REPUBLIC OF GHANA

MINISTRY OF LOCAL GOVERNMENT & RURAL DEVELOPMENT



NATIONAL OPERATIONAL GUIDELINES ON STREET NAMING AND PROPERTY ADDRESSING SYSTEM

November 2011

FOREWORD

With the ever increasing population in majority of our urban communities, Metropolitan, Municipal and District Assemblies (MMDAs) are faced with the challenge of effectively managing service delivery. Ensuring better management of urban services has varied dimensions with effective spatial planning as one of the fundamental ingredients for success. Effective spatial planning includes comprehensive street naming and property addressing. However, over the years spatial planning has been weak and this has consequently affected the setting up of an effective address system in Ghana.

Efforts at street naming and property addressing have been disjointed and limited in coverage with attendant adverse consequences on the Ghanaian economy especially with respect to locating activities in space, which has partly affected revenue mobilisation. In addition, corporate Ghana has had challenges doing effective business due to the absence of an effective address system.

Consequently, a street naming and property addressing policy has been put in place to address this challenge. Further to the development of the street naming and property addressing policy, a structured way of naming streets and numbering properties can be realised. This operational guide seeks to facilitate not only implementation of the street naming and property addressing system, but incorporates strategies aimed at assisting the MMDAs to enhance their internally generated revenues. Thus, the establishment of street naming and property addressing system also provides a good link with internally generated revenue of the MMDAs. The linkage is necessary to ensure sustainability of the system at the level of the MMDAs.

To make the efforts at street naming and property addressing reliable and relevant at all times, effective development control is required. MMDAs are therefore enjoined to comply with all requirements for implementing the system to ensure that it remains relevant not only for their operations, but to the public at large.

This guide provides the definitions, tools, processes and roles that will facilitate the implementation of the system. The primary goal of this document is to assist Metropolitan, Municipal and District Assemblies to implement the naming and addressing system in a coherent and orderly manner to partly improve response of emergency services to locations of need, delivery of municipal services in urban areas and revenue collection.

The Ministry of Local Government and Rural Development has positioned itself to support the implementation of this initiative to ensure that the general public realises the intended benefits of the system. It is therefore the expectation of government that the general public on their part will support the implementation of the system and make it a success.



HON. SAMUEL OFOSU AMPOFO
MINISTER FOR LOCAL GOVERNMENT AND RURAL DEVELOPMENT

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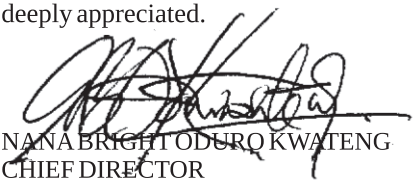
Other members of the team are Mr. Henry Nii Odai, Group Director, Ghana Statistical Service; Mr. Joseph Adu Baiden, Survey and Mapping Division of Lands Commission; Professor Paul W.K. Yankson, Geography Department, University of Ghana; Ms. Fati Lily Soale, MLGRD; Mr. Forster Mensah, Director, Centre for Remote Sensing and Geographic Information System; Dr. Volker Moniekes, former Team Leader, SfDR-GIZ; Ms. Lynda Amengor, Senior Advisor, GIZ-SfDR; Mr. Edward Sarpong, Junior Advisor, GIZ-SfDR; Mr. Benjamin Arthur, Land Valuation Division of Lands Commission; Mr. Chapman Owusu Sekyere, Town and Country Planning Department (TCPD); Mr. Lawrence Agudu, TCPD; Mrs. Lydia Essuah, MLGRD; Mr. Kofi Yeboah, Urban Management Land Information System, and Mr. Benjamin Quaye, Land Administration Project Office.

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NANA BRIGHT ODURO KWATENG
CHIEF DIRECTOR
MINISTRY OF LOCAL GOVERNMENT AND RURAL DEVELOPMENT

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List of Abbreviations

DA	District Assembly
DPCU	District Planning Coordinating Unit
DFR	Department of Feeder Roads
DPP	Department of Physical Planning
DPO	District Planning Officer
DUR	Department of Urban Roads
DWD	District Works Department
GAMA	Greater Accra Metropolitan Area
GHA	Ghana Highway Authority
GIS	Geographic Information System
GPS	Global Positioning System
IGF	Internally Generated Revenue
LI	Legislative Instrument
LGA	Local Government Act 1993, Act 462
LVB	Land Valuation Division of Lands Commission
KNUST	Kwame Nkrumah University of Science and Technology
M&E	Monitoring and Evaluation
MIS	Management Information System
MEST	Ministry of Environment, Science and Technology
MLGRD	Ministry of Local Government and Rural Development
MMDAs	Metropolitan, Municipal and District Assemblies
RCC	Regional Coordinating Council
RPCU	Regional Planning Coordinating Unit
SADC	Street Address Data Centre
SAT	Street Address Team
SPC	Statutory Planning Committee
ToT	Training of Trainers
VAT	Value Added Tax

Glossary[1]

Address directory (Index)	List of all buildings and urban fixtures identified during street addressing surveys including information such as: type of buildings, number of households per building, level of services, condition of facilities, water and electric meter numbers.
Address map	A map that specifically points indicates street names and numbers, the beginning and end of each street, and the main facilities. This map is accompanied by a street index.
Base map	Map used for positioning elements (locations and boundaries) on a new map.
Beginning Point	A point marking the beginning of a street where property numbering starts.
By-pass	A road built around a busy urban area to avoid traffic jams.
Coordinates	Numbers associated with points on a map.
Compound House	A dwelling unit with a courtyard at the centre that is normally shared by multiple families.
Detached house	A house standing alone (not joined to another) usually used by a single family
Digitising	Process that involves encoding the geometric description of geographic objects (points, lines, polygons, etc.) in digital form (x, y coordinates).
Field workers	Persons who undertake the fieldwork of inscribing addresses on properties and conducting surveys.
Geocodification	Assigning identifiers to geographic objects.
Geocoding	Positioning on a map using x, y coordinates.
Georeferenced data	Form of computerised cartography that matches data to geographical positions and locates addresses on a map using point features.
Georeferencing	Process that establishes a (mathematical) relationship between paper coordinates (example: centimetres or millimetres) on a planar map and actual (geographic)

[1] World Bank. (2005). *Directions to development: Street addressing and management of cities.* Washington D. C.: World Bank.

	coordinates. The coordinates of a certain number of points (registration points or ticks) must be known in both systems for georeferencing.
GIS	Geographic Information System. An organised system that combines hardware, software, and the geographic data needed to enter, store, update, process, analyse, and display all sorts of georeferenced information.
GPS	"Global Positioning System": A global satellite positioning system that locates and calculates points, using Lambert coordinates, datum points on a map with the help of satellites that orbit the earth. Initially designed by the United States for military purposes, it is now being used for civil applications as well, particularly for geodetics.
Layout	Local plan that sets out more detailed policies and assigns specific proposed land uses.
Number assignment	Assigning a number or a classification to streets or properties.
Numbering system	System for assigning a sequential number or classification to something.
Unique Parcel Numbering	A system of numbering used by the land sector agencies to uniquely identify each parcel of land.
Pilot operation	An approach to test the project organisation, the know-how of field workers and the method for installing signs. It is limited to a few streets to also test the signs and codification system chosen.
Property	A parcel of land and/or building built thereon.
Ring-road	A by-pass that provides a route around the Central Business District (CBD).
Sector Plans	Plans that deal with sectors of a settlement setting out more detailed policies and specific proposed land uses.
Semi-detached house	consists of pairs of houses built side by side as units sharing a party wall and usually in such a way that each house's layout is a mirror image of its twin.
Sign installation	Installing street name plates at intersections.

Signage map	A map that shows where street name plates should be placed (on posts or on building façades)
Stencil	A thin sheet of cardboard, plastic or metal that makes it easy to paint cut-out shapes.
Stencilling	In street addressing, this method is used to paint street numbers or names with a stencil on walls.
Street Addressing	Within the context of this document: A system used to locate a building or parcel, using the street name and a number assigned to the main entrance of a building or parcel. It involves sign installation, numbering main entrance of buildings, mapping and recording associated data.
Street index	A table that lists streets in alphabetical order as can be located on a map using an alphanumeric grid.
Street sign plate	A sign that designates a street at intersections during a street addressing project.
Subdivision	Division of real property in order to put buildings on a parcel or a number of parcels into smaller units
Terrace House	A number of housing units built in a row with a uniform style with two adjoining unit separated by a party wall but as a mirror-image of each other.

1.0 INTRODUCTION

This guide for naming of streets and numbering of properties (Street Addressing System) is to assist Metropolitan, Municipal and District Assemblies (MMDAs) to manage the processes for establishing a coherent address system nationally. It seeks to assist MMDA actors to own, implement and manage the Street Naming and Property Addressing System by providing a common understanding of the standards and processes involved using the Policy Document as the basis. It also outlines the processes of implementing the System within a settlement, community, city or district. In addition, it spells out the roles and responsibilities of the actors involved in implementation and management of the System.

1.1 The Legal Basis of Street Naming and Property Addressing System

The Local Government Act 1993, Act 462 (LGA) which established the Metropolitan, Municipal and District Assemblies (MMDAs) also designates them as Planning and Rating Authorities. As Planning Authorities, they have responsibility for spatial planning to primarily address the issue of orderly human settlement development. As part of this mandate, Section 49 of the LGA requires that all physical developments should have written permits from the Assemblies with the Statutory Planning Committees as the body charged specifically with this responsibility.

Also, LI 1589 {Local Government (Urban, Zonal and Town Councils and Unit Committees) (Establishment) Instrument, 1994}, has the fourth function of the Second Schedule stipulating that sub-districts are “to recommend to the District Assembly the naming of all roads in its area of authority and cause all buildings in the streets to be numbered”. In addition, the third schedule of LI 1961 Local Government (Departments of District Assemblies) (Commencement) Instrument,

2009 mandates the Department of Physical Planning (DPP) to 'undertake street naming, numbering of houses and related issues'.

In line with the planning mandate of MMDAs therefore, streets are to be named and properties including open spaces and undeveloped parcels of land, numbered to serve as a basis for assigning addresses to facilitate easy identification of places, delivery of services and better management of urban settlements and communities.

1.2 The Street Naming and Property Addressing System Defined

The street address system involves naming streets and numbering the properties along them. Street addressing is an exercise which makes it possible to identify the location of a parcel of land, public places or dwellings on the ground based on a system of names and numbers. That is, to "assign an address" using a system of maps and signs that gives numbers and/or names to streets and numbers to buildings/parcels of land.

Street Addressing as a system goes beyond the mere naming of streets and numbering of properties. It includes developing digitised maps to depict spatial development for use in the management of settlements and urban communities based on a strict development control regime. The maps with the information thereon can be developed into Geographical Information System (GIS) with a database.

Thus, development of a street address system should not be viewed as a one-off activity, but as a process to be expanded and refined over time to address a range of needs including navigation. It comprises a number of components and processes which are elaborated in subsequent sections of this document.

1.3 Why is Street Naming and Property Addressing System Necessary?

The Street Address System has a range of benefits which have been broadly categorised into key user areas as follows:

Metropolitan, Municipal and District Assemblies (MMDAs): It facilitates mobilisation of local revenue also known as Internally Generated Funds (IGF); and the management of the urban settings and services. It is, therefore, a tool:

- for planning and managing municipal services by making it possible for decentralised agencies to identify and monitor public assets in respect of their age, number and condition to facilitate urban planning and management of investments. This is made possible with the creation of a database for management of facilities and investment programming; and

- to improve local tax collection where information gathered through the initiative makes it possible to compile a register of taxable businesses and properties with addresses thereby making it easy to locate. This provides a realistic basis for determination of the tax base and has the potential to improve revenue when the right systems are in place.

Central Revenue Agencies: the system can be used to compile business and property registers vital to the operations of agencies such as Ghana Revenue Authority.

For the general public, it makes the urban setting more **"user-friendly"** by:

- improving the system of street coordinates which makes it easier for people to find their way around in cities or towns;

- assisting with the delivery of health, fire, and security services especially in times of emergencies; and

- facilitating easy location of critical facilities in towns and cities.

The **private sector** is enabled by the system to provide targeted services to clients as well as track their locations for relevant follow-ups on transactions. It also facilitates easy location of infrastructure for maintenance.

[2]World Bank. (2005). *Directions to development: Street addressing and management of cities.* Washington D. C.: World Bank.

2.0 PRINCIPLES AND STANDARDS OF THE STREET NAMING AND PROPERTY ADDRESSING SYSTEM

This section outlines the principles and standards that govern the naming of streets and numbering of properties. The principles and standards set out the requirements to be complied with in implementing the two key dimensions of the address system; namely, the naming of streets and the numbering of properties. For the purpose of this document, 'Street' has been used as a working definition for all access types, excluding railways. Properties also include buildings, undeveloped parcels of lands and open spaces.

2.1 Street Naming Standards

The rationale behind the standards is to provide the guide to interpret and implement Street Naming to ensure consistency with the requirements stipulated for the exercise. The following critical institutional requirements are to be noted by Assemblies in implementing the system:

i. The naming of streets shall be the responsibility of the Department of Physical Planning (DPPs) of the MMDAs. The DPPs, thus, shall lead the process of interpreting the policy and standards in implementing the System under the auspices of the District Assembly. This task shall be carried out in consultation with the sub-district staff and traditional authorities. All street names shall be subject to approval by the Statutory Planning Committee (SPC) of the MMDA before implementation.

ii. During the initial phase of implementing the System, the respective MMDAs shall constitute Street Address Teams (SATs) out of the membership of the District Planning Coordinating Units. The SATs will be responsible for the day-to-day coordination of

implementation of the street naming and numbering of properties. The DPP head shall lead the Street Address Team in the execution of the initiative.

iii. MMDAs shall work closely with their DPPs to set up Geographic Information System (GIS) and Management Information System (MIS) Units. The MIS Unit are to be housed in the DPP offices and should have necessary tools to facilitate effective management of the street address data using the Land Use Planning and Management Information System (LUPMIS).

iv. MMDAs will be required to submit finalised street address outputs to the Street Address Data Centre at MLGRD for validation and consolidation.

v. To enable MMDAs to ensure compliance with the address requirements in their jurisdictions, specific bye-laws will have to be formulated on specific aspects of the system.

vi. MMDAs shall strengthen their development control systems through effective spatial planning. This is critical to the success of the System.

2.1.1 Guide to Assigning Street Names

It is the responsibility of MMDAs to ensure that all existing and proposed streets in their jurisdiction are named and appropriate signage erected in accordance with agreed standards.

The selection of street names shall respond to the following standards:

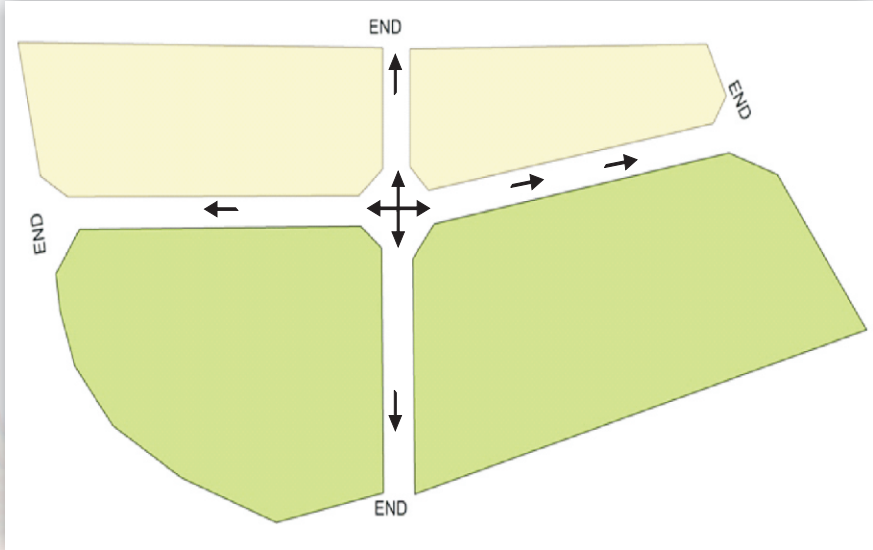
i. All streets are to be named irrespective of whether they have dwelling units or business related properties/buildings or not.

ii. Street names shall not be duplicated in an MMDA or in any geographical region defined for the purpose of this exercise even if the street types are different.

iii. Street names along continuous major streets with elbows shall not change. As such, name changes cannot occur at 'T' intersections. A street which runs through more than one community may have one name along its entire length and may not experience street name change even at 'T' or cross intersections. The name change may only occur when the intersection is taken as the origin of growth. This is to

help to determine the start and end points of streets. An illustration of Start (Beginning) and End points of streets is provided in Figure 1.

Figure 1:Determination of Access Start (Beginning) and End Points



iv. Names with similar pronunciations but different spelling shall not be permitted within a district, community or town. An example of this is Agyepong Street and Adjepong Street.

v. Street names applied should effectively communicate to the public especially children. The names have to be appropriate, easy to pronounce and not offensive.

vi. The street names are to promote community image and shall be drawn from local history, culture and traditions (including names of distinguished chiefs, queen mothers and elders); fauna and flora; prominent personalities including sports men and women; and landmarks.

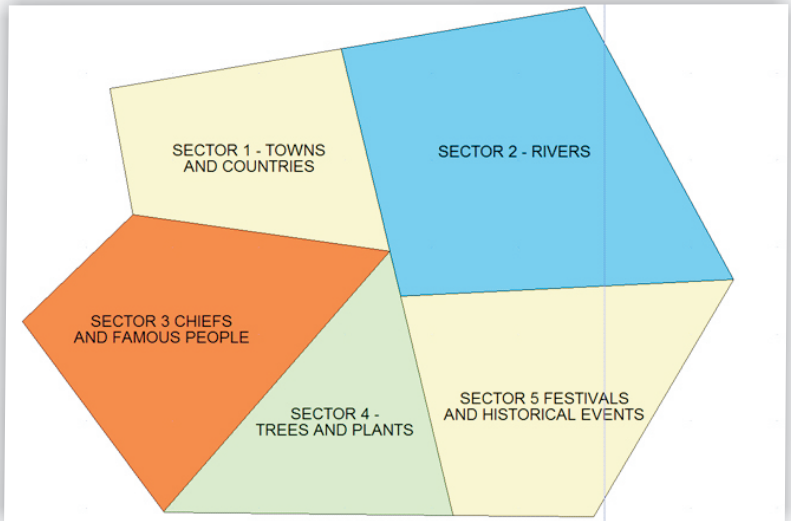
vii. Names belonging to the same theme, such as flowers are as much as possible to be applied in naming streets in an entire

zone or area as a means of providing general identification distinctions and easy public appreciation of the naming system as shown in Figure 2.

viii. Existing recognised and historical street names shall be retained.

ix. The range of streets in a community or city should be categorised into first, second and third order levels in terms of use and importance, and used as a guide for the naming exercise. Similarly, names to be applied should be categorised into levels of importance. With such categorisation, the most important streets shall be assigned the most important names, followed by the second order of names for the next level of important streets till the process is complete. The categorisation of importance of names should be determined depending on whether the achievements are of national, regional, district and community significance. National and regional level achievements of the personalities could be considered as the first level of importance, followed by district for the second level and community for the third level.

Figure 2: Guide to Determining Themes for Addressing Streets in Sectors.



x. The use of street names with apostrophes should be avoided.

xi. The use of names of living persons, including politicians and chiefs, shall only be permitted in exceptional instances. Streets shall also not be named after any private commercial organisation or set-up.

xii. Auctioning of street names for the purpose of raising funds shall not be permitted.

xiii. Names of existing streets shall be used on new streets which are continuations of, or in alignment with, existing streets.

xiv. Street names shall not exceed a maximum of eighteen (18) characters including the prefixes and suffixes but excluding the spacing in between words. Title prefixes to names of persons shall not exceed four characters. Similarly, street suffixes shall not exceed four characters

xv. Cardinal prefixes (north, south, east, and west) are permitted only when used in relation to a community name such as South La Beach Road. Cardinal words joined to a community name such as Northridge Link shall be permitted.

xvi. The use of cardinal prefixes such as South Link Road to designate streets shall not be permitted. Cardinal suffixes such as La Beach Drive South shall also not be permitted.

xvii. Only recognised street types listed in section 2.1.2, Access Types and Suffixes, shall be used. Additional access types shall be discussed and agreed with MLGRD before implementation.

xviii. Street type names used shall be consistent with definitions as in Section 2.1.2, Access Types and Suffixes.

xix. To facilitate easy mapping of street names, the length of the name shall match the length of the street on the maps and photos used.

xx. In newly developing areas, in the interest of public safety, if any graded or paved access is provided, a temporary street name post identifying the street(s) shall be erected by the developer.

xxi. Street names on proposed Local Plans shall be considered final when the local plan is approved and gazetted. For already developed areas without street names, the names assigned shall only be considered final when the name installations have been reviewed for clarity and correct spelling, the names mapped and approved by the SPC.

