



PART V

Structure Plan (SP) for Greater Kumasi Conurbation



Chapter 10 Land Use Management System

10.1 Land Use Management Systems and Procedure

Land use control is to be enforced on the development activities of people and corporates on the land whose right and transactions are secured by the land system of the Nation. The land transactions and development permit system and procedures through which land use is controlled in Ghana are shown in Figures 10.1.1 and 10.1.2 respectively and outlined below.

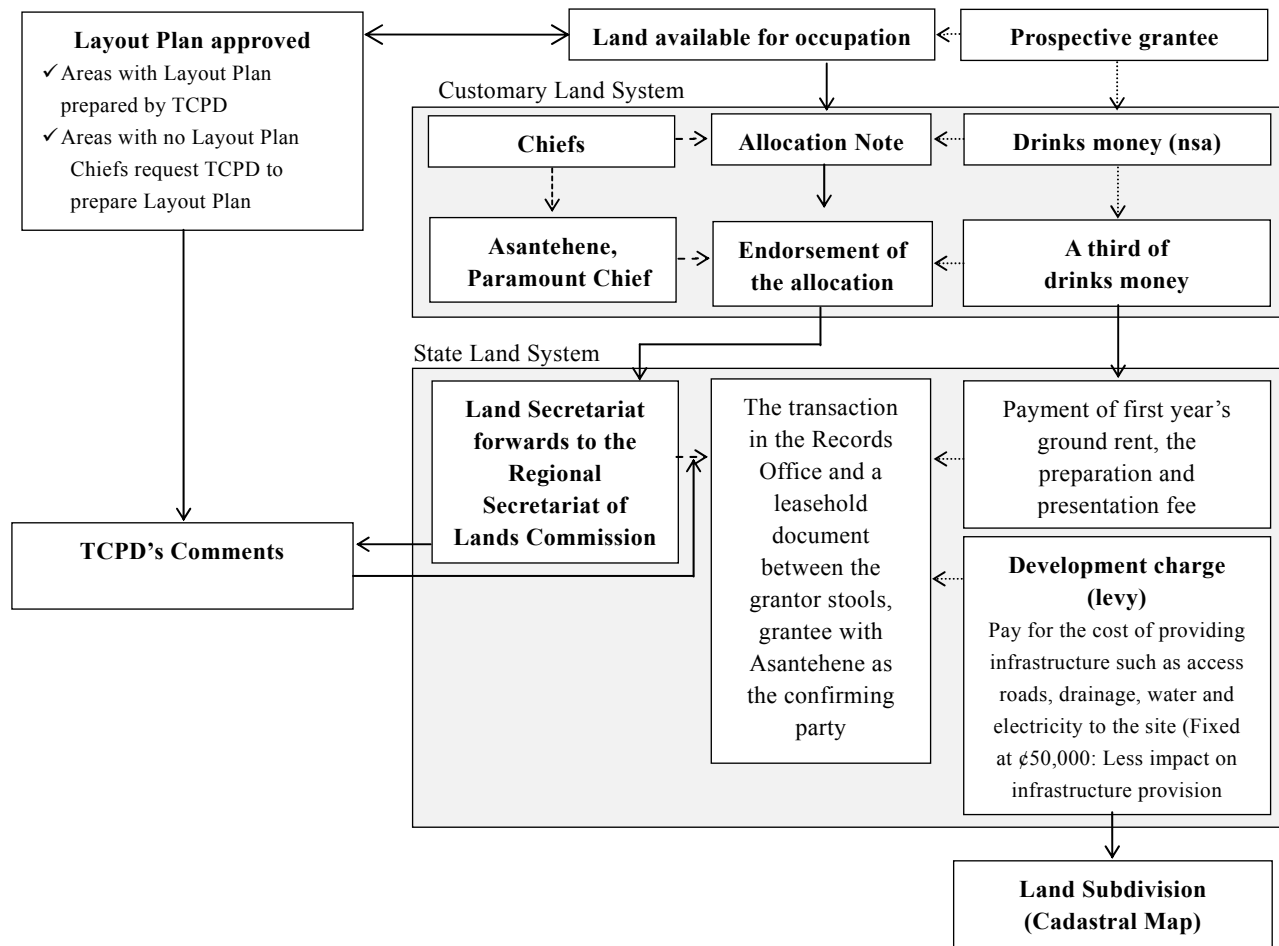


Figure 10.1.1 Land Transaction System and Procedure

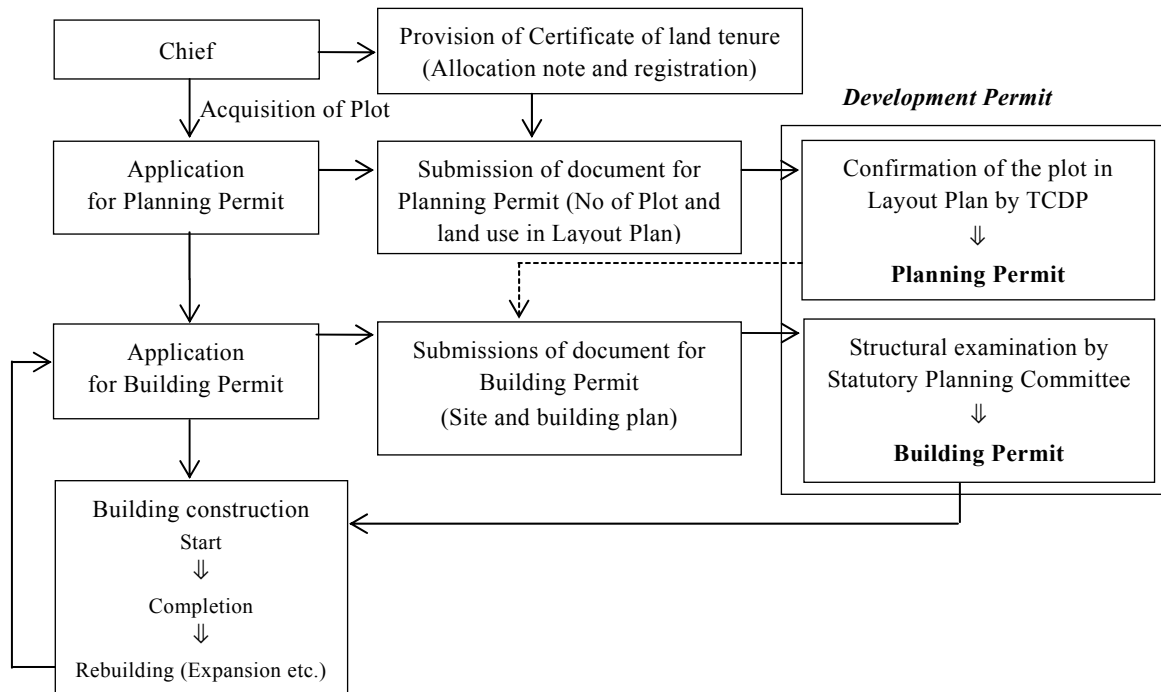


Figure 10.1.2 Development Permit System and Procedure

The Ghana land system features a dualism: combination of traditional and state land systems. Land rights and transactions (lease contract) cannot be registered in the State land system (office) for securing the land right without a chief's allocation note and Asantehene's endorsement on it. As land rights are registered through this procedure, most stool land which is not yet developed is not registered in the land office of the government. This fact makes it very difficult for prospective buyers (land seekers for housing, industries and others) to find the land right holders to negotiate for land transactions in contrast with the countries with modern land market systems based on a land registration system where such information on plots such as boundaries and sizes, legal owners and vested/attached rights (mortgages, leases and others) are easily obtainable at the land registration offices of the Government. This land system imposes a long time and large cost for land transactions so as to hinder an efficient land market, and subsequently has relevance to land use management practices as discussed below.

Land use and building control in Ghana is enforced under a layout plan system based on which the development permit consisting of a planning permit and building permit is granted as shown in Figure 10.1.2. The plot owner to whom the lease right is transferred from the Chief makes an application for confirmation (planning permit) of his plot in the layout plan by TCPD. The application documents include a map indicating his plot and its block number in the copy of the layout plan which the Chief is due to provide. Accordingly, with the confirmation by TCDP, the plot owner submits site and building plans to TCPD for a building permit.

However, without evidence of title to any land proposed for building development, local authorities cannot issue the necessary consent or permits for project

implementation. As stated above, the traditional land system takes time to provide necessary documents on land title, especially disputable land, so that it also delays the issuance of development permits by the local government. With rapid physical development all over, land-related disputes contribute to push developers into developing their properties illegally instead of losing huge sums used in acquiring such lands.

10.2 Present Conditions of Land Use and Building Enforcement

It is reported that the majority of buildings in terms of number in Kumasi were without development or building permits. In fact, unauthorized houses totalled 80% as of around 2002, but the situation was improved to around to 60 % at present.

The many factors which are attributed to the growth of unauthorized building have been generally claimed and reported as follows:

a) Socio-economic

1. Low level of income, 2. Low level of education, 3. Rural-urban migration,
4. High rent charges elsewhere, 5. Employment, 6. Social contacts

b) Cultural

1. Marriage, 2. Religious reasons, 3. Family ties

c) Physical

1. Advantageous location of the area, 2. The nature of the land

d) Political

1. Inadequate housing policy by government, 2. Political instability (conflict),
3. Lack of political will to prevent unauthorised structures

e) Historical

1. Ancestral lineage

f) Institutional

1. Delays in getting building documents, 2. Lack of enforcement of building regulations, 3. Lack of sanctions against offenders.

It is stated that the reasons for the delay in issuing the permits include the following:

- The requirement for a lease (land certification) before one applies for a permit has also been cited as a major obstacle. Acquisition of lease documents or title, to obtain the granting of a permit is not easy. It takes a long time getting permits not to mention the acquisition of leases
- Flawed building development proposals not meeting required standards and requirements that causes further delays when considering applications
- Appointed approving planning Committees do not meet regularly.

District Governments identified the problems on development permits and

management in their administrations as follows:

- Out dated base maps in built up areas
- Lack of base maps in new areas
- Inadequate logistics
- Delays and non-release of funds for plan preparation activities
- Haphazardous development due to the collusion of charlatans with landowners.
- Lack of a comprehensive study (Strategic plan)
- Litigation by landowners
- Physical development outpacing scheme/layout preparation

Poor development management seems to be due to the following situation:

- Non adherence to approved plan proposals
- Weak enforcement of legislations/laws on physical development
- Non respect to layout plans by land owners and prospective developers
- Non availability of funds for development inspections and abatement of nuisances
- Lack of discipline on the part of prospective developers/landowners culminating in unauthorized development
- Some Assembly members thwarting the efforts of development managers
- Mutilation of scheme/layout proposals by some staff colluding with landowners/prospective developers.
- Litigation against effective development monitoring.

10.3 Emerging Land Use without Development Permits

While land use without development permits may have been creating an inappropriate urban environment in their localities, the major symptoms caused by the no-permit development in the urban areas of Kumasi and the suburban areas in the surrounding districts are outlined as follows:

a) Densification of buildings

Building expansion/annexation, addition of buildings on the same plot, subdivision and demolish/rebuilding for accommodating more people and families, which all need building permits, are carried out mostly without building permits, resulting in the expansion of high-density areas encroaching over the low-density areas.

b) Proliferation of commercial uses

Since trading, including formal and informal, is one of the popular means of livelihood for people of Kumasi, which is a large commercial centre in Ghana, plots of land are likely to be used for commercial purposes here and there even in residential areas, more specifically along the roads (either arterial or collector roads). It seems that although changes of land use to commercial use is subject to a building permit, commercial activities on the plots are de facto recognition.

