eastern Region or some other arrangement. The National Capital Territory should be declared by new legislation - which should also define the function of its government.

(b) National Capital Assembly

New legislation in the form of a national capital territory act should be prepared, setting out the legal powers and responsibilities of the Assembly, the composition of the Assembly, the structure of the executive and management functions. The assembly legislature would comprise elected and agency appointed representatives, the number and proportion of each being determined by the legislation. The Assembly would be run by a chief executive appointed by terms set out in the legislation. The chief executive would recommend the appointment of department heads following approval of the assembly.

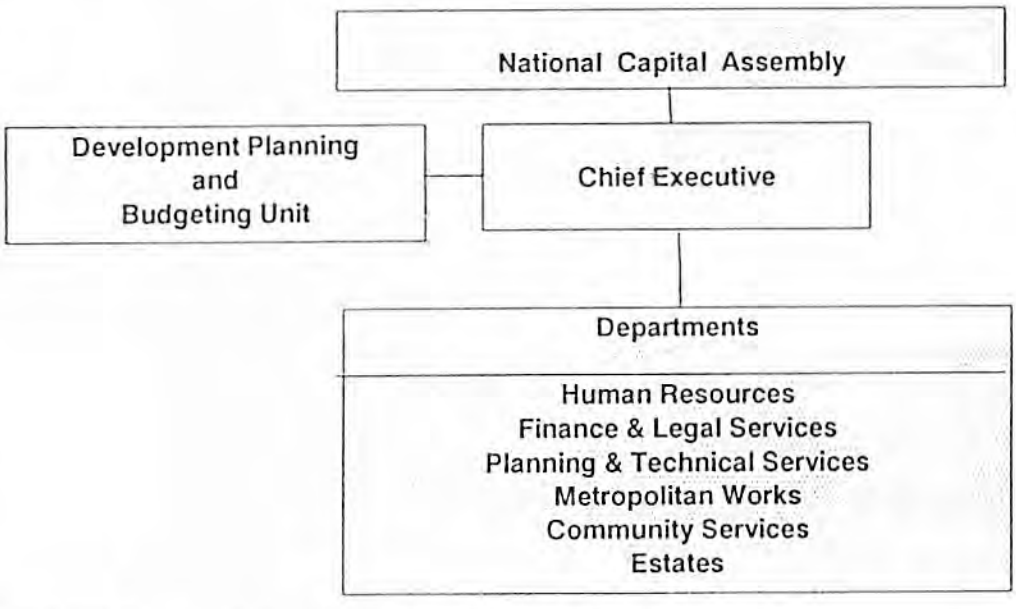


Figure 7.1 Proposed Organization Structure for the National Capital Assembly.

Departmental committees should be appointed comprised of Assembly members, departmental heads, technical personnel and specialists. Each committee would be chaired by an Assembly Member with the department head as secretary. The chief executive would be supported by a secretariat responsible for planning, programming, and budgeting. A proposed organization structure of the National Capital Assembly is shown in Figure 7.1.

There should be appointed a Secretary of State for the Capital Territory. The Chief Executive would liaise with the Secretary of State for the Capital Territory on matters of concern involving national government action. The Secretary should have the authority to intervene on issues - except national defense - affecting the development or delivery of services in the national capital, which may be contrary or not, in the interest of the strategic and subsequent development plans.

(c) Interim Arrangement for Metropolitan Management

It will take some time to prepare the legislation and arrangements for the establishment of a National Capital Assembly. There are expected to be many political and technical problems to overcome. It is necessary therefore to develop an interim arrangement for metropolitan management which will ensure the coordination of development, the delivery of services, and oversee the establishment of the new Assembly. The interim management arrangements involve:

(i) Establishment of a Joint Development Planning Board

Government has already indicated its intent to establish a Joint Development Planning Board for the area proposed as the NCT. The Accra Metropolitan, Tema Municipality and Ga District are to be designated by the National Development Planning Commission as a Special Development Area under Section 14 of the National Development Planning Law. This Joint Development Planning Board will provide an interim management framework for overseeing the adoption and implementation of the strategic plan, the coordination of development projects and delivery of public services. The functions of the board should also be extended to oversee the establishment of the National Capital Assembly. The membership of the Board is to be determined by the Commission.

(ii) Secretariat and Committees for the Joint Development Planning Board

The National Development Planning Commission shall provide the guidelines for the operation of the Joint Planning Development Board. A secretariat is required for the Joint Development Planning Board and the Accra Planning and Development Programme will form the nucleus of the Secretariat. There should be established committees to service the Board. It is expected these would include:

Metropolitan works committee.
Metropolitan community services committee.
Planning and budgeting committee.
National capital district implementation committee.

7.2.2 Decentralization

The government has announced a number of measures aimed at restructuring and decentralizing ministries and associated agencies. The following component of the urban management strategy is intended to support the policy on decentralization.

(a) Transfer of responsibilities to Local Government

(i) Listed departments and agencies to be transferred

Government will continue with the programme of decentralization as prescribed by section 29 and the first schedule of the Local Government Law, 1988 (PNDC Law 207). Departments and agencies to be decentralized and functions transferred to local government include:

Ghana Education Service
Ghana Library Board
Information Services Department
Department of Social Welfare
Department of Community Development
Department of Town and Country Planning
Ghana Highways Authority
Public Works Department
Department of Parks and Gardens
Department of Rural Housing and Cottage Industries
Statistical Service
Births and Deaths Registry
Department of Forestry
Controller and Account-General's Department
Office of the District Medical Officer of Health
Department of Feeder Roads
Fire Service Department
Department of Animal Health and Production
Department of Fisheries
Department of Agricultural Extension Services
Department of Crops Services
Department of Agricultural Engineering

The existing local government structure is not equipped to effect the immediate transfer of many of these departments and agencies, and the proposed national capital assembly will take some time to be established and consolidated. As an interim arrangement ministerial departments and head offices of agencies should take immediate steps to delegate more responsibility for planning, budgeting and disbursement of funds to their respective district offices in GAMA. The district offices, however, need to be strengthened in readiness for transfer to the national capital assembly once it is firmly established.

(ii) Strengthening Planning Capacity of Decentralized Departments

The transfer of the above departments and agencies to local government should be completed within 5 years. As outlined in (i) above, a special package of technical and training assistance is required to improve the planning and budgeting capacity of the decentralized departments and agencies before they are transferred. This assistance would involve establishing a mobile training unit under the National Development Planning Commission. Such an arrangement will ensure a smoother transfer of responsibilities and provide a very effective means of coordination between development and service agencies.