2.1.2 Access Types and Suffixes

The access classifications and suffixes are based on standards used by the Town and Country Planning Department, Ghana Highway Authority (GHA), Department of Urban Roads (DUR) and Department of Feeder Roads (DFR). The definitions applied are outlined with the details in Appendix 1.

2.1.2.1 Highway (Trunk Road) Types

i. Highways are trunk roads which are national in nature. These are represented with the suffix N with numerical extensions.

ii. Iner-regional roads are represented by the suffix IR and refer to trunk roads that provide a link between two adjoining regions. It also has numerical extentions.

iii. Regional roads have R as their suffix and are trunk roads within a region with links to various districts.

A map depicting the range of trunk roads and the codes assigned by the Ghana Highway Authority is provided in Appendix 2.

2.1.2.2 Urban Road Types

The classification of the range of urban roads is generally five in number. These are:

i. Major arterials
ii. Minor arterials
iii. Distributors and collectors
iv. Local roads
v. Special facility roads

The ordering of the above range of urban roads is usually carried out by the Urban Roads Department of the Metropolitan and Municipal Assemblies based on agreed standards.

2.1.2.3 Feeder Road Types

The Department of Feeder Roads utilises three broad road classifications as follows:

i. Access Feeder Roads usually have dead ends that terminate in a community. They are identified by the suffix A;

ii. Connector Feeder Roads provide a link between two trunk roads and are identified by the suffix C; and

iii. Inter-district Feeder Roads provide a link between two districts with the suffix I as the identifier.

2.1.2.4 Access Definitions and Suffixes

For the purposes of the street naming exercise, the following access types which relate more to the urban setting shall be used to designate streets:

Avenue (Ave): A wide access often lined with trees and predominantly straight, normally with sidewalks which leads through residential or commercial developments with a north-south orientation.

Street (St): An access with east-west orientation usually with sidewalks.

High street (Hs): A major access running through a busy shopping and commercial area of a suburb, town or city in the east-west orientation.

Lane (Ln): Is a part of the roadway within a road marked out for use by single line of vehicles. It can also refer to an access which acts as a secondary vehicular network in cities and towns.

Link (Lk): A shorter access between two major collectors or arterial roads.

By-pass (Bp): A bypass is an access that avoids a built-up area or suburb or town to let through traffic flow without interference from local traffic, to reduce congestion in the built-up area, and to improve road safety

Boulevard (Blvd): A wide access usually lined with trees, landscaped and separated by a central reservation dividing the lanes.

Court (Ct): A short street with an outlet at one end only, constructed with turnaround at the other end.

Close (Cl) or Cul-de-Sac: A short street with an outlet at one end only without provision for turnaround at the other end.

Road (Rd): Is a route between two places, or communitieswhich typically has been paved to allow easy travel.

Drive (Drv): is a type of private road for local access to one or a small group of properties and is owned and maintained by an individual or group.

Parkway (Pkwy): access with linear park maintained alongside.

Alley (Aly) : A narrow lane between or behind a row of properties for pedestrians only. They are narrow without sidewalks and gutters but used by the public.

Crescent (Cr) : Is an arch-shaped access or street.

Path (Pth): A walkway (not motorable) used by pedestrians.

Motorway (Mtwy): A highway for high-speed traffic with limited or no access to adjacent property

Way (Wy): It ranges from alley-like to a residential street or a major roadway in new developments.

Circle (Cir): An access containing a closed loop beginning and ending with the same street, or where looped street closes onto itself.

Loop (Lp): Is an access that encircles a neighbourhood, suburb, town or city.

Ring-road (Rr): A by-pass that provides a route around the CBD.

Circular road (Clr): A road with a circular pattern through a community, city or town.

The last four access types have similar characteristics and require considerable precision in designating streets as such.

The street system is illustrated in Figure 3..

Figure 3:Street System



2.1.3 Reviewing Existing Street Names

Where there are existing street names, the following shall apply:

i. The DPP shall conduct a review of all existing street names for consistency with the street naming standards.

ii. Changes to existing recognised or historical street names shall be deemed necessary only in cases of street name duplication or if the street name is such that pronunciation is difficult and can cause confusion or a mix up in case of an emergency response to

a location. Change shall also be deemed necessary if the names are not consistent with the guiding principles of assigning street names. Thus, recognised and historical names shall not be changed if they do not conflict with the standards.

iii. Where name change is warranted following the review of existing street names, the DPPs shall, in consultation with the relevant traditional authorities and community leaders (or relevant major stakeholders), select a street name in accordance with the provisions and the processes outlined in Sections 2.1.8 to 2.1.8.2 for street name change.

2.1.4 Street Naming in Newly Developing Areas or Suburbs

i. Naming of access proposed for newly developing areas shall be done at the time of preparing the Layouts (Local Plans).

ii. In the case of private gated developments, the developers shall submit the names of the access as part of plans and other documentation forwarded to the MMDA for approval. The names shall be reviewed first by the DPP to avoid duplication and to ensure conformity with the required standards before submission to the Statutory Planning Committee (SPC) for approval. The DPP review shall also be done in consultation with the traditional authorities concerned to avoid objections during implementation. However, the naming shall be guided by where the city centre is, the direction of growth and the hierarchy of streets.

iii. Street names for newly developing areas shall be deemed to be legally binding when approved by the SPC and the Local Plan subsequently gazetted.

2.1.5 Naming of Street in Developed Areas or Suburbs

i. In the case of existing streets with no names, the respective DPPs shall, in consultation with the relevant traditional authorities and community leaders (or relevant major stakeholders), select a street name in accordance with the requirements set out in sections 2.1.1 and 2.1.2 of this document.

ii. The naming of the access will first be executed as a desk work exercise by labelling the range of access on available maps with assigned names before field validation and implementation. However, the naming shall be guided by where the city centre is, the direction of growth and the hierarchy of streets.

iii. Subsequent to the completion of the above exercise and mapping of the data, the finalised labelled maps should be presented to the SPC for approval.

2.1.6 Street Naming in Metropolitan Areas with Multiple Districts

i. Where more than one district constitutes a metropolitan area or city such as the Greater Accra Metropolitan Area (GAMA) which has a number of districts, joint planning and implementation arrangements by the MMDAs concerned shall be required.

ii. The planning and implementation arrangements for the Street Naming and Property Addressing shall be facilitated by the respective Regional Planning Coordinating Units (RPCUs) under the auspices of the Regional Coordinating Councils (RCCs).

iii. The RCCs shall cause to be formed a Team made up of the DPP officers and assist them to manage the process of naming the streets and numbering of properties to ensure coherence.

2.1.7 Street Naming in Areas of Unplanned Development

Street naming in areas of unplanned development shall be based on two options due to their peculiar nature:

i. Where there are existing defined streets, walkways and paths etc., these shall be mapped and named accordingly in line with the requirements.

ii. Where there is no existing defined access, the DPP shall in collaboration with the leadership of the community, including the Assembly Member and other opinion leaders undertake an exercise to identify all access which can be used. This will involve identification and mapping of the range of access and

name them in line with the requirements of sections 2.1.1 and 2.1.2.

2.1.8 Street Name Change

i. Street names assigned, checked and approved by the SPC shall not be subject to change through any local action.

ii. Changes to recognised and historical street names shall not be permitted unless there is evidence to show that a street name has been duplicated or a street name is such that pronunciation is difficult and can cause confusion or a mix up in the case of an emergency response to a location on the street.

iii. All street name changes shall be subject to approval by the Statutory Planning Committee of the Assembly.

iv. Proposals for name change of streets may be initiated at two levels as follows:

Street Name Change by District Assembly
Street Name Change by the Community

2.1.8.1 Street Name Change by a District Assembly

i. The first level of request for name change is vested in the District Assembly. The District Assembly through its DPP shall initiate the process for a name change when a conflict in the name for a particular street has been noticed or brought to its attention by MLGRD.

ii. The DPP shall initiate the change process using the following steps:

- ✓ Assess and determine the veracity of the complaint concerning the conflict;
- ✓ Inform the affected community(ies) of the conflict and why the need for the change;
- ✓ Determine the new name options and liaise with the relevant

sub-district council, community leadership and traditional authority for their endorsement;

- ✓ Submit the new name and the rationale to the Statutory Planning Committee for approval;

- ✓ Upon approval, the locality, neighbourhood or community shall be informed by the DA of the new name, the effective date of the name change and when the street name plate will be changed. When the name change is approved, it shall be advertised by the DA.

2.1.8.2 Street Name Change Request by a Community

i. Requests for street name change by a community or neighbourhood shall be forwarded in writing to the Assembly for the consideration of the Statutory Planning Committee (SPC).

ii. Requests for street name change shall follow the process below:

a. An application for the change has to be submitted to the District Assembly through the sub-district office for the area. Where the sub-district office is not functional, the application shall be submitted to the Assembly. The application must clearly outline the concerns and basis warranting the change;

b. The applicant is to receive a written response from the Assembly on the state of the application within one month from the date of receipt of the application by the Assembly.

c. Where a new name is proposed by the community or neighbourhood, the name shall be reviewed by the DPP for compliance with the street naming standards and subsequently approved by the SPC before the physical change process is initiated;

d. Where no new name is proposed, the DPP shall follow due process to select a new street name;

e. Upon acceptance or otherwise by the SPC, the applicant will be informed together with all occupants of properties

on the street. This shall include the new name, the effective date for the name change and when the signs shall be changed; and

f. The name change when approved by the SPC shall be advertised by the Assembly for the information of the general public.

It is the District Assembly or its agent which shall be mandated to carry out name change installation after the change has been approved by the Statutory Planning Committee.

2.1.9 Effective Date of Change

The streets for which the name change request have been approved will have new street name plates installed within 60 days. The effective date for the name change shall also be sixty (60) days from the date of approval by the SPC.

2.2 Street Name Signage

All streets shall be identified by the name assigned and installed in line with the provisions in this document.

2.2.1 Description of Street Name Signage

Street name shall be installed at all intersections; and shall comply with design, installation and maintenance requirements. The name plates shall conform to specifications in Sections 2.2.1.1 and 2.2.1.3.

2.2.1.1 Street Name Sign Colour and Illumination

i. Five colour schemes are permitted for street name plates.

ii. The lettering for the street name shall be black retro-reflective material on white retro-reflective (high-intensity) background or white retro-reflective (high-intensity) lettering on blue, green, red or violet reflective backgrounds.

iii. The font shall be **"Arial Bold"** lettering.

2.2.1.2 Street Name Post Dimension and Material

The dimensions of the name post and material shall be as follows:

i. The total length of street sign post shall be 3.25 metres with not less than 2.55 metres above the ground and 0.7m buried in concrete in the ground. This makes provision for a single arm fixed at 90° to the street name post at 2.3 metres for the portion above the ground.

ii. Where an additional arm has to be accommodated on the name post, the corresponding width of the 0.25 metres per name plate shall be added to the 3.25 metre length of the street name post as illustrated in Figure 4a.

iii. The name plate shall be fixed on a 2.54cm square galvanised steel tube welded to the street name post with a dimension of 1.0 by 0.25 metres as in Figure 4b. The square galvanised steel tube shall have rivet holes at the ends and the midpoints as illustrated in Figure 4c – 4d.

iv. The street name post shall be galvanised steel tube 7.62 centimetres in diameter and the colour shall be the natural colour from galvanising.

Figure 4a: Dimensions of Street Name Sign Post with Double Name Plate Arms

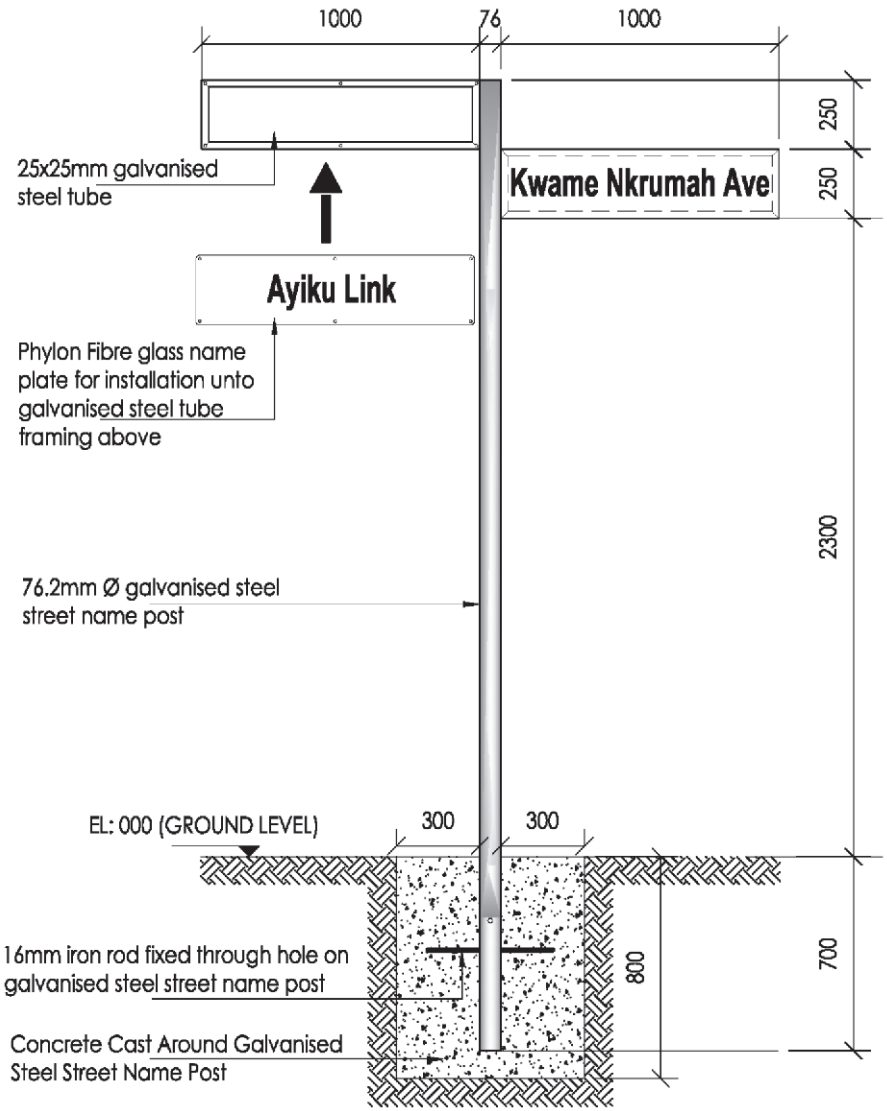
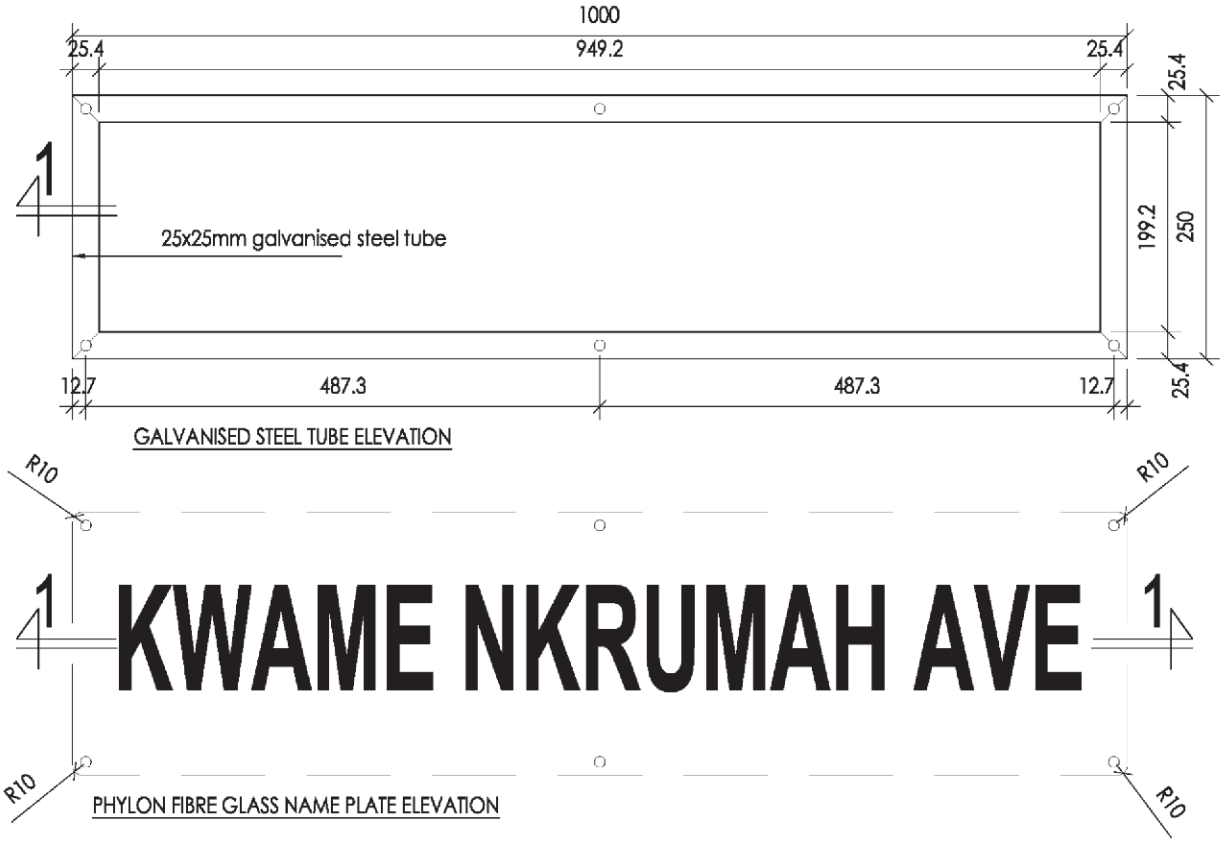


Figure 4b: Galvanise Steel Tube and Street Name Plate Elevations



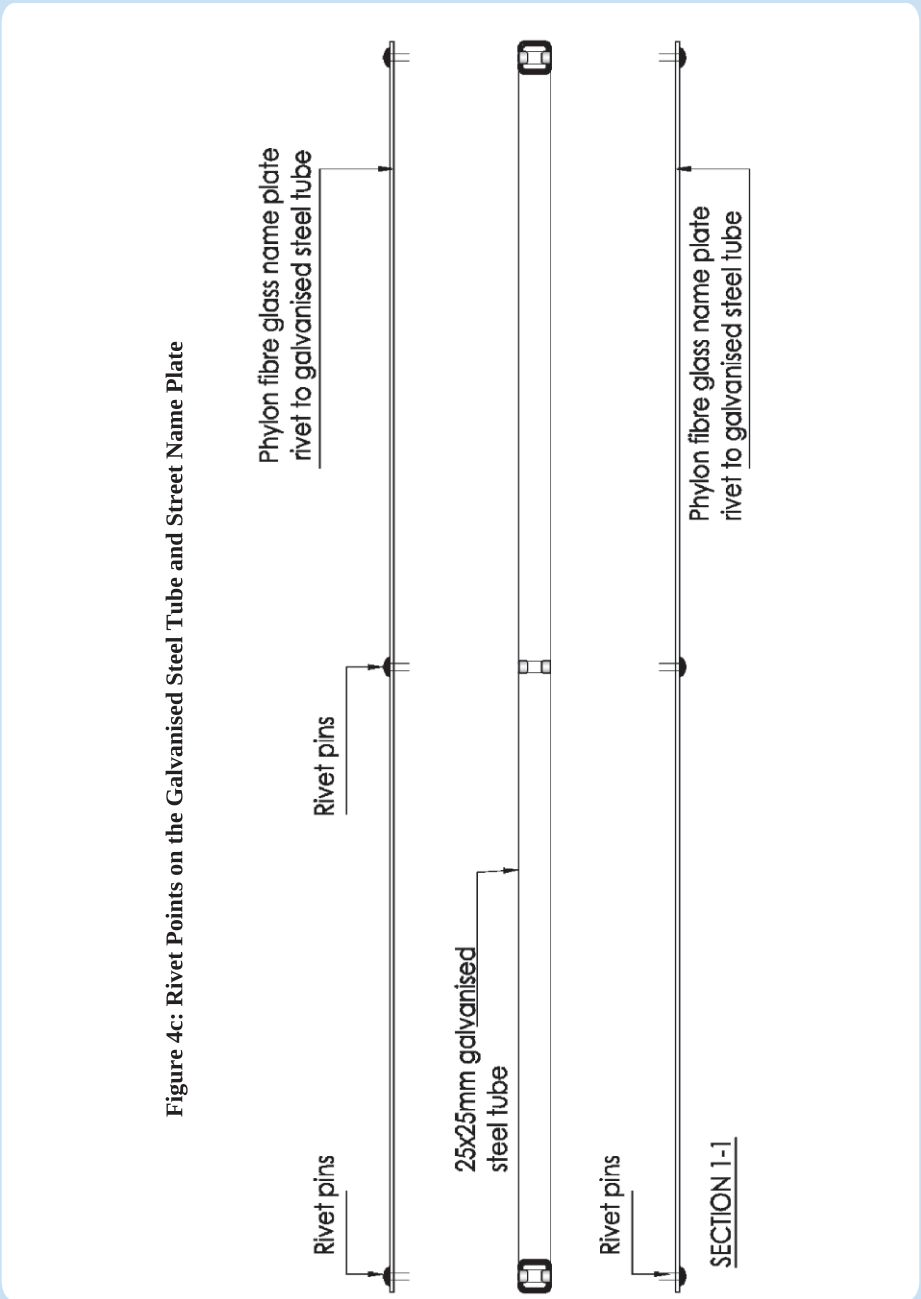
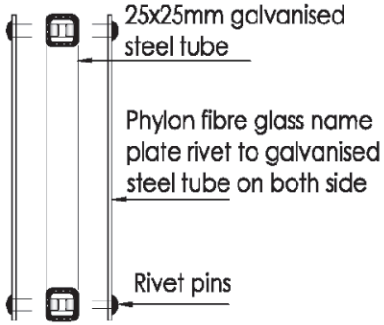


Figure 4c: Rivet Points on the Galvanised Steel Tube and Street Name Plate

Figure 4d: Rivet Points on Galvanised Steel Tube and Street Name Plate



2.2.1.3 Dimensions of the Street Name Plate and Lettering

i. Street name plates shall also not exceed 1.0 by 0.25 metres.

ii. Two text lines shall be allowed per street name plate, one for primary text and the other for secondary text.

iii. The primary text shall be for street names which shall be in capital letters (upper case) such as AKOTO LANTEY STREET and shall not exceed 18 characters as in Figure 5a. The primary text may also include the street code

iv. The secondary text shall depict the address range per street which shall be the total property numbers on a street as in Figure 5b.

v. The primary text lettering shall be 12cm and that of the secondary text shall be 6cm with a line spacing of 3cm in between the two.