- c) Encroachment of buildings in water courses and vegetation areas that are meant to be conserved

Narrow green belts along water courses stretching into Kumasi built-up areas have been left as unusable land for building when developed because of risks of flooding. As the urban areas are chocked with buildings nowadays, these unusable lands became valuable for housing and other urban uses. Accordingly, buildings encroached on the green belt and water courses. The permanent buildings along the rivers have been earmarked for demolition by KMA.

- d) Disorderly development in suburban areas without layout plans

In some localities in the suburban areas of Greater Kumasi, land development and building without layout plans are in progress either with or without knowledge of the layout plan.

10.4 Government Measures to Improve Land Use Management

The Ghana Government has been taking measures to improve the situation of no-permit development and building among which major ones are listed below:

- a) Time-shortening of decision-making for development permits

The government set up the 1996 National Building Regulation¹ L.I. 1630 Section 8 (1 and 2) aiming at avoiding unreasonable delays by setting a time limit of three months for decision making on the application for a permit, and commencement of development after the expiry of three months.

- b) Strengthening enforcement of development permit regulation

KMA commenced an exercise to demolish unauthorised buildings sited on watercourses in order to stop what authorities described as human-induced flooding in the city. KMA expressed the hope that the exercise would serve as a deterrent to other people who would want to flout the assembly's bye-laws. This is in line with the presidential directive that all structures built on watercourses should be demolished to minimise the devastating effects of floods

- c) Land Administration Project

The LAP is aimed to create an effective land use management system through establishing a spatial planning system coupled with an improved land market based on reformed land registration systems. The project components include the following:

- Harmonizing Land Policy and Regulatory Framework for sustainable Land

¹ 1996 National Building Regulation

"Where a person submits an application for a building permit the District Planning Authority shall notify him within seven days of the receipt of the application and shall within a period of three months thereafter notify the applicant whether the application is granted or refused". It goes on to conclude that "an applicant not informed about the grant or refusal of his/her application may after the expiry of the three months commence development on the basis that the application is acceptable to the District Planning Authority"

Administration.

- Institutional Reform and Development.
- Improving Land Titling, Registration, Valuation, Land Use Planning and Information Systems and
- Project Management, Monitoring and Evaluation.

Efficient and equitable land markets are a prerequisite for well-functioning cities, more specifically, for land use. Efficient functioning of land markets requires efficient and updated land registration systems which clearly indicate legal ownership of land.

d) Land Use and Planning Bill

The bill is to establish a Spatial Planning System which sets forth spatial plans including a Spatial Development Framework and Structure Plan containing Land Use Plans. Land use management is designed to be exercised through the spatial plans; more specifically, in such a system that development and building permits are granted only in conformity with the spatial plans. For making this system work efficiently special attentions in the bill are given to the following items, in other words so as to address some important problems hindering effective land use management as specified in the preceding section. These include manifestation of prohibiting development without a permit, enforcement notice for immediate stop, notice to the owners who are or have been constructing a building, order to remove, compulsory execution, penal regulations, and others which are outlined below.

- Prohibiting development without a permit: (1) A physical development shall not be carried out in a district without prior approval in the form of a written permit granted by the district planning authority. (2) The procedure and manner for securing a permit under subsection (1) shall be prescribed by Regulations.
- Enforcement Notices to the owner occupier or developer without development permit, demanding the immediate stoppage of the execution of any development or works carried out contrary to this Act (Article 117).
- Notice to the owner occupier or developer who (a) is constructing a building or (b) has constructed a building or (c) is working or executing a work.
- Order to remove: The District Assembly shall, by notice order the owner, occupier or developer within sixty (60) days to remove, alter or pull down the building, structure, physical development or other work at the expense of the owner, occupier or developer.
- Compulsory execution: The district planning authority may carry out the removal, alteration or pulling down, and recover the expense from the owner, occupier or developer, as if it were a debt from that person to the District Assembly.
- Penal regulation: Conviction results in a fine not exceeding five hundred penalty units or to a term of imprisonment not exceeding six months.

Chapter 11 Sub-Regional Land Use Plan for Structure Plan for Greater Kumasi Conurbation

11.1 Sub-Regional Land Use Plan for Greater Kumasi Conurbation

11.1.1 Sub-Regional Level Land Use Plan

The Structure Plan is a spatial plan consisting of land use plans and sector infrastructure plans. The Land Use Plan for Greater Kumasi Conurbation is an important part of the Structure Plan, which provides a spatial platform for integrating land uses and the various infrastructures.

The Land Use Plan for Greater Kumasi Conurbation is also a plan which has to be formulated at the Sub-Regional level, so that the overall spatial structure of the Sub-Region can be analysed as a whole. It is not a plan which can be made by gluing District-level Land Use Plans together into one plan.

The Sub-Regional level Land Use Plan shows the desired directions for future land uses, which are considered in terms of rational and/or effective use of land, which is a scarce resource. It is also a plan which shows how the precise disposition and scale of the elements encompassed by social, economic and environmental policies can be achieved most efficiently and effectively. It is based on the Spatial Development Framework, which is diagrammatic in nature as illustrated in Figure 11.1.1.

These policies have been developed in Chapter 8 as “Strategies for Socio Economic and Spatial Development” which form the basis of the Sub-Regional Spatial Development Framework. They included an Urban Growth Boundary for Greater Kumasi within which development should be confined over the next twenty years to prevent sprawl and unnecessary degradation of agricultural land; a strategy for intensifying land use in the City Centre while also relieving the pressure on it by creating other centres; these are near main intersections on the Inner Ring Road and other urban centres within the conurbation; they include a “secondary urban centre” joined by a primary urban corridor to Ejisu; creation of a secondary urban corridor along Kumasi-Mampong road; creation of tertiary district centres at District Capitals; proposals for extension, relocation of existing, and some new industrial development areas linked to a new outer ring road; strategies for suburban and adjoining agricultural areas and towns,

Chapter 8 has also set out the programme for Phased Spatial Development in three periods, to 2023, to 2028 and to 2033 in which the financing and construction of the new Outer Ring Road, beginning with the by-pass of Kumasi by Ghana’s main

north-south highway and the construction of a new airport are key drivers.



Source: JICA Study Team

Figure 11.1.1 Diagrammatic Nature of the SDF 2033

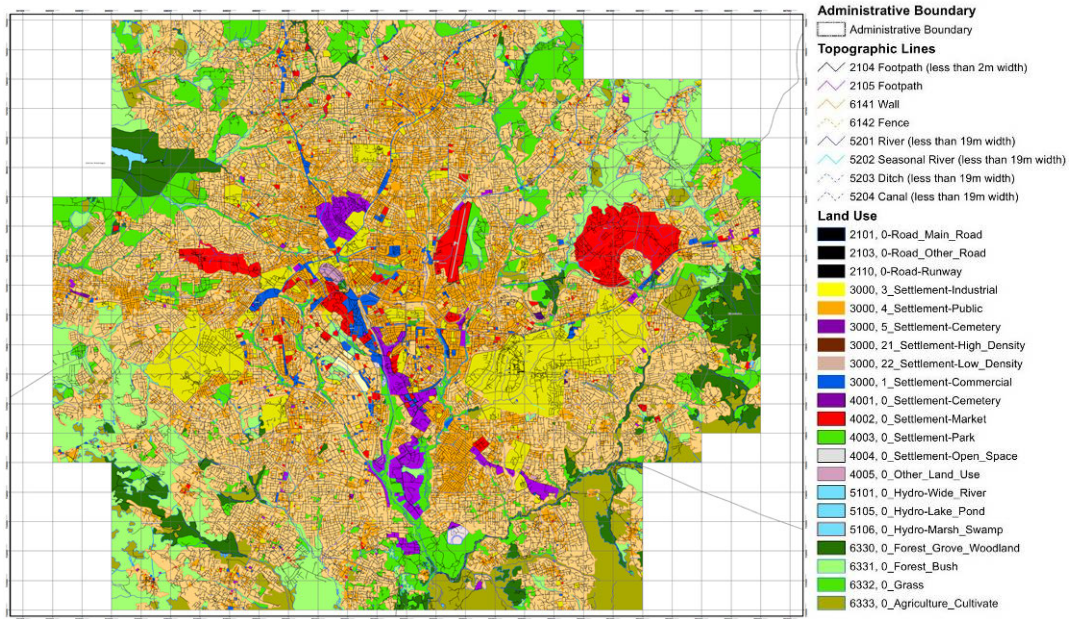
Chapter 7 has laid out the population growth and employment needs projections on which the dimensioning of space and infrastructure in the Structure Plan is based.

District-level Land Use Plans are too detailed for showing large perspectives for guiding Metropolitan Conurbations like Greater Kumasi Conurbation. Sub-Regional level Land Use Plans are expected to show general policies from macro perspectives covering the whole conurbation. These include the overall directions and required areas for growth, the needs for large-scale infrastructure such as dams, the position of watersheds and major radial and ring road networks. All of these should be planned from macro perspectives beyond the district level.

11.1.2 Objectives of Formulating Sub-Regional Land Use Plan

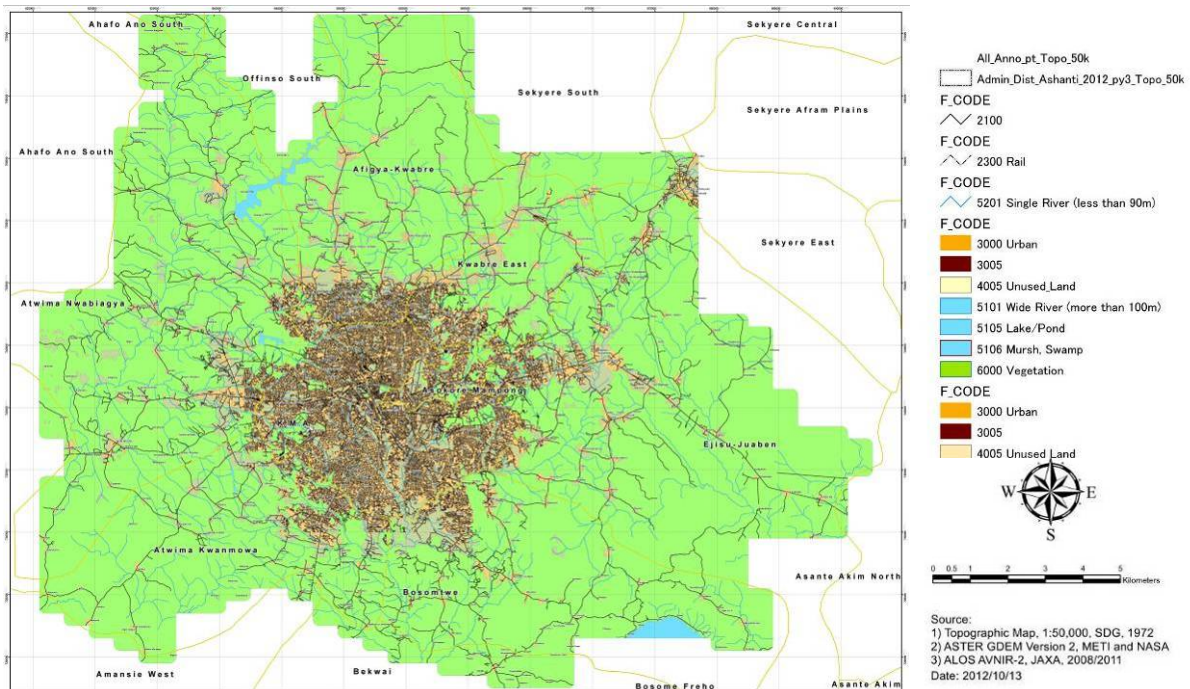
Considering the above mentioned necessary characteristics of Sub-Regional Land Use Plans, there are the following two main objectives for the formulation of a Sub-Regional level Land Use Plan:

- To guide the transformation of spatial structure by showing the dimensions, actual use of space and precise location of key elements in the development process for Greater Kumasi Conurbation.
- To provide guidance for District-level Structure Plans (SPs) for regulating of land use and development in the Greater Kumasi Conurbation.



