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The Need for an Open Geospatial Data Platform for Smart City Development in Lagos, Nigeria

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INTRODUCTION

Lagos is one of the fastest-growing cities in the world.

And just like every other city like its kind, it faces some significant challenges ranging from urban challenges, including traffic congestion, waste management, housing crisis, real estate challenges and also population challenges.

Concerns as Lagos marks 80% buildings for demolition in Ibeju-Lekki

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Real Estate

An image showing a building demolished in Lagos state. Credit: The ICIR

Some Key Facts about Lagos

- Its estimated population is over 15 million, making it the largest city in Nigeria.
- The city is a major financial center and is the hub of Nigeria's oil and gas industry.
- Research has shown that more than 70% of investors in Nigeria are Nigerians in Diaspora
- Lagos has a long Atlantic Ocean coastline, characterized by sandy beaches, barrier islands, and tidal estuaries.
- Lagos is a cultural hotspot, known for its vibrant music scene, art galleries, and theaters. It is the birthplace of Afrobeat, popularized by Fela Kuti.

Smart City Concepts and Open Geospatial Data

Open Geospatial Data refers to authoritative geospatial data that is available for anyone to access, use, modify, and share.

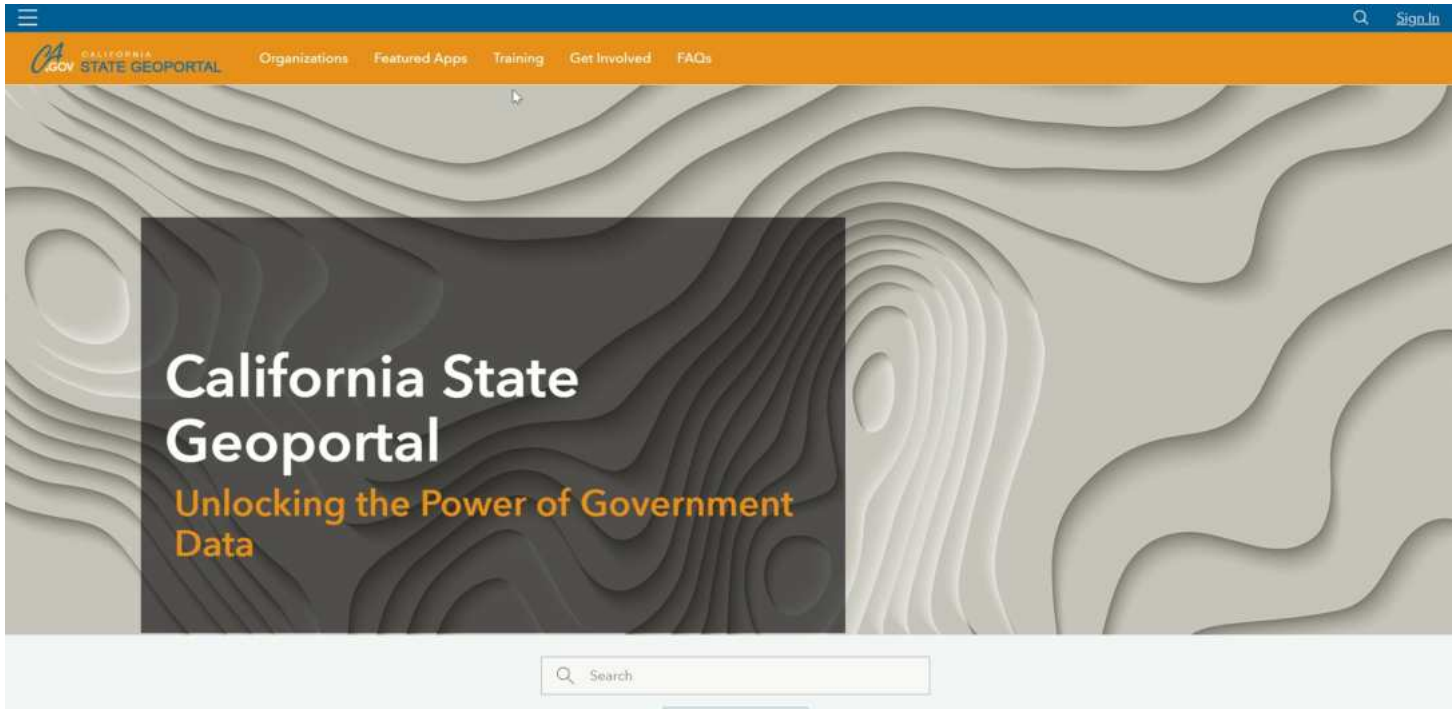
Smart cities utilize data and technology to enhance urban living. Geospatial data, which includes information about geographical locations and features, is vital for urban planning and management. Studies have shown that open access to geospatial data promotes innovation and collaboration among government, private sector, and citizens.

