SDI to Support Land Administration in Tobago

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Overview of Presentation

- Introduction
- Land Administration Review
- Concept of Spatial Data Infrastructure
- Conceptual SDI Model for Tobago
- Prototype Web Application for User Access
- Future Plans
- Conclusion

Introduction

- The effective and efficient administration of land requires information that is up to date, reliable and easily accessible.
- One of the most challenging tasks for any country is building and maintaining a land administration infrastructure.
- The implementation of a Spatial Data Infrastructure can reduce technical integration issues among land administration stakeholders allowing them to make better decisions while spatially enabling the government.
- This paper presents the concept of a spatial data infrastructure (SDI) as a tool to facilitate efficient and reliable access to well-harmonized land information in support of sustainable land administration and management.

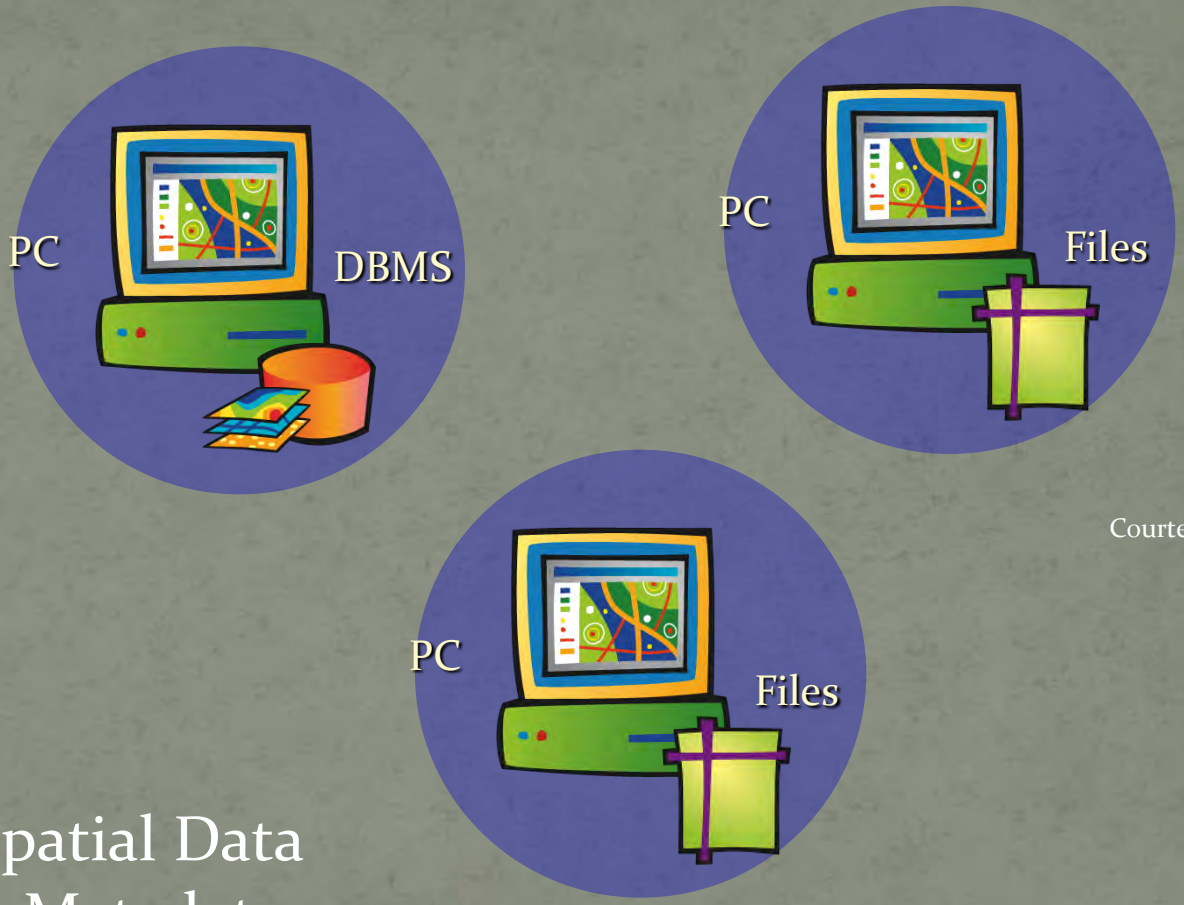
Land Administration (1)

- The processes of determining, recording and disseminating information about the ownership/tenure, value and use of land.
- The gathering of revenues from the land through sales, leasing, and taxation
- The processes of regulating land and property development and the use and conservation of the land
- The resolving of conflicts concerning the ownership and use of the land
- It includes land registration, cadastral surveying and mapping, fiscal, legal and multi-purpose cadastres and land information systems.

Land Administration (2)

- An efficient and effective system to support land administration should be able to provide information on:
  - Land Ownership/Tenure
  - Land Values
  - Property Taxation
  - Land Use
- At present, information for the above are held by different agencies in isolated databases
- This present challenges for updating the data in a timely manner and providing seamless access to stakeholders.