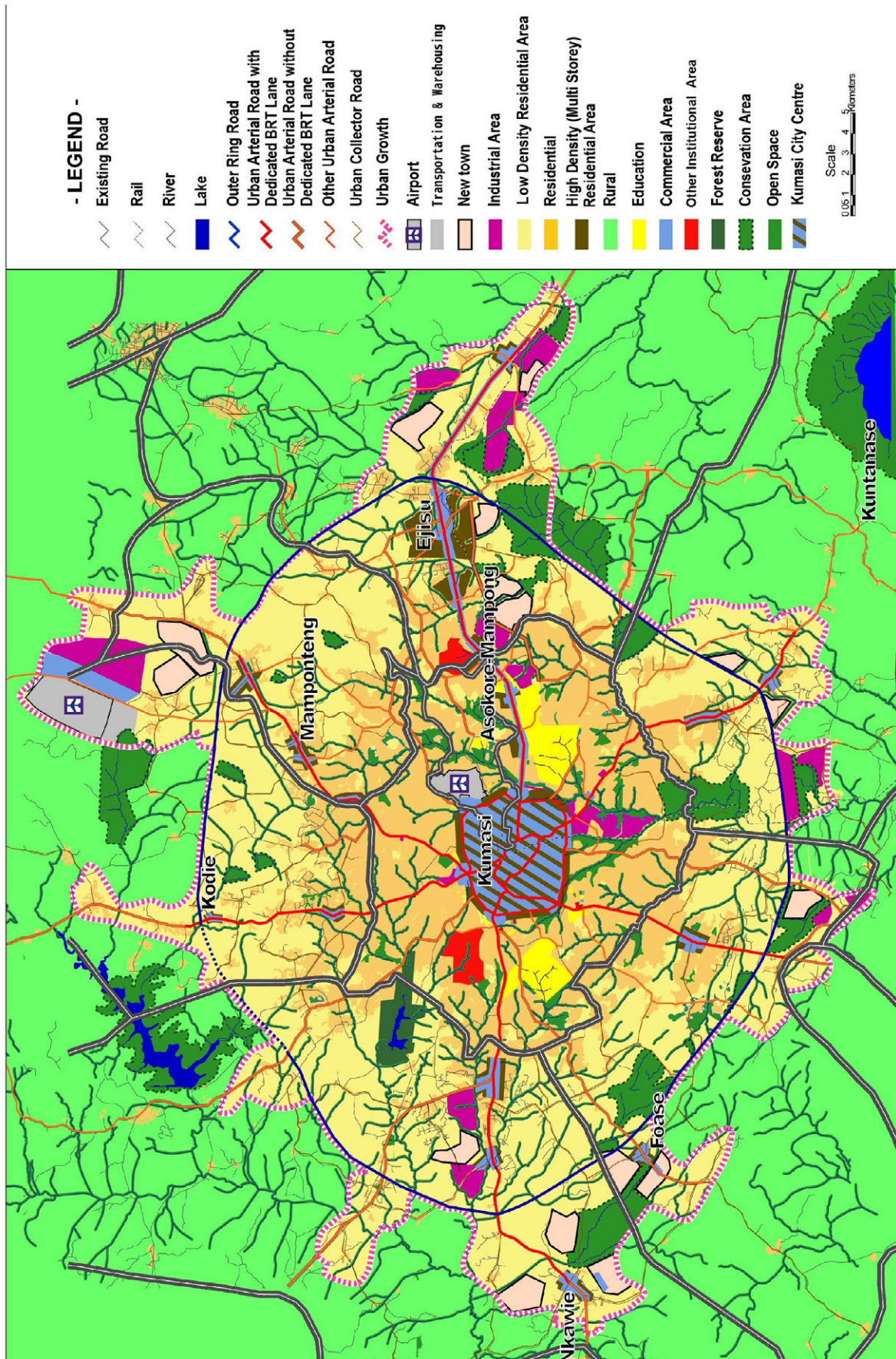
Source: JICA Study Team

Figure 11.1.2 Existing Land Use based on Orthophoto (2008)



Source: JICA Study Team

Figure 11.1.3 Existing Land Use based on ALOS Satellite Image 2008 & 2011



Source: JICA Study Team
Figure 11.1.4 General Land Use Plan for Greater Kumasi Conurbation, 2028

11.2 Future Land Use Policies by Land Use Category

11.2.1 Residential Land Use

In 1984, the population of Kumasi City was 488,000. In 2000, its population increased to 1,170,000. In 2010, Kumasi increased its population to 2,035,000. In 1986, urbanization was taking place mostly within Kumasi City (254 km²). In 2007 and 2008, urbanization was occurring within and beyond the administrative boundaries of Kumasi City. From 1984 to 2000, Kumasi City's population increase rate was over 5.6% per annum. Between 2000 and 2010, the average increase rate of the population was again as high as 5.7 per annum.

(1) Residential Land Use Policy

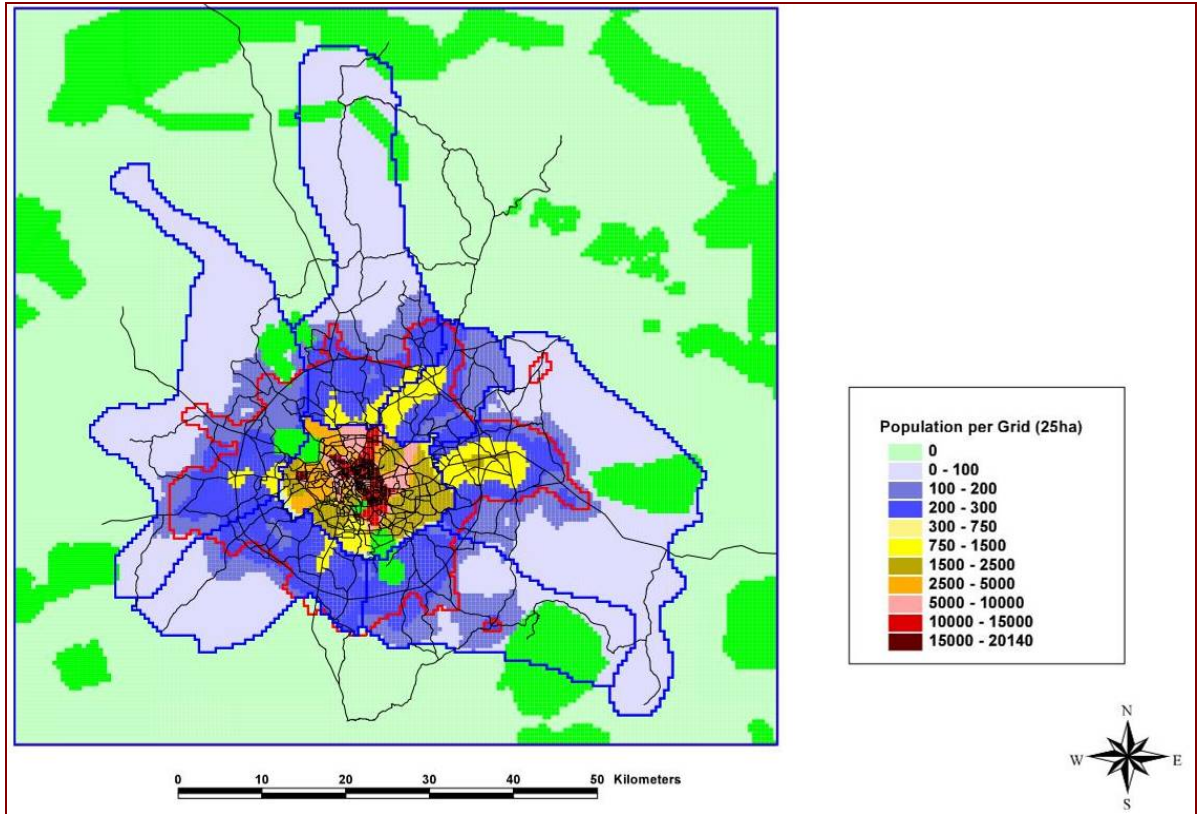
In order to guide the residential land use in the future, the following policies are applied:

- Higher density of residential population is promoted by allowing and enabling the development of multi-storey buildings.
 - In the central areas of KMA
 - In the areas along major roads
 - In the areas surrounding suburban centres and district centres
- Middle density of residential population is promoted within the Middle Ring Road Connection by applying certain zoning regulations.
- Outside the Middle Ring Road, lower density residential areas are promoted.
- Outside the Outer Ring Road, the development of new towns are promoted in order to speed up well-ordered suburbanization.

(2) Urban Growth Boundaries

Uncontrolled expansion is a problem because it is an inefficient use of land which could be productive, and because of the high cost of servicing residents which are widely scattered. In order to avoid uncontrolled expansion an Urban Growth Boundary must be established, beyond which the expansion of Greater Kumasi Conurbation should be prevented. Figure 11.2.1 below shows the projected uncontrolled expansion of Greater Kumasi Conurbation (the blue areas) which, if uncontrolled, will go well beyond the Urban Growth Boundary (shown in red).

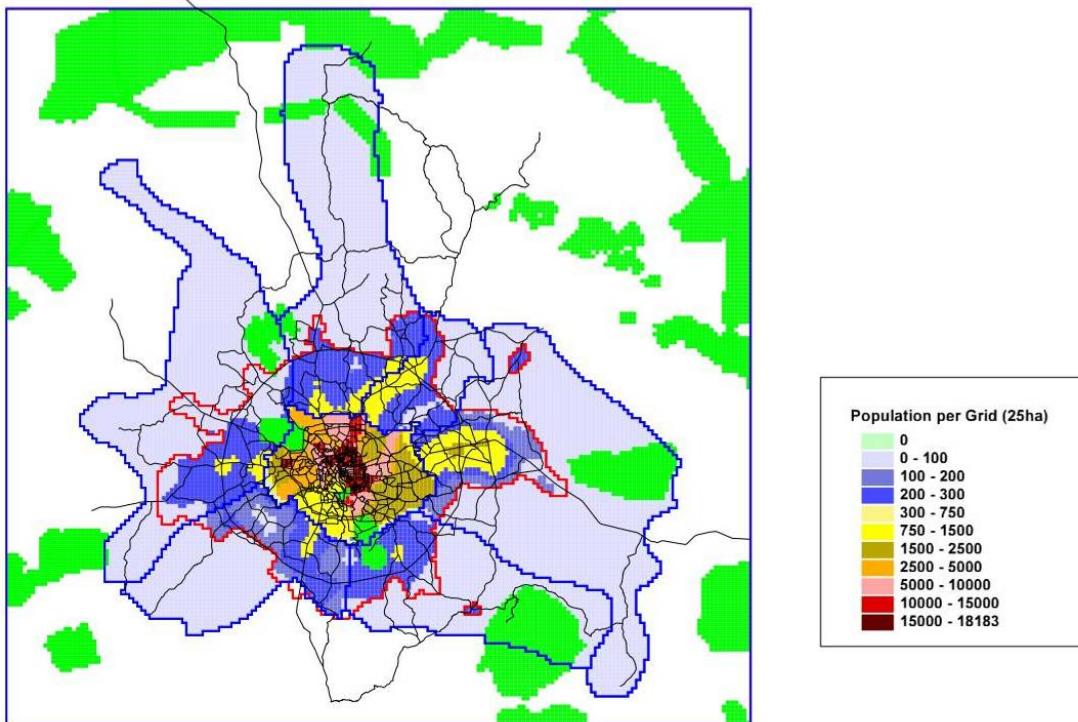
The proposed controlled expansion by creating the Urban Growth Boundary and housing density policies is shown in Figure 11.2.2.