(iii) Interim arrangements for planning, budgeting and disbursing funds for decentralized departments

It is expected to take more than 3 years to build the planning and budgeting capacity of the 22 departments of local government. Transitional arrangements involving the programme of technical assistance to train personnel in decentralized departments of line ministries and agencies (as outlined above) should lead to improved management, planning and budgeting capabilities. However, under the funding arrangements announced by government in January 1991, local government will now dispense funds to the decentralized departments - some of which will continue to operate under the line ministries.

For this to operate effectively there must be an arrangement whereby all decentralized departments not yet transferred to local government submit an annual plan and budget to the Joint Development Planning Board and thence to the respective district assembly for consideration and approval. The approved budget funds would be transferred to the decentralized ministry or agency for dispensing. Support from the mobile training unit will be necessary to facilitate the planning, coordination and transfer of funds by local government under the new disbursement arrangements.

This arrangement should continue until all departments are transferred to local government. Joint working committees comprising representatives from local government (initially the three districts and later the new assembly) and the main ministry or organization involved in the transfer should be set up to monitor implementation of the annual plan for each decentralized department. These committees should remain after the transfer to ensure effective coordination between the ministries and local government at policy, technical and operational levels

(b) Delineation of Responsibilities

The extent to which departments and agencies should be decentralized and responsibilities transferred to local government is not clearly defined in the Local Government Law 1988 (PNDCL 207). Certain functions will be transferred totally, others only partially. There is much confusion already over the functions to be transferred - especially in the fields of education and health. The National Development Planning Commission should establish clear policies setting out the responsibilities of the services (level and type) to be provided by ministries and agencies, and those to be provided under local government. This is essential to avoid confusion, conflict, duplication and waste of resources. Such policies should be monitored and adjusted from time to time by the NDPC.

(c) Decentralization within Government Corporations

While the decentralization of 22 departments and organizations is an important step in strengthening the role of local government, there are other organizations not listed in the Local Governmant Law which should be restructured and possibly transferred to local government. Many of these support the land and housing development industry. A programme of international and government assistance should be formulated to strengthen district offices of the following departments and organizations:

Ghana Water and Sewerage Corporation (GWSC)
Lands Commission
Land Title Registry
Survey Department
Tema Development Corporation
Land Valuation Board

Consideration should be given to the transfer of the district office of the GWSC, Electricity Corporation and Tema Development Corporation to the national capital assembly in future.

(d) Franchising Management

The management of many government run corporations - especially those related to the delivery of public services and housing - is inefficient. Most do not have the resources to improve efficiency and productivity. Government has announced its intention to dispose of a number of corporations and enterprises as part of a programme to divest public assets. Many of these enterprises could be revitalized by franchising the management to the private sector or entering into joint venture arrangements. Such practices are being used increasingly by governments throughout the world to improve the delivery of public services.

Franchising has the advantage that government retains interest in the business, but is relieved of the constraints which are imposed upon many State operated concerns. Areas where franchising should be applied include maintenance, revenue collection, procurement and servicing.

(e) Local Area Management

It is commonly assumed that local government and development agencies should have full control over all aspects of development. This is unrealistic, given the limited resources of the service agencies and local government in the metropolitan area. It is essential, if the management of urban development is to become more effective, that some management responsibilities should be transferred to the community, with local government and service agencies providing sufficient support and resources to ensure that local communities can get on and manage the affairs of their area.

(i) Sub District Councils, Area Councils and Unit Committees

Section 7 of the Local Government Law 1988 provides for the delegation of functions to sub metropolitan district councils, town or area councils or unit committees. The setting up of such bodies will take time and there is a need for clear guidelines to be prepared outlining the delegation of functions of the Assembly. A special project unit should be established within the Assembly to define the functions to be delegated, and the resources, technical and other support needed to make these bodies fully operational. District and area councils would be given authority to prepare and implement their own development plans in association with the proposed National Capital Assembly.

(ii) Community Development Projects

There are also many well established community organizations, of political, religious and special interest concern, which are actively involved in conservation, development, rehabilitation and community services projects. Most of these are paid for from funds raised by the local community, societies, assistance from NGOs, PAMSCAD and other like schemes. Much more support should be given to community initiatives and self help programmes through the provision of logistical and material support by local government.

(iii) Project Assistance Unit

Many community projects are undertaken without the assistance of specialist technicians and experts. Often problems arise which are expensive to rectify. There should be established a project assistance unit in the Assemblies to assist communities to develop projects and to oversee construction. The unit will also act as a link with other development agencies to ensure services are provided at the appropriate stage of construction. Requests should be made for donor assistance in setting up and operating the unit.

7.2.3 Improving Coordination Between Development Agencies

(a) Mechanism for Coordination

There is very poor coordination between development agencies in the metropolitan area at all levels. The Accra Metropolitan Planning Committee, which is supposed to be the principal coordinating body for the AMA, has representation by some development agencies, but in most cases only junior officials attend. Such officers are not in the position to influence policy within their agency and as a result senior management of development agencies plan and develop contrary to local government planning policy. There is also a feeling that coordination slows down the process of development and is therefore more of an inconvenience than a help. The net effect of isolated decision making by agencies is haphazard and uncompleted development all over the metropolitan area.

The steps recommended in the decentralization and management structure strategies will help to improve the planning and programming capability of the development and service agencies. Many of the issues involving the planning and coordination of infrastructure services for development can be dealt with by committee under the interim arrangement for setting up the national capital district assembly. Such a committee would be expected to consist of representatives from the following organizations.

Town and Country Planning Department
State Housing Corporation
Ghana Water and Sewerage Corporation
Architectural and Engineering Services Corporation
Electricity Corporation of Ghana
Post and Telecommunications Corporation
Ghana Highways Authority
Department of Urban Roads
Tema Development Corporation
Lands Commission
Survey Department
Metropolitan Works Department

Additional organizations such as Tema Port Authority, Department of Civil Aviation, Environmental Protection Council could be invited to attend special meetings.

The primary function of the committee would be to approve plans involving multi-sector agencies in construction and development, approve the annual action plan for civil works for the next financial year, approve schedules for commencement date of major works, sort out major difficulties in coordinating works.