Benefits of Open Geospatial Data for Lagos

- **Urban Planning and Development:** Improved infrastructure and land use planning.
- **Environmental Management:** Better flood management and pollution control.
- **Disaster Response:** Efficient emergency response and resilience building.
- **Economic Development:** Enhanced business analysis and tourism promotion.
- **Transportation:** Improved traffic management and public transport planning.
- **Public Health:** Effective disease tracking and healthcare access.
- **Governance:** Informed decision-making and public engagement.
- **Community Development:** Fair distribution of services and community empowerment.
- **Education and Research:** Support for research and skill development.

Examining existing Open Geospatial Data

According to Forbes Tech No fewer than 85 US cities now have some type of open data portal.



- California State Geoportal

The initiative to create the California State Geoportal was announced on November 1, 2019, and it took less than a month to launch the site. The California State Geoportal includes data and information products—web maps, apps, and story maps—from more than 25 state agencies.

Examining existing Open Geospatial Data

- **State of Florida Geographic Information Office**

Users can access variety of geospatial data at their fingertips.

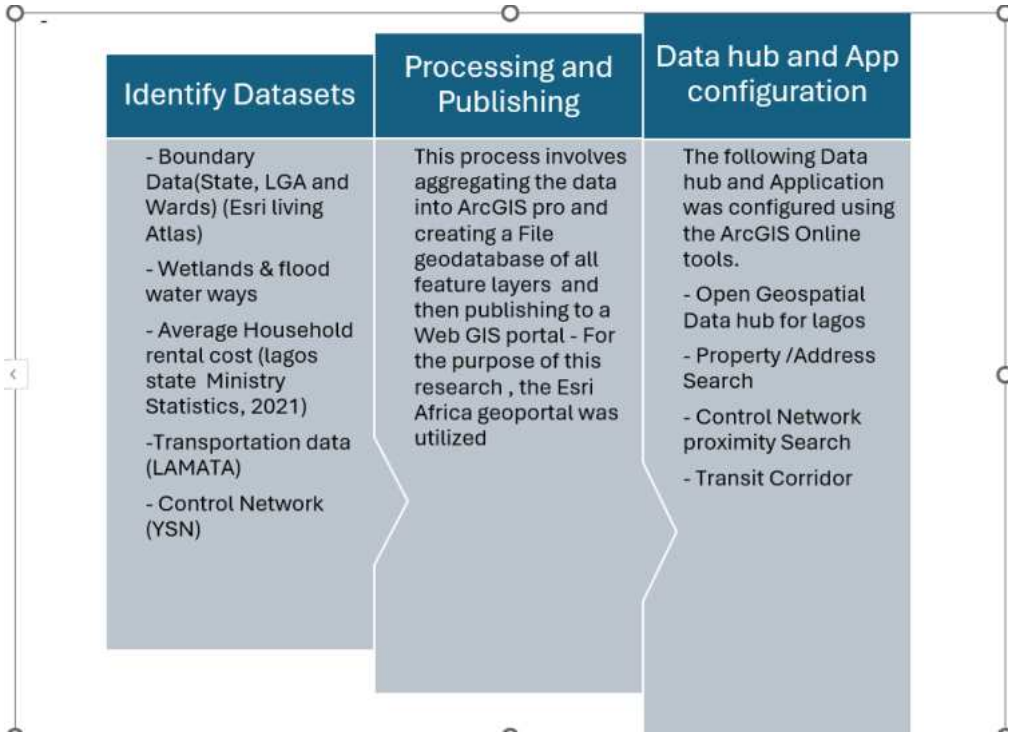
https://geodata.floridagio.gov/

Prototype of Lagos Open Geospatial Data

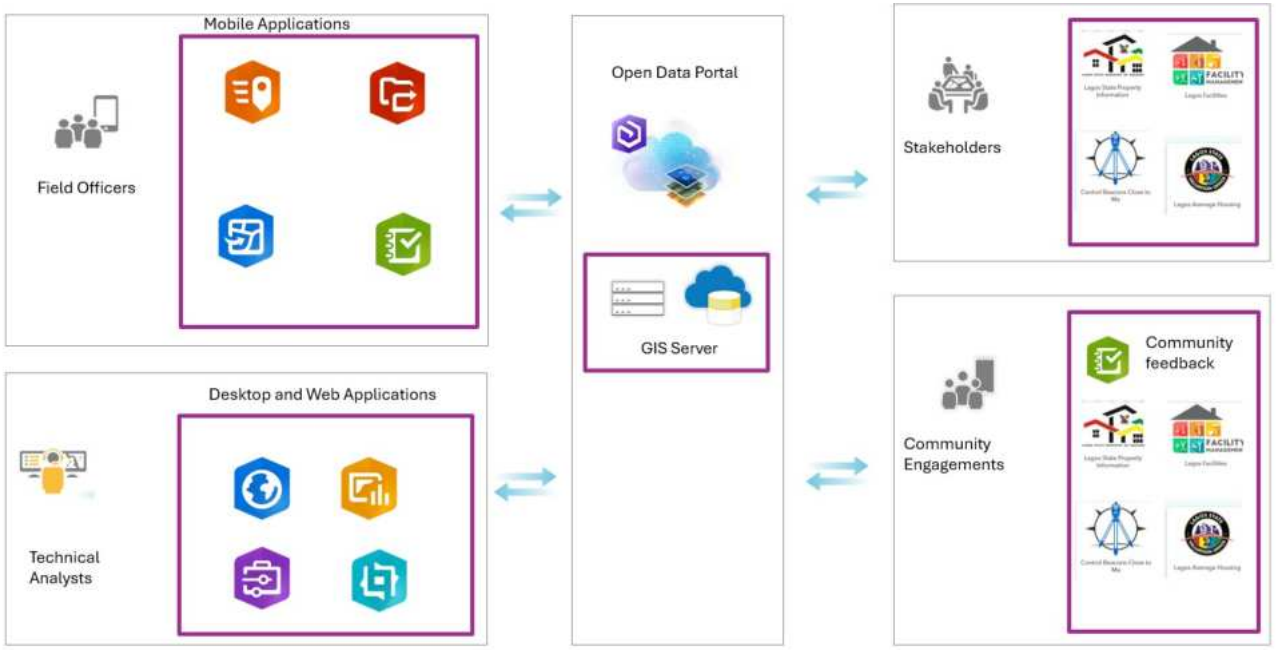
Objectives

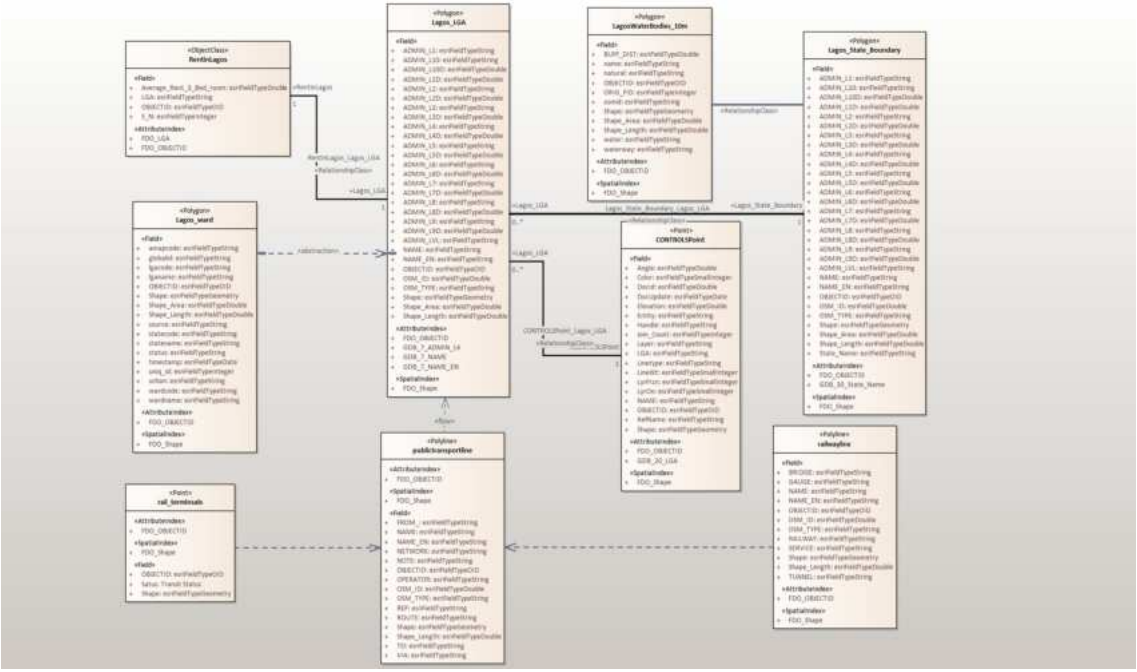
- Identify available geospatial dataset needed for open data from various sources.