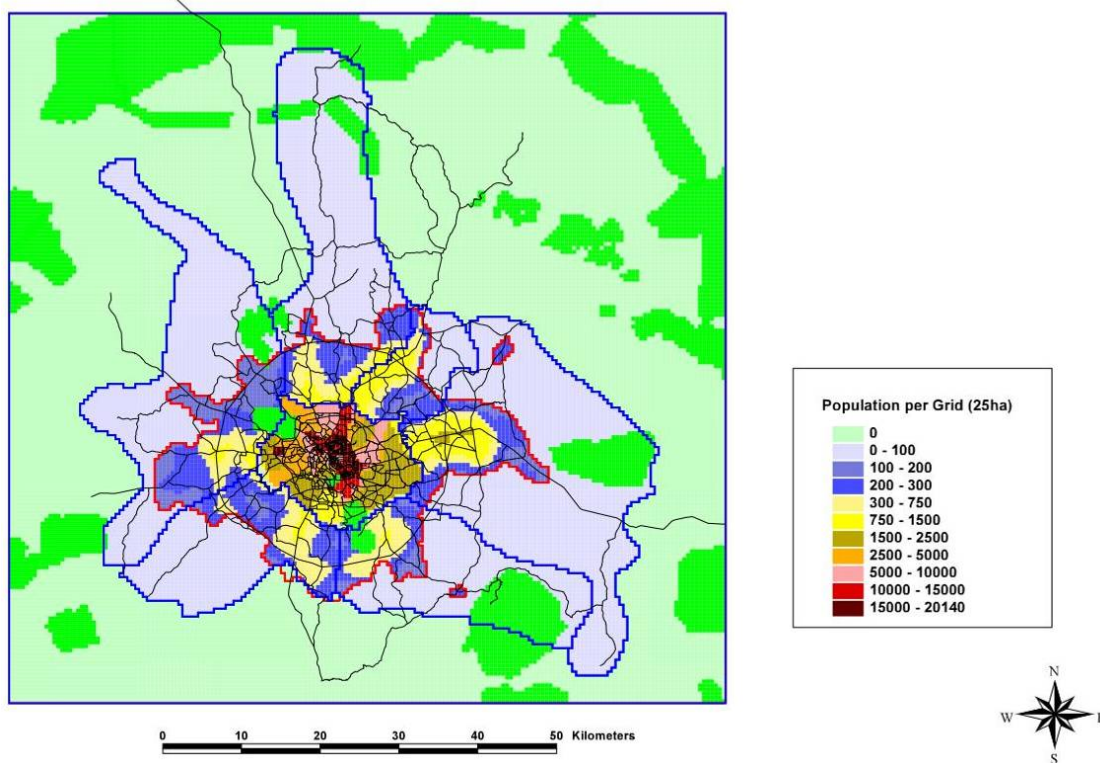
Source: JICA Study Team

Figure 11.2.1 Predicted Population Distribution without Urban Growth Boundary 2033 (Uncontrolled Expansion)

Population Distribution (Year 2028)



Population Distribution (Year 2033)



Source: JICA Study Team

Figure 11.2.2 Population Distribution Simulation of Greater Kumasi Sub-Region, 2028 and 2033 (Controlled Expansion under Urban Growth Boundary)

The future population increase is accommodated by expansion of residential areas as shown in Figure 11.1.4 and in Table 11.2.1, as well as by increase of population density shown in Figure 11.2.2.

Table 11.2.1 Increase of Population and Residential Area within Greater Kumasi Conurbation

	Population (persons)	Residential Areas (ha)	Gross Population Density of Residential Areas (persons/ha)	Populations (persons)	Residential Areas (ha)	Gross Population Density of Residential Areas (persons/ha)
	2010			2033		
K.M.A	2,035,064	12,761	159	4,226,860	15,163	279
Outside KMA within Conurbation	423,951	23,760	18	1,242,856	59,742	21
Greater Kumasi Conurbation	2,459,015	36,521	67	5,469,717	74,905	73

Source: JICA Study Team

In Table 11.2.2 below it will be seen that the projected population increase (Chapter 7) can only be taken up within the KMA boundary by additional 2,400 hectares (19% increase) but it will need a very large increase in population density. This is due to the lack of available land, which already causes a large amount of higher density housing (as seen in Figure 11.2.2, dark brown areas, above).

For the area outside KMA within the Urban Growth Boundary, the existing low population densities and the available undeveloped land means that a much greater increase in residential land use is planned.

Table 11.2.2 Increase of Residential Area by Area

	2010	2033	2010-2033	2010-2033
	Residential Areas (ha) [A]	Residential Areas (ha) [B]	Increase of Residential Area (ha) [C] = [B] - [A]	Increase (%) [D] = [C] / [A] (%)
K.M.A	12,761	15,163	2,402	19%
Between KMA Boundary and Outer Ring Road	17,430	41,166	23,736	136%
Between Outer Ring Road and Greater Kumasi Conurbation Boundary	6,330	18,576	12,246	193%
Greater Kumasi Conurbation	36,521	74,905	38,384	105%

Source: JICA Study Team

Population increase and residential area increase underlie the rationale for the Urban Growth Boundary as shown in the proposed General Land use Plan 2028.

As a result of the analysis of population growth, existing housing use and density, and the above predictions of the demands on land use up to 2028, the following residential land use policies are put forward for the areas within Greater Kumasi Conurbation:

- In suburban areas outside KMA, and within KMA outside of the middle ring road, low density residential areas should generally be promoted.
- However, near the District Centres and Suburban Centres, development of multi-storey residential buildings should be promoted. This would also apply to the Kumasi-Ejisu Urban Corridor.
- Within KMA, where densities will need to be greatly increased, in areas between the Middle Ring Road and Inner Ring Road, where lot sizes are relatively large, they have a piped water supply, and relatively dense road networks are available:
 - Building more dwellings within the same lot, subdivision of the original lots should be formally allowed.
- Within KMA in order to cope with existing high-density residential areas:
 - Set standards for controlling overcrowding and decreasing the number of households within a dwelling unit
 - Conduct monitoring and enforcement measures
- The development of high-density multi-storey residential buildings should also be promoted behind the commercial/business areas along the Inner Ring Road.
- In order to accelerate housing development and provide quality residential areas with basic infrastructures in suburban areas, new town developments should be promoted mainly outside the Outer Ring Road within the Conurbation Area.

Table 11.2.3 Land Uses in City Centre, Middle and Suburban Areas 2013-38

(1) Kumasi City Centre (Central Areas within Inner Ring Road)			
	Present & Short Term (2013-2018)	Middle Term (2018-2023-2028)	Long Term (2028-2033-2038)
High Density Residential Area	Over 20% of the area is occupied by high-density residential areas.	The percentage of high-density residential areas will increase substantially.	Some high-density residential areas will be redeveloped into multi-storey mixed use developments.
High Density Multi-Storey Residential Area	Small areas are occupied by multi-storey residential buildings.	Gradually multi-storey residential buildings will increase in the areas well equipped with basic infrastructures along the Inner Ring Road.	Large-scale urban renewal projects will be implemented for mixed use development of commerce/business (at the first floor or so) and residential (at higher floors).
Low Density Residential Area	There are still large areas of low density residential areas within the Inner Ring Road.	Gradually more residential buildings will be constructed on former low-density residential areas, while some low-density residential areas will remain.	Large-scale modern mixed use development will take place in some former low-density residential areas in the southern part of Kumasi City Centre.

(2) Middle Areas (Areas between Inner Ring Road and Middle Ring Road)			
	Present & Short Term (2013-2018)	Middle Term (2018-2023-2028)	Long Term (2028-2033-2038)
High Density Residential Area	High-density residential areas are increasing by subdividing existing housing lots or by building extra buildings in the same lots.	Subdividing of plots and building of extra buildings in the same plots will continue in these residential areas.	Subdividing of plots and construction of additional buildings in the same plots will continue.
High Density Multi-Storey Residential Area	Few	In some areas, multi-storey buildings will be located in response to the increasing population.	High density multi-storey residential areas will be increased.
Low Density Residential Area	Low density residential areas are extensively located.	Gradually part of the low density residential areas will become high density residential areas as described above.	There will be less low density residential areas due to increase in both high density residential areas and high density multi-storey residential areas.

(3) Suburban Areas (Areas between Middle Ring Road and Outer Ring Road)			
	Present & Short Term (2013-2018)	Middle Term (2018-2023-2028)	Long Term (2028-2033-2038)
High Density Residential Area	Less	In some areas, high density residential areas will increase.	Expansion of high density residential areas will be limited.
High Density Multi-Storey Residential Area	Less	In the Kumasi-Ejisu Urban Corridor, development of high density multi-storey residential areas will be promoted.	In the Kumasi-Ejisu Urban Corridor and Kumasi-Mamponteng Urban Corridor, development of high density multi-storey residential areas will be promoted.
Low Density Residential Area	Low density residential areas are expanding toward outside. But still there are extensive unurbanized areas.	More expansion of low density residential areas will take place.	More expansion of low density residential areas will take place.

(4) District Centres and their Surrounding Areas (Within the Greater Kumasi Conurbation – within the Urban Growth Boundary)			
	Present & Short Term (2013-2018)	Middle Term (2018-2023-2028)	Long Term (2028-2033-2038)
High Density Residential Area	Limited	Limited	Limited
High Density Multi-Storey Residential Area	Few	In new towns, a few high density multi-storey residential areas will be developed.	In new towns, more high density multi-storey residential areas will be developed. In Ejisu Centre, behind central commercial/business areas, high density multi-storey residential areas will be developed.
Low Density Residential Area	Not so extensive	Low density residential areas will expand gradually along major roads and near District Centres.	Low density residential areas will expand both inside and outside new towns.

Source: JICA Study Team

11.2.2 Commercial/Business Land Use

In Greater Kumasi, there are issues and challenges concerning urban centres, commercial/business land uses and residential populations as follows:

Table 11.2.4 Problems and Challenges concerning Urban Centres and Commercial/Business Land Uses

	Problems	Challenges
Urban Core of Kumasi City Centre	<p>Too much concentration of urban functions is found within Urban Core of Kumasi City Centre.</p> <p>However, the Urban Core has only small commercial/ business areas and is dominated by low-rise houses/ buildings.</p> <p>Therefore, it is not possible to enable further commercial/business development in the central area of KMA due to limited space and poor infrastructures.</p>	<p>To provide advanced urban functions at the Urban Core of this Kumasi City Centre not only for Greater Kumasi but also for Ashanti Region and northern areas</p> <p>To provide necessary infrastructure to support the performance of such advanced urban functions</p> <p>To relocate unnecessary functions to suburban areas/suburban centres/district centres</p>
Sub Centres of Kumasi City Centre	<p>There is little development of commercial/ business functions outside the Urban Core of Kumasi City Centre.</p>	<p>To develop Sub Centres along the Inner Ring Road to accommodate commercial/ business functions</p>
Outside Kumasi City Centre within KMA	<p>Commercial/business land uses are distributed mostly along major roads (ribbon type development).</p> <p>Efforts at satellite market places have been made, but they have been not so successful.</p>	<p>To reduce the prevalence of ribbon development of commercial/ business functions along roads by promoting urban centre development</p>
Suburban Areas outside KMA	<p>There are no many urban service functions, such as commercial/business, as well as public services, for serving suburban residential populations.</p>	<p>To promote the development of suburban centres and district centres with commercial/ business functions for serving suburban residents</p> <p>To promote the orderly development of suburban residential areas</p>

Land use changes for commercial/business are expected to take place in the directions described in Table 11.2.5. The following major commercial/business land use policies are recommended for the areas within Greater Kumasi Conurbation:

- Within Kumasi City Centre, more commercial/business land uses should be allowed, by change from low-density residential use to encouraging multi-storey buildings with first or second floor for commercial/business use and upper floors for residential use.
- Between the Inner Ring Road and Middle Ring Road, commercial/business land

uses could be located by change from low-density residential use along the major roads. That is, ribbon development of commercial/business will be allowed to take place along the major roads in these areas.

