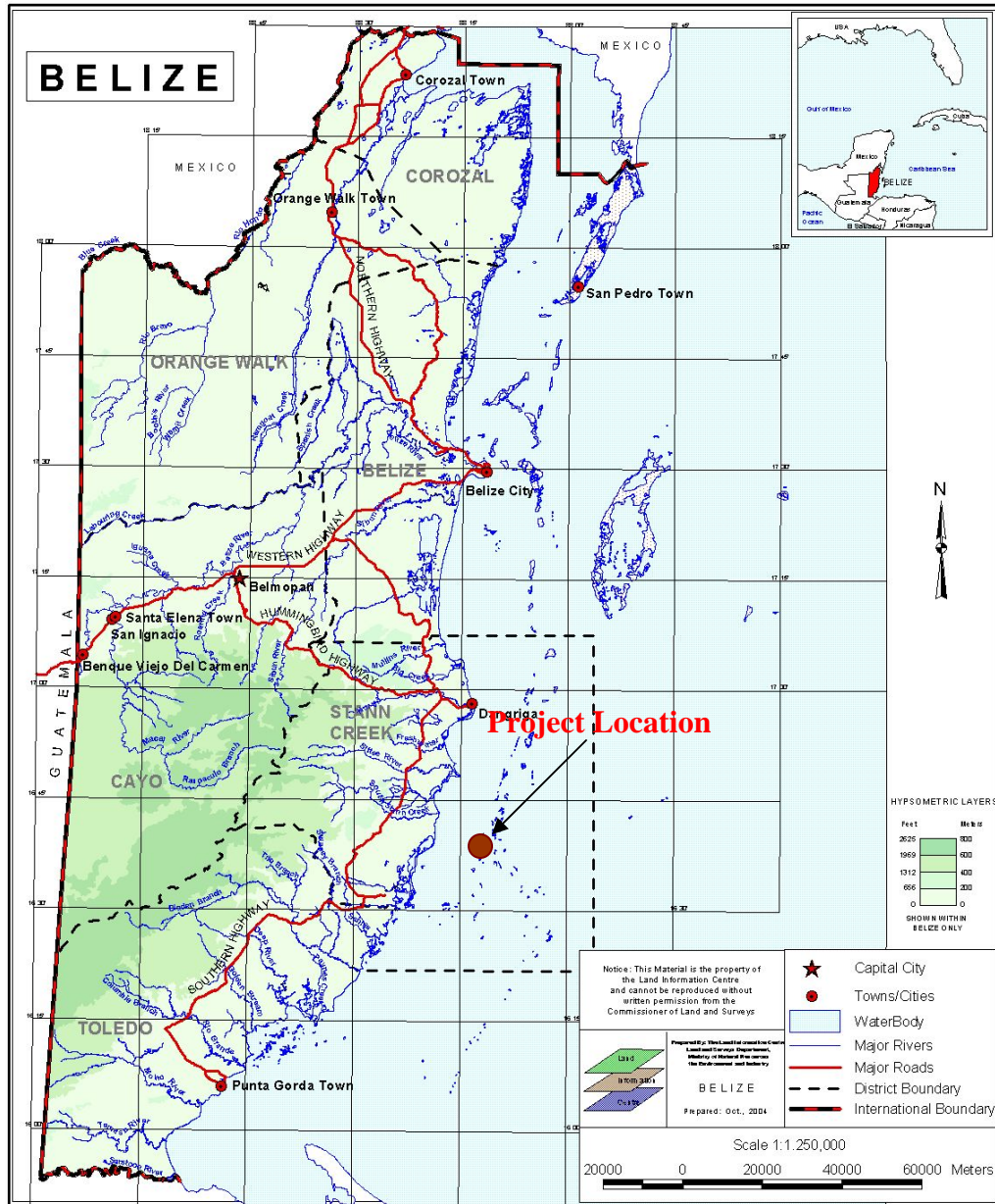


# Executive Summary

## Project location



The project site is located on Cats Caye situated within the Pelican Caye Range of the South Water Caye Marine Reserve. Cats Caye has a total land area of 42 acres and this proposed development shall cover a footprint of less than 25%.

