

Brief Introduction

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**Grenada Central Statistical
Office**

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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.)





An aerial photograph of Grenada, showing the island's coastline, a winding river, and dense urban and forested areas. The entire image is covered with a semi-transparent blue filter.

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



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