- In the Kumasi-Ejisu Urban Corridor, the development of commercial/business multi-storey buildings should be promoted including by change from low-density residential use.
- At District Centres and Suburban Centres, area development of commercial/business land uses including multi-storey buildings should be promoted by change from low-density residential use and by providing better local street networks within the centre areas.

Table 11.2.5 Commercial Land Uses in City Centre, Middle and Suburban Areas 2013-38

(1) Kumasi City Centre (Central Areas within Inner Ring Road)			
	Present & Short Term (2013-2018)	Middle Term (2018-2023-2028)	Long Term (2028-2033-2038)
Retail Commercial Shops	Numerous small-scale retail shops concentrate in the City Centre.	Some retail commercial shops will move to near satellite markets, which would have bulk breaking points. Modern multi-storey shopping facilities will increase along the Inner Ring Road.	Special retail shops (shops for traditional and specialty items, as well as modern department stores) will continue to be located in the central area, while other retail shops (neighbourhood types) will move to suburban areas.
Wholesale Commercial Shops	Wholesale commercial functions are combined with retail commerce and concentrated in the central area.	Some wholesale functions will move out from the central area near the Middle Ring Road.	Wholesale functions will move out from the central area to suburban areas near the Outer Ring Road.
Private Business Offices	Only a limited number of private companies have their offices in the central area.	Demand for private business offices will increase in the central area, because of the increasing traffic congestion.	More private business offices of regional headquarters functions will be located in the central area.
Government Offices	Ministry department offices and KMA offices are located in the central area.	A new ministry sector will be developed for accommodating new government office buildings.	Renovation of old government offices will continue to be multi-storey buildings and some office buildings will accommodate non-governmental business offices.

(2) Middle Areas (Areas between Inner Ring Road and Middle Ring Road)			
	Present & Short Term (2013-2018)	Middle Term (2018-2023-2028)	Long Term (2028-2033-2038)
Retail Commercial Shops	Modern and middle-sized retail stores are emerging.	Due to limited spaces available within the central areas, more shops of modern and middle-sized retail commerce will be located in these middle areas. At the same time, small informal retail shops will be located along major roads and sometime non-major roads (commercial ribbon development will continue to flourish).	Since ribbon pattern of commercial developments are largely increased and concentrated, it is convenient for shoppers to do shopping on the roads. As a result, traffic congestion will intensify on the roads due to those developments, in despite of transformation effort at Kumasi City Centre and development effort at suburban and district centres.
Wholesale Commercial Shops	Few	Few	Few
Private Business Offices	Some private business offices are located along major roads and within convenient residential areas.	Due to limited spaces available within the central areas, more private business offices will be located in these middle areas.	Private business offices will be located in a ribbon pattern along the roads. Because of close to the Kumasi City Centre, it is a convenient place for business offices. As a result, traffic congestion will intensify on the roads due to those developments, in despite of transformation effort at Kumasi City Centre and development effort at Suburban and District Centres.
Government Offices	Few	Few	Some government services offices will be located on these commercial roads.

(3) Suburban Areas (Areas between Middle Ring Road and Outer Ring Road)			
	Present & Short Term (2013-2018)	Middle Term (2018-2023-2028)	Long Term (2028-2033-2038)
Retail Commercial Shops	Neighbourhood retail commercial functions are weak in this area.	Modern shops will be located in designated Suburban Centres. Small/informal shops will also increase in and near designated Suburban Centres.	New developments for modern and large-scale shops will be located in designated Suburban Centres.
Wholesale Commercial Shops	Very few or none	Bulk breaking points will be located near satellite markets.	Bulk breaking points and satellite markets will continue to function.

Private Business Offices	Few	Banks and other financial institutions will be located for serving suburban areas.	Private business offices will increase in number in designated Suburban Centres.
Government Offices	Few	Some government service branch offices will be located in designated Suburban Centres.	Relatively large complexes of government institutions will be located or relocated in designated Suburban Centres.

(4) District Centres and their Surrounding Areas (Within the Conurbation – within the Urban Growth Boundary)			
	Present & Short Term (2013-2018)	Middle Term (2018-2023-2028)	Long Term (2028-2033-2038)
Retail Commercial Shops	Neighbourhood retail commercial functions are weak in this area.	Small/informal retail shops will increase in response to increasing suburban populations.	More modern retail shopping facilities will be located in District Centres and New Town Centres for serving suburban neighbourhoods.
Wholesale Commercial Shops	Very few or none	Few	Few
Private Business Offices	Very few	Some satellite offices for private businesses will be located.	Light industries and ICT-BPO sectors will be located near District Centres.
Government Offices	District-related government offices and services are located.	District-related public facilities, such as district hospitals, will be added to District Centres.	Other government functions will be relocated from the Kumasi City Centre to surrounding areas of District Centres.

Source: JICA Study Team

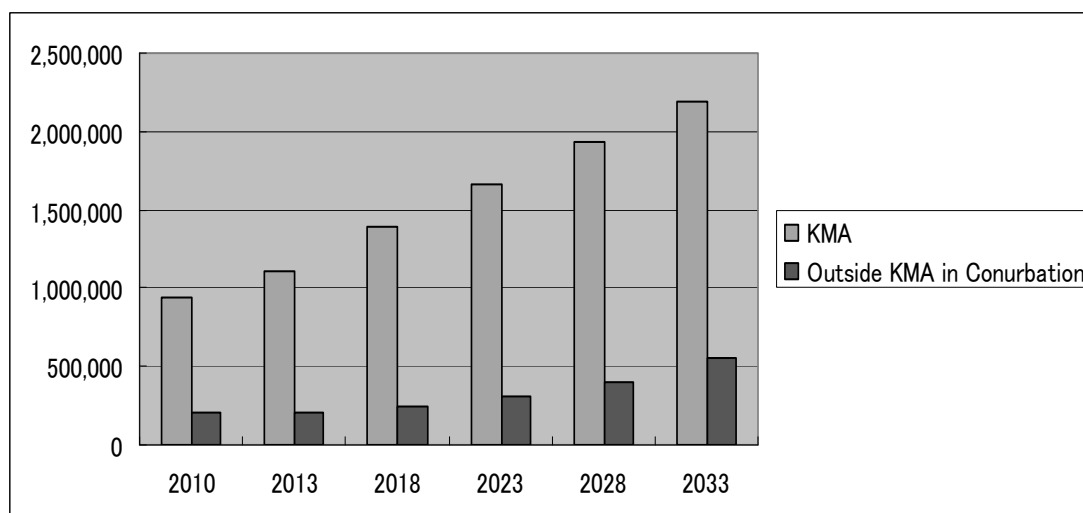
11.2.3 Industrial Land Use

(1) Re-Industrialization Policy

Ghana has been clear about its commitment to transforming its economy from mineral/cocoa dependency to more efficiency driven economy. Manufacturing industrial development is one of the core areas for economic development, not only oil-related and energy related development, but also agriculture-related, such as agro-processing industries. Accra-Tema, Greater Kumasi and Secondi-Takoradi are three major urban clusters of industries. Greater Kumasi also should contribute to national economic development through revising of manufacturing industries and also development of knowledge-based sectors.

(2) Economy, Population and Jobs

Projections for the total number of jobs which will be needed, based on analysis in Chapter 7 is summarised in Figure 11.2.3.



Source: JICA Study Team

Figure 11.2.3 Number of Jobs Needed by Population 2010-33

Of these totals, Primary Industry is projected to decline strongly, manufacturing and services are expected to grow, the latter more than the former (see Table 11.2.6 below). Since most of the service sector jobs are likely to be found in Kumasi City Centre, (which explains the relatively strong increase in KMA jobs in Figure 11.2.3) the land use strategy seeks an increase in commercial uses in KMA, by conversion from low density residential to high density commercial in the CBD. The result will be that a majority of those living in the expanding residential areas between KMA and the Urban Growth Boundary will need to commute into KMA for work. This places emphasis on need for provision of good transportation systems.

Table 11.2.6 Greater Kumasi Population and Employment in Industrial Sectors 2000-2033

	2000	2010	2013	2018	2023	2028	2033
Population	1,758,740	2,764,091	3,127,010	3,749,705	4,393,019	5,050,422	5,761,463
(Annual Growth Rate)	-	(4.62%)	(4.20%)	(3.70%)	(3.22%)	(2.83%)	(2.67%)
EAP	788,799	1,255,027	1,434,351	1,749,042	2,083,164	2,434,048	2,821,388
(EAP/Population)	(44.9%)	(45.4%)	(45.9%)	(46.6%)	(47.4%)	(48.2%)	(49.0%)
Primary Industry	180,166	157,107	160,322	156,846	152,836	148,479	137,988
Secondary Industry	197,061	285,774	355,378	491,166	617,095	730,261	856,972
Tertiary Industry	411,571	812,146	918,651	1,001,031	1,313,233	1,555,307	1,826,473
Employed Population	699,586	1,157,511	1,328,084	1,629,993	1,953,917	2,297,688	2,031,455
(Annual Growth Rate)	-	(5.16%)	(4.69%)	(4.18%)	(3.69%)	(3.29%)	(3.13%)

Source: JICA Study Team and Ghana Statistical Service

Table 11.2.7 Number of Jobs in Economic Sectors Outside KMA within Greater Kumasi Sub-Region, Formal and Informal 2010-33

	Number of Jobs in 2010	Number of Jobs in 2033
Secondary Industry Jobs	54,800	216,900
Manufacturing Jobs	35,600	141,000
Case 1: Formal Manufacturing Jobs (10% of Manufacturing Jobs)	35,600	14,100
Case 2: Formal Manufacturing Jobs (30% of Manufacturing Jobs)	10,700	42,300

Source: JICA Study Team

However, the extent of the formal, versus the informal nature of jobs is a major factor which will affect the likelihood of employment needing to be provided for by serviced industrial areas as opposed to informal settings which are evident today.

The outline in this section, which is more fully developed in Chapter 7, provides the background to the proposals for commercial and industrial land uses which follow.