Land Administration (3)



Courtesy: ESRI

- Silos of Geospatial Data
- Non Existent Metadata
- No Mechanism for Data Discovery

Land Administration (4)

- Recommendations by Prof. Opadeyi (2002):

1. Effort should be made to legally register all state and public lands. This will ensure completeness of records.
2. An active mapping program should be established with adequate funding for the maintenance of maps and production of map products.
3. The title land registration system should be supported as the only land registration system with a mechanism being devised to reduce the cost and time taken to process the registration.
4. **Land administration agencies should take advantage of developments in information technology, by adopting computer tools for the efficient storage and efficient retrieval of data. These tools would facilitate the exchange of data and ensure a more compact storage environment.**

- **This study pursues recommendation #4**

Spatial Data Infrastructure (1)

- What is an SDI ?

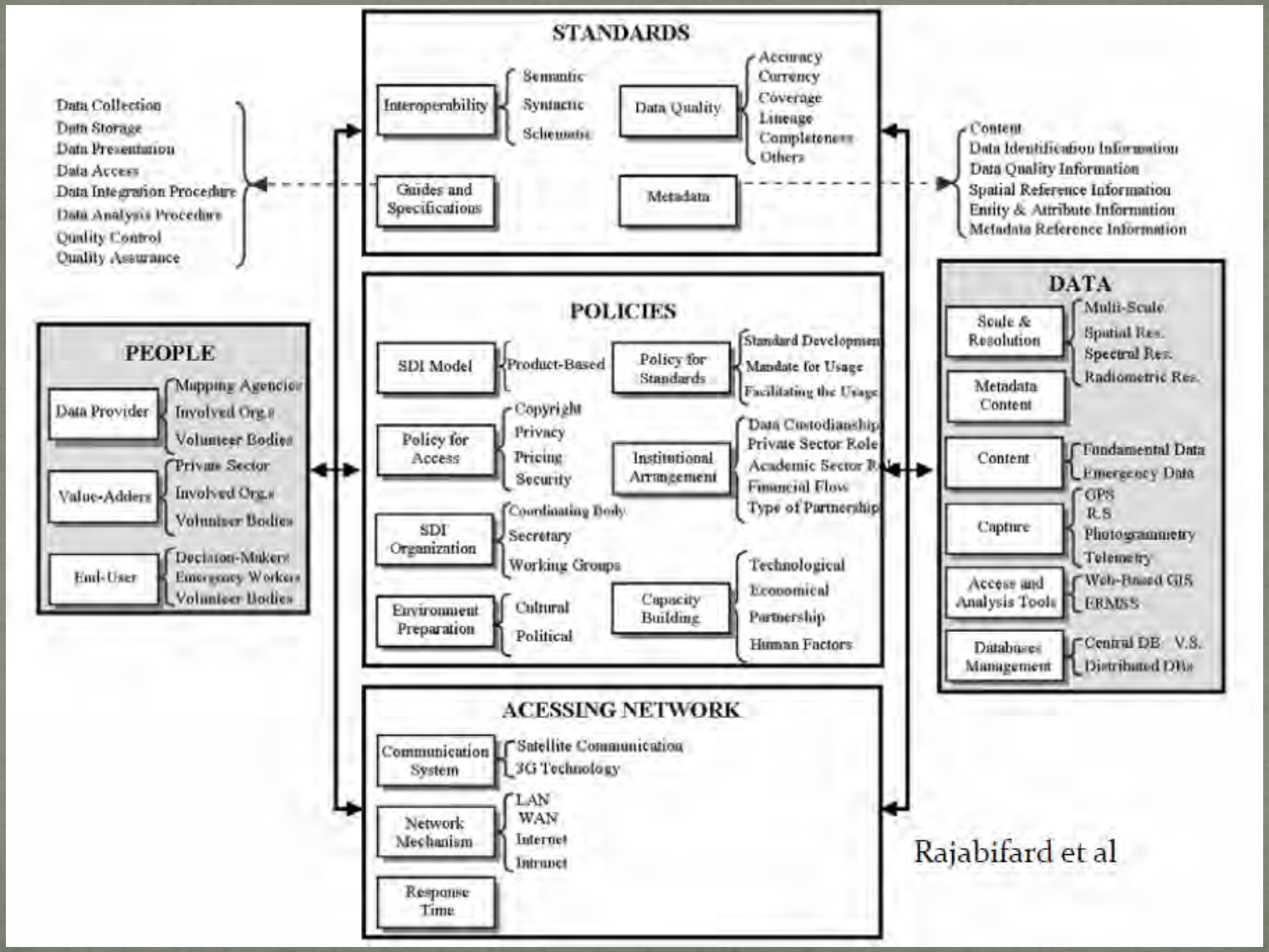
  SDI is the technology, policies, standards, and human resources necessary to acquire, process, store, distribute, and improve utilisation of spatial data. It facilitates the discovery, access, use and exchange of ***spatially referenced*** *information (Brand, 1998; Clinton, 1994)*

- SDI Hierarchy:
  - Global SDI
  - Regional SDI
  - National SDI
  - Local SDI
  - Corporate SDI (also known as Enterprise GIS)

- The last decade has seen the evolving SDI concept focus on National SDIs, there is an expectation that next decade will focus much more on large scale SDIs and particularly those related to land administration activities.