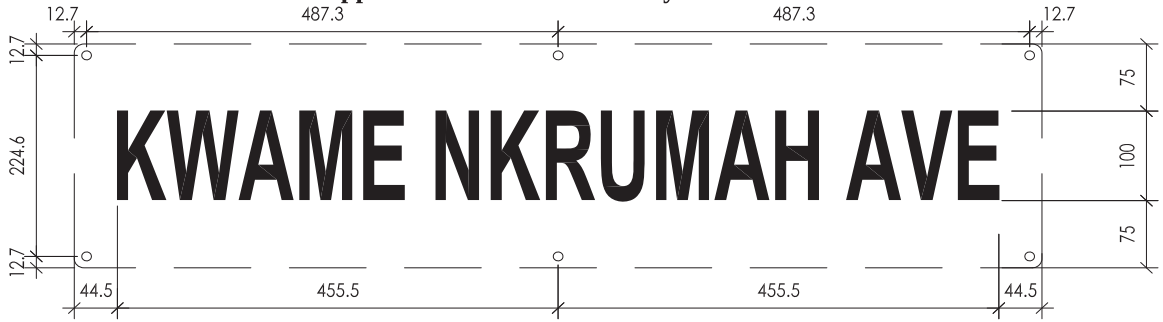
Figure 5a:Street Name in Upper Case for Primary and Secondary Texts



PHYLON FIBRE GLASS NAME PLATE ELEVATION

vi Where there is no Address Range as Secondary Text, the pacing in between the Text Line and upper and lower borders shall be 7.5cm.

Figure 5b: Street Name in Upper Case without Secondary Text



PHYLON FIBRE GLASS NAME PLATE ELEVATION

vii. The names shall be inscribed on Phylon Fibre Glass or any other material subsequently determined.

viii. The street name plates shall be fixed on a 2.54cm sq. rectangular galvanised steel tube of 1.0 metre by 0.25 metre dimension welded to the street name post as illustrated in Figure 4a.

ix. The name plates shall be fixed on both sides of the rectangular galvanised steel tube.

2.2.1.4 Street Name Post Placement

Requirements for placement of street signs have not been exactly detailed, as each situation must be assessed in its own context to give the most suitable results. However, the following list of standards for the positioning of street name post shall be taken as a general guide, but must not be seen as an exhaustive list.

i. Street name signs shall be placed with the DIRECTION OF THE INSCRIPTION parallel to the streets they name.

ii. The post shall be placed beyond pedestrian walkways at intersections within 20 cm from the edge of the walkway.

iii. Street name post and plate installations are not to impede pedestrians and other road users.

iv. **Placement of street name installations shall not be combined with outdoor advertising**.

v. Street name installation shall not be obscured by outdoor advertising, plants or any other object at street intersections. **However, Street Name installations shall not interfere with Traffic Light installations at road intersections**.

vi. Outdoor advertisement installations are not to be placed within 2 metre radius of street name installations.

vii. All street intersections shall have names installed.

viii. At 'T' intersections, name plates are to be placed on the major road directly opposite the approaching traffic from the perpendicular section of the road.

ix. The galvanised steel name post may be filled with concrete before they are installed to reduce pilfering.

2.2.1.5 Responsibility for Street Name Signage

The responsibility for fabricating and installing street name signs at the intersections of all existing and new streets in an assembly's jurisdiction is vested in the MMDAs.

A period of three years is allowed for all MMDA's implementing the system to install street Name Post at intersections

SIGNAGE OF HIGHWAYS (TRUNK ROADS) REMAINS THE PRESERVE OF THE GHANA HIGHWAY AUTHORITY.

2.3 Property Numbering Standards

i. MMDAs shall establish and assign property numbers in accordance with the guidelines set forth in this section.

ii. All properties used for residential, commercial, civic, or governmental purposes as well as vacant parcels in developed areas shall be assigned numbers to identify them.

iii. For newly developing areas on the outskirts of settlements and communities without Local Plans, the DPP will have to establish how the parcels of land have been demarcated together with the proposed streets before proceeding to assign property numbers.

iv. The properties shall be numbered in relation to the access in front of them.

2.3.1 Property Numbering Flow

This section provides details of the generally acceptable numbering flow standards. The property numbering flow along a street or on a compound depends on its specific pattern.

2.3.1.1 Determining the Start and End Points of Street for Property Numbering

i. The process starts with determining the city or town centre (origin of growth) and the direction of growth.

ii. The second step is to determine the hierarchy of the street based of on the width and traffic volumes.

iii. Properties on higher order streets are to be numbered first before that of the lower levels.

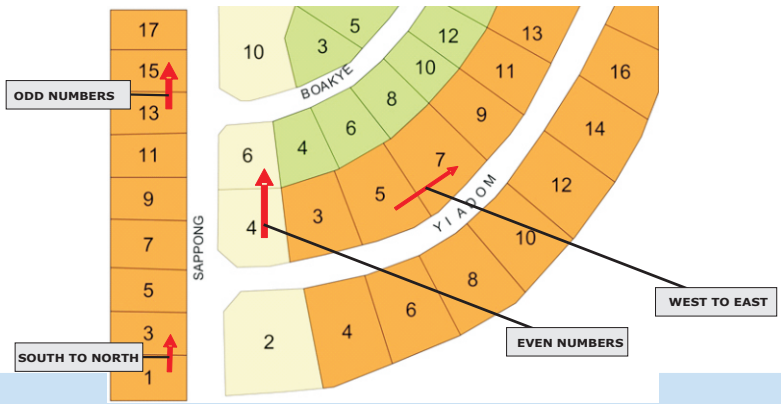
iv. The beginning points for numbering of properties shall be based on work done to define the Start and End Points of the streets as in Figure 1.

v. Where there is a northward orientation in the growth of a community, the norm shall be to follow a south – north direction of numbering and a southward growth shall follow a north-south orientation in the numbering, however this will also depend on the start and end points of streets.

vi. Dead-end roads shall have beginning points at the point of departure from the main road.

vii. Numbers assigned shall be determined according to the entryways to the properties. Where the properties have more than one entryway and street on both sides, the most used entryway shall determine the number to be assigned. Figure 6 depicts a simple numbering flow in west – east and south - north directions.

Figure 6: Numbering Flow after the Start and End Points of Streets are Determined



2.3.1.2 Odd/Even Number Location

Numbering of properties should start first from the highest order street to the lower levels. Therefore within a community, properties on all first order streets have to be numbered first and followed by second order streets after which third order streets properties will be numbered and so on.

Even numbers are to be assigned on the right side and odd numbers are to be on the left from the start point of the street. Figure 6 also illustrates the numbering flow for Even and Odd numbers.

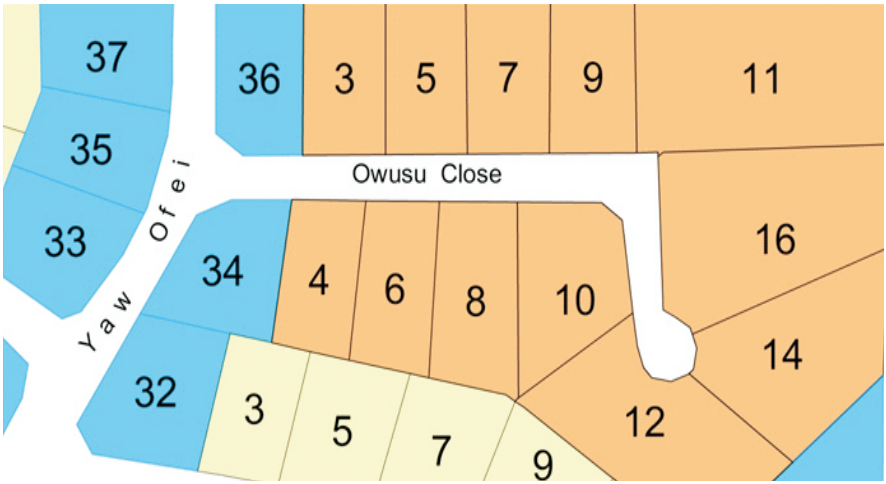
2.3.1.3 Fractional, Alphanumeric, Hyphenated Addresses

Property numbers shall not have any fractions (e.g. 46 ½ Tadi St) or hyphenated numbers (41-56 Bill St). Alphanumeric numbers such as 46A and 46D are on the other hand shall be allowed.

2.3.1.4 Court and Close Numbering

The property numbering in this case will be clockwise with reference to the north orientation and anticlockwise for south orientation depending pattern of development and numbering flow. Figure 7 illustrate numbering of a court with a south orientation. The flow will be clockwise if the numbering is from east to west.

Figure 7:Numbering Flow of a Court with a South Orientation



2.3.1.5 Numbering of Circular Patterns

For an access with a circular pattern, the only entrance to the main road is both the start and end points. Where there is more than one access to the circular development location, the main access shall be used as the start and end points. The properties shall be numbered in a clockwise direction, taking into account the odd and even numbering rule. If an access with a circular pattern has buildings at its centre, odd numbers shall be given to the parcels on the outer ring and even numbers to those at the centre. See Figure 8a and 8b.

Figure 8a:Numbering Flow for Circular Street Patterns

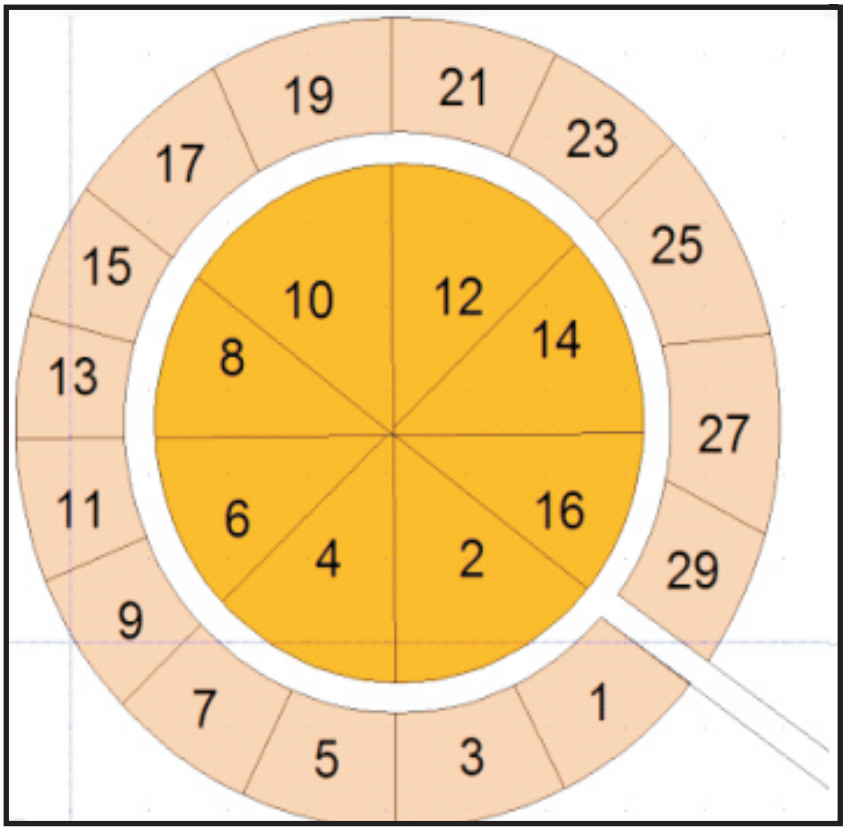
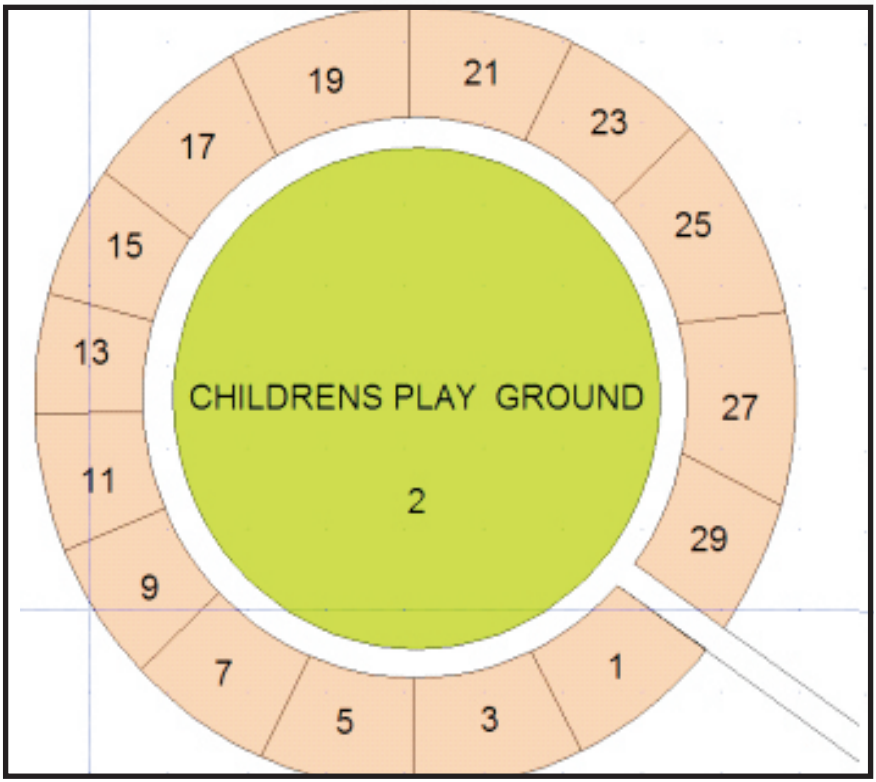


Figure 8b:Numbering Flow for Circular Street Patterns



2.3.1.6 Numbering Corner Parcels of land

Assigning numbers to corner parcels shall take into account the entryway. Thus, for corner parcels the numbers assigned will depend on the main entrance to the properties.

Where there is an undeveloped parcel at an intersection, the DPP shall determine the number based on an assumed entryway. The allocated number shall remain when the parcel is developed and this will also determine the location of the entryway.

Corner parcels shall have two numbers but one shall remain silent depending on the entryway to the property. The silent numbers will be active only when the entryway changes

permanently, which means that the previous active number will become the silent number.

Permanent change in entryway in such cases shall be brought to the attention of the Assembly 60 days before it is carried out. The Assembly also shall on receipt of the notification respond within a period of two weeks to the property owner. If the change is approved, the property owner shall ensure that a new property number plate is procured and installed before the end of the 60 days allowed for the change to take effect.

2.3.1.7 Numbering of Underdeveloped Parcels of Land in a Developed Area

Where there are uncompleted developments or undeveloped parcels in-between properties, the number for the parcels shall be determined and assigned. The numbers assigned shall be allocated by the DPP when applications are presented to develop such parcels of land.

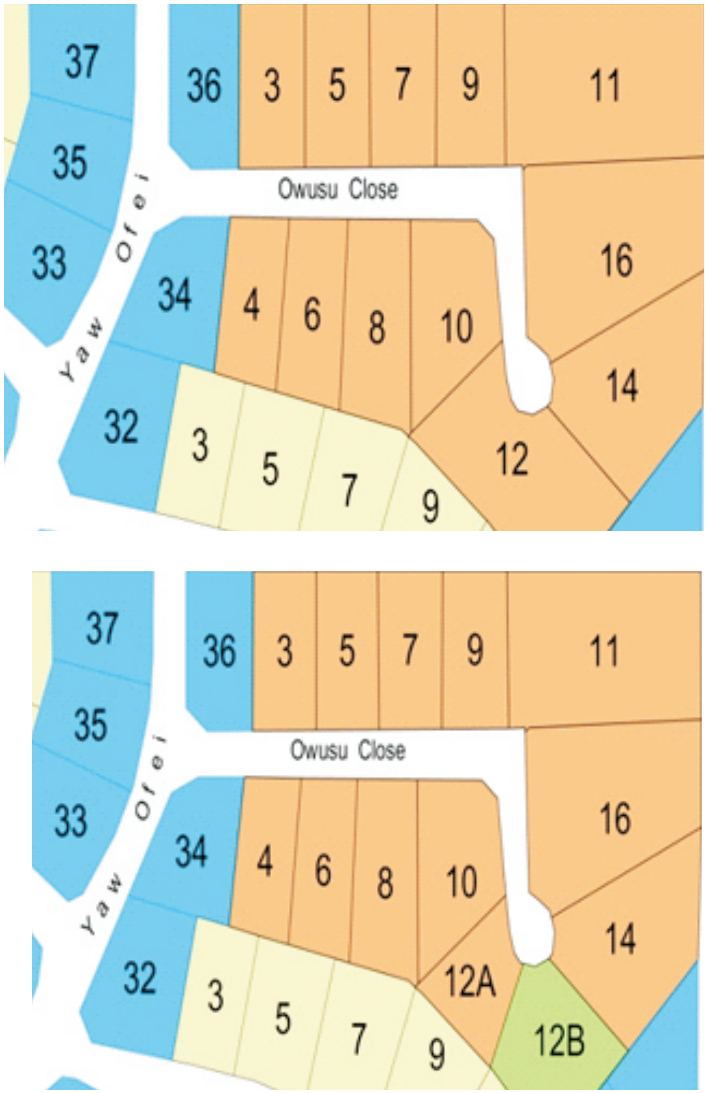
2.3.1.8 Numbering of Properties with Infilling or Subdivision

Numbering in this category will usually take place after an address has been assigned to the main property. Depending on the nature of the infilling or sub-division, two options may arise. If the new structure:

i. is within the same compound and uses the same entrance just like the original property, the number allocated to the original property shall be maintained.

ii. has or will have a walled compound different from the original property, then its own entryway shall be allocated a new number. The new property shall be allocated an alphabetical extension to the original number as shown in Figure 9.

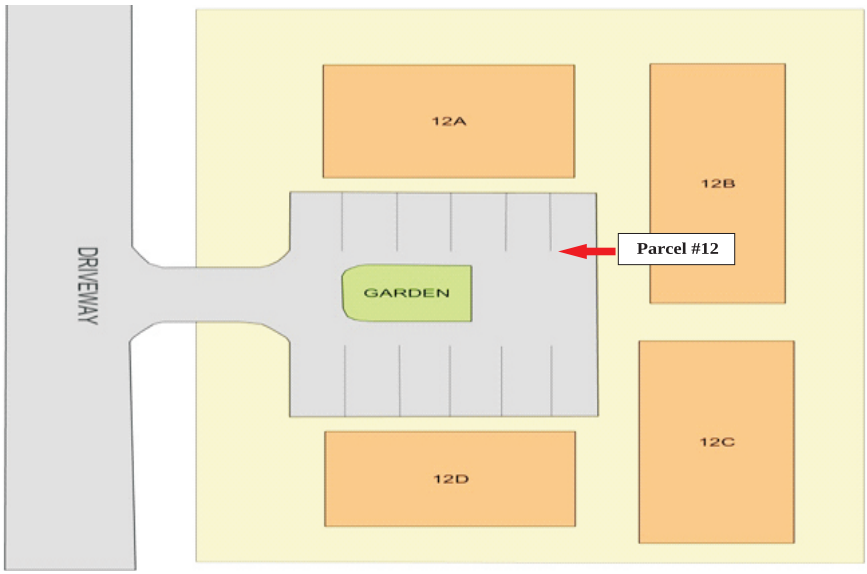
Figure 9:Numbering for Infilling and Sub-division at Property #12



2.3.1.9 Numbering on a Compound House

Numbering of a compound house shall be in two forms. The first scenario is when buildings are located on the same compound or parcel but with different owners. In such cases, the parcel of land will first be assigned a number and the buildings thereon assigned alphabetical extensions in a clockwise direction starting from 'A'. An example of this is illustrated in Figure 10.

