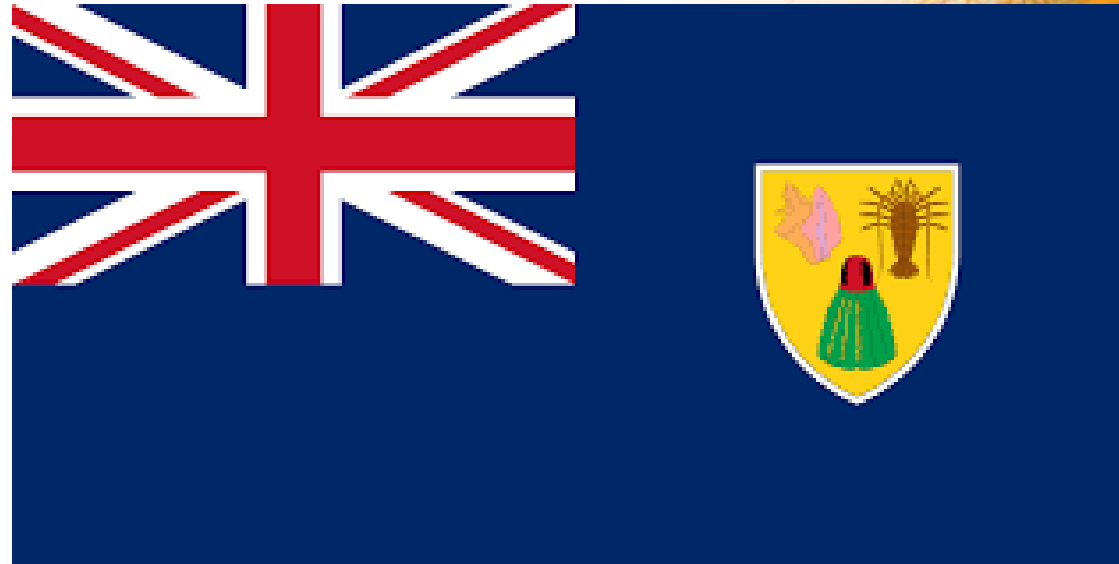


Geospatial Concerns of Turks & Caicos Islands



Wayneworth G. Hamilton – Director of Survey & Mapping Department

TURKS & CAICOS ISLANDS

- One of 14 British Overseas Territory
- Population of 46,000
- Land Area – 948 Sq. Km.
- Gross Domestic Product – 1.06 bn USD

Waitzmann, E. (2023)



GEOSPATIAL CONCERNS OF TURKS & CAICOS ISLANDS

- Lack of a Homogenous Geodetic Reference Framework
- Absence of Synergy & Collaboration of Stakeholders
- Need for a Multi-Purpose Cadastre
- Glaring Knowledge, Skills & Gender Gaps
- Need for Legislative Changes

Lack of a Homogenous Geodetic Reference Framework

1. Coordinates & Projections (Land Survey Ordinance 2014)

- Universal Transverse Mercator Projection – Zone 18 (West Caicos & Providenciales), Zone 19 (All other areas)
- Spheroid – Clarke 1866 (Semi-major axis-6378206m, Flattening-1/295.0)
- Unit of Measurement – Meter
- Meridian of Origin – 75° West | Latitude of Origin – Equator | Scale Factor – 0.9996

2. Three (3) Autonomous Geodetic Base Station

3. Geographic Information System with Arbitrary Reference (Transformed)

Absence of Synergy & Collaboration of Stakeholders

- There is a disjointed approach within Lands Division (Survey & Mapping, Valuations, Crown Land Unit & Land Registry)
- Insufficient Collaboration with other TCIG departments (Planning, Disaster Management, Environmental Protection & Public Works)
- Lack of Regional & International Membership/ Collaboration
- Data Sharing & Data Protection Mechanisms Needed

Need for a Multipurpose Cadastre

- The Survey & Mapping Department is the de facto Spatial Data Management Infrastructure
- Department Lacks Server Storage, technical expertise & data standards
- The transition from the paper-based approach of stakeholders' operations
- Digital Cadastre – Filled with cadastral errors derived from lack of homogenous reference

Glaring Knowledge, Skills & Gender Gaps

- No Geomatics educational offering in the TCICC
- Eight (8) Authorized Licensed Surveyors (Need for succession planning)
- Limited Focus on Continuous Professional Development (CPD)
- Limitations of Personnel & Technical Capacity in the Survey & Mapping Department
- Limited success in capacity building of staff
- No female professionals in the Geospatial Industry

Need for Legislative Changes

- Land Survey Ordinance 1967 (Revised 2014)
- General Boundary vs Fixed Boundary Methodology (Fit-for-purpose)
- Proposed Bill 2020 – Introduction of Board, Disciplinary Committee, Licensing Structure, Offenses & Penalties
- Land Survey Regulations (Draft Revision 2020)

CONCLUSION

- CORS, Re-survey & Densification Existing Control Infrastructure (Ground)
- A new approach is necessary to engender collaboration internally & externally
- Re-design of geodatabase is needed to facilitate a multiplicity of datasets
- TCICC has been engaged in delivering Geospatial Education & Female Inclusion
- Draft Legislative changes subject to comments of stakeholders (including Regional Agencies) must be advanced



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