- In this study, our focus is on the technology component at the Local SDI level

Spatial Data Infrastructure (2)



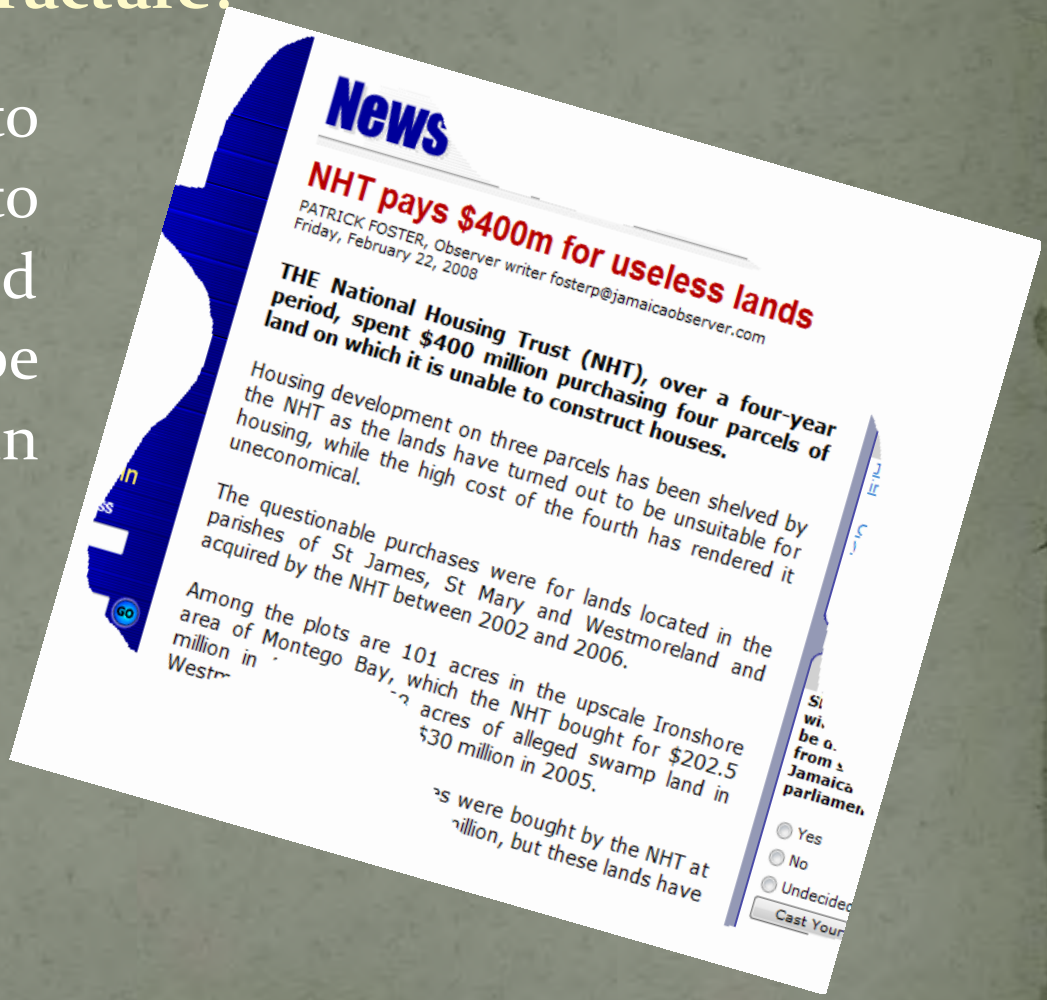
Rajabifard et al

Spatial Data Infrastructure(2)

- Benefits of an SDI
  - Integrates spatial data across multiple departments and serves entire organization
  - Allows connection to anyone who needs access to spatial information
  - Eliminates data duplication by collecting data once and using many times
  - Reduces data maintenance time
  - Enforces data security

Why Spatial Data Infrastructure?

Not having access to Geospatial Information to make an informed decision can be **extremely costly** for an organization.



News

NHT pays $400m for useless lands

PATRICK FOSTER, Observer writer fosterp@jamaicaobserver.com
Friday, February 22, 2008

THE National Housing Trust (NHT), over a four-year period, spent $400 million purchasing four parcels of land on which it is unable to construct houses.

Housing development on three parcels has been shelved by the NHT as the lands have turned out to be unsuitable for housing, while the high cost of the fourth has rendered it uneconomical.

The questionable purchases were for lands located in the parishes of St James, St Mary and Westmoreland and acquired by the NHT between 2002 and 2006.

Among the plots are 101 acres in the upscale Ironshore area of Montego Bay, which the NHT bought for $202.5 million in ... acres of alleged swamp land in ... $30 million in 2005.