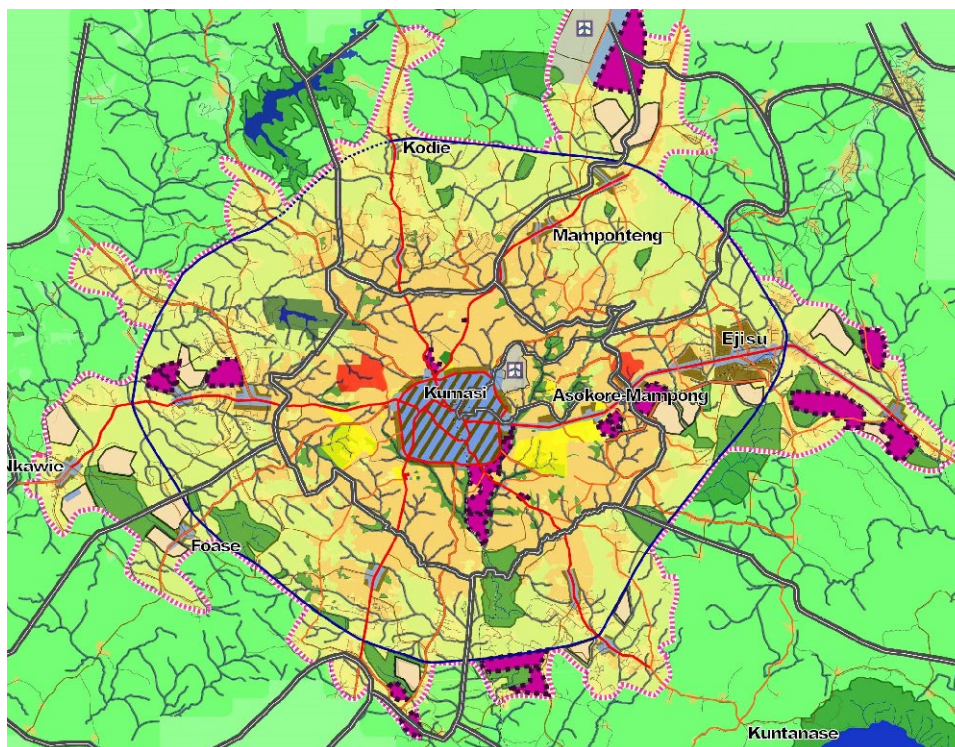
(3) Industrial Areas

Industrial Areas proposed for Greater Kumasi as shown in Table 11.2.8 and Figure 11.2.4 are mostly based on new sites that have been identified. Those New Industrial Areas are located close not only to the existing major roads, but also to the proposed Outer Ring Road.

Table 11.2.8 Necessary Area of Industrial Sites in 2033 Land Use Plan

	Name	Area (ha)	
		High Case	Middle Case
Afigya Kwabre	Airport City	700	0
Atwima Nwabiagya	Sepaase North 1	80	80
	Sepaase North 2	100	100
	Abuakwa North	200	200
Atwima Kwanwoma	New Bekwai Road South 1	50	50
	New Bekwai Road South 2	110	110
	Nkwanta 1	120	120
	Nkwanta 2	250	0
Ejisu-Juaben	Fumesua	140	140
	Ejisu	400	400
	Bankra North	150	150
	Boankra	30	30
Outside KMA Sub-Total		2,330	1,380
KMA	Boadi 1	70	0
	Boadi 2	50	0
KMA Sub-Total		120	0
Greater Kumasi Sub-Region		2,450	1,380

Source: JICA Study Team



Source: JICA Study Team

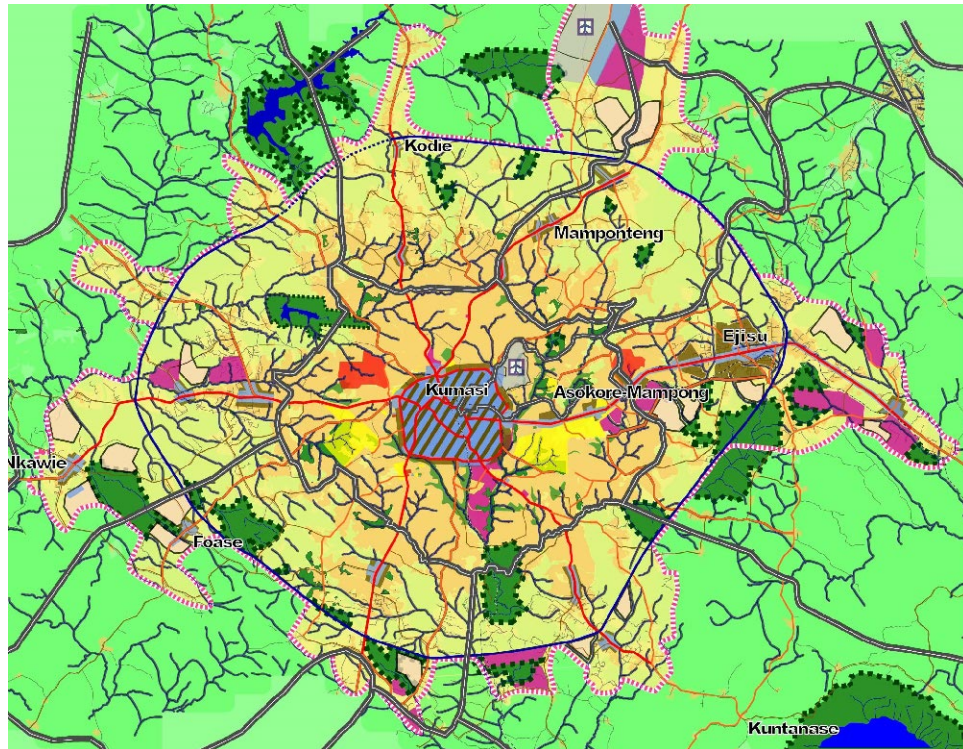
Figure 11.2.4 Industrial Land Uses shown in Purple in the 2028 General Land Use Plan (Proposed)

The estimated capacity of these sites to create jobs is in the order of 30,000-50,000 jobs. These would be in the formal, secondary, manufacturing sector. The provision of adequately serviced and accessed sites attracts manufacturing. The main locations are at and around Boankra, the point of arrival from Accra and link to the centre via the Kumasi-Ejisu Urban Corridor; at the new airport; around the existing manufacturing area at Boadi and to the west of the city on the route to Bibiani and Cote d'Ivoire where sites have been identified for the extension or relocation of Suame Magazine.

11.2.4 Conservation Areas and City Parks Land Uses

Formerly the “Garden City”, since the 1950s Kumasi has lost much of its designated Forest Reserves and other open space including flood plains and water courses to illegal encroachments, as shown in Figure 8.7.1. However, several of these remain within the City Centre and extending into KMA beyond the Inner Ring Road. Standards of provision of open space in KMA are well below those required by the Government’s Planning Standards. If current practices continue, this may become the prevailing condition in the new conurbation.

Therefore it is essential that existing open spaces within the City Centre are strongly defended, and that new areas are designated in KMA outside of the Inner Ring Road as shown in an excerpt from the Land Use Plan 2033 below.



Source: JICA Study Team

Figure 11.2.5 Conservation Areas shown in Green in the 2028 General Land Use Plan (Proposed)

For promoting nature conservation in Greater Kumasi Sub-Region, the following measures should be taken:

- Protection of existing water courses and enforcement of buffers in all areas
- Identify and designate conservation areas as show in the proposed Land Use Plan above
- Enforce protection of any remaining Forest Reserves
- Active landscaping and management of open spaces in partnership with private individuals and companies for leisure and urban agricultural uses.

The following conservation areas are proposed as shown in Figure 11.2.1:

- Owabi Reserve to protect immediate catchment areas of Owabi Dam
- Barekese Reserve to protect immediate catchment areas of Barekese Dam
- Oti Reserve to secure buffer areas for keeping residential areas away from the Oti Landfill Site
- Dedesua Reserve to protect the areas for a potential site and immediate catchment of a future dam in Dedesua area
- Riverside buffers of water courses, in accordance to the national policy for protecting riversides from encroachment
- Large Green Open Space between Oda River and the Outer Ring Road, which is located to the south of Ejisu Town
- Area surrounding two dams used for aquaculture near Foase
- Large Green Open Space to the south of Nkawie Town
- Large Green Open Space to the west of Airport City

11.2.5 Health, Education, Security, Fire and Other Services' Land Uses

Although the bulk of public services including places of worship, cemeteries and education up to tertiary level and health up to district and regional hospital level, there are certain key uses which fall under the institutional land use category and for which land uses should be shown in the Sub-Regional Structure Plan. However, a limited number of such land uses including tertiary education facilities and tertiary health facilities should be shown in the sub-regional level general land use plan. Other land uses on health, education, security, fire and other public services should be designated at the district level land use plan or zoning plan.

11.3 Future Land Use Policies by Area

11.3.1 General Land Use Plan for Kumasi City Centre

(1) Present Land Use

At present, various urban activities (retail/wholesale shops/service, logistics, public services) are concentrated in the existing urban centre (Central Market: the largest single open-air market in Ghana, Kejetia Terminal: selling mostly non-consumable goods at a parking facility for the Central Market, Adum Shopping Centre: main commercial centre of non-consumable goods and also accommodating government and private offices). This situation created an extremely single centred concentration pattern. In contrast, suburban service centres supporting suburbanization of population have not been well developed. It may be said that this urban centre pattern does not provide a convenient environment for shopping for most Kumasi people.

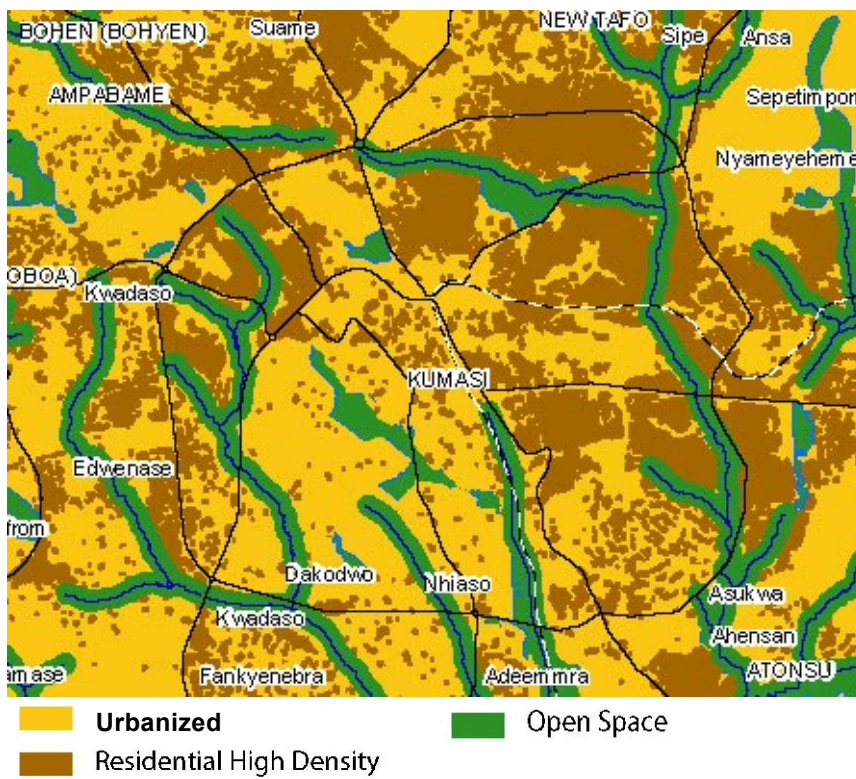
The existing Kumasi City Centre is plagued with over-crowding and congestion resulting from concentration of various urban activities including even daily-commodity retail shops which should be normally located close to residential areas rather than in the central area. On the other hand, specialized shops and specialty shops should be located in the central area of the city.

In the northern part of the existing central area of Kumasi, building and population densities are high. In the low density residential areas also, the number of buildings have increased. More demand for residential and commercial/business uses is expected in the City Centre of Kumasi. See the current land use in Figures 11.3.1 and 11.3.2.



Source: TCPD KMA

Figure 11.3.1 Present Land Use Map in the Central Area of KMA



Source: JICA Study Team

Figure 11.3.2 Present Land Use Map showing High Density Residential Areas (based on Orthophoto Imagery)

(2) Strategies for the City Centre on which Land Use Plan is Based

In the Sub-Regional SDF Kumasi City Centre is defined as the highly urbanized area within the Inner Ring Road, which is composed of the Central Core (CBD) and Sub Centres along the Inner Ring Road.