Figure 10 : Numbering of Buildings with Different Owners on a Parcel



In the situation above, the parcel of land has the number 12 and the properties on it have chronological alphabetical extensions A, B, C and D in a clockwise direction.

The second scenario is where there is a parcel with a number of buildings owned by an individual with one main entrance. Such a compound house shall be assigned an address 12 without any alphabetical extensions.

2.3.1.10 Numbering of Apartments

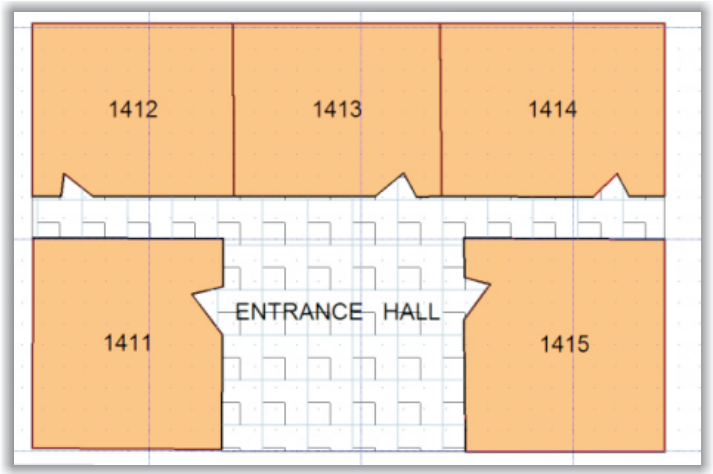
Apartments and multi-tenant structures shall first have the entire building assigned a number followed by secondary

location attributes for the floors and individual apartments. For example, addresses 14 Tadi Street, Apartment 11 and 14 Tadi Street, Apartment 22 are the first apartment on the first floor and the second apartment on the second floor respectively at 14 Tadi Street. The numbering illustrations are provided in Figures 11 and 12.

Figure 11: Numbering of Apartment Floors



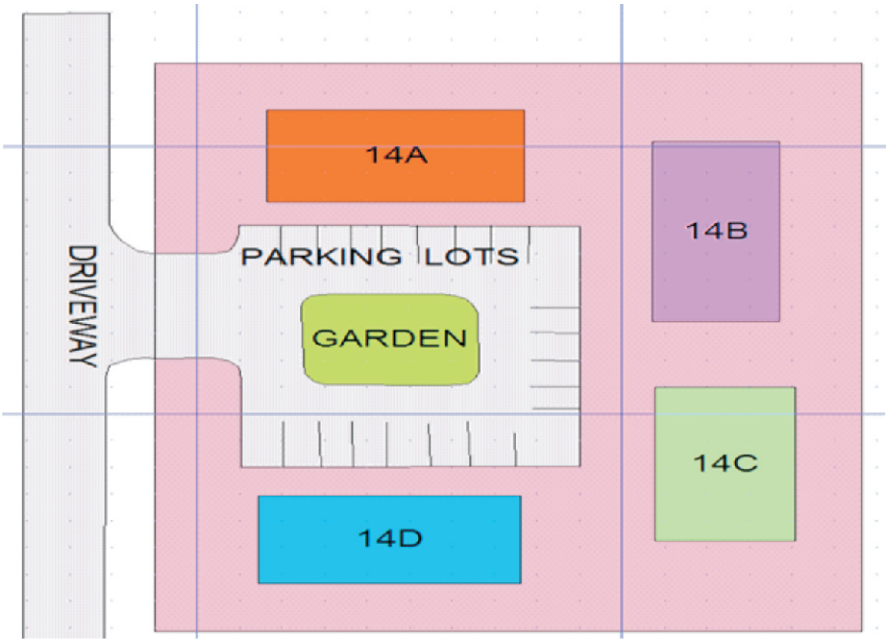
Figure 12: Numbering of Apartments by First Floor



2.3.1.11 Numbering of Multiple Apartments or Buildings on a Parcel of Land

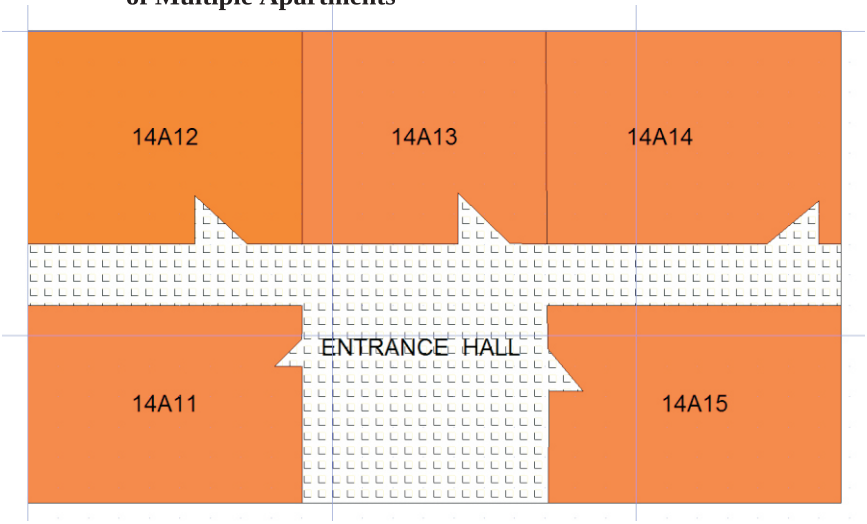
Where there are a number of apartments or buildings on the same parcel of land, each shall be assigned an alphabetical extension starting with the letter 'A' in a clockwise direction as in Figure 13

Figure 13: Numbering More than one Apartment on a Parcel



This is to be followed by assigning secondary location attributes to the floors and individual apartments by floors. For example, the first apartment on the first floor of the first block on parcel number 14 on Tadi Street shall have the number - 14 Tadi Street, Apartment A11. The number for the apartments on the floor shall be as in Figure 14.

Figure 14: Numbering of Apartment Floor in a Situation of Multiple Apartments



2.3.2 Numbering of Hotels

A parcel of land which has been developed as a hotel shall be assigned a number but the room numbers shall be as applied by the hotel management.

2.3.3 Numbering of Commercial and Office Suites

i. Suites shall be numbered sequentially in the order they are accessed from the main entrance, in a clockwise manner from the front view of the building.

ii. Commercial or office suite in single storey buildings shall be numbered starting from 1, 2, 3 and so on without using the odd and even numbering rule.

iii. Multiple storey buildings shall be addressed like the single storey buildings with suites by floors. However a floor numbering connotation shall be added. The floor with the main entrance shall be the building's ground floor and be identified by zero (0), the first floor shall be identified by one (1) and so on. A 20th suite located on the ground floor of an office complex at 15 Tadi Street in North Kaneshie

- Accra shall have the address as follows:

1.Name of the Enterprise
2. Number of the Suite
3. Block name if any
4. Number of the property
5. Street Name and Code
6. Suburb or Neighbourhood
7. City or Town
8. Region and Country if required

Suite numbers shall be posted on top of the main entrance door to each suite.

iv. When additional tenant spaces are created in existing addressed commercial suites or offices, the subdivisions shall be assigned alphabetical extensions starting from 'A' in a clockwise direction.

v. All other unoccupied rooms such as caretaker's closet, housekeeping, electrical closet, etc., shall be identified with a simple description.

vi. Placement of numbers in such buildings shall be consistent with the identification and signage requirements.

2.3.4 Property Numbering of Areas of Unplanned Development

Property numbering of such areas will be based on a range of options due to their peculiar nature. Numbering in areas where there is an access shall follow the standards and procedures outlined in sections 2.3.1 to 2.3.3. In situations where there are no walls for the properties and a number of buildings are on the same compound or parcel of land, the following steps shall be followed:

- The DPP or SAT will identify the owners of the buildings or properties on the parcel of land; and
- Where it is established that there are different owners who are not of the same household, then different numbers shall be assigned to the properties or houses using the principle in Figure 10.

In situations where there are a few access and unplanned developments, the following approach shall be used in the numbering of properties:

- Where there are named streets, walkways, lanes etc.,

then the numbering of the properties shall be done with these as the reference points, but the process should follow the access order approach explained in section 2.3.1.2;

- Where there are no defined access, the developments should be clustered using specific landmarks. Each of the clusters shall be given specific names originated locally and name post erected to identify them. The walkways will then be identified and the numbering done based on hierarchy and using the odd and even number rule for property numbering.

2.3.5 Property Numbering in Settlements without Streets

The following process shall be applied in the numbering of properties in settlements without streets, which is typical of most peri-urban settlements in Ghana. Most of such per-urban areas are ultimately absorbed into urban areas over time. This process should be combined with section 2.1.7 (ii) and 2.3.4:

- ✓ Determine the central point of the community;
- ✓ Determine the direction of growth of the settlement;
- ✓ Using available maps, sub-divide the settlement into manageable and distinct blocks as sectors;
- ✓ Number and/or name the sectors on the Map. If there are existing names for the sectors they may be adopted;
- ✓ Sign post the sectors or sections;
- ✓ Determine the order or hierarchy of walkways and paths with the help of community leaders;
- ✓ Determine the start and end points of the paths and walkways and name them; and
- ✓ Start numbering of properties along the paths and walkways from the high to low order levels using the start and end points.

2.3.6 Numbering a New Construction Site or Development a Parcel of Land

Layout Requirement: Layouts or Local Plans for newly developing areas shall be approved and gazetted only when street names and address numbers have been assigned to the parcels of land.
Building Permit Requirements: Assemblies when approving

applications for building permits of prospective developers shall assign numbers to the buildings as part of the permit issuing processes.

2.3.7 Responsibility for Installation and Maintenance of Property Numbers

At the initial phase of establishing the system, stencils may be used to assign numbers to the properties until the Assembly decides to use number plates. Generally, a peroid of three years is allowed for Assemblies to ensure that all properties have number plates. Owners or tenants of properties shall ensure that the numbers are visible at all times. The number plate installation and maintenance shall be managed as follows:

i. Responsibility for the installation of an assigned property number is that of the property owner, but the number plate shall be purchased from the District Assembly or its agent. Where it is installed by the Assembly, the cost of the number plate shall be borne by the property owner.

ii. The maintenance of the number plates shall be the responsibility of the owner, caretaker or tenant of the property at all times.

iii. Any attempt to cover an assigned number with the intention of concealing it shall be considered unlawful.

iv. To ensure public compliance with the address requirements as well as empower Assemblies to take legal action against defaulters, Assemblies are to put in place appropriate bye-laws in respect of the system.

2.3.8 Size and Placement of Property Numbers

The size and location of the address numbers shall take into account situations outlined in Sections 2.3.8.1 and 2.3.8.2.

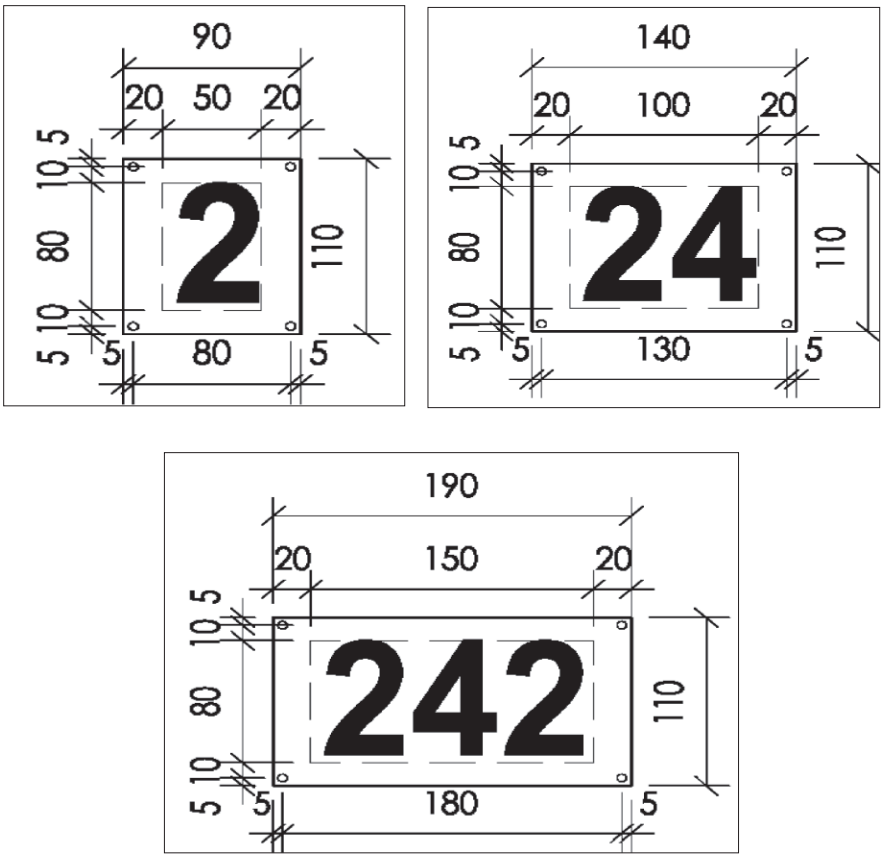
2.3.8.1 Residential, Industrial and Commercial Centres

Material and Dimension

i. The use of stencils on walls shall be accepted if it is endorsed by the Assembly. However the stencilling has to be done in accordance with the inscription specifications given in Figure 15.

ii. The number shall be inscribed on a Phylon Fibre Glass or ceramic tile. The dimensions for the number of digits are provided in Figure 15.

Figure 15: Details of Inscriptions on Property Number Plates



Colour

The plates shall have a blue background with white lettering or white background with black lettering or any other colour subsequently approved by MLGRD. The number plates shall be reflective. The ceramic tile shall be brown in colour with block inscription.

Placement

i. The plates shall be placed at the front entrance of every property 155 cm above the building floor or ground.

ii. The address plates to be placed at the front entrance of a building or property has to be visible from the sidewalk or access whether it is day or night. Where the number is not visible from the access, and there is a driveway or lane, an additional number shall be placed at the intersection of the driveway or lane.

2.3.8.2 Apartment Buildings and High-rises

All apartment buildings shall display the property numbers above or on the side of the primary entrance to the building. The size, colour and placement shall be in line with the requirements as outlined in 2.3.8.1. Apartment or suite numbers for individual units within the complex shall be displayed above or on the right side of the entrance of each unit as may be appropriate.

2.3.9 Numerical Address Exceptions and Numbering of Unauthorised Structures

All properties (parcel of land) with or without physical developments shall be numbered whether they are unauthorised or not, but this excludes temporary structures such as kiosks and containers. To be able to do this effectively, the DPP is expected to execute this exercise by using prepared Local Plans. However, the numbers assigned to unauthorised developments shall not constitute an endorsement or approval by the Assembly.

The numbering of the unauthorised developments shall have two dimensions:

i. Developments which are in line with the provisions of the Local

Plan but have no Building Permits shall be numbered just like others which have Building Permits. The number assigned by the Assembly shall not be equated to a Building Permit. Therefore, a property owner without a Building Permit for his/her development has to take the necessary steps to secure the appropriate approval from the Assembly.

ii. Developments on roads, water channels and other public places shall be numbered but this will also not constitute an endorsement by the Assembly. All such developments shall therefore receive an automatic alphabetical extension 'U', which shall designate them as unauthorised.

Assemblies are to use the implementation of the street naming and property addressing as one of the tools to put in place a system that will assist them to effectively manage physical developments in the cities and towns, by getting rid of the numerous temporary structures on the streets if the address system is to be effective.

2.4 Violation of Street Naming and Property Addressing Standards

MLGRD shall ensure that all violations of the addressing requirements by MMDAs are addressed by bringing such to their attention on a regular basis. The process shall be as follows:

i. Whenever a violation of the standards in an MMDA jurisdiction is noticed by the Ministry, the MMDA concerned shall be notified in writing with the details.

ii. Upon receipt of the notification, the Assembly shall ensure that the violation is addressed within 60 days.

iii. Where specific individuals or organisations are involved, the Assembly shall notify such persons or parties to rectify the violation and where it requires a name change, appropriate processes shall be followed to address the situation.

2.5 Defining Addresses for Residential Properties

Section 2.3.3 outlines the address structure for businesses and organisations.

Similarly, the address for residential property shall be as follows:

- ✓ Name of the Individual
- ✓ Number of the property or apartment
- ✓ Street Name and Code
- ✓ Suburb or Neighbourhood
- ✓ City or Town
- ✓ Region and Country if required

3.0 DISTRICT LEVEL IMPLEMENTATION PROCESS

This section focuses on the process for the implementation of the System at the district level. The process has three main stages, namely Preparatory, Implementation and Maintenance Phases.

3.1 Preparatory Phase – District Level

The preparatory phase defines the specific initial activities to be carried out in implementing the System by focusing mainly on:

- ✓ Setting up and operationalising the Street Address Team to coordinate implementation;
- ✓ Holding district level stakeholder consultations to present an overview of the system;
- ✓ A critical assessment to define district specific implementation approaches;
- ✓ Design of sensitisation programme for the exercise;
- ✓ The modalities for the selection of fieldworkers;
- ✓ Procurement of materials needed by the Assembly to implement the system;
- ✓ Ground-truthing to validate orthophoto maps;
- ✓ Deskwork of street naming and property numbering;
- ✓ Pilot Operation of Street Naming and Property Addressing;
- ✓ Preparations for the data gathering exercise
- ✓ Training of Fieldworkers;

3.1.1 The Setting up of the Street Address Team

The composition of the Street Address Team together with their functions is outlined in Section 5.3. To get the team to operate, the District Chief Executive is to inaugurate it and spell out their terms of reference.

3.1.2 District Level Stakeholder Consultation

The General Assembly and key actors in the District such as the Police, Fire Service and Civil Society Organisations are to be sensitised on the initiative, and to solicit their support during implementation. In line with this therefore the Assembly is expected to organise a day's session to introduce the system and outline implementation processes to the stakeholders in the district.

3.1.3 Assessment of District Situation to Define Implementation Approach

This stage of the initiative is critical as it will help to define what the implementation needs are and what is available. Where the Assembly does not have the capacity, it may engage the services of a consultant. A specimen Terms of Reference for the engagement of the consultant is provided in Appendix 3. Some of the areas the SAT should focus attention, includes:

- ✓ Gathering of available documents for the implementation of the system (including orthophoto maps);
- ✓ Modalities for applying existing access coding used by Ghana Highway Authority (GHA), Department of Urban Roads (DUR) and Department of Feeder Roads (DFR) by the Assembly for the exercise,
- ✓ The range of property numbering dimensions to be considered; the approaches to be adopted for implementing the initiative; recommendations for operationalising the system; a budget and a work programme. Refer to Appendix 4 for the estimated timelines for the initiative.

3.1.4 Design of Sensitisation Programme for the Street Naming and Property Addressing System

Communication and education are very essential to the exercise for the following reasons:

- ✓ For the public to better understand the objectives and purpose of the

system;

- ✓ Solicit public co-operation and support for the introduction of the system;
- ✓ Create public awareness for people to volunteer the necessary information towards the establishment of the system;
- ✓ Promote community responsiveness in maintaining the street naming infrastructure; and
- ✓ Promote acceptance, ownership and usage of the system when it is established.

The approach to communication and education developed by local governments shall be based on a national communication strategy formulated for implementation of the system. However, Assemblies shall be guided by the following:

i. It is necessary to launch regular education campaigns aimed at reaching out to the public. Several media options can be used simultaneously including radio, newspapers, television, posters, flyers and official inauguration of the operation.

ii. Set up the campaign: The campaign has to be carried out with the important steps of the operation in mind as follows:

- ✓ ground truthing to establish the real situation on the ground to inform the deskwork of the SAT;
- ✓ the pilot operation of testing out the deskwork on the field;
- ✓ the onset of the implementation phase;
- ✓ midway through the implementation phase; and
- ✓ final stage of the operation, where the system will be in use and maintained.

Specific local conditions should inform options adopted by Assemblies in their public education efforts.