(b) Correlation of Agency Boundaries

A major problem in coordinating planning and development in the metropolitan area is the lack of correlation between boundaries adopted by the development agencies. This makes it very difficult to compare and extract information for planning purposes. There is an urgent need to rationalize and draw up consistent boundaries for planning purposes. This matter should be discussed and resolved by the Joint Development Planning Board.

7.2.4 Improved Management Systems

(a) Improved Management Skills

Several departments of the Accra Metropolitan Assembly have been strengthened to improve management capability by a programme of international assistance mainly from the World Bank and the German government. Most other departments have little or no management capacity. The development of the National Capital Assembly incorporating the assemblies of Accra, Tema and Ga will require an expanded programme of assistance to help establish the departments proposed under the national capital assembly structure. This will involve a programme of bilateral aid and technical assistance for up to 5 years before the respective departments (incorporating those designated for transfer under First Schedule of the Local Government Law 1988) are completely operational.

Specific areas where management skills require improvement are:

Planning
Programming
Budgeting
Expenditure and cost control
Project management
Contracts and procurement
Personnel management
Information systems
Quality assurance

(b) Increased Productivity

Productivity in the public sector is low. There are a number of reasons for this: low salaries, poor working conditions, lack of career path and promotion, lack of incentives and low expectations and morale. Increasing productivity within the public sector will take time and involve difficult and painful decisions by government and management. The initial steps in a programme to improve productivity should involve an improvement to the physical work environment and an incentive linked increase in remuneration. This should be followed by measures to strengthen managerial skills, job security and career path planning and team oriented solutions to management and production problems.

(c) Research and Development

The paucity of reliable statistical and other data on the urban environment has made it almost impossible to plan and manage urban development. The Accra Planning and Development Programme has collected a significant amount of base line information to prepare the strategic plan. However, there are serious gaps in information - especially data for housing, the environment and population. It will take many years to develop a good data base of information which can be used for more precise planning, analysis and forecasting.

A programme should be developed by the secretariat supporting the Joint Development Planning Board to collect regular statistical data, records and survey information for planning and plan monitoring purposes. A research unit should be set up to undertake specialized studies and research on environmental issues. The unit will be linked to other research and academic institutes to enable information to be shared and to avoid overlapping of research topics. The unit is expected to concentrate its activities on population, construction, land development, economic, social and environmental issues.

The information collected by the unit should be retained on the Geographic Information System to be set up by the Accra Planning and Development Programme. The geographic information system should be networked to databases of other development agencies to enable information sharing on the urban environment. Such a system will enable organizations to make much more informed decisions on development and to monitor development programmes better.

(d) Information Systems

Information on what is happening in the urban environment is essential for sound decision making. The paucity of available data and the absence of an efficient system for collecting, processing and disseminating information is severely hampering the development of the metropolitan area and the delivery of public services. Information systems should be developed to support various sectors of the economy and should include the following tools:

(i) Geographic Information Systems

These systems involve the collection and storage of environmental, engineering, social, economic and landuse information on a computer database which can be produced and analyzed in map form. A 1:50,000 spatial database is necessary for macro planning purposes. A more comprehensive 1:2,500 mapping system is required for infrastructure and land surveying purposes. Such a unit is intended to be established as part of the Accra Planning and Development Programme.

(ii) Microfilming

Large numbers of important plans and documents are currently stored in offices throughout the city and in most cases there are no duplicate records. Many of these documents have deteriorated and will soon become unusable. If fire should occur, all reliable records would be lost and this would create enormous difficulties - especially in offices such as the Lands Commission, Land Title Registry and the Town and Country Planning Department. To ensure all important records are preserved, a programme to microfilm all engineering, building, drainage, subdivision and other services plans, together with important legal documents should be

undertaken. Technical assistance from donor agencies should be sought to establish a microfilm unit, together with information research and reproduction facilities.

(iii) Computerized Record Keeping System

Local government holds a substantial number of files and records which could provide useful information for planning and programming purposes. Most records are kept manually. Retrieving and analyzing information from archives is a slow and tedious job and many records are lost or mistiled. Appropriate low level computer technology should be introduced to the Town and Country Planning Department to establish a simple information storage and retrieval system.

(iv) Digest of Annual Statistics

Both the private and public sectors require up to date information on population, subdivisions, building commencements and completions, number of establishments by landuse category, etc. for planning, marketing and ordering purposes. There is currently no reliable publication which provides up to date information of this kind. This makes it very difficult to estimate what needs to be produced or imported to meet the expanding needs of the economy. To meet this need, a digest of statistical information should be produced annually by the Planning Department giving up to date information and projections for successive financial years.

(v) Information Dissemination System

There is a serious problem in all government organizations in dissemination of information. Middle management is often uninformed about actions taking place within their organization, and this leads to a great deal of inefficiency within departments with many things left unattended or undone. This costs time and money. As part of the process of improving the dissemination of information, management information systems should be developed with the assistance of local consultancy expertise for all agencies and government organizations. The introduction of information systems should not only ensure better distribution of information, but also more efficient collection and processing of it. Special attention must be given to accelerating the introduction of information systems for disseminating information for emergency, planning and breakdown services.

(vi) Services Directory

In order to assist individuals in organizations, members of the public and visitors to locate persons responsible for different activities involving development and the delivery of public services, a public service directory should be prepared and updated annually.

(vii) Maps and Aerial Photography

The updating of maps and 5 yearly aerial photography is essential for regular updating of spatial information and monitoring. A programme of assistance is required in the Survey Department to update maps which were prepared nearly 30 years ago. Further technical assistance is required to establish an ongoing programme of map updating using digital mapping techniques.

(vii) Enforcement

The enforcement of laws and regulations affecting the metropolitan area is ineffective. This is not due to an unwillingness on behalf of local government to enforce the law, but the inadequate resources to police breaches of the law and an over extended, complex legal system for prosecuting offenders. It will be many years before the enforcement capacity is developed to a level where it can effectively manage the numerous breaches of laws and regulations. Any attempt to improve enforcement must go hand in hand with streamlining laws and procedures for prosecution, a shift towards community responsibility for enforcement and an

education programme designed to improve the public awareness of the law to promote a culture of community support for enforcement.

The National Capital Assembly once it is established should embark upon a programme to:

Review all existing bylaws and regulations and, where necessary, update, amend or replace outdated instruments of enforcement.