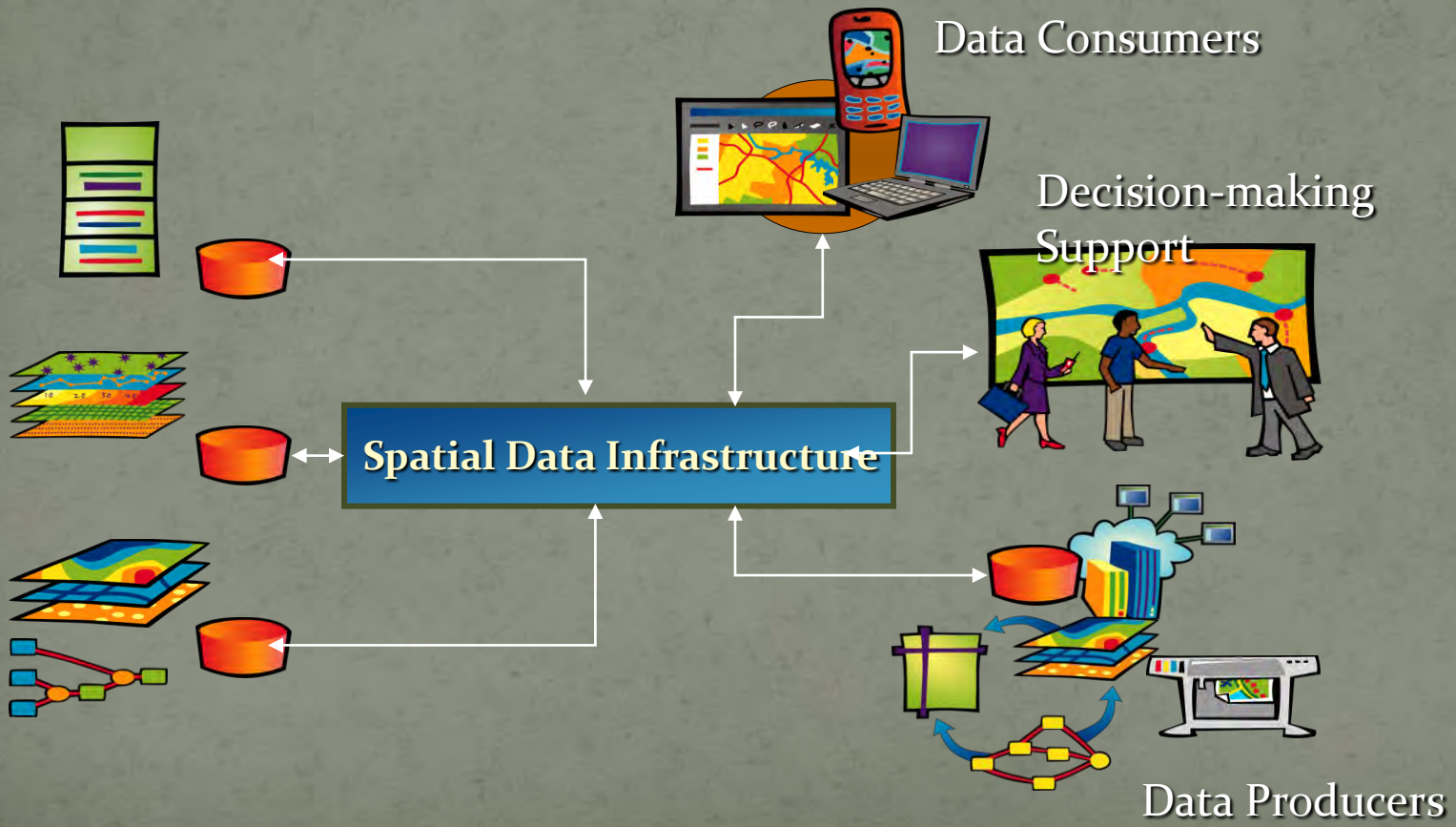
...s were bought by the NHT at ...illion, but these lands have

