

Further information:

Edenvale Young Associates

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Project Description number:

EVY0303

Project Type

Flood Risk/Consequence Assessment

Flood Forecasting

Detailed Design

Calibration & Optimisation

Flood Map Challenges

Scour & Geomorphology

River Restoration & Water Quality

Environmental Impact Assessment

Training

Key Words:

Resort Development

Environmental Impact Assessment

Fluvial and Coastal Flood Risk

Water Quality Modelling (Delft 3D)

Coastal Processes & Beach Morphology

Client and other Organisations:

Burney Group

Pinney's Estate, Nevis

Edenvale Young were appointed to undertake a range of studies relating to hurricane damage, water resources and assessing coastal water quality.

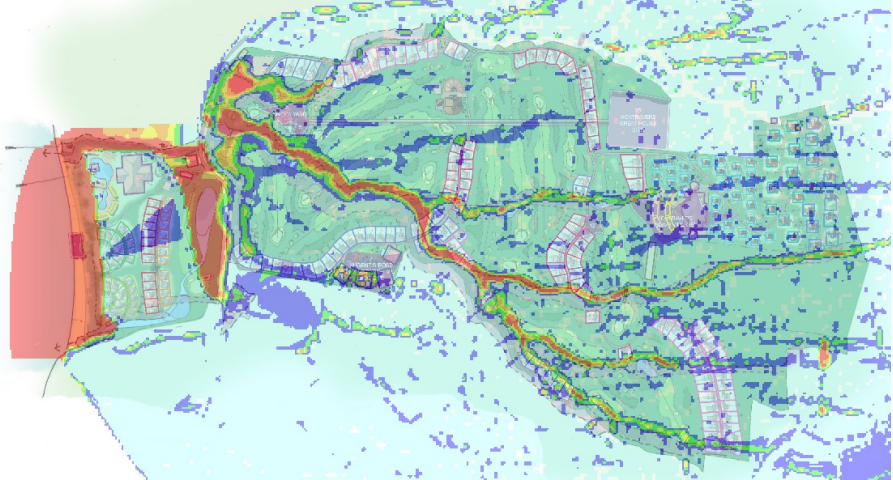


Illustration 1: Flood Risk Assessment results on Pinney's Estate

Project Details

The west coast of Nevis has been subject to a number of damaging hurricane events in the past 20 years.

The focus of the brief to EVY was to address concerns principally relating to:-

- Hurricane Flood risk from fluvial and coastal sources
- The potential for sediment erosion and deposition (coastal processes)
- Managing surface water runoff from the development site; and,
- Appraising options for supplying the new development with freshwater for potable and non-potable uses.

Edenvale Young prepared the Water Resources, Fluvial Flooding, Coastal Processes and Coastal Water Quality sections of the Environmental Impact

Assessment. In terms of water resources and water quality sections this included an assessment of:-

- Water demand for the resort
- Water supply from the existing potable water supply system; rainfall run-off (provision of storage in the catchment), groundwater; treated effluent and Reverse Osmosis (RO)
- Made recommendation associated with the composition of potable water supply
- Evaluation of the impact of an RO plant on coastal seawater quality using Delft 3D water quality modelling.

In relation to flooding, EVY assessed flood risk due to storm surge in conjunction with hurricane waves and from fluvial sources (using a

Ludford Mill, weir modelling



TUFLOW 2D Direct Rainfall Model). This information was used to develop a constraints plan and the master plan. This output from the analysis was used

to set the height of the main resort development platform, refine the location of villas and plan the golf course.