3.1.5 Modalities for Selecting Fieldworkers and Supervisors and Setting-up their Training

Following deskwork of naming of streets and numbering of properties, the fieldwork to undertake stencilling of the names of streets and inscribing numbers on the properties will be the next major exercise. Simultaneously, data collection on properties as well as businesses will

have to be carried out. These activities require the services of fieldworkers to execute. Due to the importance of the exercise, considerable care is required in selecting the fieldworkers.

3.1.5.1 Selection of Fieldworkers

For cost effectiveness, fieldworkers should be hired from the communities where the exercise is to be carried out. Where possible, the fieldworkers are to be selected in consultation with sub-district staff, the assembly members, chiefs and opinion leaders of the community. Prospective fieldworkers should be literate with at least Senior High School certificate or its equivalent. They must be socially accepted in the community where they will work.

The SAT will need to advertise the recruitment of the fieldworkers through radio announcements and by posting notices at vantage points among others. The advertisement for fieldworkers may indicate the need for supervisors. The following must serve as a guide for the advertisement:

- ✓ The essence of recruitment;
- ✓ Summary of the responsibilities of the fieldworkers and supervisors;
- ✓ How interested persons can submit their application;
- ✓ Closing date for the submission of applications;
- ✓ The criteria for short-listing;
- ✓ Duration of the fieldwork; and
- ✓ The date for the training.

The number of fieldworkers to be recruited, depends on the number of properties to be numbered and the volume of data to be gathered, in addition to the streets to be named. A minimum of 40 properties for stencilling and data collection including the range of streets covered by the properties, should be the basis of a day's work for a group of two fieldworkers. The specific roles to be played by the fieldworkers and supervisors are as follows:

a. **Fieldworkers:** The communities in which the exercise is to be carried out are to be subdivided into manageable zones and assigned to fieldworkers to cover the duration of the fieldwork. The essence of having fieldworkers working in

groups of two is to make the stencilling of street names and numbering of properties as well as the data collection easy to manage.

b. Supervisors: With the communities designated for the street naming and property numbering zoned and assigned to fieldworkers, a supervisor is to be assigned to ten groups of two fieldworkers. The supervisors could either be members of the Street Address Team or a combination of personnel from the Works and Physical Planning Departments.

3.1.6 Deskwork of Street Naming and Property Numbering

This stage of the process is very critical to the street addressing initiative. It is expected to take place before the training of the fieldworkers and supervisors is carried out. It involves:

- ✓ Procuring or accessing maps;
- ✓ Validating the maps and photo using the ground truthing approach: and
- ✓ Codification of street names and property numbering.

3.1.6.1 Accessing Maps

Available maps from the Survey and Mapping Division of the Lands Commission, GHA, DUR, DFR and Town and Country Planning Headquarters can be accessed for use, in addition to new ones to be developed in the execution of the Street Addressing Project. However, the photos and maps obtained from these agencies must be verified for their completeness. The maps or photos should be printed using a scale of 1:1250 to facilitate the ground-truthing and deskwork. A sample of a map is provided in Figure 16.

3.1.6.2 Validation of the Maps

In most cases, maps printed for the street addressing project may not be exactly the same as the developments on the ground. Even in cases where they are, the SAT will need to better understand the maps to improve their ability to use them, therefore, a good approach is to undertake ground-truthing to ascertain the range of approaches to be adopted to define the start

and end points of streets. This effort will inform how the property numbering will be carried out. This has to be done before the desk exercise of the street naming and property numbering starts. To do this, the SAT will need to be guided by the steps below:

- ✓ The process should start with determining how the photos or maps are linked for each particular community besides the names written on them. This process can be done by referring to the grid details provided on the edges of the photos or maps. Where a map index is available it could also be used.

- ✓ When the above has been completed, the SAT will have to determine the distinct blocks, zones or neighbourhoods that should be tackled and the photos for those locations collated. This process should be systematically done to ensure that the exercise is well organised;

- ✓ The next stage is for the SAT to develop a work plan and form sub-teams to be assigned specific areas for the ground-truthing exercise. To ensure that this exercise is executed within the shortest possible time, technical officers of the Physical Planning and Works Departments should be involved in the planning and execution of this fieldwork;

- ✓ The sub-teams, then have to be given the photos and maps based on the work plan to undertake the ground-truthing exercise. See figure 16 for sample of an orthophoto; and

- ✓ Each team will be required to take specific notes on issues requiring attention either on a note pad or on the photos. Feedback from the field should be shared by all teams including the notes made, since it will have to be collated and later used in the work of naming, numbering, training and the data collection.

During the fieldwork of ground-truthing, the following should be considered:

- ✓ Orientation of the photos to determine the location of the team before the verification of the data starts. This involves

the identification of a landmark on the photo and the same in addition to determining the position of the team, and on the photo to get the right orientation;

- ✓ Data to be verified include properties both developed and underdeveloped, available streets and their alignment and determine the start and end points based on the definitions provided;

- ✓ Areas where compound or apartment type numbering approaches have to be used, should be noted and more information sought from the occupants. This should also include areas where there are multiple shops; and

- ✓ New developments in terms of properties and streets as well as other physical infrastructure not on the photos, should be noted and GPS references taken on them.



Figure 16: A sample of an Orthophoto

3.1.6.3 Labelling of Maps with Street Names and Property Numbers

After the field validation of the maps, deskwork to name streets and number properties can start. The principles outlined in sections 2.1.1 to 2.1.2.4, should guide the SAT in its work. The notes from the validation, should also guide the team. The key factors to take into account are:

- ✓ The city or town centre;
- ✓ The hierarchy of streets and the naming approach;
- ✓ The range of neighbourhood or sectors there are and where different naming themes will be used ;
- ✓ The start and end points of streets; and
- ✓ The provisions to be made for street coding now and for the future.

The final output of this stage is a hand prepared Address Map which will be accompanied by a Street Index.

3.1.7 Processes for Preparation of Street Index

A critical input to the preparation of street index is the coding of the streets which will be used for the preparation of the Address Map. Coding involves assigning unique numbers or names to streets as a means of making it easy for identification and use for navigation ultimately when other parameters have been digitised. The coding system includes defining the numbering system for properties.

Harmonised road coding systems have been established by Ghana Highway Authority, Department of Urban Road and Department of Feeder Roads which have to be reviewed and used by the Assemblies. In instances where the coding is incomplete, MMDAs will have to seek the assistance of the Road Agencies to code streets not covered. The coding system of the various Road Agencies is provided in Appendix 1.

The coding system should respond to the following principles:

- ✓ make it possible to rapidly codify all streets until they are "named"; for streets that are already named, the names are to be maintained if they comply with the naming

requirements. However, it can also have a number to be inscribed on the street name plate as to whether they are national, inter-regional and regional roads as well as urban and feeder roads;

- ✓ allow for easy identification by all road users; and
- ✓ be adaptable to different types of towns, namely structured or non-structured neighborhoods. It should also be able to accommodate areas experiencing rapid development.

Coding streets in practice is a desk exercise and involves four major steps as follows:

- ✓ A decision on the type of street identification system to be adopted;
- ✓ Segmentation of the town or community into sectors;
- ✓ Determination of the general direction in which streets run; and
- ✓ Selection of the system for numbering.

3.1.7.1 Street Identification System

The first step is to decide on a street identification system, which can either be a number or name but in most cases the use of both numbers and names are permissible. The stages involved are as follows:

- ✓ Determine the city centre and how to divide the area into distinct sections.

- ✓ **Allocating Street Numbers:** Each street must be allocated a number from where it starts to the end point. Street numbers are to start with the sector or community code or prefix where they are located. For example, a street with the number 1.005 is the street bearing the number 5, located in sector 1. In practice, usually a numeric system is applied initially before later names are allocated. However, the two systems of numbering and naming can be combined where major streets are named and their numbers also displayed on street name plates.

- ✓ **Allocating Street Names:** The naming of streets shall be based on the guide provided in Section 2.1.1. The factors to

take into account are the hierarchy, themes for the names (famous people, historical event, countries, towns, plants, etc.), division of the town, community or city. The naming of streets as earlier indicated shall be carried out in consultation with traditional authorities and approved subsequently by the Assembly's Statutory Planning Committee.

3.1.7.2 Segmentation of a Town into Sectors

To make it easy to apply the identification system, a town or locality should be sub-divided into sectors with each containing a number of streets. This sub-division exercise should take into account the pace of urbanisation of the city or locality to ensure that adequate provision is made for a sizeable increase in the number of streets for the future. The different options are:

- ✓ **Coding in Small Towns:** In the case of small towns, consideration shall be given to segmenting them into three or four sectors using important land marks as streets in the city centre or natural limits such as rivers, etc. Selection of the number range to be used for the different sectors could be in batches of 100 (100 to 199, 200 to 299, etc.) depending on the existing and proposed number of streets per sector. See Figures 17 and 18.

Figure 17 :Street Numbering without Provision for Future Expansion

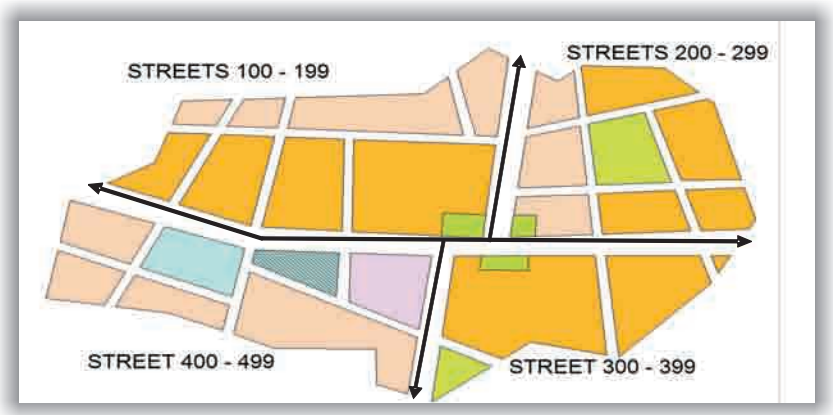
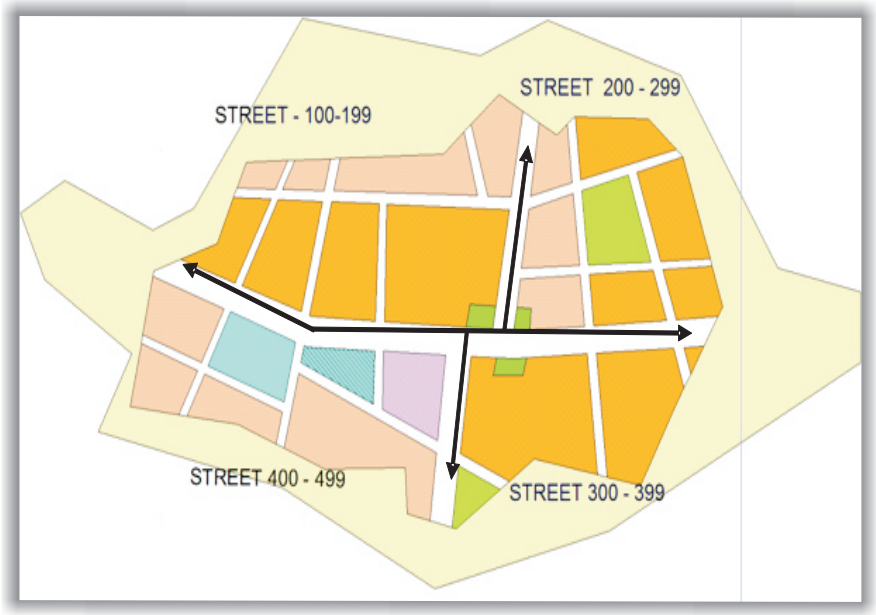


Figure 18: Street Numbering with Provision for Future Expansion

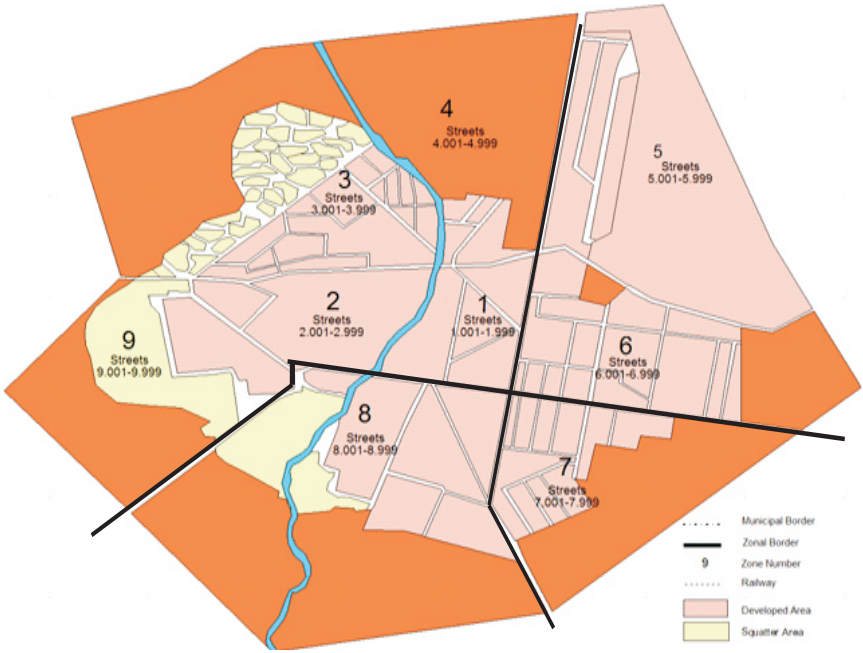


✓ **Coding for Medium and Large Size Town:** The approach envisages street numbering according to a geographical sub-division of the town. Segment the city, locality or town into sectors (see Figure 19). The subsequent processes are as follows:

- Allocate to each sector a range of street numbers depending on the number of existing and future streets. Each street number is to be preceded by a prefix which shall either be a number or letters (two letter abbreviations of the community name) belonging to the sector in which the street is situated.

- Provision should always be made for future expansion. For example, 250 numbers might be allocated to a sector currently containing 100 streets.

Figure 19 : Sector Coding for Numbering of Streets



3.1.7.3 Determine Orientation of Streets

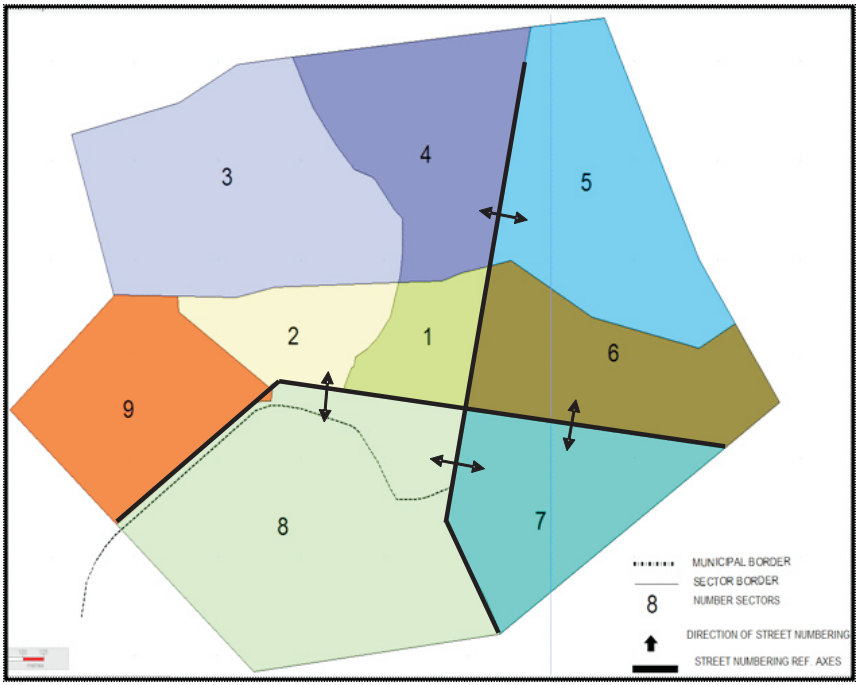
The Department of Urban Roads has pre-determined the general orientation of streets in a West – East direction. Thus, the same principle should be adopted after the orientation of the town or city has been determined.

Choose the numerical progression system: To set up the street address system;

- ✓ Identify linear points of reference (streets, railways, rivers, etc.) in a north – south axis and a west–east axis close to perpendicular as possible. The intersection should be close to the centre of the town. The two axes must match with the limits of naming of the sectors by almost traversing them.

The north-south will be the reference point for even numbered streets and the west-east for odd-numbered streets.

Figure 20:Determining the Direction of Streets



✓ The numbering of the streets is defined by the axis as the origin. The numbers will progress on both sides of each of the axis, from the lowest number to the highest. The numbering in each zone or area starts from one, but maintains the same order of progression. Figure 20 illustrates the zones and the direction of the progression of the numbers.

As far as possible, each axis should be oriented in line with the cardinal directions: north-south and west-east. But this rule can be modified when there are obvious, simple, geographical landmarks, such as a river or perhaps a shoreline.

3.1.7.4 Select the System for Numbering Buildings

The principle of entryway numbering will be carried out using the sequence outlined in Sections 2.3.1 to 2.3.6.

3.1.7.5 Assign and Inscribe Names to Streets on the Maps and Photos

Address Maps which have streets labelled with the names including numeric addresses for properties will be produced by the DPP. The numbers assigned to the properties will be used for the fieldwork. This helps to reduce errors on the field.

3.1.7.6 Pilot Operation of Street Naming and Property Numbering

On completion of the Address Map by the SAT, a pilot operation is recommended to give the team an insight as to how the labelled maps and photos will be used by the fieldworkers. The following tasks shall be executed to pilot the street naming and property numbering, before an extensive fieldwork is carried out.

First step is to select the pilot zone. In order to kick-start the operation within the pilot zone, the SAT shall:

- ✓ hold a session to design the approach to implementing the pilot exercise;
- ✓ Target a relatively small locality of not more than 50 to 100 properties to initiate the operation;
- ✓ obtain the map for the selected area;
- ✓ Prepare data collection forms and print the necessary copies;
- ✓ Select fieldworkers from the District Works Department (DWD) and DPP of the Assembly or persons recruited through a short listing process;
- ✓ Develop a programme for the fieldwork;
- ✓ Train the fieldworkers on the exercise;
- ✓ Provide the necessary logistics such as stencils, paint, brushes etc.; and
- ✓ Undertake public education.

The second step is to undertake the actual street naming of the pilot zone based on the programme by executing the following activities:

- ✓ Undertake an exercise to identify all the spots where street names are to be stenciled;
- ✓ Seek clearances from the property and business owners to undertake stenciling and data collection;
- ✓ The SAT, based on the work programme, will monitor

implementation and take note of any lapses and challenges to factor into the full scale implementation;

- ✓ When the pilot exercise is successfully completed, there shall be an official inauguration; and
- ✓ Another pilot may be carried out if an Assembly is not comfortable with the initial pilot.

To ensure that the full scale implementation is very successful, the SAT will need to thoroughly discuss the good practices and the pitfalls of the pilot phase and take specific actions to ensure better results.

3.2 Training of Fieldworkers and Supervisors

To ensure that the SAT is well prepared to execute the training, the team is expected to go through a rigorous preparatory exercise before the event.

3.2.1 Preparatory Work for the Training of Fieldworkers and Supervisors

Before the training of fieldworkers and supervisors, the SAT will undertake the following activities:

- ✓ Prepare the training programme and materials;
- ✓ Determine assignment for each member of the SAT for delivery of topics and tasks outlined for the training programme;
- ✓ Shortlist fieldworkers and supervisors and invite them for the training;
- ✓ Secure a venue for the training;
- ✓ Determine the total duration for executing the fieldwork;
- ✓ Agree on the rewards for the days of the training and execution of the fieldwork;
- ✓ Print the relevant training materials;
- ✓ Procure the relevant logistics;
- ✓ Determine the number of streets to be named in a location and properties to be numbered;
- ✓ Discuss and agree on how trainees will be fed during the time of the training;
- ✓ Determine how supervision and monitoring of fieldwork will be carried out; and
- ✓ Determine how the collation of the completed questionnaires will be done.

With all the above addressed, the training of the fieldworkers and supervisors could be carried out

3.2.2 Training of Fieldworkers and Supervisors

The SAT will need to ensure that the following have been wholly addressed during the training:

- ✓ How trainees will sit during the training? Will it be by community or what?
- ✓ Each fieldworker and supervisor should be supplied with a plastic folder containing instructions, pen, pencil, eraser, sharpener /blade, blank A4 sheets and sample survey questionnaires.
- ✓ Questionnaires for the various communities packed in large envelopes with community codes written on them.
- ✓ Each envelope should also contain the Property Numbers Sheet for the community.
- ✓ Questionnaire packages should be organised by zone/neighbourhood and community.
- ✓ Questionnaires assigned to each fieldwork should be recorded on the Questionnaire Allocation sheet (See Appendix 5).
- ✓ Supervisors have Itinerary Sheets to document their supervisory tasks (see Appendix 6).
- ✓ Completed questionnaires submitted by fieldworkers should be recorded using the form provided in Appendix 5.
- ✓ Plan for monitoring, developed in consultation with supervisors.
- ✓ Arranged for a Vehicle to be used for monitoring.

