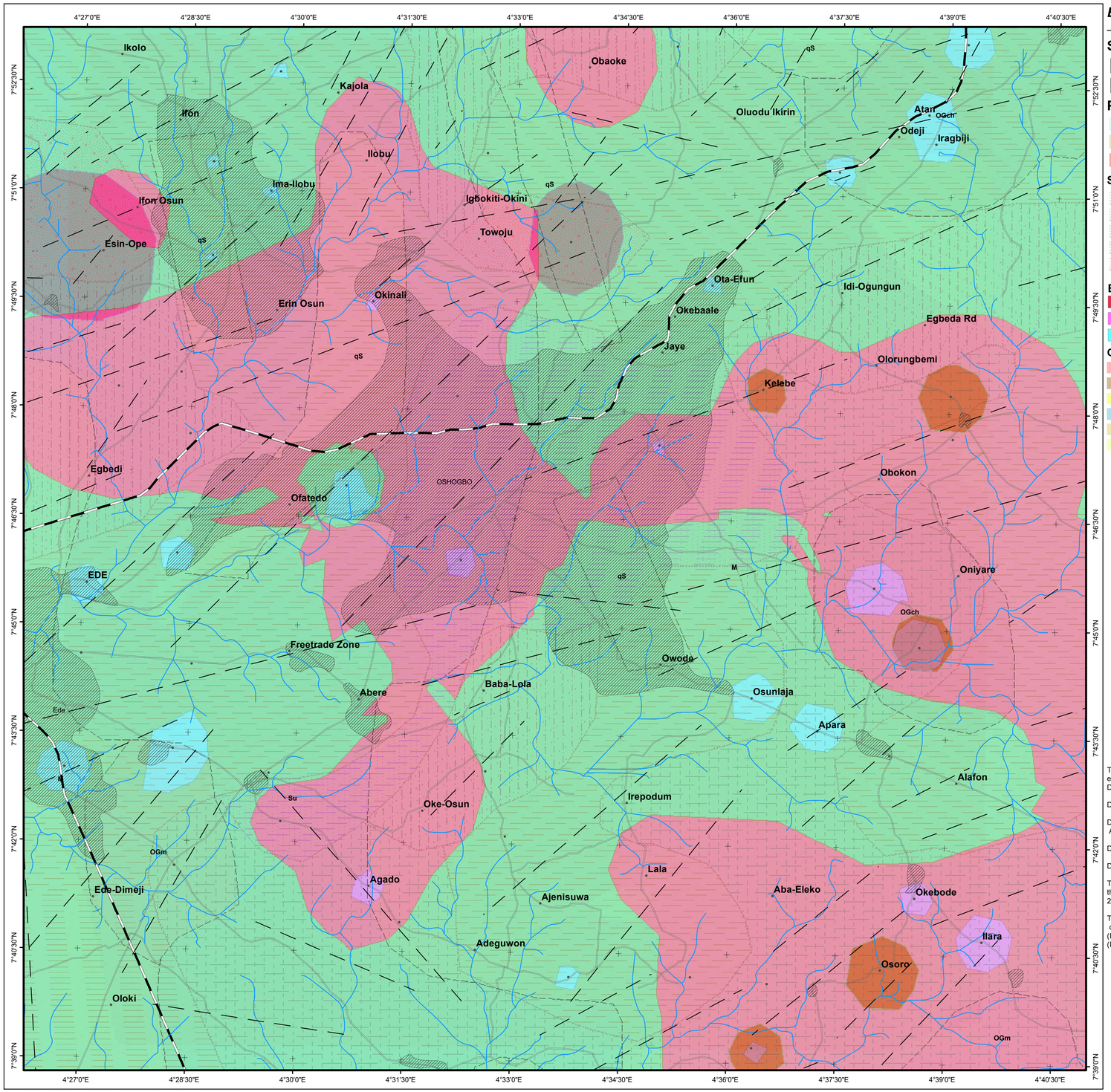
ENGINEERING GEOLOGICAL MAP OF OSOGBO METROPOLIS & ITS ENVIRONS



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First Edition

3 0 3 6 9 Kilometers

EXPLANATIONS

- Structural Trends

Soil Acidity
- < 7.0
- > 7.0

Permeability
- Low permeability
- Medium permeablity
- High Permeability

Soil Classification
- Gravelly Clay
- Sandy Clay
- Sandy Silt
- Silty Clay
- Gravelly Sand