Yes
No
Undecided
Cast Your

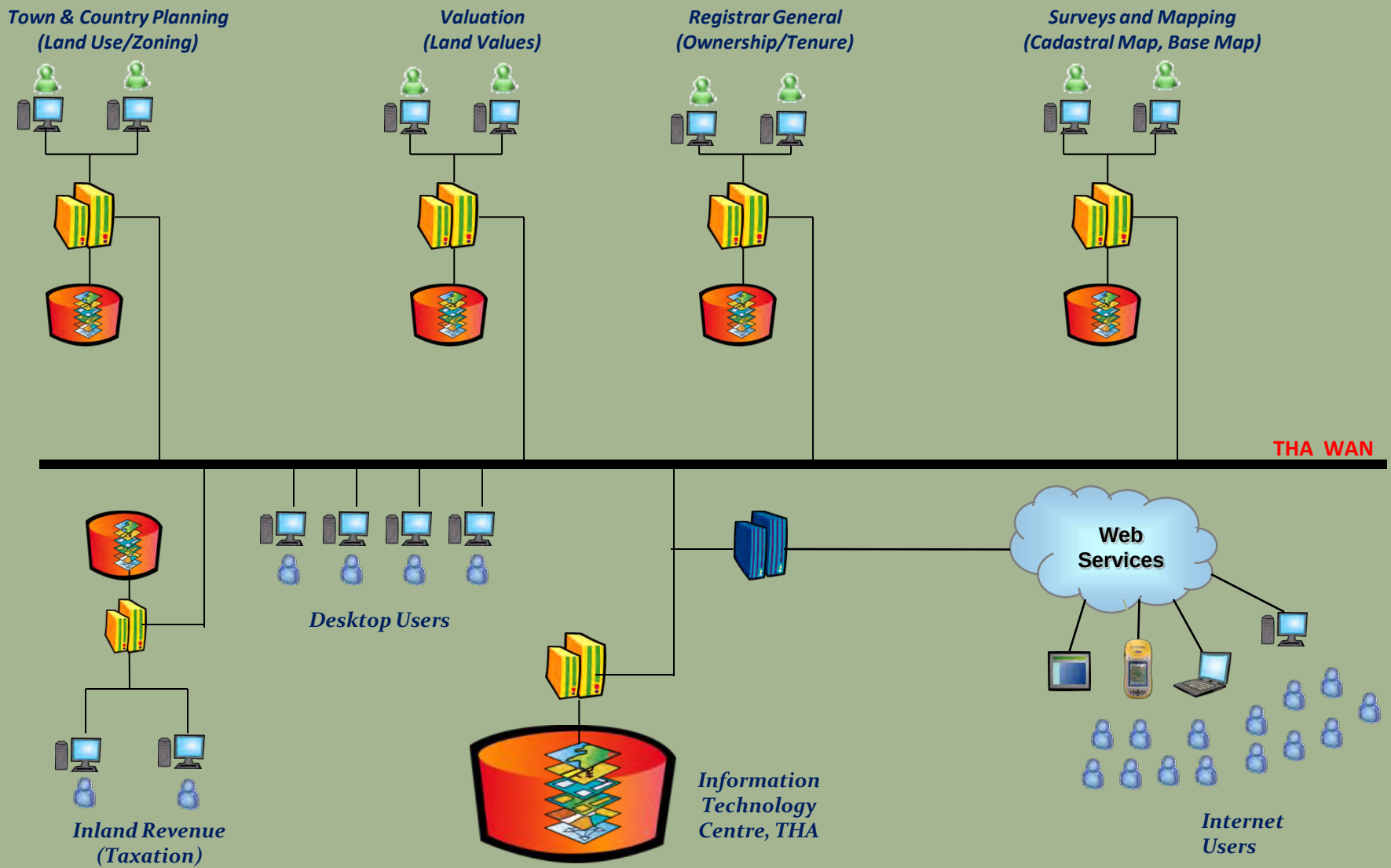
Courtesy: Jamaica Observer Online

Conceptual SDI Model for Tobago (1)

Understand that SDI is not a “database”; it is an infrastructure which links people to data and comprises policies, access technologies and standards.



Conceptual SDI Model for Tobago (2)