The SDF for Greater Kumasi Sub-Region recommends transforming Kumasi's City Centre, defined as the area within the Inner Ring Road, to be equipped with much advanced/enhanced urban functions and more space for accommodating commerce/business and residence, while promoting physically and functionally decentralization of retail/wholesale shops/services, logistics and other unnecessary urban functions to District Centres and Suburban Centres.

The SDF proposes that the functions and amenity of Kumasi City Centre as the Primary Centre of Greater Kumasi Sub-Region should be developed and strengthened. High-class infrastructure should be provided for Kumasi City Centre by constructing new roads and establishing BRT routes and BRT major stations.

Strategies for the Central Core include:

- In order to expand the functions and space, establish a new CBD, complimentary with the existing in Adum Area, and connect the two strongly by constructing new roads and BRT routes.
- Promote redevelopment of old housing areas in good locations for increasing mid-rise housing, as well as for introducing mixed use development.
- Conserve historic areas with historic buildings in order to maintain the identity of Ashanti by designating "Historical Conservation Action Areas". (This needs to be carried into not only the Sub-Regional Structure Plan as a whole).
- Modernize the Central Market to reduce roadside hawking.

Strategies for the Sub Centres include:

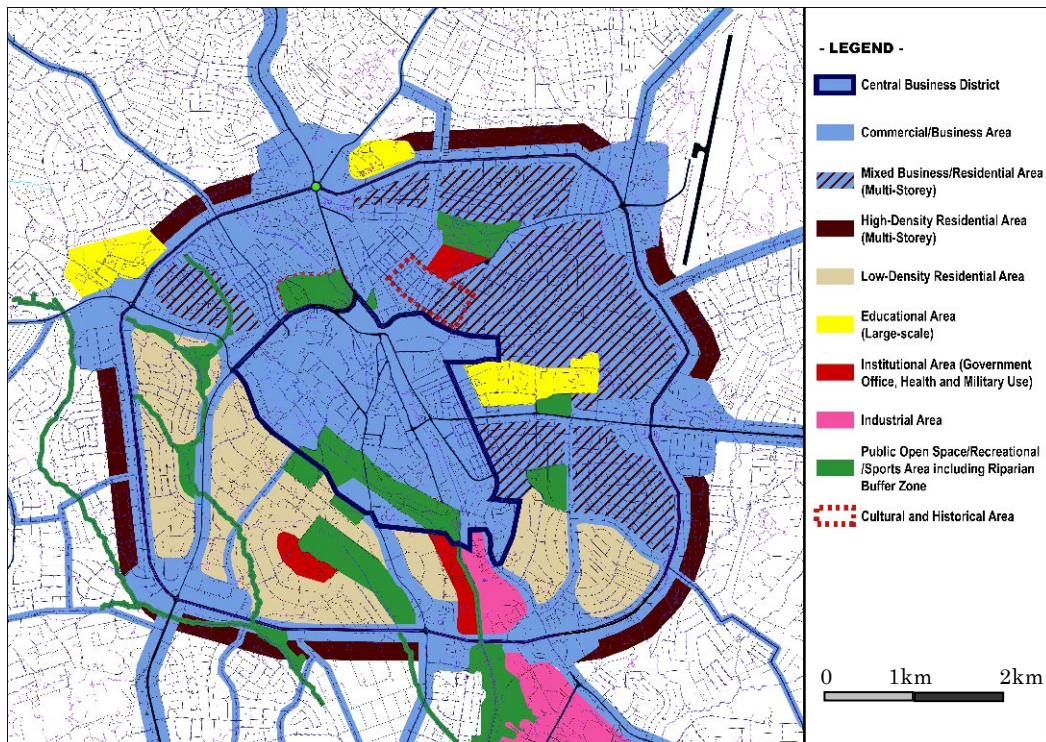
- Develop flyovers for grade separation of the junctions at the Inner Ring Road and major radial urban arterial roads
- Establish BRT major stations, where people can change BRT routes and bus routes, near the junctions
- Give incentives, through revised Local Plans and re-zoning, for establishment of "Mixed Use Development Areas" at major junctions on the Inner Ring Road and radial urban arteries.
- Designate mid-rise, middle-income housing areas behind the Mixed Use Development Areas in the KMA Structure Plan.

(3) Designation of Land Use Categories in Kumasi City Centre

In order to achieve the proposed strategies for transforming the Kumasi City Centre, the proposed Land Use Plan for the City Centre, as shown in Figure 11.3.3, has the following main characteristics:

- Allow and encourage the already dense areas to continue to change from residential areas to mixed business/residential areas, as hatched blue in Figure 11.3.3.
- Allow and encourage the development of multi-storey buildings for mixed business/residential areas.
- Allow changes of use to commercial use along the ring road and along all major roads.

- Encourage and permit mid-rise residential areas behind the commercial uses on the outer edge of the inner ring road:
- Retain and safeguard the existing low-rise residential areas which have a good living environment.
- Safeguard large-scale existing educational, industrial, public open space/leisure uses.
- Designate and apply appropriate policies to the Cultural and Historical areas as shown above: necessary to identify the important areas



Source: JICA Study Team

Figure 11.3.3 General Land Use Plan for Kumasi City Centre, 2028

11.3.2 Land Use Policy for between the Inner Ring Road and the Urban Growth Boundary

In the general land use plan for Greater Kumasi Conurbation, the expansion of suburban residential areas is allowed and encouraged by the following measures:

- Upgrading minor radial roads to major radial roads toward suburban areas
- Establishment and upgrading of a set of roads composing a Middle Ring Road Connection
- Promoting the development of Suburban Centres for providing commercial and other services
- Permitting development in any area up to the Urban Growth Boundary (as described in 8.2.2 above), but
- Preparing a phased programme of provision of infrastructure and services to new settlement areas.

In general, unnecessary urban functions in the central area should be relocated to

these suburban areas, while high-degree urban functions should be more developed in the central area.

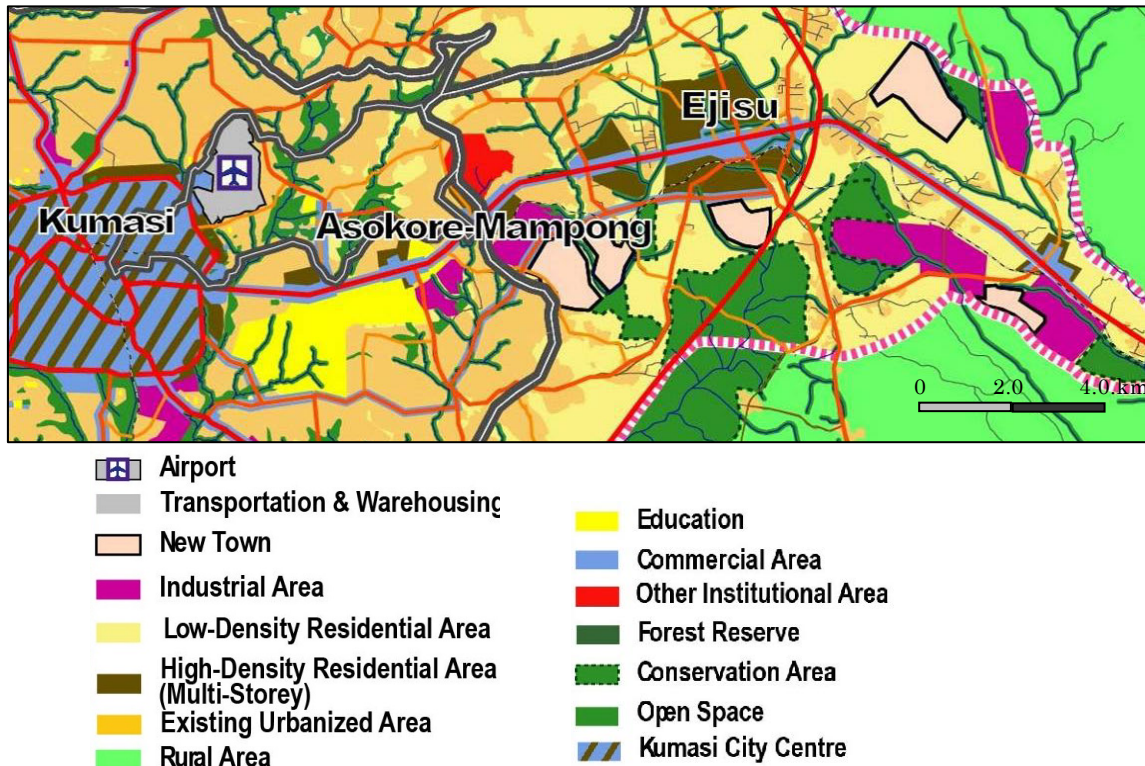
Suburban urban centres can provide perfectly adequate urban services which will prevent suburban residents from having to travel to the City Centre, if they are well planned and organised (for example smaller modern supermarkets, as well as modernized satellite markets). Such suburban centres should be planned not only for providing services to surrounding residents, but also as places for employment opportunities in suburban areas.

In the case between the Inner Ring Road and Middle Ring Road, commercial/business uses should be allowed to develop along major roads since it is not so easy to develop necessary urban functions at Suburban Centres.

On the other hand, in the case between the Middle Ring Road and Outer Ring Road, commercial/business uses should be discouraged from developing along major roads in favour of development of the identified Suburban Centres at Ahwiaa (Kwabre East), Afrantwo (Afigya Kwabre), Sepaase (Atwima Nwabiagya), Kotwi, (Atwima Kwanwoma), Aputuogya (Bosomtwe), New Akwadu (Bosomtwe) and Asokore Mampong (Asokore Mampong), and District Centres including Mamponteng, and Kodie. A model measure for upgrading and expanding suburban centres development is given in Figure 11.5.1. This figure shows the ways to add local streets for expanding commercial/business areas at Suburban Centres/ District Centres.

11.3.3 General Land Use Plan for Kumasi-Ejisu Urban Corridor

The Kumasi-Ejisu Urban Corridor should be developed to accommodate business offices, shopping centres, government administrative offices and housing areas, but to have an overall theme of a “Knowledge Corridor” with facilities such as free wireless internet and meeting points for higher education students and graduates with business funders. International exhibition and conference halls could be one of the urban functions which is part of the mixed use development.



Source: JICA Study Team

Figure 11.3.4 Proposed General Land Use Plan for Kumasi-Ejisu Urban Corridor

The development of the Kumasi-Ejisu Urban Corridor proposed in the SDF for Greater Kumasi Sub-Region should be encouraged by the following hardware and software measures:

Road and BRT Development

- Widening of Accra Road to accommodate dedicated BRT lanes (2 lanes)
- Construction of a new major road in parallel with Accra Road
- Establishment of BRT route and BRT stations on Accra Road

Land Use Plan and Regulations

- Set Commercial/Business Land Use Areas along Accra Road in the Land Use Plan
- Set larger areas for Commercial/Business Land Use in surrounding areas of BRT key stations in the Land Use Plan
- Set Multi-Storey Residential Areas behind the Commercial/Business Areas along Accra Road

New Area Development

- Development of Industrial Areas for Knowledge-Based Sectors between Accra Road and the Parallel Road
- Development of New Towns in the south of the Parallel Road

A key Element of this urban corridor development is that the functions and amenities of Ejisu City Centre should be developed and strengthened as the Secondary Centre of Greater Kumasi Sub-Region. Ejisu City Centre should be developed to accommodate business offices and administrative services offices for serving the

surrounding urban areas including industrial areas. Therefore this is designated as a high rise, high density area.