### ***Project Description***

The proposed project is a medium scale eco-tourism development project consisting of cabañas totaling some 32,000 square feet, several fishing cottages totaling 16,000 square feet, a communal center “Eco-Village” of 10,000 square feet, a maintenance building, staff quarters and other amenities. In total, building space will be approximately 67,000 square feet and a total of 3,500 length feet of raised walkway.

### **DESIGN CHARACTERISTICS**

1. 20 Resort Units 32,000 ft.<sup>2</sup>
  - 40 Bedrooms
  - 60 Bathrooms
  
2. 20 Fishing Cottages 16, 000 ft.<sup>2</sup>
  - 30 Bedrooms
  - 30 Bathrooms
  
3. Lobby/Restaurant/Office Area 5,000 ft.<sup>2</sup>  
(6 Restrooms)
  
4. Transient Marina – 5 Tie-ups
  
5. Kayak Center – Small Floating Dock
  
6. Sport fishing Marina – 15 slips (to accommodate a maximum of 30 small vessels)
  
7. Fishing Lodge 3,000 ft.<sup>2</sup>
  
8. Eco-Village 10,000 ft.<sup>2</sup>
  - Local Crafts
  - Local Foods
  - Coral Reef and Belize Natural Resource Learning Center
  - Sustainable Design Center
  - Health/Wellness Center
  - Lecture Hall
  - Dive Center
  - Public Restroom - 4

9. Maintenance Building 2,000 ft.<sup>2</sup>
10. Management/Employee Housing 9,000 ft.<sup>2</sup>  
(6 two bedroom/two bath Cottages)
11. Interpretive Walkways 3,500 feet
12. Snorkel Trails and Floating Rafts instead of Beaches
13. Constructed Lined Gray Water Gardens
14. Solar, Wind and Diesel Generators
15. Nursery and Reforestation Center

### ***Human Occupancy and Water Resource Use***

Maximum human occupancy for the entire development is estimated at 140 personnel based on a maximum of 2 persons for each of the bedrooms. This maximum is most not likely to occur at any given time, however to allow for a safety factor when estimating the need for basic necessities, this figure will be utilized.

Rain water will collect from all roof tops and stored in cisterns. The resort units will have small compartments build into their foundation for the storage of rain water. In addition, the Eco-Village building will have a large water storage cistern with a capacity of up to 150,000 gallons. Rainwater will be complimented by the use of Reverse Osmosis. The simple fact of the use of Reverse Osmosis is and indicator that it is paramount that the surrounding marine environment is maintained in a healthy condition and in compliance.

Rainwater will be treated by ultraviolet radiation prior to its use. However, rainwater will be used for domestic purposes such as in the shower, cleaning purposes, irrigation to minor extent, and flushing of toilets. Drinking water will be supplied by bottled water. Each unit will be equipped with three-five gallon bottles of water and servicing will be

conducted on a regular basis. Guest to the facility will be given an orientation as to the practices to conserve water and energy.

### ***Solid Waste Management***

A proper solid waste management plan (SWAMP) to dispose solid waste has been developed and will be implemented. The plan revolves around the “three R’s” Reduce, Reuse and Recycle. The SWAMP includes the following waste disposal options: Composting, Transport, Burning/incineration.

### ***Liquid Waste Management***

Liquid waste management will be by means of two different systems, but both being aerated wastewater treatment systems. The resort facilities will be interconnected and all waste will be treated by the Biologically Engineered Single Sludge Treatment (BESST) Plant. A more superior system that is currently being researched with respect to cost and logistical arrangements to import to Belize is the Integrated Membrane Activated Sludge (IMAS) Treatment system.