Delegate to the sub districts and communities selected powers and responsibilities to enforce the provisions of development plans and regulations.

Review penalty provisions to reflect the severity of breaches in laws and regulations.

Prepare publications and education programmes in local languages which will help the public to understand the provisions of laws and regulations and the need for the community to report breaches of the law to community officials to take action.

Increase resources long term to enforce legislation.

7.2.6 Maintenance

Maintenance is an important element of management which has been seriously neglected by all organizations. It is the principal reason for much of the city's infrastructure having fallen into a state of disrepair, but there is also no culture of maintenance in Ghana and many other African countries. In many cases it is not clear which authority is responsible for maintenance - which often leads to no maintenance being done at all. Private individuals place a low priority upon maintenance and seldom report damage to infrastructure and services - partly because of the low expectation that it will be repaired.

The strategy to improve maintenance involves several components, some of which will require long term commitment by local government and service agencies.

(a) Maintenance Programmes

As an initial step to developing a maintenance programme each development authority and service agency should undertake to prepare an inventory of all its assets, (such as infrastructure, buildings, plant and equipment) including condition and operating costs. From this a maintenance programme should be developed listing the type of maintenance required; for example, breakdown routine, planned and preventative maintenance. Maintenance manuals and programmes should be prepared for agencies and organizations. Such a programme should ensure planned procurement of spare parts. Checks should be made to eliminate overlapping areas of responsibility. Some international technical assistance will be required to prepare maintenance manuals and train personnel to carry out maintenance programmes.

(b) Developing a Maintenance Culture

There should be introduced education programmes designed to make individuals aware of the need to maintain personal and public property, otherwise the prospects of keeping equipment operational and improving the quality of the environment in the metropolitan areas are very limited. Maintenance is not something that people will just suddenly do, it requires a progressive programme of education and reward to develop a culture that is maintenance conscious. The initial programmes should be developed at the school level - as children are a very effective means of conveying ideas and prompting the action by adults. The development of such a programme should be undertaken by the Ministry of Education in association with local government.

(c) Community Maintenance Programmes

It must be recognized that local government and the development agencies do not have the resources to undertake all the maintenance required on public services in the metropolitan area. There is a need to hand responsibility for some aspects of maintenance to local community groups. Maintenance programmes should be drawn up by the community in consultation with the assembly. The assembly should provide materials, plant and, if necessary, supervisors for maintenance work to be undertaken. Such programmes would enable many roads, drainage channels, street lights, hydrants and other services to be maintained at comparatively low cost.

7.2.7 Promotion

Promotion of Accra as the national capital city has been given very little attention in the past - possibly because there is a feeling that there is little to promote. This attitude has been to the detriment of the city's development. There is a need to develop a programme to promote and enhance the image of the city, locally, nationally and internationally.

(a) Publications

New publications in the form of small booklets and brochures are required which can be given to individuals and organizations visiting Accra to find their way around and visit places of interest. The following publications should be prepared as part of the publicity programme.

An A-Z street map of Accra and Tema - including the outer suburbs
Publications on places of interest, events, etc.
A commercial business directory
Annual publication of telephone directory
Directory of municipal services and offices
Business promotion brochure for issue by all High Commissions and Trade Offices
Airport information board showing location of hotels., etc.
Regular publications of what is on in Accra.

(b) One Stop Business Centre

The provision of a one stop business centre has been proposed in the economic strategy. This is essentially for business purposes, but the same should also be used for advising on available community and other public services. The centre should be run by the national capital assembly and be partially funded by the business sector.

(c) Enhancing City Image

The image the public has of the metropolitan area is poor - not only in terms of its appearance, but also in terms of the quality of services provided. There is a low level of expectation that anything can be done to improve the current situation, and this does little to promote pride in the city by its citizens. There is the belief by many that the government is responsible for improving the appearance of the city. Changing such attitudes and rebuilding civic pride will take time. There should be introduced education and public relations programmes aimed at the school and community level - to publicize and award initiatives which have resulted in environmental and other improvements in urban areas. Special use should be made of well known sporting personnel and teams to promote the need for a clean city and that it is every individual's responsibility to ensure he helps keep it that way.

Local government should prepare a programme for city wide improvements concentrating primarily on places of maximum public usage such as public spaces, transportation terminals and the city's main thoroughfares. This programme should be implemented through the support of community groups, with the assembly

providing, where possible, some resources in the way of equipment. In the long term the urban development, environmental and management strategies outlined in the plan should lead to an overall improvement in the city's image.

7.2.8 Improved Revenue collection

(a) Municipal services

Government has taken a number of steps to improve revenue collection throughout the country. Assistance has been given to the Accra Metropolitan Assembly for this purpose. Nevertheless a substantial amount of revenue escapes or is absorbed in high administrative costs of collection. With respect to municipal services, consideration should be given to joint collection arrangements for water, waste collection services and rates. There would be considerable savings to all organizations concerned.

(b) Franchising Revenue Collection

The full or partial privatisation of some municipal services in urban areas would significantly increase accrued revenues to municipal services agencies. Franchising by tender to private companies or organizations the right to bulk buy and distribute water, electricity - especially in areas where there are a substantial number of illegal connections - would greatly decrease escaped revenues. Such companies and organizations, with proper controls, would ensure that all users of the service pay. Franchising greatly reduces administrative costs of collection, but still leaves the organization responsible for providing and maintaining basic infrastructure.

(c) Local Taxes

There are substantial local taxes collected from taxis, parking fees, vehicle worthiness certificates, kiosk holders, etc. Many of these are collected using labour intensive methods and the actual revenue realized is very small. Consideration should be given to improving these individual collection systems by introducing groups of some commonly paid taxes and redirecting others into a more formalized system.

(d) Incentives to Improve Revenue Collection

Many organizations collecting revenue for public services deposit these in central government funds. In many cases much of the revenue collected does not come back to the department or organization collecting it. There is thus very little incentive for departments to ensure all potential revenue is collected. Giving departments and organizations more autonomy to collect revenue and to use any surplus revenue collected above a central agreed target would significantly improve revenue collection systems. Surplus funds could be used to improve facilities, supplement salaries and investment.