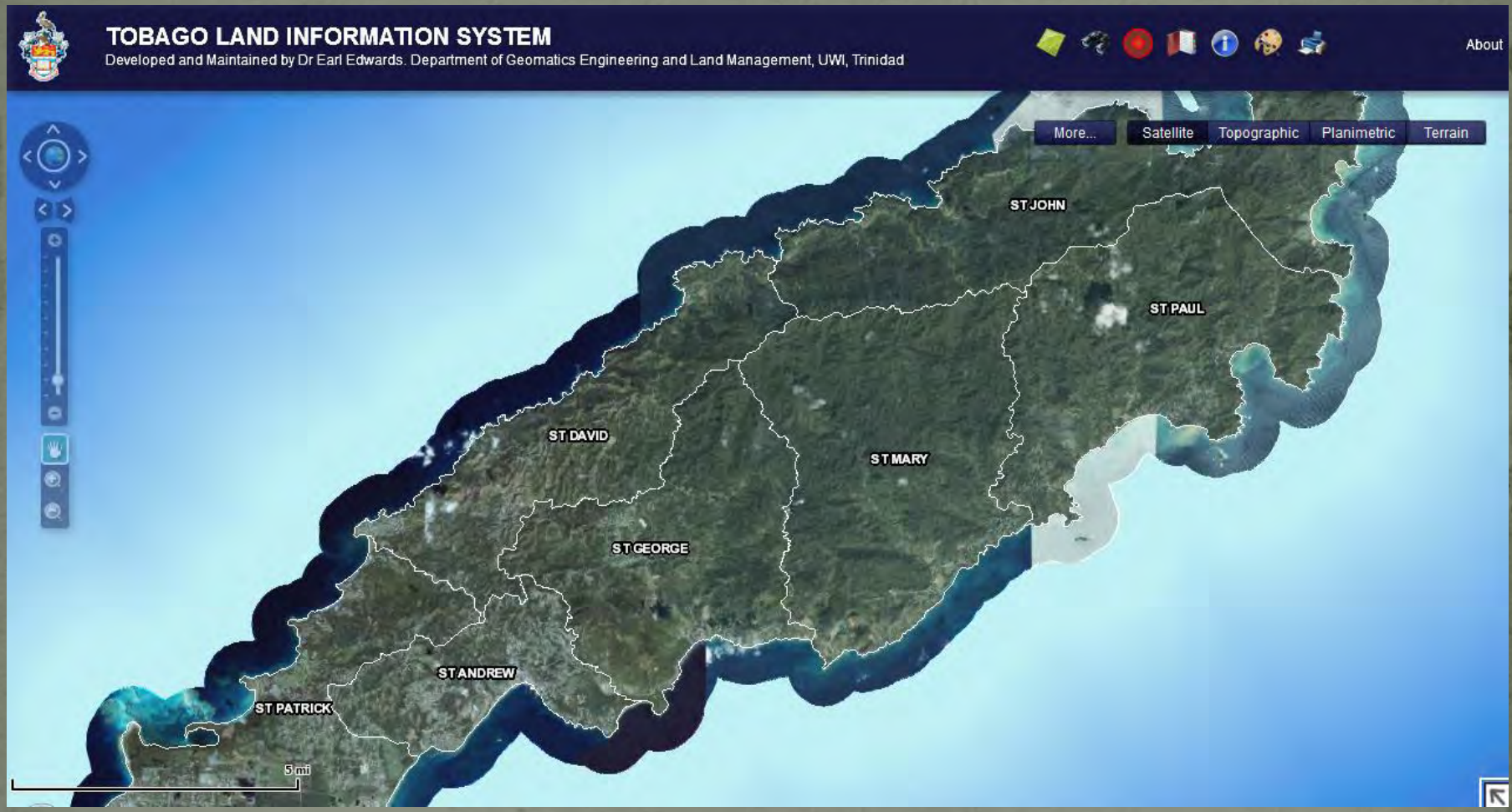


Prototype Web Application

- Built using the following software components:
  - Microsoft SQL Server 2008
  - ESRI Enterprise SDE
  - ESRI ArcGIS Server
  - ESRI ArcGIS Desktop (ArcEditor or ArcInfo)
  - ESRI API for Adobe Flex
  - Microsoft IIS Web Server
  - Google Chrome Web Browser