- Process these datasets for publishing to a web portal.
- Configure open data hubs for various application citizens and geospatial professionals can interact with.

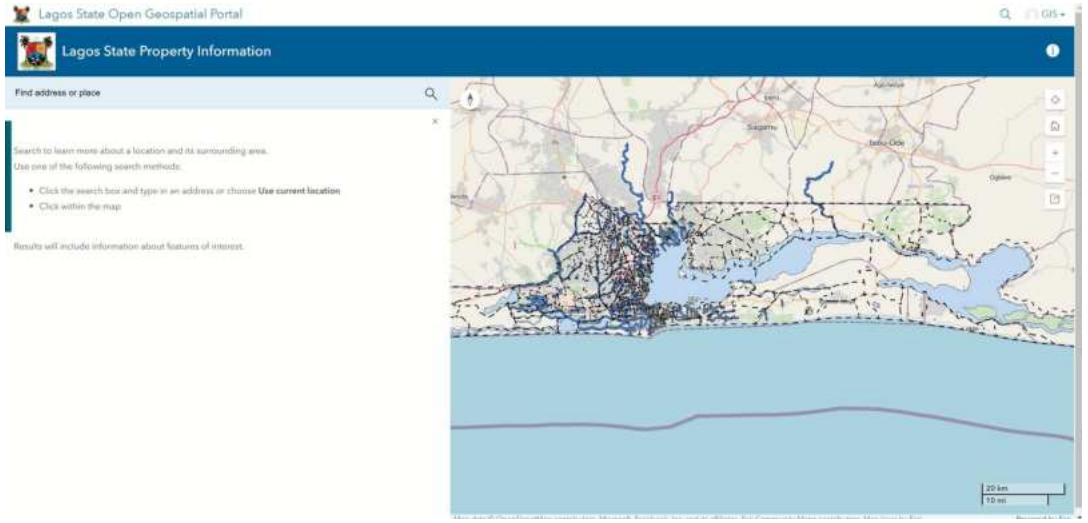


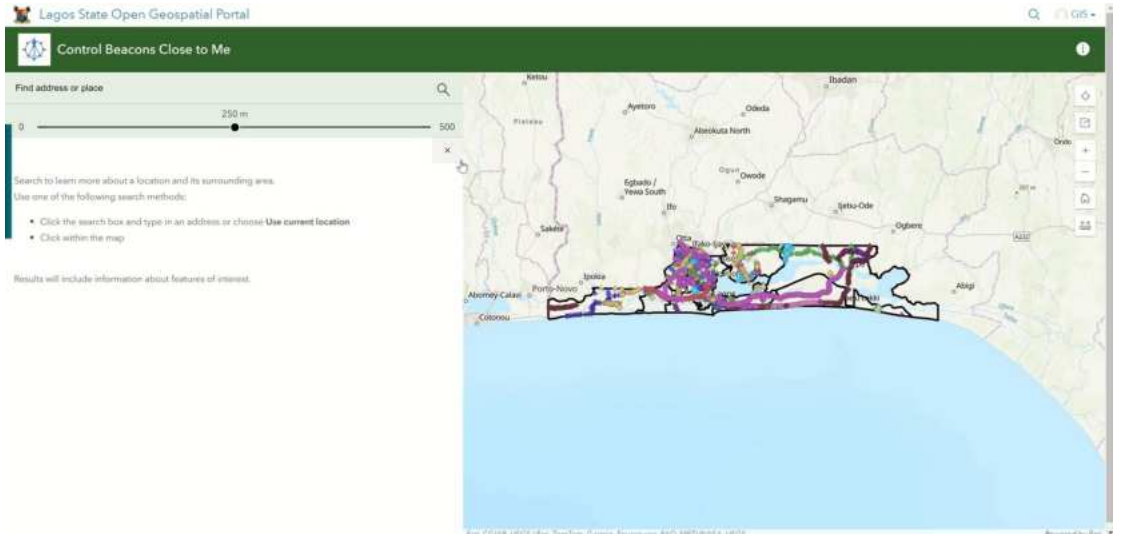
Methodology

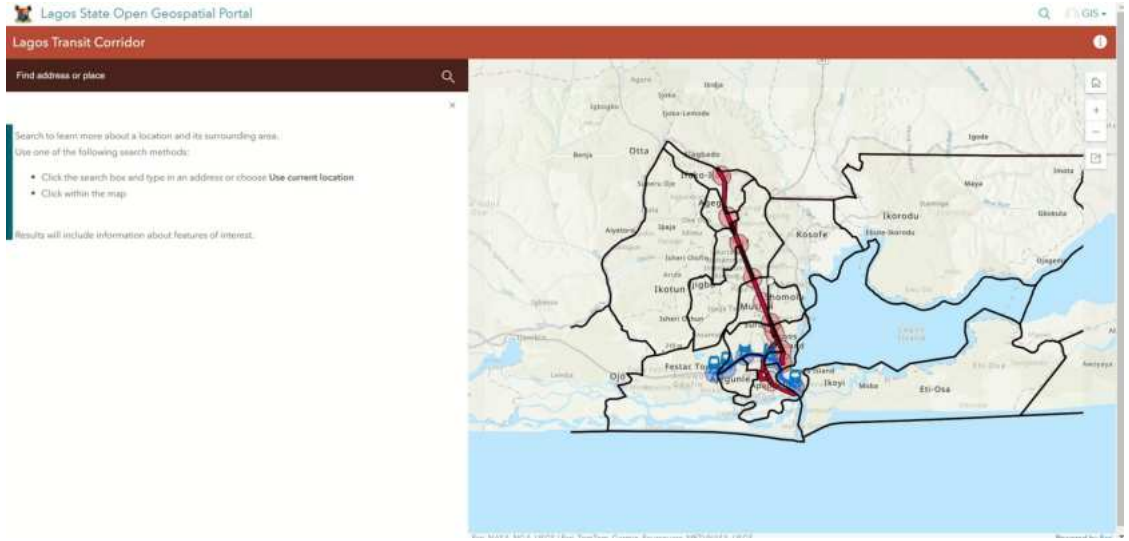


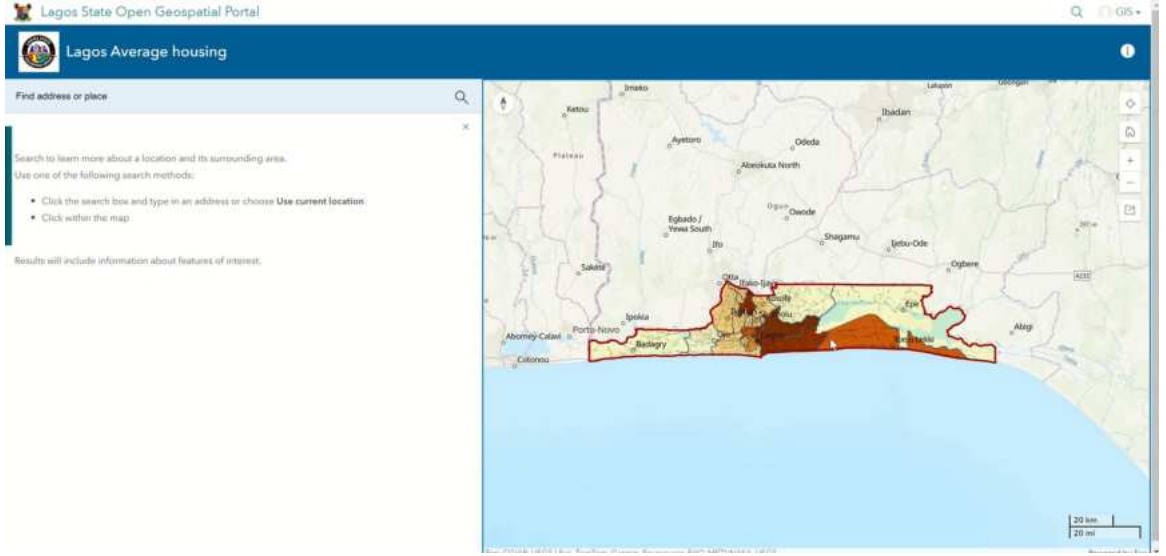


Configured Apps









Conclusion

For Lagos to develop into a smart city, an open geospatial data platform must be established. It might greatly advance public services, encourage innovation, and improve urban planning. This paper urges stakeholders to acknowledge the significance of open geospatial data in urban development and offers a strategic framework for its implementation.

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