(e) Joint Ventures

Section 26 of the Local Government Law 1988 provides for joint venturing arrangements between district assemblies. There is no provision in the law for ventures with the private sector. Legislation is required to enable this to occur. This should be incorporated as an amendment to the Law as there are significant financial and managerial benefits to be gained by involving private/public sector projects or for franchising as described in 7.1.4 above.

(f) Sponsoring Public Facilities

Sponsoring is used very effectively in many countries to provide public facilities such as children's play equipment, seating, parks and small landscaped areas. This practice involves large or prosperous organizations taking reponsibility for particular public facilities on an ongoing basis and receiving public recognition for it. This practice should be encouraged.

Chapter 8

RURAL DEVELOPMENT STRATEGY

8.1 INTRODUCTION

8.1.1 Issues Affecting the Rural Environment

About 68% of land included in the Strategic Plan is rural. Most of this area is under small scale subsistence cultivation with a few private company farms involved in growing export fruits. The economic base of the rural sector is weak and its development is hampered by lack of capital, fragmented land holdings, and poor farming practices. Rural population growth is expected to decline as the result of increased migration to the urban area. Most settlements are without basic services and roads are very poor. The eastern part of Ga district is separated from the west by the Densu river with no road connection. This is a major impediment to the development of the western area of Ga district. The expansion of the metropolitan area will create new opportunities for investment and improvement to the rural way of life, but unless this is managed carefully the rural sector resources could be exhausted, and the positive benefits of urbanization lost.

8.1.2 Objectives

The goal for the rural sector is "**The achievement of a more diversified economy to support the rural community through development which will lead to long-term sustainability and management of rural resources**". The following objectives support this goal:

To encourage agriculture development which will result in more efficient land management and productivity.

To progressively improve rural infrastructure and community services.

To support the development of recreational, leisure and tourist facilities.

To support the development of market centre towns to aid rural development.

To support programmes to restore, conserve and protect the landscape, soils, and water quality in river and stream catchments.

To secure and protect sites required for public utilities

8.2 RURAL DEVELOPMENT STRATEGIES

The primary thrust of the rural strategy is aimed at improving the economic base of rural communities, through improved farming, creation of new employment opportunities, improvements to communications and social services. The strategy supports the medium term agriculture development programme for Ghana. It remains for district assemblies in the plan area to implement this programme. Specific subsector strategies designed to meet the rural objectives of the Plan are outlined below.

8.2.1 Land Reform

Current land tenure practices are a severe impediment to improvements in agriculture production and short of direct government intervention and reallocation, land reform must be viewed as a long-term process. Resentment of contract or private farming practice by the rural peasantry makes rapid change in farming

production difficult. The practice of share farming is well established and this provides a sound basis for transition towards more co-operative farming practice. However, the need for a system to guarantee leases, boundaries and tenureship must go hand in hand with this if reforms are to be accepted. These are matters which government action through the Ministries of Agriculture, Justice and Land and Natural Resources is required.

8.2.2 Improved Farm Production

Current farming practices in the rural areas are extremely inefficient. Land reform, together with co-operative arrangements for time sharing of labour, storage and marketing would improve current land use practice, productivity and access to markets. The plan supports initiatives which encourage co-operative ventures linked to contract buying - especially for export. Tropical fruit export has significant potential, because of proximity to Kotoka International Airport. However, unless the delivery time, quality and quantity are improved this potential will not be realized. Agriculture policy should be directed to mixed farming by private companies or cooperatives for domestic and longer term export markets. The Weija catchment offers particular advantage to capitalize on the use of small scale irrigation projects.

8.2.3 Infrastructure

(a) Roads

Poor roads, water supply, drainage and telecommunications are major obstacles to the development of the rural area. There is no passable road between the western and eastern parts of Ga District. The construction of a road between Ashaladza and Ayikaidoblo across the Densu River is vital to the district's economic development. This will open up opportunities for small scale irrigation farming along the Western Bank of the Densu. Improvements to the following roads in order of priority should be taken as Department of Feeder Roads projects:

Amasaman to Ashaladza (including a bridge)
Mile 9 loop road to Bortianor and Mile 13
Ashaladza to Galuluya on Cape Coast road
Ashaladza to Obuom via Kweku Panfo Junction
Pokuase to Mayera
Medie to Adzen Kotoku
Oyibi to Ashaiman

These are shown in Fig. 8.1.

(b) Water Supply

Many rural villages are without adequate water supply or are drawing unpotable water from streams and rivers. A programme is well advanced to provide potable water for all villages in the rural area. Water for irrigation from streams is unreliable, however, there is potential to construct dam structures for crop irrigation and livestock watering. Small scale initiatives supported by the Ministry of Agriculture should be encouraged to increase water storage capacity in the area.

Priority must be given to repairing the 100 mm pipeline to Amasaman which has not been operational for over 8 years. Provision should be made for a 150 mm line to Bortianor west of Accra for the development of a proposed tourism and recreational zone along the coastline and to service the existing settlements in this area.

(c) Sanitation

Few towns and settlements in the rural area have adequate toilet and ablution facilities. At least one (12 seat) Kumasi Ventilated Improved Pit (KVIP) should be provided in every settlement of over 500 persons and one (24 seat) per 1500 population. In settlements serviced by reticulated water a general policy of introducing septic tanks should be maintained. The construction of soakaway pits close to kitchens and washrooms should be encouraged in preference to throwing water on the ground.

The provision of a waste collection service is not cost effective in rural areas given the low volume and the distances to be traveled to collect it. There should be identified a small site (free of environmental problems) in all settlements over 1000 population for the dumping of solid waste - in particular inorganic waste. In smaller settlements the burying of waste should be encouraged.

Industries which use large quantities of water for cleaning, processing or manufacturing should be required to treat wastes on-site before being discharged into the natural drainage channels. Solid waste by-products from processing and manufacturing should be disposed of by incineration or burial. For large institutions such as prisons, military barracks or construction camps, provision should be made for on-site treatment and disposal of solid and liquid wastes.

(d) Drainage

Many small settlements in rural areas have very poorly developed drainage systems, consequently foundations become undermined, rising damp occurs in wall and pools of water lay open to become a breeding ground for mosquitoes and other disease carrying insects. Simple drainage plans should be prepared and implemented for all settlements with a population of over 500 persons. The schemes would involve minimal capital outlays and could be supervised by an engineer doing national service.