The training of the fieldworkers and supervisors should also include the instructions that will guide their operations during the fieldwork as provided in Appendix 7. It should also detail what the data collection entails, by elaborating that the data collection exercise involves soliciting information on properties available in a community, as well as businesses located in immovable properties (See Appendix 8 for the set of questionnaires). The questions on the questionnaires to be administered have to be exhaustively explained to fieldworkers during the training to ensure that the responses obtained from the data gathering exercise are in line with expectations.

3.2.2.1 How the Data Collection Exercise is to be Carried Out?
The training will have to extensively elaborate how the Data Collection Exercise will be carried out. Focus should be given to the approach of jointly inscribing property numbers and street names on buildings at the same time. Dummy exercises should be conducted to illustrate how one of the two fieldworkers is expected to stencil the number on the building, whilst the other gather the data. However, the stenciling and data gathers should only start after the property and business owners have been contacted and their permission obtained.

The administration of the questionnaires will involve a combination of answering open-ended questions as well as pre-coded ones. Most of the pre-coded questions require ticking of boxes whilst there are others where the fieldworker will have to neatly print responses in spaces provided. The variables on which data is to be collected should be exhaustively explained to the fieldworkers and the supervisors. The variables for the two questionnaires are:

Properties	Business Operations /Economic Activities
• Locality Code	• Locality Code
• Locality/ Community/ Suburb Name	• Name of Community/ Locality/ Suburb Name
• Zone	• Zone
• Street Code	• Street Code
• Old Street Name	• Old Name of Street
• New Street Name	• New S treet Name
• Old Building Number	• Old House number (if any)
• New Building Number	• New House number
• Name of Owner/ Caretaker	• Business ID assigned by Assembly
• Contact Number of Caretaker/ Owner	• Business Certificate Number (if any)
• Postal Address of Caretaker/Owner	• Business Name
• Year of Construction	• Establishment Date of Business
• Building Type,	• Name of Business Owner
• Use of Building	• Contact number of business Owner
• Number of Rooms	• E-mail (if any)
• Roofing Type	• Classification of Business
• Ownership Type	• Business Type
• Building Material	• Number of employees (if any)

The working definitions to the variables are provided in Appendix 9. The software used to design the questionnaires requires that the questionnaires should be filled legibly in capital letters to make scanning possible.

3.3 Implementation Phase

The implementation phase will involve key activities covering the physical naming of streets and numbering of properties on the field as follows:

- Naming of streets and numbering entryways according to the coding system adopted and data collection;
- Producing and installing street name post and plates;
- Setting up an address directory; and
- Conducting public education for the implementation programme.

3.3.1 Field Naming of Streets and Numbering of Properties

Based on the exercise of subdividing the community into manageable zones, fieldworkers will be assigned specific neighbourhoods to carry out the fieldwork. A number of fieldworkers will be assigned to a supervisor for monitoring purposes. As already illustrated, the fieldworkers will work in groups of two to make the stencilling of street names and numbering of properties as well as the data collection easy to manage.

As a result, the SAT is to ensure that the following are available to each group of two fieldworkers:

- ✓ Labelled maps have the required properties for the areas assigned for the duration of the exercise; and
- ✓ The alphabetical and numerical stencils as well as the black paint and brush for marking of the walls.

- ✓ The two fieldworkers will jointly carry out the stencilling of street names and property numbering in addition to gathering the necessary data on the property and any other businesses operating in the premises.
- ✓ One of the two fieldworkers is expected to stencil the number on the building, whilst the other will gather the data.
- ✓ The stencilling and data gathering should only start after the property and business owners have been contacted and their permission obtained.

The following critical issues are to be considered by the SAT during the fieldwork:

- ✓ Ensure that the fieldworkers are given the necessary field support in the early days of the exercise;
- ✓ Intensify the public education;
- ✓ Have a back-up of logistics to be supplied to fieldworkers in times of need;
- ✓ All ineffective fieldworkers and supervisors are to be immediately replaced; and
- ✓ Completed questionnaires are collected and checked to ensure that they are in good condition for the scanning.

3.3.1.1 Stencilling of Street Names on Walls

This should be done with the illustration in Figure 21 in mind. The stencilling should be done to make it possible for all road users and pedestrians to read the name from the side walk of the road. Stencilling of the street should be done at a height of 1.55 meters from the ground.

Figure 21 : Street Name Stencilling Points



3.3.1.2 Numbering Entryways of Properties

After the stenciling of the street names, the next stage is to stencil the entryway of the properties. This should be at a height of 1.55 metres from the ground. Where there are old numbers they should be covered with paint and the new number stenciled.

3.3.1.3 Data Gathering (Survey)

i. As the stencilling proceeds the data gathering for the property and businesses will be executed concurrently. The fieldworker is to administer the questionnaire to occupants of properties and businesses in the premises.

ii. The fieldworker gathering the data will have to explain to the property owner or business owner, the rationale for the exercise and the new address assigned before collecting the relevant data.

3.3.1.4 Monitoring the Data Collection Exercise

Monitoring the data collection exercise should start from the time the advertisement for the fieldworkers and supervisors are made through the street name and property number stencilling to the data gathering stage. This will ensure that all efforts at executing the exercise are tracked for the realisation of the best results.

The field exercise is to be carried out in a maximum of 10 days to ensure that public interest is high. Depending on how an Assembly intends to execute the exercise, monitoring can take place at different levels. Where there are supervisors, they will undertake monitoring of the fieldworkers and the SAT, will also undertake monitoring to ensure that implementation of the exercise proceeds according to the plan.

The RPCU is responsible for providing technical assistance, in monitoring the data collection and street naming and property numbering exercises. Assemblies are to serve their RPCUs with copies of the programme prepared for the data gathering exercise to enable them to participate in the activities and monitor implementation.

3.3.1.5 Managing Completed Questionnaires

All completed questionnaires are to be checked for inconsistencies by the supervisor. Questionnaires found to be incomplete or with mistakes are to be given back to the fieldworkers on a daily basis to ensure that the errors are corrected before final submission. Under no circumstances should questionnaires be accepted by a supervisor when inconsistencies have not been addressed. All completed questionnaires are packed according to property numbers, streets names, neighbourhoods/zones, communities and sub-districts.

The SAT is to check that all questionnaires (Property and Business/ Economic Activity) and control sheets received have been adequately completed before payments are made to the fieldworkers and supervisors.

3.4 Installation of Street Names at Intersections

The stencilling approach adopted is to ensure that the names and numbers given are correct before street name post and plates are procured. In line with this approach therefore, the SAT will be required to check all the names and numbers through a ground-truthing exercise to ascertain whether the information documented is right or otherwise.

When this validation is completed, three key activities are to be carried out to have the street name and property installations carried out. These are as follows:

- ✓ Development of street name signage maps
- ✓ Production of Street Name Posts and Plates
- ✓ Installation of Street Names Plates at Intersections

3.4.1 Preparations of Street Name Signage Maps

The first task of this process is to decide on the name post system by:

- ✓ Selecting the type of signs to be used. That is, whether street name plates will be placed on walls or sign posts;
- ✓ Determining whether street name placements are to be densely, moderately or lightly populated at intersections.

The operational details of the above are as follows:

3.4.1.1 Decide on the Signage System

The choice of the street name placement type depends on the financial capacity of the MMDA and the characteristics of the various intersections. That is, whether there are walls or fences to which street name plates on could be fixed or sign posts have to be used. The nature of intersections presents two sign options:

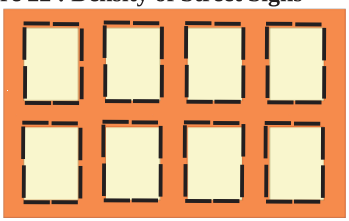
- ✓ Fixing street name plates on existing walls and fences, or
- ✓ Installing street name plates on signpost.

To facilitate the process, the SAT will prepare a report on the nature of intersections, indicating on a map where which of the options above can be applied.

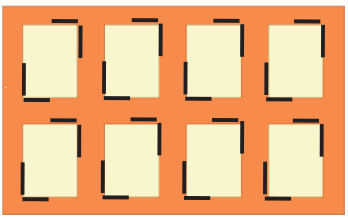
3.4.1.2 Determining Density of Street Signs

Ideally, each intersection is to have 8 street signs to ensure that the signs are always visible to road users from every direction. However, due to the cost involved other options can be considered. The recommended option is to apply the Medium Density for the City Centre and Lower Density for peripheral areas.

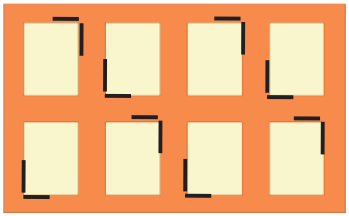
Figure 22 : Density of Street Signs



Maximum Density
(8 signs per intersection)



Medium Density
(4 signs per intersection)



Lower Density
(2 signs per intersection)

The second task is to develop street name sign post maps by:

- ✓ Using the segmentation previously adopted to sub-divide the community into sectors for the preparation of street name stenciling to guide the placement exercise.
- ✓ Printing of 1:1,250 map for each sector or zone
- ✓ For each zone, sketch out the placement of street name plates indicating whether they are to be placed on walls or signposts. See Figure 22;
- ✓ List the number and type of street name plates required by street; and
- ✓ Label the parcels as in Figure 23 in line with the numbering standards to help determine the number plates required per streets.

Figure 23 : Street Signage Map

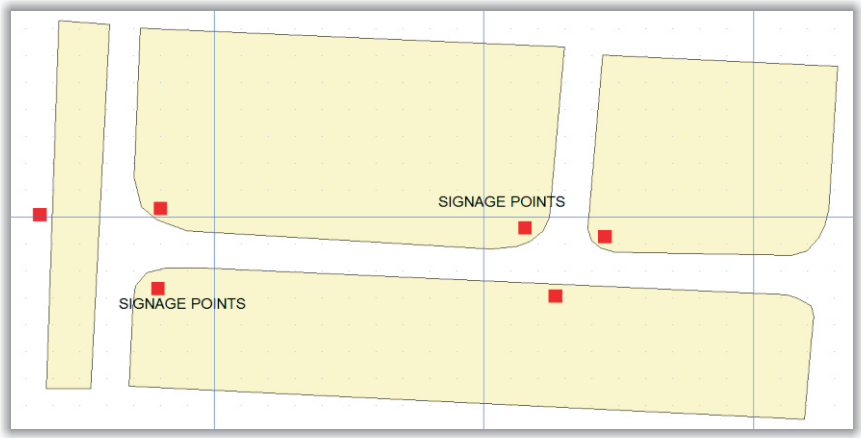
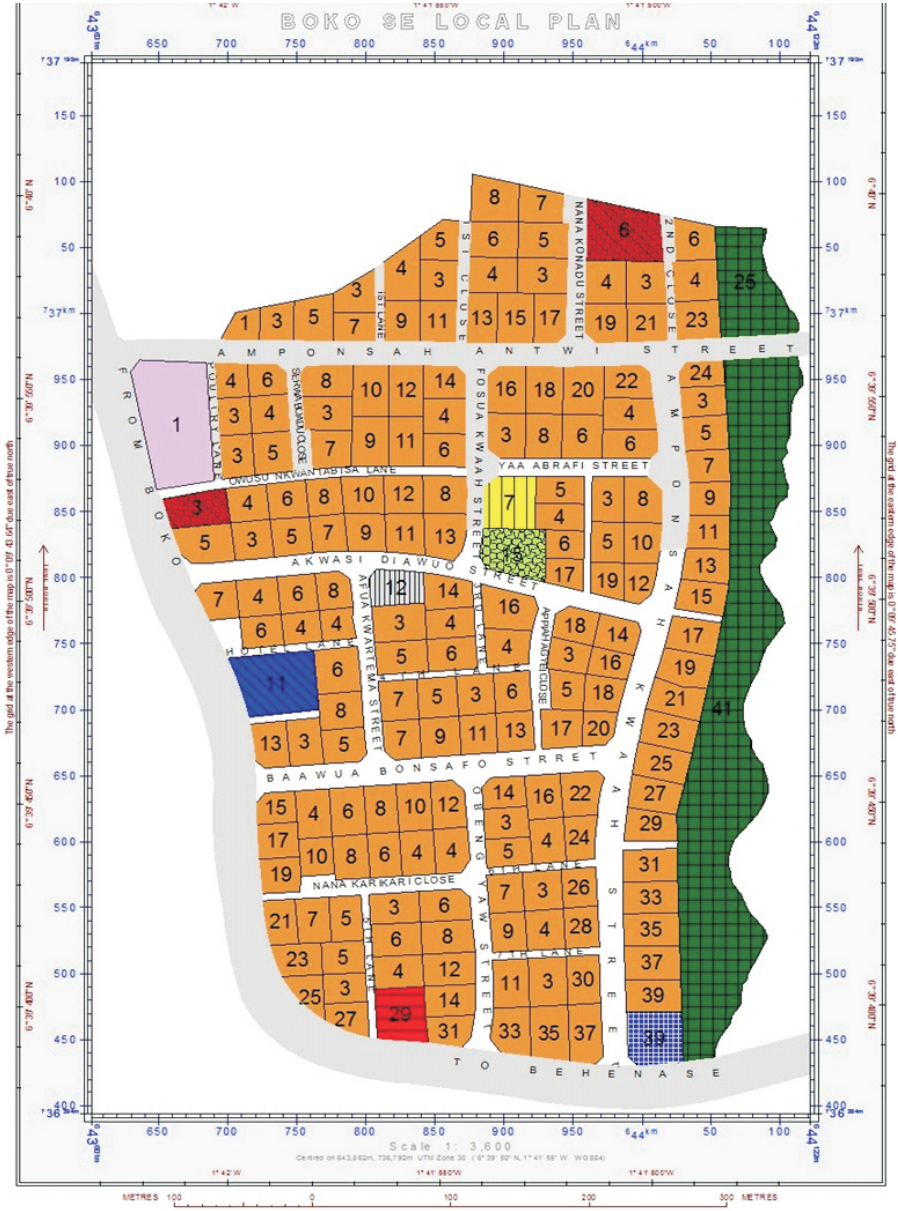


Figure :24 Sample of a Numbered Local Plan



The illustration in Figure 23 will help to determine the street name and property address plate quantities and types. Based on the Layout or map, a detailed list of the range of plates for streets and properties needed to execute the operation can be quantified, as outlined in Table 1:

Table 1 : Determining the Quantity of Street Name Plates and Sign Post and Property Numbers

Street #	Name	Colour of Name Plate	Name Plate Size	Name Plates on Walls of fences	Name Plates on Sign Posts	Numbers Plates	Number Range
1.005	**Ayiku Street**	Blue background with white lettering	1 meter by 0.25 meters	**4**	**2**	10	1-10
1.006	**Kwame Link**	✓	✓	**2**	**2**	20	1-20
1.007	**Mantse Close**	✓	✓	**2**	**2**	10	1-10
1.008	**Lomotey Street**	✓	✓	**8**	**2**	15	1-15

With the details in Table 1 together with size and colour specifications, procurement of the street name posts and plates as well as property numbers can be launched by calling for tenders to produce and install them. Alternatively the Assembly can procure and have personnel of the District Works Department carry out the installation.

3.5.2 Installing Street Name Infrastructure

This involves the following activities:

- ✓ Preparatory work before executing the installation;
- ✓ Organise the work of the teams; and
- ✓ Installation of street name signs.

3.5.2.1 Preparatory Work before Installation

The selection and contracting of a company paves the way for the installation activities to start. The first requirement is for the methodology for the installation to be laid out. This step is very important and requires major organisation to accomplish. Larger towns automatically require more name plates thereby making the organisation of the methodology very paramount. The following should be taken into account:

- ✓ Secure a spacious facility where the street name plates

can be set out orderly and stored;
- ✓ Prepare the work of the installation teams; and
- ✓ Systemically verify that implementation follows the prepared signage map and work plan.

3.5.2.2 Organise the Work of the Teams

Installation must be carried out syetematically to ensure efficiency and reduce mistakes in placement. Hence,

- ✓ Each team shall have a day-by-day installation schedule with property numbers on the signage map of the area to be tackled.
- ✓ To ensure conformity, request made by the team shall be the exact number of street name plates needed for the day as per the schedule.
- ✓ Progress made on the installation each day shall be documented to ensure that there is effective record keeping on the exercise.

3.5.2.3 Installation of Street Name Signs

Using the signage map as the basis, the contractor or the Assembly's Works Department will install street name posts and name plates.

a. Placement of street name plates on walls must be at a height that will ensure maximum visibility and reduce the risk of degradation. Placement at 1.55 metres above ground is ideal. Street name plates placed on sign post at intersections must not impede pedestrians. Thus, specifications in Sections 2.2.1.1 to 2.2.1.4 have to be complied with. At T-intersections, the main street name plate is to be placed directly opposite the traffic approaching as illustrated in Figure 22.

b. Bi-directional signposts: The bi-directional street name plates are to be at intersections. Requirements in Section 2.2.1 and Figure 4 amust be complied with to ensure the stability of the signposts.

The last step of the installation task is when the Street Address Team verifies the conformity and consistency of the fieldwork as agreed on paper.

3.5.3 Fixing of Property Number Plates at Entryways

- ✓ On the entryway of a property, the number shall be placed approximately 155 centimeters from the ground on the right side of the entryway.
- ✓ When there is no fence wall, the number plate shall be placed on the building or property but should be visible from the access that fronts it.
- ✓ When a property gate or door is often left open (such that of a business, for example), the number shall be fixed on both sides of the gate/door or on top of the facility's entry door or gate.

3.6 Setting-up an Address Directory

This step includes entry of the data generated into a database system for use by MMDAs and for Public consumption. This involves the following:

- ✓ Developing address index ; and
- ✓ Preparing Address Maps (including GIS).

3.6.1 Developing the Address Index

i. The range of data gathered now and in future will be processed by scanning and manual data input. However these will be done using Mapmaker and MySQL currently in use by TCPD. The development of the index should be informed by the purposes and objectives of the data generated now or in future. The range of options available for consideration includes infrastructure, equipment, local tax services, land taxation, etc. The address index is one of the most important outcomes of street addressing.

ii. Train staff: The staff responsible for manipulating and updating the index must undergo specific training on the software as designed by TCPD.

3.6.2 Prepare and Publish the Final Street Address Map

Preparing the finalised street address map and its street index is the last

task in the operation. Once the street names have been installed, verification carried out, data collection completed and data processed, the next is to develop a Final Street Address Map.

This document requires clarity and precision, and it must be easy to read. It must be designed in a manner that allows the majority of the town's public offices and general users to utilise it. The street index should make it easy to locate all streets and facilities, by using a code that refers to an alphanumeric grid. The basic street address map should include the following additional data:

i. Borders of sectors or neighborhoods being addressed;
ii. Name or number of each street;
iii. Direction in which each street is numbered (indicated by arrows at the beginning and end of the street);
iv. Public facilities: administrative, educational, sports-related, etc.;
v. Parks;
vi. Commercial facilities;
viii. Cultural facilities;
ix. Transportation services (railway stations, railway lines, ports, etc.); and
x. Historical and cultural sites.

All the above in data form should be grouped into broad uses and the map color-coded accordingly as well as labeled in the database.

3.6.3 Develop the Street Index

The street index is a list that is developed in tandem with the street map. It includes the following details:

- ✓ street numbers;
- ✓ street names and location;
- ✓ references on the alpha-numeric grid; and
- ✓ indication of where streets start and end.

To facilitate the process of locating a street, the index is computerised and can therefore be presented in two ways namely by using the street number (code) and the alphabetical order of named streets.

3.7 Maintenance Phase

The final step includes maintenance of the System, which involves the following:

- The respective DPPs will continue to expand street address system;
- District Works Department (DWD) will be responsible for installing new street name infrastructure and maintain existing ones;
- The MMDAs will apply the operation to urban management; and
- Storage and updating of district data at the regional and national levels.

3.7.1 Sustaining Street Addressing System by the DPP

Implementing a Street Addressing operation is not a one-off activity which ends when the system is established, due to the rapidly evolving nature of urban developments. Thus, sustaining the implementation involves continuing and expanding the system to take into account new developments. SUSTAINING the exercise will involve focusing on new settlements that emerge, new parcels of land that are developed and infilling among others. For MMDAs to have a complete grip of these, **COMPREHENSIVE SPATIAL PLANNING AND DEVELOPMENT CONTROL ARE VERY ESSENTIA**L.