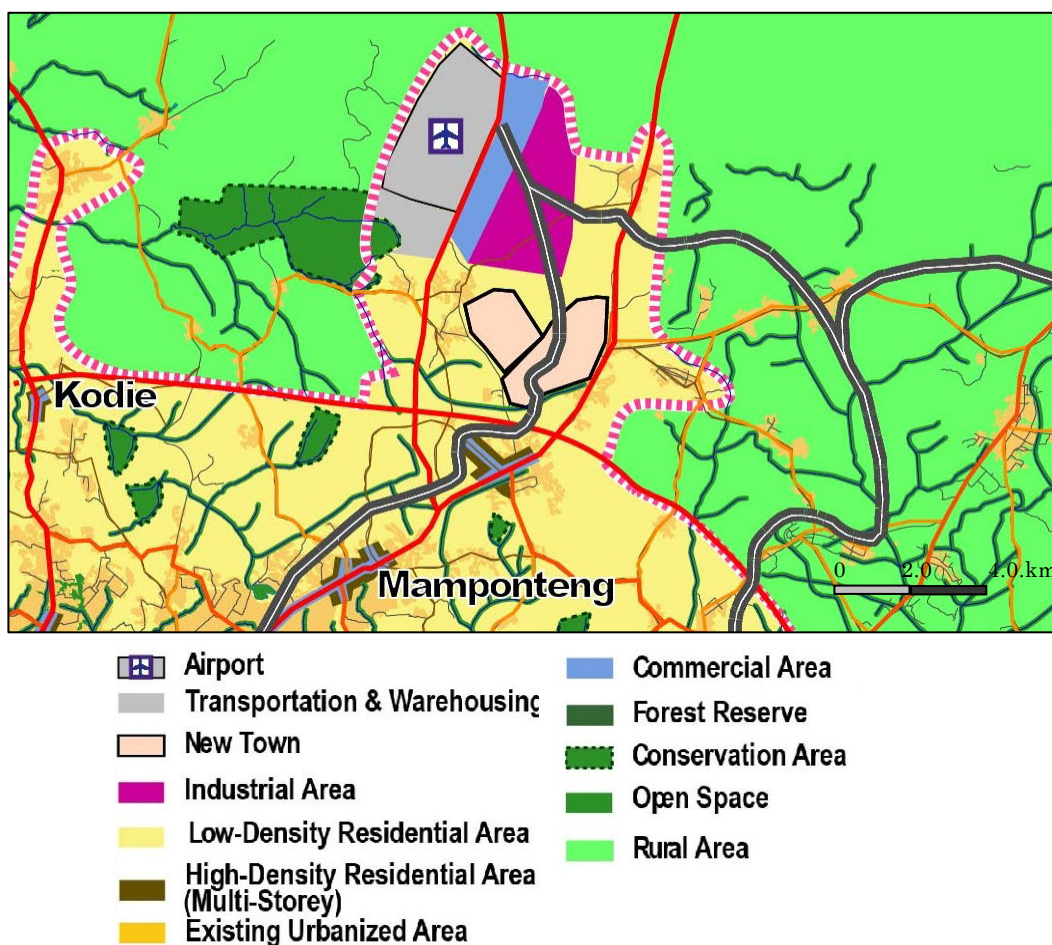
11.3.4 General Land Use Plan for Airport City

An airport city is proposed in conjunction with the proposed new international airport for Kumasi. The Airport City is composed of the following components as shown in Figure 11.3.5:

- International Airport
- Commercial/Business Area
- Light Industrial Area including Logistics Centre
- New Town

This Airport City is to have the following transport accesses:

- BRT route connecting Kumasi City Centre and a new airport terminal through Kumasi-Mampong Urban Corridor
- Expressway connecting between the Outer Ring Road and the new airport terminal
- Major Roads connecting Mampong District Centre and Aboaso Suburban Centre with the new airport terminal



Source: JICA Study Team

Figure 11.3.5 Proposed General Land Use Plan for Greater Kumasi Airport City

11.4 New Town Development outside the Outer Ring Road and in Urban Corridor

In order to accelerate the speed of suburban development in orderly manner, new town development is recommended for Greater Kumasi Conurbation. Such new towns should be developed for satisfying diversified residential needs ranging from low-rise single family housing to multi-storey multi-family housing.

Eleven new town sites are identified as shown in Table 11.4.1. The proposed new towns are located in Kumasi-Ejisu Urban Corridor (Figure 11.3.4), Airport City (Figure 11.3.5), along New Bekwai Road and Lake Road (Figure 11.4.1) and near Nkawie and Foase (Figure 11.4.2). These new towns could provide residential capacity of about 300,000 populations. This accounts for over 30% of the future population increase outside KMA within the Greater Kumasi Conurbation.

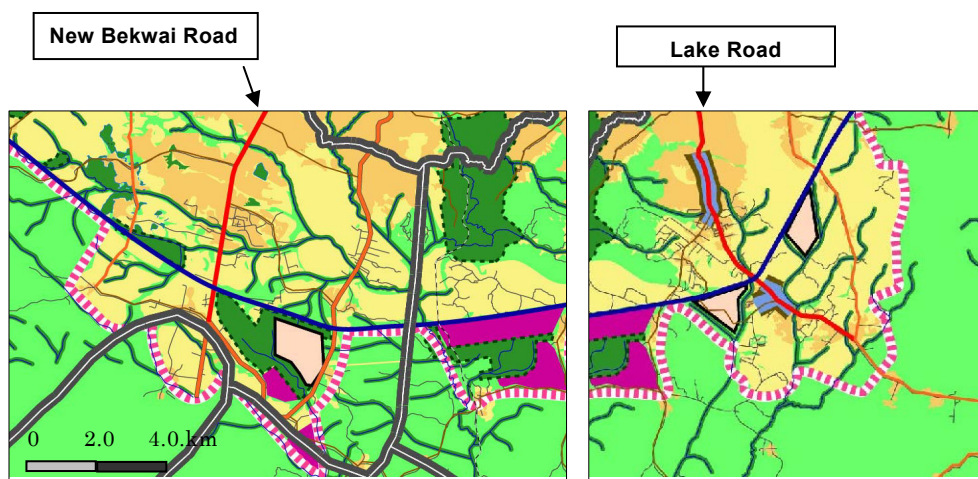
These new towns are mostly located outside the Outer Ring Road since the proposed new town development should be middle-sized area development requiring around 100-200 hectare.

These new towns are to be developed by private developers. Lands for such new town development should be arranged by traditional and government authorities. Such new towns should be developed and equipped with infrastructures in order to encourage people to start moving in immediately after the completion of construction of the new towns.

Table 11.4.1 New Towns Proposed for Greater Kumasi Conurbation

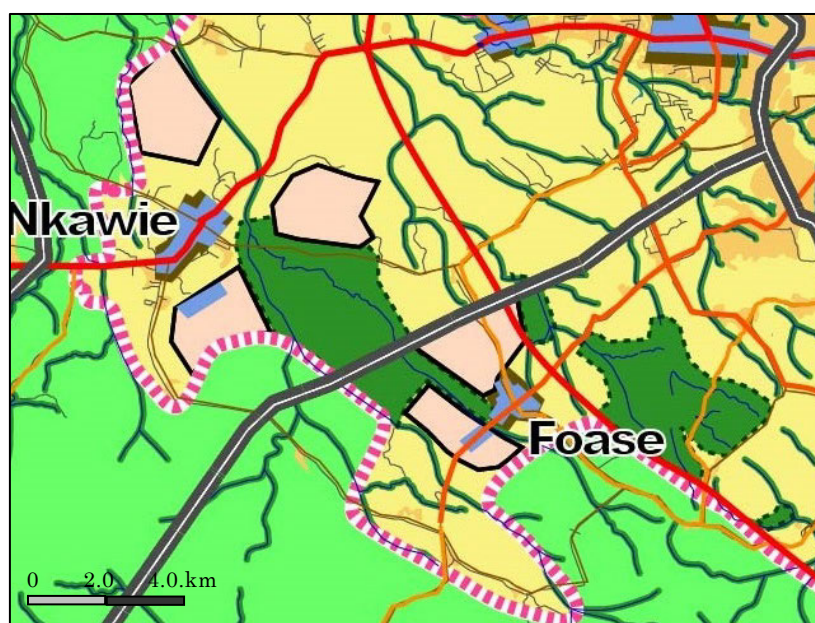
	Name	Area (ha)
Afigya Kwabre	Airport City New Town 1	200
	Airport City New Town 2	200
Atwima Nwabiagya	Nkawie New Town 1	200
	Nkawie New Town 2	210
	Nkawie New Town 3	280
Atwima Kwanwoma	New Bekwai Road South New Town	130
	Foase New Town 1	130
	Foase New Town 2	230
Ejisu-Juaben	Ejisu New Town 1	190
	Ejisu New Town 2	120
	Ejisu New Town 3	110
Outside KMA Sub-Total		2,000
KMA Sub-Total		0
Greater Kumasi Sub-Region		2,000

Source: JICA Study Team



Source: JICA Study Team

Figure 11.4.1 Proposed New Towns along New Bekwai Road and Lake Road in Greater Kumasi Conurbation



Source: JICA Study Team

Figure 11.4.2 Proposed New Towns near Nkawie and Foase in Greater Kumasi Conurbation

11.5 Land Use Plans for Suburban Centres and District Centres Existing

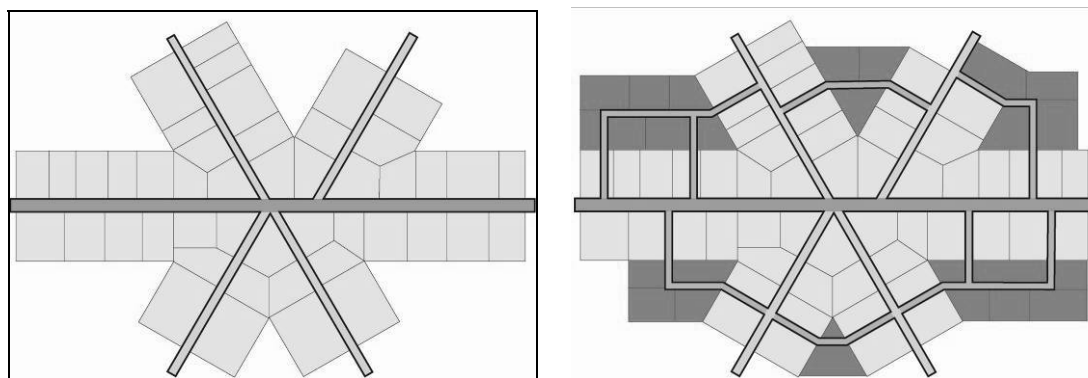
In the Spatial Development Framework (SDF) for Greater Kumasi Sub-Region, district centres and suburban centres are designated. However, currently the areas in which district centres and suburban centres are designated are currently occupied by houses and retail shops.

In order to achieve the desirable spatial structure delineated by the Sub-Regional SDF, the development of commercial/business functions for providing services to suburban residential populations, but also for employment opportunities in suburban areas. For this purpose, it is necessary to provide local roads within designated urban

centres and to designate commercial/business land uses as permissible uses in the land use zoning to be provided by district-level Structure Plans.

The left-side graphic of Figure 11.5.1 is a typical cross section found in suburban centres and district centres. It is a road and land use pattern of ribbon development along roads. Then the right-side graphic of Figure 11.5.1 shows model measures for provision of local roads and designation of commercial/business land use designation in order to solve problems related to ribbon development. .

Local plans for suburban centres and district centres should be prepared and approved to incorporate this kind of measures. Sub-Regional Structure Plans should generally specify which towns should be suburban centres and district centres and to what extent areas should be designated as commercial/business areas. These basic features and parameters specified by the Sub-Regional SP will be translated into a land use plan and zoning plan at the district level.



Source: JICA Study Team

Figure 11.5.1 Model Measures for Upgrading Suburban Centres and District Centres