(d) Electricity

The Electricity Corporation of Ghana has a strategy to supply electricity to all settlements in the country which can meet the contribution required to be connected to the national grid. Most larger settlements to the east of the Densu river can be connected to the national grid via the 33 KV line to Nsawam. Settlements will be connected to this and the Dodawa line as demanded. Provision will need to be made for an 11KV line to Bortianor to support future tourist and recreation facilities in this area.

8.2.4 Market Centre Towns

All villages and towns have markets which operate on one or more days of the week. Some towns, because of their size and location provide important community, transportation and business services. In order to provide improved services to rural sector towns several towns have been selected as market centre towns. Each market centre town will have a clinic, junior secondary school, police station, post office and petrol station. The designated market centre towns are:

Ashaladza	Adzen Kotoku	Pokuase
Manhean	Mayera	Obuom
Oyibi	Apolonia	Katamanso
Kpone		Bortianor.

Amasaman will have a greater range of services than the market centre towns. Its function will become more of a subregional centre to strengthen its position as the Ga District capital. Amasaman's trading base is expected to expand from passing traffic on the Kumasi - Accra Road. Strict controls will need to be placed on the expansion of Amasaman to avoid it becoming a commuter dormitory town of Accra. If rapid expansion were to take place in Amasaman and other road settlements, the demand for infrastructure services could

not be met and a significant deterioration in the environmental conditions in these towns would occur. Traffic flows along the highway will also be impeded.

8.2.5 Industrial Development

Prospects for industrial development in rural areas are not good. Poor communications, services, access to skilled labour, reliability of supply of raw materials and produce are not attractive to industry. The strategy for industry recognizes that Accra will continue to provide much of the metropolitan area's industrial employment, but support must be given to small scale industries which service the rural community. The strategy to develop market centre towns is designed to support the establishment of ancillary services and repair industries to better service the rural economy.

Quarrying will become an important rural industry supplying construction material to the metropolitan area. It is intended that two large scale plants will be permitted near Mayera. Malam Quarry will be closed when resources are depleted. Small scale quarrying operations will be prohibited or severely restricted.

8.2.6 Recreation and Leisure

The rural environment provides limited opportunities for tourism and recreation development. The strategy for tourism and recreation seeks to support initiatives that provide low key - small scale enterprises of interest to tourists and visitors. Weija reservoir offers potential for establishing retreat housing and conference facilities and water sports - provided environmental problems with weeds on the lake can be solved. Bortianor is intended to be developed as a major recreation and tourist centre. A detailed development plan will need to be prepared for this area paying particular attention to coastal erosion, pollution and intensity of development. The Akuapim hills and the area near Peduase Lodge provide opportunities for day trip retreats for the urban population. Any development along the escarpment of the Akuapim hills would need to be of low intensity and blend in with the landscape. Shai Hills outside the Strategic Plan area has significant potential as a wild life recreational centre.

8.2.7 Conservation

The Densu River is the main catchment for the Weija Dam, the major reservoir for supply of water to Accra. Protection of this catchment from pollution is essential if water treatment costs and potability are to be maintained. Development below the Akuapim Hills will be constrained by the green belt to prevent urbanization of the Densu catchment. Afforestation is encouraged to stabilize soils and enhance the visual appearance of the rural environment. Strict conditions will be imposed upon quarrying and sand winning operations to avoid damage to the environment especially from flooding and erosion.

In support of the strategy for conservation, development will be restricted in prominent hill areas and wetlands of ecological importance. The Sakumo I/Densu Delta and Sakomo II lagoons should be given protection as Ramsar sites under the Ramsar Convention. Major drainage works will be required on the periphery of the lagoons to prevent further pollution of the lagoon water from urban run. The entrance to the Sakumo II lagoon at Tema should be widened to improve tidal flushing.

8.2.8 Public Utilitiy Sites

There are important public utilities, such as prisons, military, cemeteries, water storage, waste dumps, utility and telecommunication and avaiation, for which land is required in urban areas. Some of these are required for protection and security purposes, operations, conservation and health reasons. The plan ensures protection of all existing sites, but further sites will need to be identified, secured and protected during the period of the plan. Provision should be made for the following:

Additional military land north west of Michel Camp.
Cemetery sites of 150 ha on the Nsawam, Madina and Aksombo Roads.