3.7.2 Maintenance of Street Name Signage

To ensure that street name infrastructure and property addresses are kept constantly up-to-date, the following are to be complied with:

- ✓ Update the system with new developments regularly in terms of assigning street names and numbering entryways to facilitate installation of name and number plates respectively. Responsibility –DPP
- ✓ Carry out maintenance on existing street name infrastructure by replacing damaged ones and installing new plates for new streets. Responsibility – DWD
- ✓ Update street address maps and directory regularly, preferably twice a year. Responsibility –DPP

- ✓ Process new data unto the maps and database as well as generation of new maps and address directory. Responsibility – DPP

4.0 NATIONAL LEVEL IMPLEMENTATION PROCESS

To facilitate the implementation process at the MMDA level, there are a range of activities to be carried out at the national level. The timelines for the implementation of the activities have been provided in Appendix 4. The range of activities has also been categorised into three phases in line with the district level implementation as follows:

Preparatory Stage

- ✓ Orientation of District Chief Executives (DCEs)
- ✓ Development of a communication strategy
- ✓ Public Education
- ✓ Accessing orthophoto maps for the areas selected for the implementation of the system

Implementation Stage

- ✓ Public Education
- ✓ Technical Support to Implementing MMDAs
- ✓ Monitoring of Implementation
- ✓ Establishment of a Street Address Data Centre at MLGRD
- ✓ Procurement of equipment and software for data processing
- ✓ Training of District Actors on software packages
- ✓ Collection of Data
- ✓ Development of platform for navigation

Maintenance Stage

- ✓ Updating of database and maps

4.1 Preparatory Stage

The preparatory stage involves initial activities to be implemented to provide the necessary drive to launch into full implementation of the System.

4.1.1 Orientation of DCEs

As per the design of the implementation, district technical personnel (SAT) are expected to be trained. For the SAT to better operate, they will require the support of the DCE. To ensure that the DCEs better understand the System to provide the leadership and support required for its implementation, they will be sensitised on the policy and the technical details.

The sensitisation of the DCEs will be carried out at two levels. The first will be a general sensitisation session for all DCEs countrywide whilst the second will involve sessions with DCEs of districts selected for implementation of the system at various times.

4.1.2 Development of a Communication Strategy

The implementation of the System requires considerable efforts in educating the public and this has to be carried out using a defined strategy, hence, the need for a communication strategy. The strategy will seek to define the following:

- ✓ The role of central government (MLGRD) and districts in sensitising the public and sustaining awareness on the implementation and use of the system.
- ✓ What communication tools have been identified as suitable for delivery of the project at the national and district levels, taking into account the different stakeholders?
- ✓ The target audience(s) of the communication strategy.
- ✓ The role of the target audience regarding the implementation of the system and how to promote community responsiveness in maintaining the street naming infrastructure.
- ✓ How to promote acceptance, ownership and usage of the system, when it is established; and

✓ Communication Strategy Action Plan and Budget

4.1.3 Public Education

Beyond the development of the communication strategy at the national level, specific public education programmes are to be set in motion to promote the initiative using a range of media options. This is critical at the preparatory stage to ensure that the entire population is reached with the salient dimensions of the initiative and this will have to be followed through during the implementation stage.

4.1.4 Securing Orthophoto Maps

The availability of orthophoto maps on the cities and towns where the System is to be implemented is critical to the success of this laudable initiative. There are indications that the Survey and Mapping Division of Lands Commission has orthophotos covering some of the cities and towns. Where there are no orthophotos, it means that TCPD will need to be resourced to produce the required spatial data by procuring satellite images for use for the exercise.

4.2 Implementation Stage

At this stage, the bulk of the action is expected to be at the district level. However, the national level will be required to provide support to the process in a range of areas.

4.2.1 Public Education

The public education started at the preparatory phase, is expected to continue at the implementation phase . The public education at this stage will seek to inform the public of the programme for implementation and what is expected from the public in terms of their cooperation. This will be executed as a continuous exercise to sustain public awareness for the implementation and will have to include radio and television discussions.

4.2.2 Technical Support to Implementing MMDAs

Following the training of the SATs and orientation of DCEs, MLGRD through the Technical Committee will provide technical backstopping to the implementation process and help to address specific issues which emerge.

To ensure that MMDAs are able to identify where to direct all technical issues, MLGRD will have a focal point where the MMDAs would direct all issues pertaining to street naming and property addressing system.

4.2.3 Monitoring of Implementation

Monitoring of the implementation process is very critical. The approach will be to integrate the monitoring of the project implementation into the Ministry's monitoring arrangements in order to strengthen the Ministry's role in overseeing the System from the centre. However, modalities for the inclusion of specific members of the Technical Committee in the monitoring sessions will be determined to provide the mix of expertise required for the monitoring exercise.

The monitoring of the implementation has to be guided by a district specific work plan and budget submitted for funding to establish the system. Based on this, specific indicators will be developed to track the progress of implementation.

4.2.4 Establishment of a Street Address Data Centre (SADC)

The process of developing the necessary maps for the implementation and use of the outcome of the addressing exercise requires a location where all the data sets can be managed from accessing maps through processing of information to updating of data.

MLGRD shall be required to establish and host a Street Address Data Centre. The Centre will have to be staffed with two GIS Experts, Urban Planners, Surveyors and MIS Experts.

This Centre will manage spatial data connected with mapping and street addressing, and develop the platform for using the data for navigation. The SADC will need to collaborate with all the road agencies and the MMDAs to establish a system of collation and updating of the spatial data. A bi-annual update of data will be an appropriate starting point. The security of the Spatial Data will have to be ensured by the SADC.

4.2.5 Procurement of Equipment and Software for Data Processing

The establishment of the system at the district level will require dedicated

equipment and application software to ensure that the implementation proceeds unimpeded. Specifications by TCPD for equipping the DPP offices shall be used. As such, the SADC under the auspices of MLGRD shall be charged with the responsibility of providing the necessary guidance on equipment and software procurement for the MIS Units of Assemblies to ensure data compatibility.

4.2.6 Training of District Actors on Software Packages

TCPD in collaboration with MLGRD will provide training to Assembly staff including DPP staff to equip them with the relevant skills to manipulate the software application for the street addressing and revenue data.

4.2.7 Collection of District Data

The SADC will need to also track implementation of the System at the district level to enable them to to develop modalities for the submission of Street Address Data for collation at the national level. This will have to include parameters such as data sets to be presented and the storage and labeling requirements.

4.2.8 Development of Platform for Navigation

Upon receiving the data from the districts, the SADC will collate and merge the data into a consolidated database. The labeled georeferenced maps with the street names and property addresses will have to be further developed for navigation based on the collection of:

- ✓ street level database with navigation attributes;
- ✓ 2 dimensional city maps with detailed land use, and building classifications;
- ✓ a database of critical landmarks for emergency services (fire and police installations etc);

Systematic field surveys to continuously update data to improve the quality for navigation shall be instituted. The application of the data for navigation shall be based on stringent quality control/assurance processes (Availability & accuracy of destination points, turn restrictions and speed profiles). The hosting of the navigation platform shall require security and reliability to ensure access at all times.

4.3 Maintenance Stage

The maintenance of the system will be to first create a credible backup system to ensure that the database is kept up-to-date and safe at all times.

To keep the database of the System up-to-date at all times at the data centre, it will require regular updates. Provision of updates to the SADC is envisaged to take place in June and December each year or any other months subsequently determined. The data should also be stored in hard copy form in addition to the electronic format.

5.0 INSTITUTIONAL ARRANGEMENTS

This section of the guide outlines institutional requirements for realising the objectives of establishing the Street Addressing System. It focuses on the arrangements at the national, regional and district levels as well as accompanying operational details.

5.1 National Level

5.1.1 National Oversight

The Ministry of Local Government and Rural Development has oversight responsibility regarding the implementation of the System and is expected to ensure that the institutional arrangements are complied with.

5.1.2 National Technical Steering Committee

For the purpose of providing technical guidance to the implementation of the System, a Technical Steering Committee will be in operation for the duration that the implementation will be carried out in all districts. The committee will be established at the national level with the following membership:

1.	Minister, MLGRD	Chair
2.	MLGRD	Member
3.	Ministry of Environment, Science & Tech.	Member
4.	Ghana Highway Authority	Member
5.	Department of Urban Roads	Member
6.	Department of Feeder Roads	Member

7.	Land Valuation Division of Lands Commission	Member
8.	Survey and Mapping Division of Lands Com.	Member
9.	TCPD Head Office	Member
10.	Ghana Post	Member
11.	Ghana Statistical Services	Member
12.	Ghana Police Service	Member
13.	Ghana National Fire Service	Member
14.	Head of the National Street Address Centre	Member
15.	National Disaster Management Organisation	Member

Other bodies which may be co-opted to participate in the Committee's deliberations include:

1. Centre for Remote Sensing and Geographical Information System, University of Ghana
2. Department of Planning, Kwame Nkrumah University of Science Technology (KNUST)
3. Department of Geomatic Engineering, KNUST
4. Ghana Institute of Planners
5. Ghana Institution of Surveyors
6. Ghana Water Company Limited
7. Electricity Company of Ghana
8. Ghana Institute of Architects
9. Ghana Institution of Engineers
10. Ghana Real Estate Development Agency

5.1.3 Functions of National Technical Steering Committee

The Committee will provide technical guidance in the following areas:

i. Consistency of the Guide with the legal and regulatory framework ;
ii. Compliance of implementation with the policy framework;
iii. How MMDAs can promote sustainability and ownership of the System;
iv. Facilitate access to available tools and inputs for the System;
v. Monitor implementation progress of the Assemblies
vi. Develop and implement of a communication strategy for nationwide sensitisation on the System
vii. Advise on modalities for data storage including harmonising other spatial data from the key institutions such as DFR, DUR and GHA; and
viii. Establish modalities for collation and sharing of the address information.

5.2 Regional Level: Monitoring, Coordination and Technical Support

At the regional level, the Regional Planning Coordinating Units (RPCUs) will provide monitoring, coordination and technical support to the districts in the respective regions. For the purpose of giving focused attention to the execution of their mandate in respect of the System, a smaller team is to be constituted out of the larger group of the Unit. The team's capacity will be built to enable them to assist districts to carry out the exercise. The team is to be made up of the following:

1.	Regional Coordinating Director	Chair
2.	Regional Economic Planning Officer	Member
3.	Regional Head of Survey and Mapping Division of Lands Commission	Member
4.	Regional Head of Town & Country Planning	Member
5.	Regional Head of Land Valuation Division of Lands Commission	Member

The regional team will participate in Training of Trainers (ToT) sessions to be organised by MLGRD.

5.2.1 Functions of Regional Teams

The functions of the Regional teams are as follows:

i. Support districts to determine logistic requirements for the Street Address System;
ii. Assist districts to manage the implementation of the Street Address System. This will include monitoring, coordination and technical support;
iii. Facilitate the formation of a team of district actors for the metropolitan areas where joint planning and implementation of the exercise may be required, such as in city of Accra, Kumasi and Sekondi-Takoradi among others.

5.3 District Level: Implementation Management

At the district level, to ensure sustainability and ownership, the overall implementation management of the Street Address System will be under the auspices of the District Planning Coordinating Unit which is chaired by the District Coordinating Director. Out of the expanded membership of this Unit, the Assembly will constitute a Street Address Team which will be responsible for coordinating

the implementation of the Street Address System. The Team may comprise the following actors, among others:

1. District Officer, Dept. of Physical Planning as the leader of the team;
2. Planning Officer;
3. Budget Officer;
4. Finance Officer;
5. Urban Roads Engineer;
6. Land Valuation Division Officer;
7. Survey Officer;
8. Works Engineer;
9. District Information Officer;
10. District Statistical Officer.;
11. Representative of Traditional Authourities in the District;
12. Chairperson, Works Sub-Committee; and
13. Chairperson, Development Planning Sub-committee

This team, in addition to others proposed by the Assembly, will be trained to enable them to effectively understand and manage the setting up of the System.

5.3.1 Functions of Street Address Team

The district team will perform the following functions:

i. Undertake initial assessment of what resources are available for implementation of the system
ii. Prepare a plan and budget as well as a schedule covering the implementation of the whole exercise
iii. Ensure that the public is sensitised on the System to serve as a platform for their co-operation during implementation of the exercise
iv. Work with the appropriate authorities at the sub-district and community levels to name streets;
v. Recruit personnel to carry out fieldwork;
vi. Supervise and monitor the updating of maps;
vii. Access road codes from the Ghana Highway Authority, Department of Urban Roads and Department of Feeder Roads;
viii. Undertake deskwork of the street naming and property numbering;
ix. Supervise the installation of street names and property numbers;
x. Supervise the work of the consultant, contractor, fieldworkers and data collection;
xi. Oversee the preparation of a computerised database of property

addresses and an address directory for the district; and

xii. Manage access to address data to service providers and other stakeholders.

5.3.2 Maintenance of the System

When the fieldwork of assigning names to streets and numbering of properties has been completed, the responsibility for ensuring the expansion of the naming of streets and the numbering of new developments shall be that of the Department of Physical Planning. Maintenance of street name installations signs shall be the responsibility of the District Works Department.

5.3.3 Reporting

As part of implementing the System, the Assembly shall report on the progress of implementation in the following areas: funds received or allocated, amounts disbursed, specific activities undertaken and the status of these activities. The reporting format of the Monitoring and Evaluation guidelines issued by the National Development Planning Commission shall be used as a guide. Financial reporting shall be in line with the financial reporting operations of the Assemblies. Thus, timelines for reporting shall be in line with agreed financial and activity reporting requirements.

5.3.4 Data Management

For the purpose of effective management of the data, MMDAs shall establish MIS Units at the offices of the DPP. The Unit shall have computers and other equipment and software in line with specifications of TCPD to process and store street, property and revenue data.

The Unit shall be responsible for the following:

i. Process and store data generated from the exercise;
ii. Ensure the safety of the data generated by the street namingand property numbering exercise;
iii. Ensure that regular back-ups are taken for all electronic information available at the Unit;
iv. Manage request for information by keeping records of all information given out and the feedback emanating there from; and

v. Work in close cooperation with the DPCU in the maintenance of the database.

5.4 Role of Consultants

To provide technical guidance on operational details of implementing the System, MMDAs may require the services of a facilitator. Assemblies may therefore need to recruit a consultant using the processes as set out by the Public Procurement Act 2003 (Act 663) A Specimen Terms of reference is proved in Appendix 3

5.5 Role of Contractors

Contractors may be recruited for the purpose of implementing the System. Task to be assigned may include the following:

1. Production of street name posts and plates as well as property number plates; and
2. Installation of name post and plates at the intersection and placement of number plates on properties.

Appendix 1:
Road Coding System Applied by the Road Agencies

The road agencies namely the Ghana Highway Authority (GHA), Department of Urban Roads and the Department of Feeder Roads, all have established coding systems for the range of roads under their mandate. These coding systems have been harmonised and the roads georeferenced using a geocoding system. This provides a very good platform for the MMDAs to proceed. For the purpose of the street address system, the coding adopted by these agencies are subsequently outlined.

Ghana Highway Authority
The GHA's system of identifying the highway types are as follows:

i. Highways or trunk roads which are national in nature are represented with the suffix **N.**
ii. Inter-regional roads are represented by the suffix **IR** and refer to trunk roads that provide a link between two adjoining regions.
iii. Regional roads have R as their suffix and are trunk roads within a region linking a number of districts.

The numbering has been done chronologically by type to identify the roads. Each of the category of the road definitions are given numeric extensions in a south-north direction at major intersections, but the road identifier remains the same for its entire length. The coding system has east-west orientation.

Department of Urban Roads (DUR)
The DUR has a unique referencing system that links each urban road. This takes into account the metropolitan area/municipality in which the road is found, the sub metro or zonal council in which it is, the road class, the road number and the road link number.

The unique referencing system utilises the parameters defined in the following form: **AC-AY-D-9999-99**, where

- AC: represents the metropolitan/municipal area (e.g. Greater Accra)
- AY: represents the sub-metropolitan or zonal area (Ayawaso)

- D: represents the class of the road (local road)
- 9999: represents the road number which is done chronologically from the west to the east.
- 99: represents the road link number

Thus, the unique reference for the third link of a local road with a road number 0335 in the Ayawaso Sub-Metro of the Accra Metropolitan area will be defined as **AC-AY-D-0335-03**.

The unique referencing is mapped in a geo-spatial database. A database for the road inventory is based on guidelines of the Ghana Highways Authority which is linked to a spatial database.

Department of Feeder Roads (DFR)

DFR's system has unique identifiers in a GIS Road Database System. The main features of the unique identifiers are to define a road on the following basis:

- The Region Code by the first letter of its name and R for region. Thus, Ashanti Region will be **AR** followed by;
- The District Code – such as **ADE** for Adansi East followed by;
- The functional class - **A** (for Access), **C** (for connectors) and **I** (for inter-district) followed by the number of counts (0001 – 10000 etc.). A typical road ID is in the form **AR-ADE-A-00**1.

Appendix 2

GHA Road Map of Ghana



Source: Ghana Highway Authority

Appendix 3

Terms of Reference for the Recruitment of a Consultant to Assist with the Implementation of the Street Address System

Background

In recent times, central government has expressed great concern regarding the absence of comprehensive street names and property numbers in urban areas. Although there have been makeshift solutions, urban services have not functioned effectively over the years due to a myriad of challenges and difficulties caused by the absence of an address system. In addition, the increasing urban population has resulted in serious urban management problems which manifest in:

- Poor housing and property development due to improper use of land;
- Inadequate enforcement of zoning requirements to ensure efficient and effective disposition of activities in space;
- Inadequate provision of services to properties and consequently the population;
- Traffic congestion during rush hours; and
- The mounting difficulties associated with provision of emergency services in times of fire and robbery among others.

Thus, the following questions arise in respect of how urban services function:

- In the absence of an effective identification system, how do city dwellers and visitors find their way in an ever-expanding town?
- How can commercial entities easily locate their clients and offer the needed services?
- Would services such as ambulances, fire or security be able to operate effectively?
- How can courier services be able to deliver to homes with ease, apart from notable public facilities?
- How can water, electricity or telephone network breakdowns be tracked and fixed?
- How can tax collection agencies and local authorities effectively function?

Dwellers and visitors to our urban environment devise ways to overcome these difficulties and questions by using landmarks which presents its own challenges. This situation has serious development implications for our municipality and the

Assembly intends to address this by launching a special programme of street addressing.

The establishment of an addressing system in the district is intended to have three phases namely preparation, implementation, and maintenance. The key objectives for establishing the system are the following:

- Ensure quicker response by emergency service providers to locations of need by enabling easy identification;
- Promote efficient delivery of municipal services in urban areas as well as overall urban management; and
- Provide location addresses to contribute to easy identification of places; improve tax/revenue collection by revenue agencies and promote operations of businesses generally.

Objective

The objective of the assignment is for a consultant to facilitate the process of establishing an address system by defining the operational conditions and implementation requirements.

Scope of Work

The Assembly as part of rolling out this programme has set-up the Street Address Team under the guidance of MLGRD. The consultant is to assist with the implementation of the system by facilitating processes to enable the Assembly to accomplish the following:

- code streets by adapting the coding system of road agencies;
- determine practical methods for executing numbering, surveys, sign installation, and creating an address directory;
- develop a programme of work for the implementation of the key activities;
- how to organise and execute the programme; and
- prepare a phased budget for the implementation of the system

The following professionals may be needed:

1. An Urban Planner (or an equivalent) with expertise in street address system; and
2. A specialist in geographic information systems, data collection and processing.

Reporting

Submission of inception report will be two weeks after the signing of the contract. A detailed report should be submitted six weeks after the submission of the inception report. The detailed report shall contain the following key ingredients:

- An assessment of the existing coding system and the associated challenges. Proposals for a new coding of the streets;
- The methodology for the execution of numbering, surveys, sign installation and creating an address directory;
- Work Plan and Budget for the key activities including the logistics requirements; and
- Specific and general recommendations for the implementation of the system based on peculiarities of the district.

Appendix 4

Generic Work Plan for Implementation of the Street Naming and Property Addressing System



Appendix 5:Questionnaire Allocation Sheet

Community Name: ……

Date of Issue	Name of Fieldworker	Signature	# of Questionnaires Issues		Date of Receipt	# of Questionnaires Issues		Signature
			Property	Economic Activity		Property	Economic Activity	

Name ofSAT Member: ……..……Signature: ……..……

Appendix 6:Supervisors Itinerary Sheet

District:.....Sub district/Metro:..... Community: .....

Date of Visit	Name of Fieldworker Interacted with	Neighbourhood/Zone	Remarks

Name:…… SIGNATURE:…… DATE:……...

Appendix 7
Instructions for Fieldworkers and Supervisors

7.0 Introduction

The fieldwork requires a lot of tact to achieve the best of results. Details of how the fieldworker and the supervisor need to prepare for the fieldwork as well as how to conduct themselves during the fieldwork to ensure effectiveness and efficiency are outlined.