DEMO

See Application at **http://64.28.139.197/TobagoLIS**


TOBAGO LAND INFORMATION SYSTEM
Developed and Maintained by Dr Earl Edwards. Department of Geomatics Engineering and Land Management, UWI, Trinidad
About
More...
Satellite
Topographic
Planimetric
Terrain
ST JOHN
ST PAUL
ST DAVID
ST MARY
ST GEORGE
ST ANDREW
ST PATRICK
5 mi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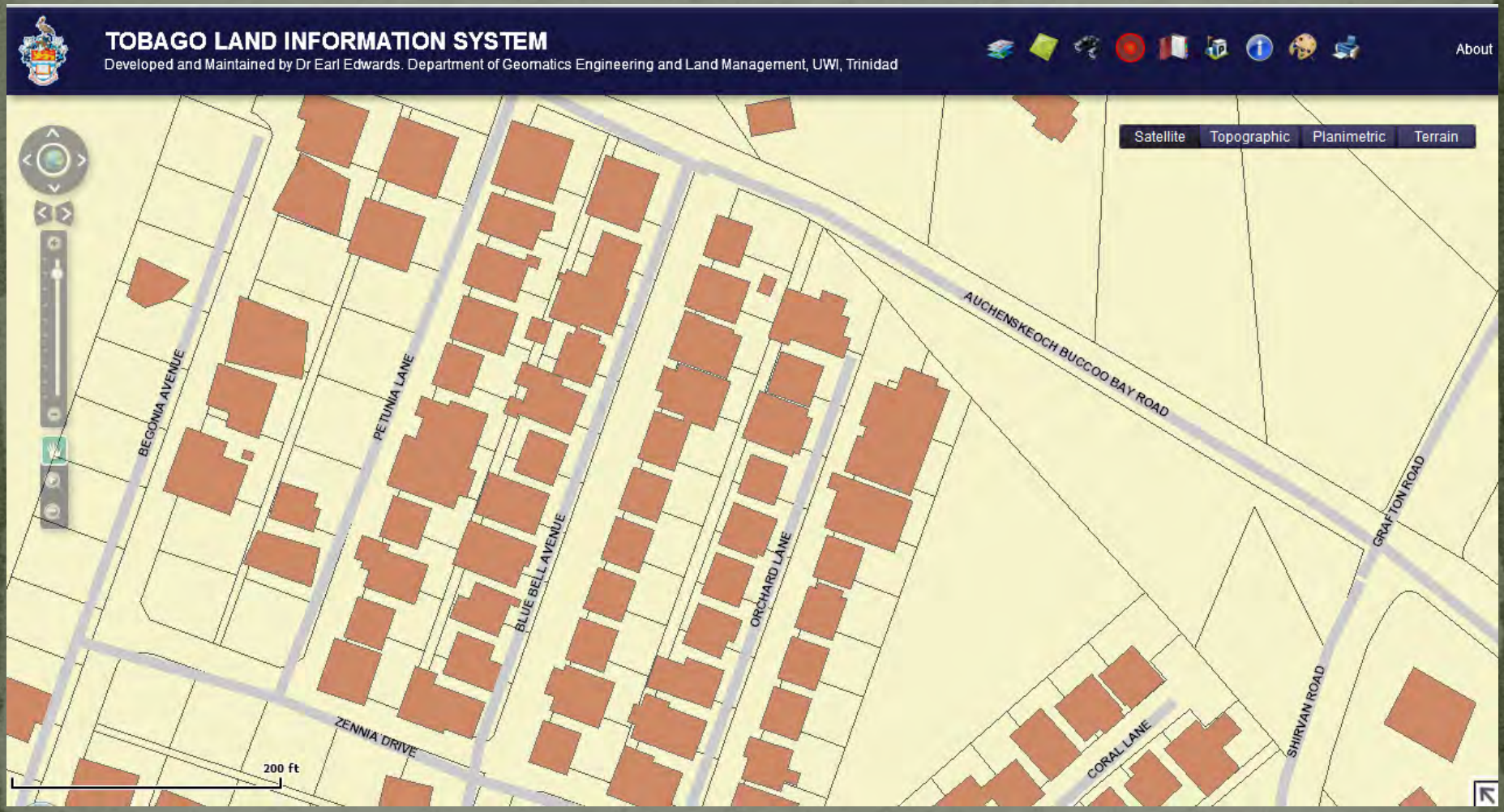
SIGNAL HILL ROAD
SIGNAL HILL ROAD
SIGNAL HILL ROAD
General Search
Features selected: 1
Information Technology Center (THA)
Street Address:
Plan Area (Sq. M):
Information Technology Center (THA)
Street Address:
Plan Area (Sq. M):
400 ft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Satellite
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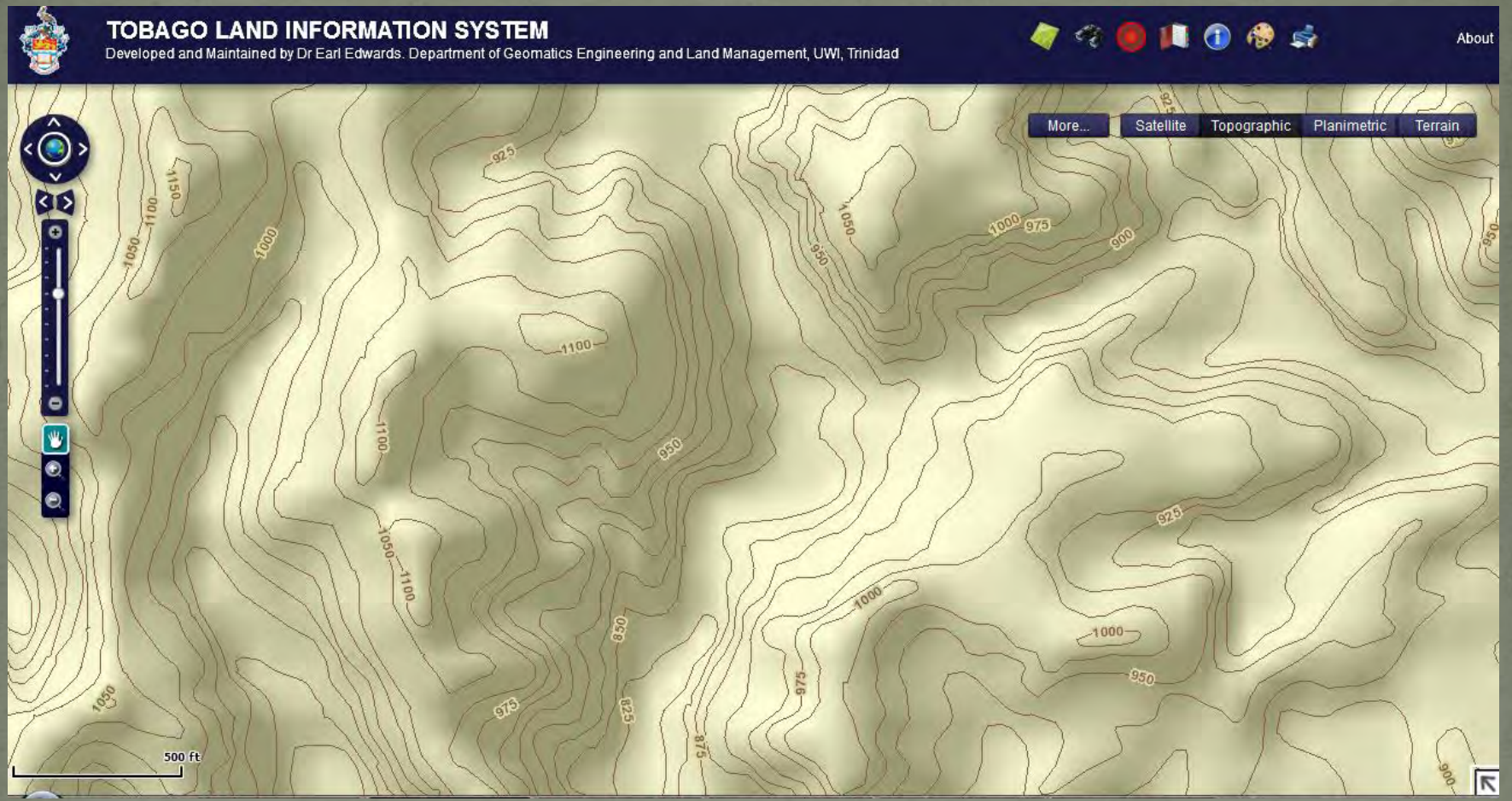
BEGONIA AVENUE
PETUNIA LANE
BLUE BELL AVENUE
ORCHARD LANE
AUCHENSKEOCH BUCCOO BAY ROAD
GRAFTON ROAD
SHIRVAN ROAD
ZENNIA DRIVE
CORAL LANE
200 ft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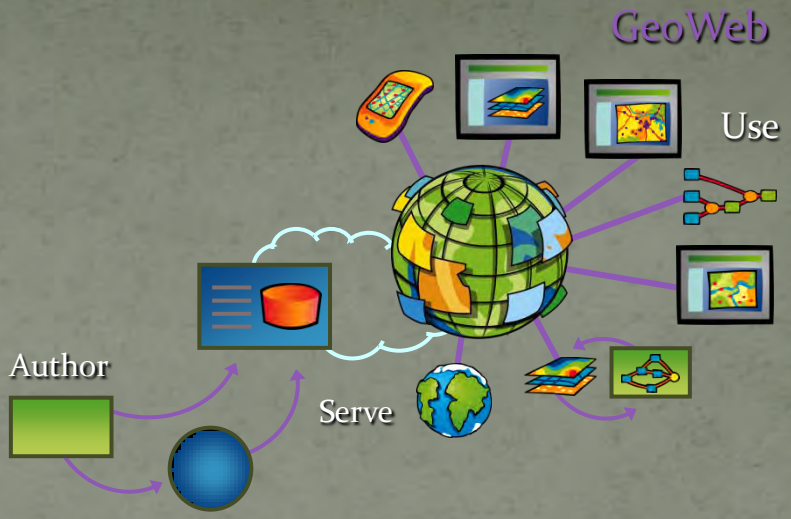
500 ft