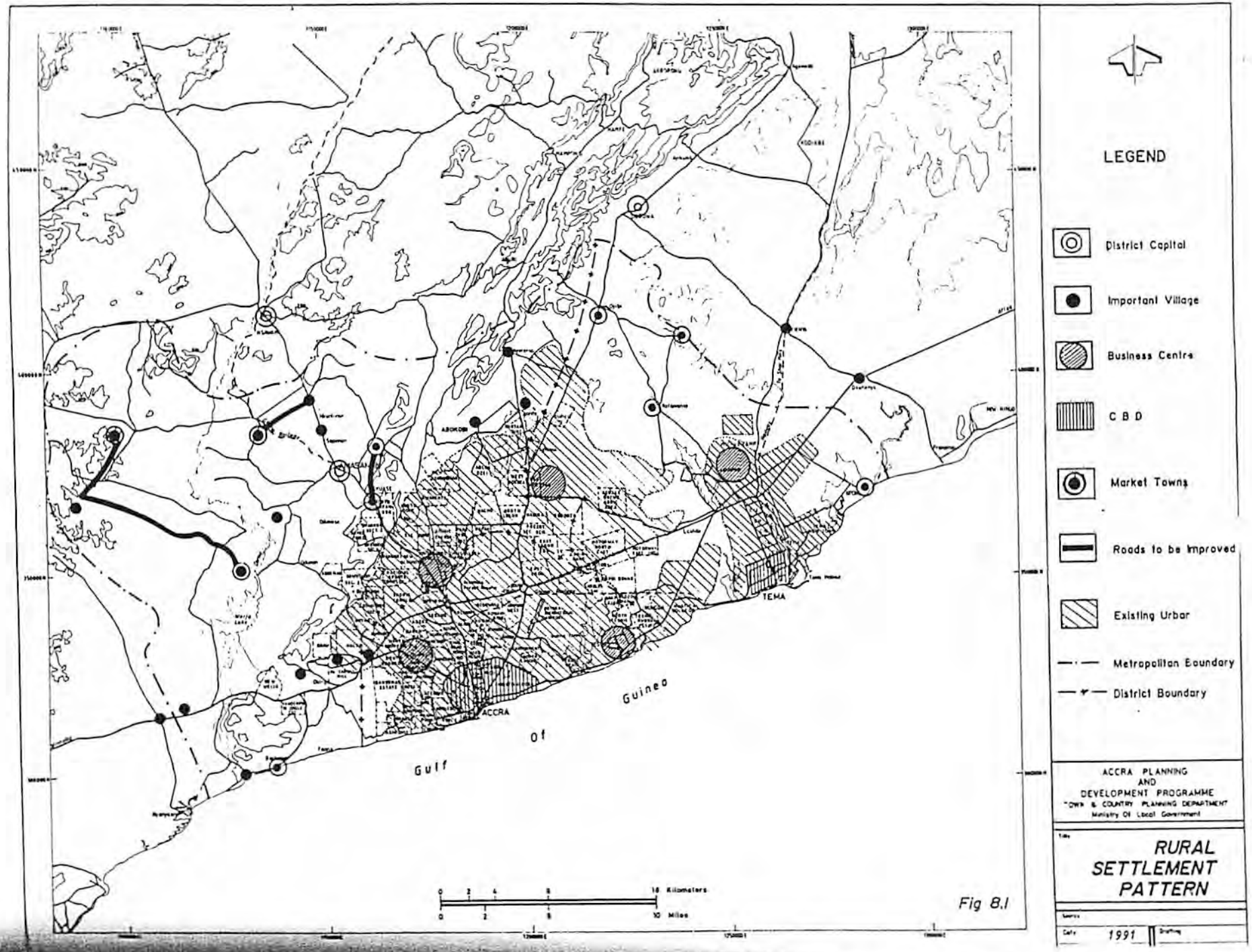

LEGEND
District Capital
Important Village
Business Centre
C B D
Market Towns
Roads to be Improved
Existing Urbar
Metropolitan Boundary
District Boundary
ACCRA PLANNING AND DEVELOPMENT PROGRAMME
TOWN & COUNTRY PLANNING DEPARTMENT
Ministry Of Local Government
RURAL SETTLEMENT PATTERN
1991
ACCRA
TEMA
ABOKOBI
Gulf of Guinea
0 2 4 6 10 Kilometers
0 2 6 10 Miles

Fig 8.1

Water reservoir and catchment area on Yiribi stream near Afienya.
Waste Dump sites of 50 ha.
Route for proposed Kpong-Tema water irrigation cannal.
Corridors for 11 KVA overhead distribution lines.
Sites for additional television and radio masts.
Site for additional sanitorium and prison.
Site for new international and domestic airport.
Corridor for rapid transit system for new airport site.
Site for a Sports Complex.

Before sites are selected for major public utilities, a thorough environmental impact assessment should be undertaken. Special attention must be given to burial sites.

Chapter 9

IMPLEMENTATION

9.1 INTRODUCTION

Implementation is the most difficult part of planning: it requires commitment and most plans fail for this reason. Commitment involves agreement on what should be done, which organizations should do it, how and when actions should be taken. Unless these commitments are clearly understood and acknowledged then the prospects of the Strategic Plan being successfully implemented are low. The following section describes the mechanisms and instruments for the plan's implementation. It is recognized that there are still many issues which cannot be resolved at this stage in time, but the plan provides the framework for addressing these later. There are 5 components to implementation of the Strategic Plan.

9.2 NEW ADMINISTRATIVE FRAMEWORK FOR GAMA

The Strategic Plan calls for the establishment of a new administrative structure for GAMA. The first step in this process is the setting up of the Joint Development Planning Board as an interim arrangement to the setting up of a single metropolitan (but decentralized) authority. Once the board is established it should, in conjunction with carrying out its coordination functions, discuss, consult and recommend a preferred metropolitan management structure and the necessary legislation to be passed to put it in place. It is expected to take five (5) years to establish the new administrative structure for the management of the national capital.

9.3 ADOPTION OF THE STRATEGIC PLAN

For the plan to become official and binding it must be adopted by the Joint Development Planning Board, the district assemblies in GAMA and the government concurrently. This will go through several stages: initial acceptance by the Board as the draft plan, a consultation process, a second review and final adoption. This process is expected to take one year.

9.4 INSTRUMENTS OF PLAN IMPLEMENTATION

The objectives and strategies outlined in this plan document provide the framework for implementation over the next 20 years. However, more specific plans are required to identify projects and programmes to be undertaken in the medium and short term. The following planning instruments will be used to assist with the implementation of the Strategic Plan. These plans should be prepared, updated and reviewed on an annual or regular basis of not less than 5 years.

9.4.1 Five Year Development Plan

Volume 3 is the first five year plan and this is scheduled to commence in January 1993. This document must be adopted by the Joint Development Planning Board in 1992 and be reviewed and updated over successive years. The Board will approve the five year development plan and the annual plan but execution will be the responsibility of local government until a new overall metropolitan management structure is established. The review of the plan must be coordinated closely with the National Development Planning Commission and the formulation of the national budget so that specific programmes and projects are included in the Public Investment Programme or future national plans. The five year plan should outline all ongoing and new projects and programmes, time schedules and financial inputs and the agencies and organizations involved in implementation. A programmed release of funds through a financial plan is essential.

9.4.2 Action Plan

The Action Plan is a 1 year plan, whose contents are extracted from the five year development plan. It should be prepared concurrently with the review of the five year plan. The draft plan should be completed by September each year. It will become the basis of the budget submission to government for a commitment of public sector funds. The final plan will be published after the budget release in January. The Action Plan is very detailed, defining the full extent of projects and project components for the year and the budget for expenditure and contributions by development agencies. The first Annual Action Plan will be prepared for 1993. The draft plan should be approved annually in August by the Joint Development Planning Board under the interim arrangements and thence by the new metropolitan authority.

Figure 9.1 shows the annual process for reviewing and preparing action plans. A similar process would be followed to prepare financial, area and local development plans. There are specialized plans and programmes of individual service and development agencies which must be linked in with this process. The secretariat to the Joint Development Planning Board will be responsible for coordinating these various inputs.

