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BW ANALYTICS OPEN GEOSPATIAL DATA INITIATIVE PROJECT METADATA – Ikeja Roads

Overview

This metadata document has been put together to describe the roads and boundary data in the Open Geospatial Data Initiative (OGDI) for roads in Ikeja, Lagos State, run and fully sponsored by BW Analytics. The data were curated and packaged by BW Analytics' OGDI team – Abdullahi Bello, Olakunle Muniru, Godswill Azubuike, Anita Truscott, and Victoria Aderinoye. Special acknowledgments go to other staff and volunteer – Jamiu Omotoso and Oluwaseun Owolowo respectively – who contributed to the project; and lasty, Zainab Saka and Fatima Situ for providing consulting services.

This data packet contains four files including this metadata document (PDF), a shapefile of curated roads (.shp), a shapefile of administrative boundaries (.shp), and a csv file of all the roads (.csv). The roads data were remotely sensed and vectorized, after which they were reviewed using ground truth data obtained from field surveys. The spatial data (roads and boundaries) are in the Coordinate Reference System (CRS): ESPG 4326 (WGS 84).

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Data Dictionary

This data dictionary section describes the administrative boundary data obtained from the Humanitarian Data Exchange[1] and more specifically, the roads data curated by BW Analytics.

Administrative Boundary

This exists at the electoral ward level, sourced from the Humanitarian Data Exchange[1]. It spatially bounds the road data within defined administrative units, allowing for accurate identification of their geographic context. The variables included in the dataset are described below.

1. **Ward Code (*ward_code*)** – A unique code assigned to identify each ward. See the Lagos State Independent Electoral Commission (LASEIC)[2] for more information on electoral ward divisions and names in Lagos State.
2. **Ward Name (*ward_name*)** – Name of each electoral ward.
3. **Ward Area (*ward_area*)** – The geodesic area of each ward in Square Meters.
4. **LGA Code (*lga_code*)** – A unique code used to identify local government areas of each electoral ward.
5. **LGA Name (*lga_name)*** – The name of the local government area containing each electoral ward.
6. **State Code (*state_code*)** – A unique code used to identify the state of each electoral ward.
7. **State Name (*state_name)*** – The name of the state in which each electoral ward is located.

[1] Humanitarian Data Exchange - https://data.humdata.org/dataset/cod-ab-nga

[2] Lagos State Independent Electoral Commission - https://lasiec.gov.ng/electoral-wards/#

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Roads

This is the primary focus of this packet, containing roads of all classes that were remotely sensed using open-source aerial and street imagery (Google Earth Imagery[3] and Google Street View Plug in[4]), vectorized using QGIS, cleaned using Geopandas Python library and ArcGIS Pro. Subsequently, they were updated and verified through ground-truth surveys and Lagos State streets line work. The variables included are described below.

1. **ID (*id*)** – A unique identifier for all 1,062 captured streets/roads in Ikeja, Lagos.
2. **Street Name (*Street_Name*)** – The official or commonly recognized name of each street or road segment.
3. **City (*City*)** – The LGA in which each road is located. For this dataset, all entries fall within the boundaries of Ikeja, the capital city of Lagos State.
4. **State (*State*)** – The state in which each road is located. In this case, all roads are situated within Lagos State, Nigeria.
5. **Surface (*Surface*)** – Describes whether the road surface is paved or not.
6. **Drainage (*Drainage*)** – Indicates the presence or absence of a drainage system along the road (e.g., Yes, No).
7. **Drainage Type (*Drainage_T*)** – Specifies the type of drainage infrastructure, such as open drains, covered drains, or underground stormwater systems.
8. **Drainage Condition (*Drainage_C*)** – Assesses the physical state of the drainage infrastructure, categorized as Good, Bad, or Other.
9. **Streetlights (*Streetligh*)** – Denotes whether street lighting is available along the road segment (Yes, No, or Present but in bad condition.
10. **Bike Lanes (*Bike*)** – Indicates the existence of dedicated bicycle infrastructure, such as marked lanes or shared-use paths (Yes, No).
11. **Road Length (*Road_lengt*)** – The length of each street in meters.

[3] Google Earth Imagery - https://earth.google.com/web/search/ikeja

[4] QGIS Google Street View Layer Plug in - https://plugins.qgis.org/plugins/google-street-view-layer-master/

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APPENDIX

Ground Truthing

Site: Ikeja LGA, Lagos, Nigeria, 6.4547° N, 3.3511° E

Date: 22nd January 2025.

