

Brief Introduction

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Area of Interest

- Land mass of the islands of Grenada, Carriacou and Petite Martinique as well as the smaller islands Ronde Island, Caille Island, Diamond Island, Large Island, Saline Island, and Frigate Island
- This results in a total area of 348.5 km² to be covered. (134.6 sq. mi.)





A high-angle aerial photograph of a coastal town. The town is built on a green, hilly landscape that slopes down to a large, calm blue bay. Numerous buildings, mostly houses with red roofs, are scattered across the hillside. In the bay, several small boats are visible. The overall scene is a mix of natural greenery and human-made structures.

Grenada Creating a Digital Twin

A project in collaboration with
the Grenada Central Statistics Office,
The Ministry of Agriculture and Lands and Esri

Goals behind the project

- For Grenada:
- Create information that can be used in decision making in key areas
 - Economic Development
 - Sustainability
 - Public Safety
 - Disaster Planning, Preparedness and Management
 - Census planning
 - Physical planning
 - And more!

Data Processed

- **Topographic Lidar (digital 3D/elevation data)**
- **Min. 8 points per square meter, 5 cm vertical accuracy (RMSE), 15 cm horizontal accuracy (RMSE)**
- **Aerial color (RGB) photography**
- **Aerial near infrared (NIR) photography**
- **Orthophotos: 20 cm resolution (ground sampling distance), 3 pixel absolute horizontal accuracy**

Data Processed

- Classified point cloud (ground, buildings, land vegetation, temporary objects, outliers, others)
- Interpolated topographic digital surface model (DSM) as 0.5 m grid
- Interpolated topographic digital terrain model (DTM) as 0.5 m grid
- RGB orthophoto mosaic with 0.2 m resolution
- NIR orthophoto mosaic with 0.2 m resolution
- DSM and DTM adjusted and combined with the UKHO bathymetry data

How is GIS benefitting the Tri Island State of Grenada, Carriacou and Petite Martinique?

- **Census 2021**
 - **Mapping of Households and listing of building for census enumeration**
- **Creating an addressing system for delivery of mails (Grenada Postal Cooperation)**

How is GIS benefitting the Tri Island State of Grenada, Carriacou and Petite Martinique

- Disaster Preparedness and response (NADMA-National Disaster Management Agency)**
- Building construction (Physical Planning)**
- Land use and forestry (Land use department, Ministry of Agriculture, Forestry)**

How is GIS benefitting the Tri Island State of Grenada, Carriacou and Petite Martinique

- Covid 19, Vector control and mapping of Health Facilities**
- Utility Companies**

How can GIS be useful in achieving the outcomes of Government 's National Sustainable Development Plan 2035

- Modern Climate-and-Disaster-Resilient Infrastructure**
- Environmental Sustainability and Security**

Thank you



**Grenada Central Statistical
Office**

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