7.1 What Fieldworker should first do before starting the exercise?

The process outlined for the fieldworker is as follows:

- ✓ Consult first the Chief and Elders and the Assembly Member of the community;
- ✓ Introduce him/herself and the District Assembly and the purpose of the exercise and seek their approval before starting the exercise;
- ✓ Produce a letter of introduction, where necessary; and
- ✓ If possible, undertake the exercise in the chief's house first. This will promote greater cooperation from others.

7.2 How to Identify the Properties on the Field?

Fieldworkers should be provided with a property list containing the street name and property numbers for areas where they have been assigned. The Fieldworker will be involved in the identification of streets and inscribing the name, data collection on properties and data collection on business activities.

7.2.1 Identification of Streets

The fieldworker is expected to be directed to the general location where he/she has been assigned to execute the assignment. Using the labelled aerial photographs or maps, the fieldworker is expected to identify the specific location by selecting a land mark on the map and by determining the right direction of the north point and identify the same point on the ground.

Following the identification of the right position on the map or photo on the ground, the fieldwork will proceed to identify the locations where the names of the streets are to be stencilled. This will be followed by securing the permission of the property owner before stencilling the street name on the wall is done.

7.2.2 Identification of the Property Numbering Start Point

After identifying the streets on the ground, the next exercise is to identify the start and end points of property numbers on the maps and photos. Subsequent to determining the right orientation and identifying the location on the ground, that same process is to be used to identify where the numbering flow starts by locating it on the map and identifying the same location and structure on the ground.

7.2.3 Identification of Properties

Properties on which numbers are stencilled have to first be identified along the street before starting the exercise. The numbers are to be printed boldly at the entryways of the buildings. The fieldworker is expected to do the following:

- ✓ Identify the property number from aof listed Property Numbers;
- ✓ Knock at the gate or door of the property and ask to speak to the Property Owner or Caretaker;
- ✓ Inform the Property owner or caretaker of the purpose of the exercise;
- ✓ After that, the fieldworker is to proceed to undertake the stencilling whilst the other fieldwork will administer the questionnaire for properties.
- ✓ The fieldworker is to record the data according to responses provided;
- ✓ Similarly, if there is a business activity located in the property, the fieldworker will proceed to administer the Economic Activities questionnaire to the owner of the business.
- ✓ When the exercise is completed for a property, the fieldworker will tick it on the list of Property Numbers.

7.3 Tips for Fieldworkers During the Data Collecting?

7.3.1 What the Fieldworker MUST DO During the Interview?

After self-introduction, the fieldworkers shall proceed to explain the exercise and following the consent of the interviewee administer the questionnaire to obtain the needed information. The interview is to be conducted in a language understood by the interviewee. The following must be noted by the fieldworker:

- ✓ Fill all information on questionnaire with PEN.
- ✓ Completion of the questionnaire may be done as a group activity in some cases; as a result the interviewee could be allowed to consult with other members of his/her household if it becomes necessary;
- ✓ Ask questions exactly the way they are on the questionnaire without adding or omitting anything;
- ✓ Ask questions in the order in which they are printed on the questionnaire;.
- ✓ Ensure that all responses are recorded before leaving the interviewee;
- ✓ Ask the questions clearly and confidently;
- ✓ Repeat the question in full, or explain if the interviewee did not understand or did not hear the question.
- ✓ Enumerate businesses in the property systematically to avoid omissions.
- ✓ Record responses clearly and accurately including answers to open-ended questions.
- ✓ Thank the respondent and leave him/her with the feeling that he/she would want to be interviewed again.

NB. Assure the respondent of confidentiality of responses to allay her/his fears.

7.3.2 What Fieldworker MUST NOT DO during the interview?

- ✓ Do not presume answers of` respondents.
- ✓ Do not mislead the respondent about the possible duration of administering the questionnaire - give an average duration when requested to do so.
- ✓ Do not engage in long unrelated chats.
- ✓ Do not pause unnecessarily between questions.
- ✓ Do not allow respondent the opportunity to complete questionnaires personally since he/she is not preview to the instructions.
- ✓ Do not break or be late for any appointment you make with an interviewee.
- ✓ Do not indicate by facial expression or gesture or in any other way, opinion, approval, disapproval, shock or any emotion at any answer given by the interviewee.

7.3.3 What Fieldworkers Should Do Before Submitting Questionnaires?

Fieldworkers on completion of the day's tasks are required to ensure the following:

- ✓ Collate the completed questionnaires serially by Property Numbers and by streets; and
- ✓ Questionnaires administered have been marked on the Property Numbers sheet before submission.

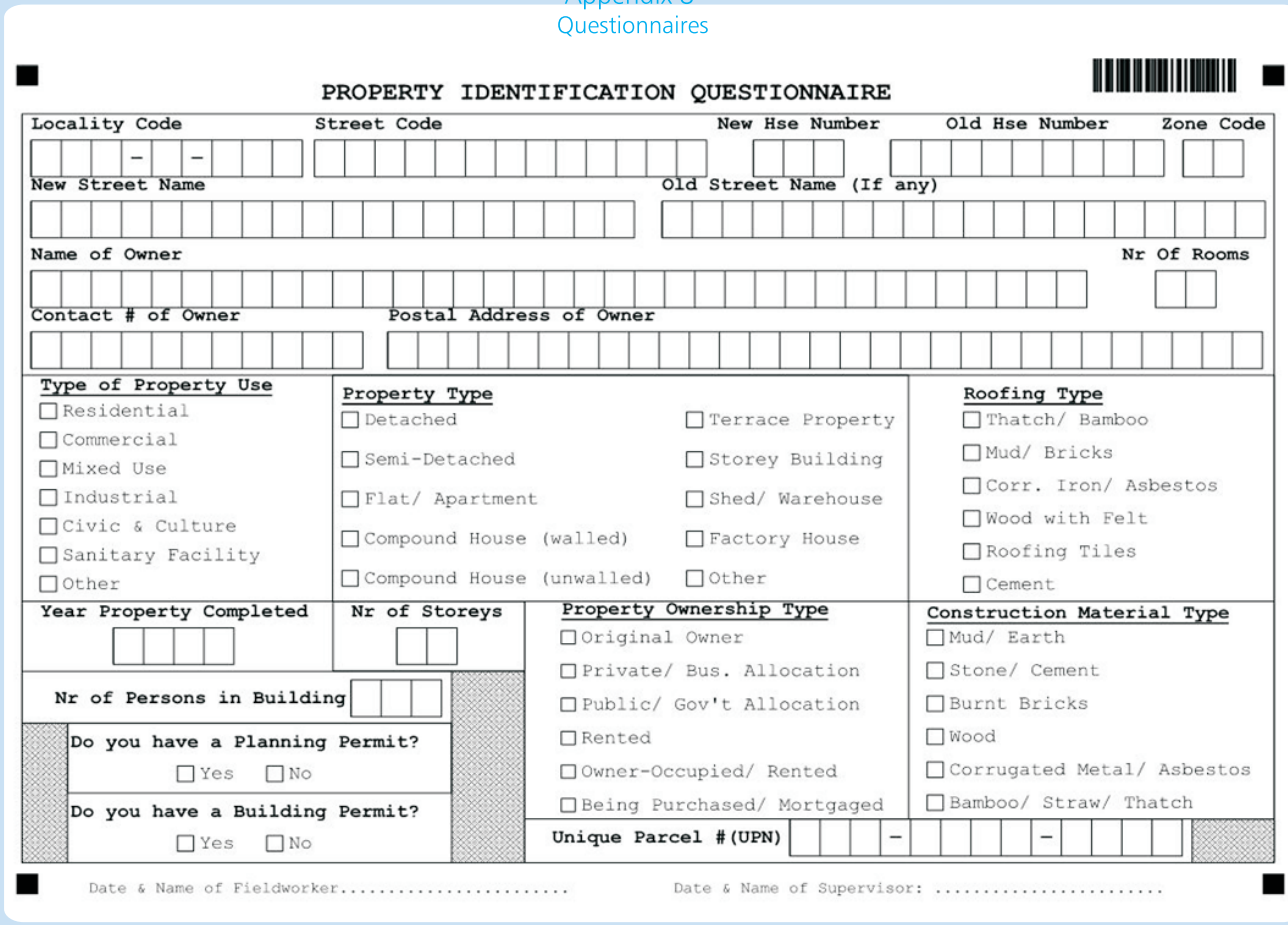
7.4 Instructions for Supervisors or SAT

To ensure that the data collection exercise achieves the desired results, supervisors are to take note of the following instructions:

- ✓ All supervisors or SAT members should keep a record of all questionnaires given out by recording them on the Questionnaire Allocation Sheet before distribution to fieldworkers.
- ✓ Additional questionnaires should be delivered to fieldworkers at a central point within the communities.
- ✓ As much as possible, supervisors are to visit fieldworkers daily to make available just enough questionnaires for a day's work.
- ✓ All completed questionnaires received by supervisors should be duly checked for inconsistencies. Questionnaires found to be incomplete should be returned to the fieldworkers for the necessary corrections to be effected. Efforts should be made to correct all questionnaires with problems before the exercise ends. For no reason should any questionnaire be submitted without correcting inconsistencies found in the information recorded.
- ✓ To ensure that the above does not happen, supervisors should make sure fieldworkers have finished with all their work before recommending them for payment.
- ✓ Where a supervisor is not clear or cannot handle a particular issue relating to the exercise, he or she must immediately report to the SAT at the Assembly Secretariat.
- ✓ All completed questionnaires are to be sorted out by Property Numbers, Street Name, Zone, community/locality and Sub-district.
- ✓ Supervisors are to be in close contact with fieldworkers under their supervision to check the following:

i. Fieldworker's appearance, as shabby dressing has an effect on the response rate;
ii. Fieldworker's attitude to the job by ascertaining whether they are actually carrying out the interviews;
iii. Approach and interview manners;
iv. Correctness and consistency of recorded answers and the ways in which queries from interviewees are answered.

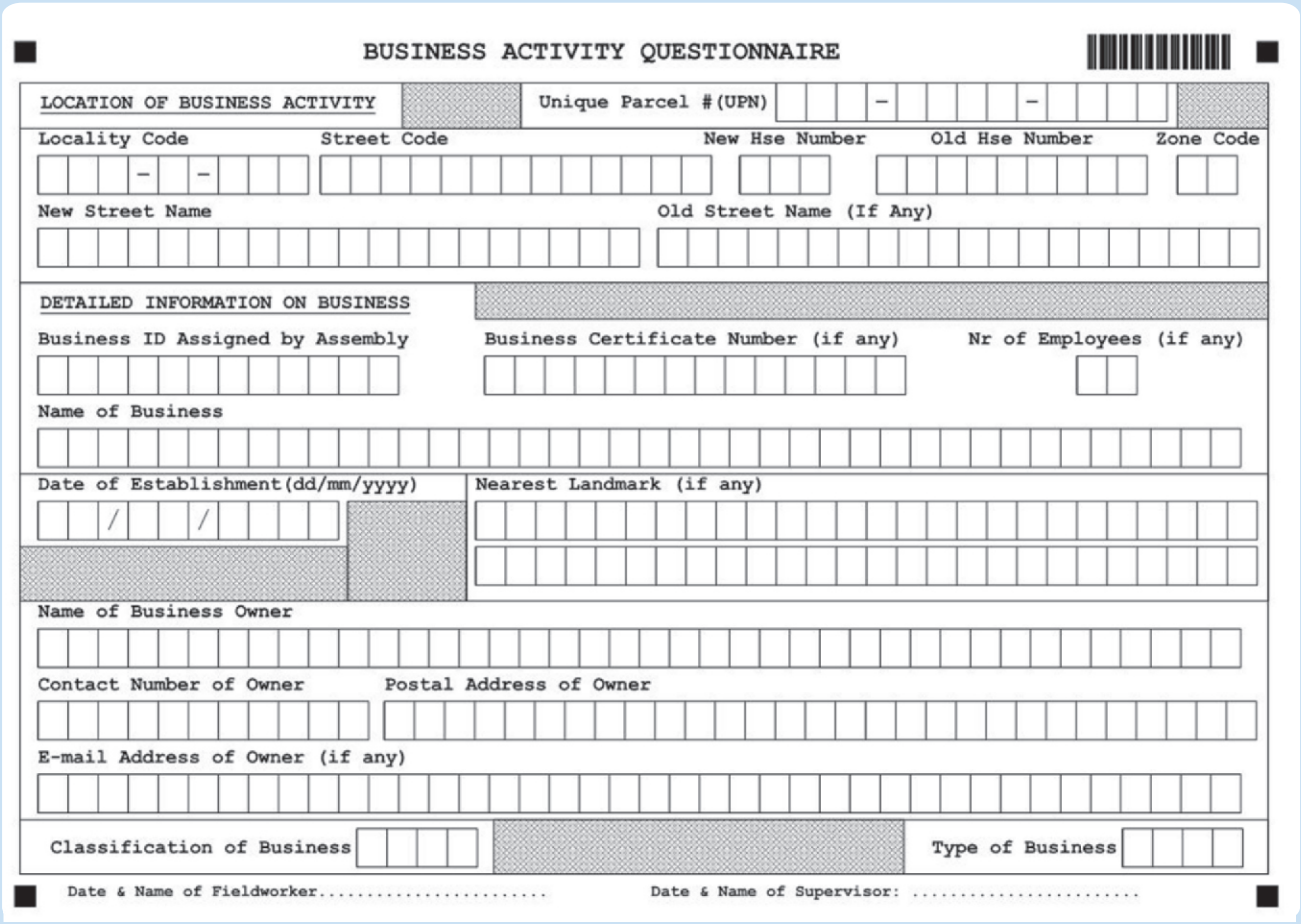
Any fieldworker found to be incompetent during the period of the exercise should be singled out and replaced immediately.



PROPERTY IDENTIFICATION QUESTIONNAIRE

Locality Code ☐☐☐-☐☐-☐☐☐☐ Street Code ☐☐☐☐☐☐☐☐☐☐☐☐☐☐ New Hse Number ☐☐☐ Old Hse Number ☐☐☐☐☐☐☐☐☐☐ Zone Code ☐☐

New Street Name ☐☐☐☐☐☐☐☐☐☐☐☐☐☐



BUSINESS ACTIVITY QUESTIONNAIRE

LOCATION OF BUSINESS ACTIVITY

Unique Parcel #(UPN) – –

Locality Code – –

Street Code

New Hse Number

Old Hse Number

Zone Code

New Street Name

Old Street Name (If Any)

DETAILED INFORMATION ON BUSINESS

Business ID Assigned by Assembly

Business Certificate Number (if any)

Nr of Employees (if any)

Name of Business

Date of Establishment(dd/mm/yyyy) / /

Nearest Landmark (if any)

Name of Business Owner

Contact Number of Owner

Postal Address of Owner

E-mail Address of Owner (if any)

Classification of Business

Type of Business

Date & Name of Fieldworker.....

Date & Name of Supervisor: .....

Appendix 9
Working Definitions of Variables of Questionnaires

9.0 Introduction

There are general and specific data requirements for the property and business activity questionnaires.

9.1 General Data

The general data requirements are explained as follows:

District: This refers to the districts within which the exercise is being carried out. The district is represented by three letters such as PHV for Prestea-Huni Valley District and TNM for Tarkwa-Nsuaem Municipality etc. This has to be determined by the SAT.

Sub-district: This refers to the Sub-Metro, Zonal, Urban, Town and Area Councils under the Assembly within which a fieldworker has been assigned to conduct interviews. A, B, C, D etc. represents the specific sub-district in a particular district as determined by the SAT.

Community: Is any physically distinct settlement, which has a locally recognised status and a name. Thus, a community may be a zone, neighbourhood, a suburb or a town. The identification for community is a serial numbering system. The SAT is to list all communities by sub-district and then based on the alphabetical arrangement, number them serially. This means that for each sub-district, the numbering will start at one to the number of the last community. Alternatively, the SAT may number the communities based on the way they are located spatially

9.2 Property data

The Property Questionnaire provides options for most of the questions to be answered. Only one of the options provided should be ticked for each of the questions.

Property: This refers to real property which is a combination of land and any improvements to or on the land which is immovable.

Street Code: This is a unique code assigned to each access in an

Assembly's jurisdiction, taking into consideration its direction and location, among others.

Street Name: This refers to the name assigned to an access and should be in line the standards in the Street Naming and Property Addressing Guide.

Zone Code: This is where the Assembly has sub-divided a community into neighbourhoods or suburbs and each assigned a letter or number code for purposes of facilitating the identification of properties and businesses for revenue collection.

Property number:
Provision is made for two types, namely the old and new numbers as explained below:

New Property Number: This refers to a unique number given by the Assembly in relation to the access. This number is different from the ones used for the population census, Electricity Company of Ghana, Ghana Water Company or any other institution.

Old Property Number (if any): Is the house number previously assigned to the house or building.

Name of Owner/Caretaker: Indicate the name of the caretaker or owner of the Property or building.

Contact Number of Owner / Caretaker: Indicate the telephone number of the Owner/ Caretaker of the property or building.

Postal Address of Owner/ Caretaker/ E-mail: Indicate the postal address or electronic mail address of the owner or caretaker.

Room: A sub-division of a building.

Type of property use: This refers to the type of use to which a property or building has been put. This could be either wholly residential (used solely as homes),

commercial (used solely as shops) or a combination of the two (mixed uses), Industrial, Civic and Culture or Sanitary Facility etc.

Property Type: The range of information to be provided is explained as follows:

- **Detached House-** A house built for which the walls of the main building are not shared with another main house.
- **Semi-detached -** consists of pairs of houses built side by side as units sharing a party wall and usually in such away that each house's layout is a mirror image of its twin.
- **Flat/Apartment -**This is a set of rooms occupied by a family usually in large storey buildings.
- **Compound House (Walled)** -A large house with numerous rooms where occupants have shared facilities with a wall around it.
- **Compound House (Unwalled)** -A large house with numerous rooms where occupants share facilities but without a wall around it.
- **Terrace property:** A number of housing units built in a row with a uniform style with two adjoining unit separated by a party wall but as a mirror-image of each others.
- **Storey -** the space between the under surface of every floor and the under surface of the floor next above it. Indicate the number of levels/ Storeys of the building.
- **Shed/ Warehouse -**This is a building used for the storage of products or produce. For example, warehouses or sheds for the storage of cocoa etc.
- **Factory House** - This is a building used for manufacturing of products.
- **Other -** Any other type of structure not mentioned in the above options could be classified under this group.

Roofing material used: This denotes the type of roofing material used in the construction of a house. Where there is combination of roofing materials used, verify and indicate the material that has been used most as per the alternatives provided on the questionnaire.

Year Construction Completed: Indicate the year the building was constructed.

Planning Permit: Indicate whether the owner of the property obtained a

permit in line with the zoning requirements.

Building Permit: Indicate whether the owner of the property obtained a building permit before developing the structure.

Ownership Type: Refers to who owns the building. The options on the questionnaire are explained as follows:

- Original Owner: Is where the owner occupies a building or house.
- Private/ business allocation: A house allocated to an individual by a private business establishment.
- Public / Government allocation: This is a house allocated to an individual by a public business or government establishment.
- Rented - This is a house for rental purposes
- Being Purchased/ mortgaged: This refers to a house that is being purchased on the open market or through a housing finance scheme or mutual purchase agreement.

Construction material (outside walls): This only refers to the material that has been used to construct the walls of a building. This could be any of the alternatives given on the questionnaire. Where two or more construction materials have been combined, the most used should apply.

Unique Parcel Numbering: A system of numbering used by the land sector agencies to uniquely identify each parcel of land in Ghana.

9.3 Business/ Economic Activities

This questionnaire is to be administered only for properties which have economic activities. The range of information to be provided is explained as follows:

Business ID Assigned by the Assembly: This refers to the number assigned by the Assembly to businesses/ economic activities.

Business Certificate Number (if any): This refers to the number indicated on the business's certificate of registration obtained from the Registrar General's Department.

Name of Business/ Economic Activity: Indicate the name that has been assigned to the business/ economic entity by the owner(s).

Date of Establishment: Indicate the date that the business/ economic activity was started.

Number of Employees (if any): Indicate the number of employees/ apprentices engaged in the business/ economic activity.

Name of Business/ Economic Activity Owner: Indicate the name of the business owner. This should be written legibly.

Contact Number of Owner: Indicate the telephone number of the Business Owner.

Postal Address of Owner: Indicate the postal address of the business owner.

E-mail Address of Owner (if any): Indicate the electronic mail address of the business owner, if the person has any.

Classification of Business/ Economic Activity: This is the code assigned as per the Composite Budgeting Coding System.

Type of Business/ Economic Activity: This refers to codes assigned to various sub-items identified under each broad category of business/ economic activities under the Composite Budgeting System.

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