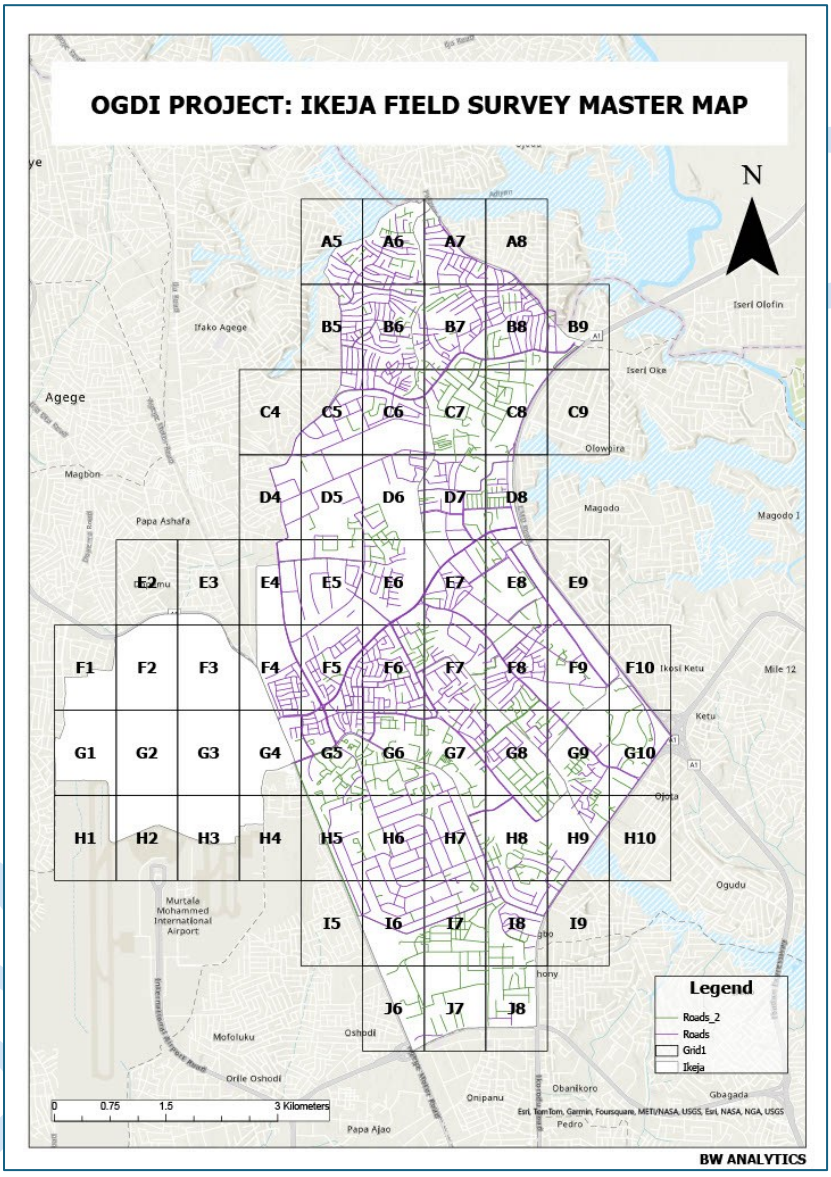

Figure 1: Grid Division of Ikeja LGA for ground truthing

Road Variables

Table 2: Road Variables, Description and Content Example

Variable	Description	Example Contents
ID	Unique Identifier.	1, 2, 3
Street Name	Name of the street or road segment.	“Oluwaleimu St”
City	Name of the city (or LGA) where the street/road is located.	"Ikeja"
State	Name of the state where the street/road is located.	"Lagos"
Surface	Type of road surface.	“Paved”, “Unpaved”
Drainage	Indicates whether drainage is present or not.	"Yes", "No"
Drainage Type	Type of drainage system installed.	"Open”, “Close”
Drainage Condition	Current condition of the drainage system.	"Good", "Bad", “Other”
Streetlight	Indicates presence of streetlights.	"Yes", "No", “Present but in bad condition”
Bike	Indicates if there is a designated bike lane.	"Yes", "No", "Not Applicable"
Road Length	The length of the road in meters.	217.67, 68.19

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