Future Plans

- Obtain a better understanding of the LA issues in Tobago
- Engage the LA stakeholders in our investigative processes
- Explore the use of the ESRI Cadastral Fabric as a means of developing a sustainable Cadastral layer
- Unique Parcel Reference Number (UPRN)
- Investigate the development of an addressing model for Tobago

Conclusion



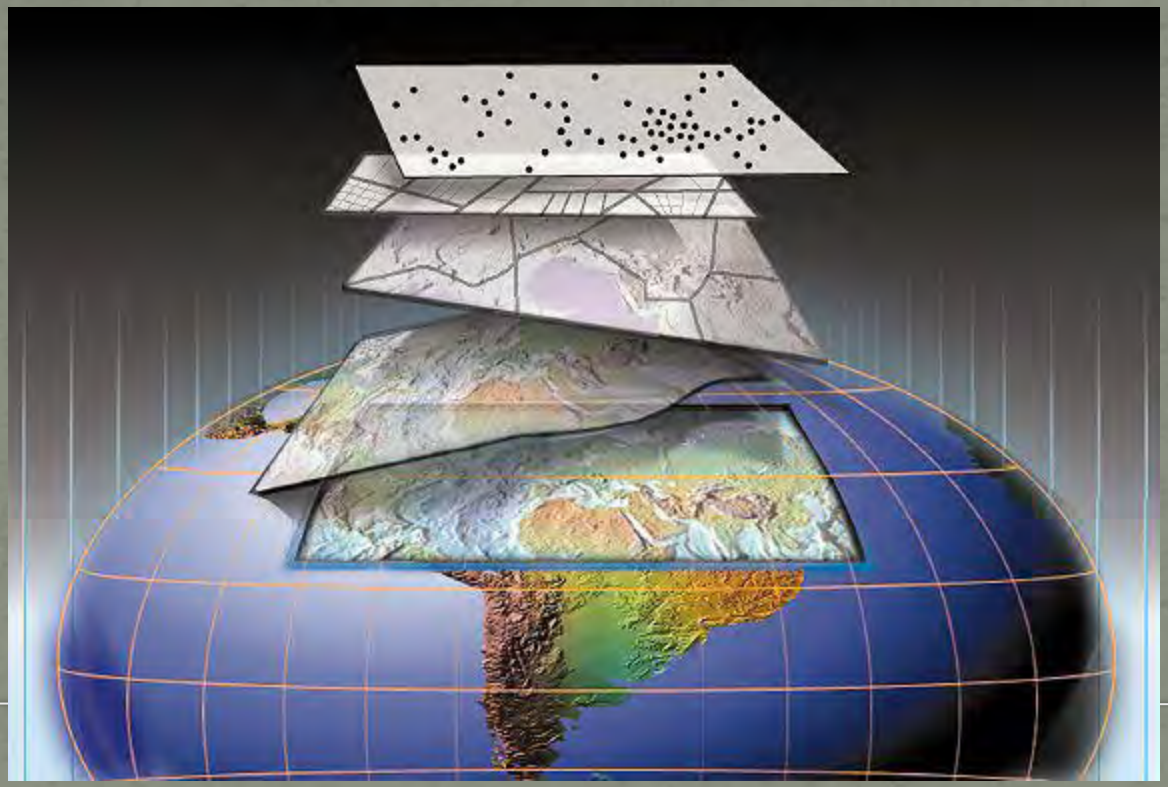
Courtesy: ESRI

Never doubt that a small group of thoughtful, committed citizens can change the world . . .

. . . It's the only thing that ever has . . .

~ Margaret Mead

Thank You!



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