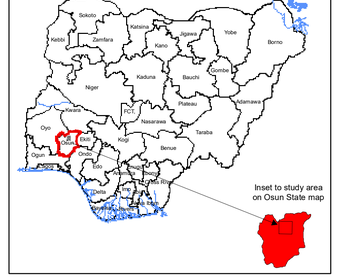
Bearing Capacity
- qa>300KN/sqM
- 150<qa<300KN/sqM
- qa<150KN/sqM

Geology
- OGm Medium-to-coarse-grained biotite granite
- OGch Charnokitic rocks
- Qs Quartzite, massive and schistose
- Su Undifferentiated schists, including phyllites
- M Migmatite
- qS Silicified, sheared rocks, large quartz veins

- Settlements
- Rivers
- Major Road
- Major river/ Dam
- Built up Area

N

INDEX TO MAP



Map History

This Cartographic Geotechnical map of Osogbo Metropolis & its environs was produce based on field data acquired from Department of Applied and Engineering Geology,NGSA Abuja HQ.

Data collection: Supervised by Mr. Gambo Lawal

Data Processing, compilation, Cartographic Design & Reproduction: Ayodele A. Omotehinse, Alichi Alichi & Nura Adamu

Digital Processing: Supervised by Mr. H.O. Davies

Data Review: Moderated by Mr. O. Oyedeji

The project work was undertaken by NGSA staff under the supervision of Mr. A.N. Nwegbu (Ag. Director General) in 2013 and reviewed for publication in 2023.

The review team for the publication of this Geotechnical was coordinated by Mr. Iyah Robert
(Director, Hydro. & Engineering Geology), assisted by Mr. Fijabi O. (DD Map production)

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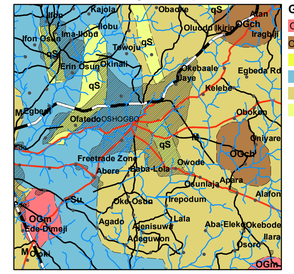
Geological Map



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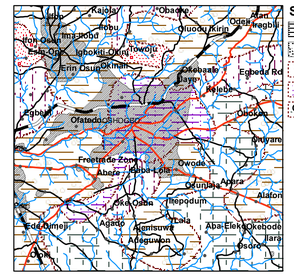
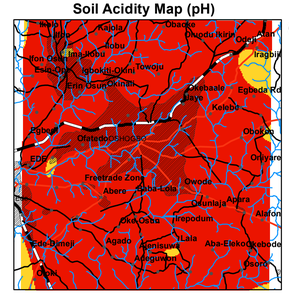
Soil Map



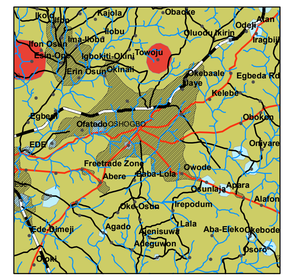
Soil Types & Distribution
- CL Clay
- GCL Clayey Gravel
- CLG Gravelly Clay of Low Plasticity
- CLS Sandy Clay of Low Plasticity
- CLM Silty Clay of Low Plasticity

Soil Acidity Map (pH)



(Acidity)<6 or =>7(Alkalinity)
- < 6 ----- Acid soil (pH<6)
- > 6 ----- Neutral - Low Acid soils (pH 6 - 7)

Permeability Map



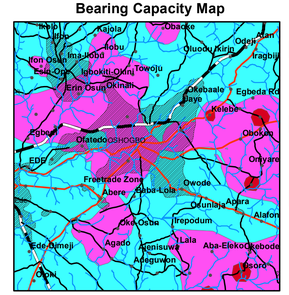
Soil Permeability

H **High permeability area**
K> 10^{-3} m/sec
(i) Clayey gravel

M **Medium permeability area**
K= 10^{-3} - 10^{-5} m/sec
(i) Gravelly clay
(ii) Sandy clay

L **Low permeability area**
K= 10^{-5} - 10^{-7} m/sec
(i) Lateritic clay
(ii) Alluvium Silty clay
SAMPLE DEPTH = 0.5m

Bearing Capacity Map



Bearing Capacity

High bearing capacity area
q_a >300 kN/m^2
(i) Gravelly clay
(ii) Clayey Gravel

Medium bearing capacity area
300 kN/m^2> q_a >150 kN/m^2
(i) Lateritic clay
(ii) Sandy clay

Low bearing capacity area
q_a >150 kN/m^2
(i) Alluvial Silty clay
SAMPLE DEPTH = 1m
FACTOR OF SAFETY (Fs) = 3
MAXIUM DEPTH OF INVESTIGATION = 5m