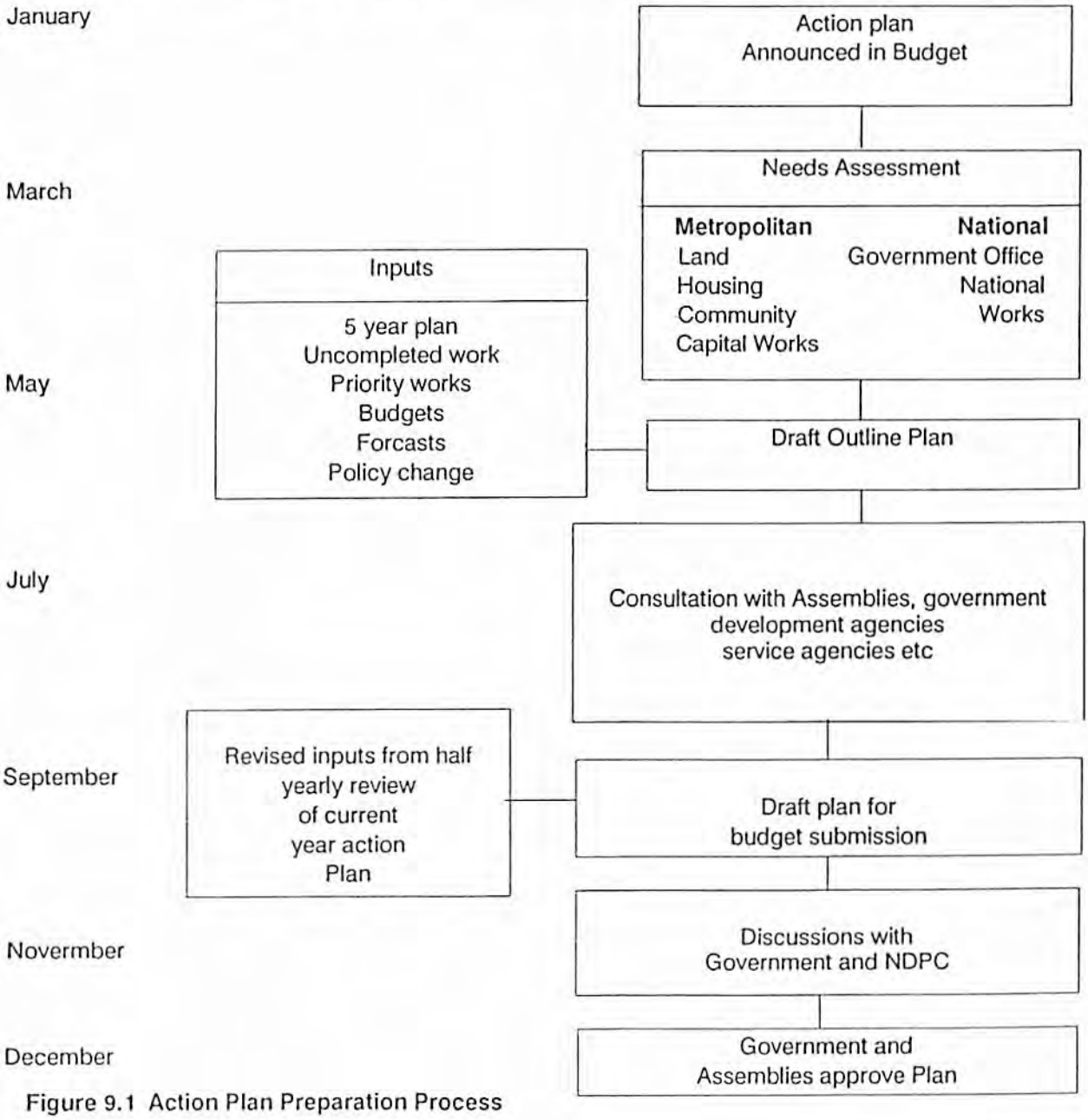


Figure 9.1 Action Plan Preparation Process

9.4.3 Financial Plan

In order to ensure the timely release of funds for implementation of the annual action plans, a financial plan should be prepared prior to and finalized after the release of the budget. The financial plan should indicate monthly installments to be paid on all projects and programmes in the budget for the year. In addition to outlays, the plan should also detail anticipated revenue and other sources of funds anticipated on a monthly basis. Income and expenditure should be carefully monitored to ensure that there is not an over or under commitment of funds.

9.4.4 Area Development Plans (sub district plans)

These plans set out specific policies and proposals for development at a subdistrict council or community level. They address a wide range of local planning and development issues. The preparation of area development plans will be undertaken on a needs rather than a time basis, however, regular reviews of not less than five years of area development plans must be undertaken. Most development plans will be prepared by the Town and Country Planning Department with assistance from consultants.

9.4.5 Local Development Plans

These are specific project and programme oriented plans. They may cover the upgrading of an urban area or a building project. If the project is to be funded by local or central government, the details will need to be included in the action and financial plans. There is no time framework for the preparation of a local development plan. Local development plans are very detailed and may not necessarily be prepared by local government or a development agency. However, large projects such as a subregional business centre or market are an intergral part of the overall planning process. Some local development plans will be listed in both the 5 year and action plans as they will require commitment of public funds and resources to be implemented.

9.4.6 Special Plans

There will be a need to prepare special plans which are not necessarily time or resource specific. Currently, there is no civil emergency plan for GAMA to deal with natural disasters, such as earthquake, fire, flooding and epidemics. Plans are also required to handle security, chemical release, pollution, major accident emergency such as air disaster or oil spillage. These should be prepared immediately by emergency services and armed forces to ensure public safety can be maintained in the event of an emergency arising. Such plans require testing by exercises to identify weaknesses in coordination and publicity to ensure that the public is aware of actions to be taken.

9.5 ORDER AND LEGISLATION

There are serveral legal instruments which must be enacted or amended to implement the plan. These include:

An order to establish the Joint Development Planning Board

A law designating the national capital territory

Enactment of special legislation to establish an authority or assembly with powers to administer the national capital territory

Review of legislation affecting different service and development agencies' functions to identify inconsistences in legislation which have become impediments to the coordination process.

Amend legislation to restructure Land Tribunal, establish traditional land trusts, and a land bank.

9.6 PLANNING SECRETARIAT

A secretariat to support the implementation of the plan should be established at the same time as the Joint Development Planning Board is inaugurated. The secretariat should be a multidisciplinary team of specialists drawn from planning, economic, engeneering, accounting and statistical backgrounds. The cost of this should come from the district assemblies in GAMA and central government on a proportional basis. Some technical assistance may be required from donor agency sources for equipment and training.