For the Fishing Lodge, waste will be treated by the Klargester Biodisc Aerated Treatment system or the Klargester Airflow Single House treatment plant. All treated effluent will be stored and tested. Treated effluent meeting the required national standards will be used for irrigation. This activity will further reduce macro-nutrients, nitrates and phosphates, from leaching into the surrounding water bodies as plants would absorb these nutrients.

To ensure further treatment of effluent, this development will also utilize lined Constructed Wetland, which is compatible with the project’s sustainable philosophy. These wetland will operate facultatively; meaning they will comprise of a series of ponds. These ponds will be vegetated with plants of high transpiration rates and that require nutrient rich environments to thrive in. The wetlands will aid in reducing Nitrates and Phosphates, the limiting nutrients in a marine ecosystem. The objective would be to prevent impacts to the natural environment as a result of liquid waste management.

### ***Vegetation Clearance***

Clearance of vegetation is a requirement for the laying of necessary infrastructure. The impact associated with this activity is the altering of habitat to species that thrive in a mangrove eco-system. This impact is irreversible, but can be managed in a sustainable manner. As illustrated below, the necessary vegetation clearance activities have been undertaken and with only minimal additional clearance required. An area needs to be cleared to accommodate the delivery and maintenance area (approximately 40' x 60') and a three paths to the snorkel trails will be needed. These will be approximately 8' x 15'. Snorkel and floating raft access is to be used instead of attempting to create beaches, which would destroy additional mangroves and coral. The delivery area is in the large lagoon, which is a protected area with no coral colonies. Further, 15 acres of the 42 acre island was previously cleared. The proposed resort will be building impervious surface structures on less than 5% of the 42 acres, just over 2 acres. The remaining previously cleared area will be replanted with mangroves and littoral forest vegetation. In addition, the fringing mangroves, with the exception of a few trees (approximately 20-30 trees) will be cleared to facilitate the transient dock and the temporary LCM landing area; the remaining vegetation will remain in its natural state. The peripheral vegetation will serve as an erosion measure and also maintain the habitat for juvenile fish and act as a nursery for other marine species. In addition, a reforestation program forms part of the overall development. Native plants will be used, particularly those that produce seeds and wild fruits to attract birds and provide nesting for selective species.

Upon completion, a bio-diverse species native of vegetation will beautify the landscape. These include species of palms, grasses, broad leaf plants, flowering plants, fruit bearing trees as well as ornamental plants.

### ***Dredging***

Dredging activities will be required, but only to a minor extent as the area has already been previously filled, under an activity for which Environmental Clearance and all other relevant permits were obtained. As an Annexed, please find a copy of the signed

Environmental Compliance Plan. Dredging activity will be required to deepen the channel to the largest of the lagoon area that will be used as a marina for docking of small vessels. The marina channel will deepen from 6 feet to 12 feet. In addition, considering the minimal benthic organisms in the lagoon area, this area would also be used for the landing of the barge that would be used for delivering construction materials and other operations. In addition, a channel of similar size will be opened to facilitate access of vessels to the transient marina area.

Notwithstanding that the area has been previously filled, there is still the need for further filling to raise the property and additional 1½ to 2 feet. This entails the need for an additional 24,000 cubic yards of material. A marine survey has been conducted, the report of which is included, also includes possible burrow sites to obtain the additional material required. In addition, the importation of sand fill material has also been explored, but whilst feasible is very costly and poses additional unwarranted environmental risks.

However, the most viable burrow site is that which was previously used obtain material as this alternative will pose minimal impacts.

### ***Energy Demands***

Energy will be supplied to the development by various means, including wind, solar and fossil fuels. The impacts associated with supplying energy are minimal and can be mitigated against with great efficiency. Primary emphasis will be on both PV solar and passive solar technology. Wind generators will be used on an experimental basis. Diesel generators will be used for supplemental power.

### ***Potential Impacts***

The impacts associated with development are with respect to vegetation clearance, primarily mangrove (Red Mangrove – *Rhizophora Mangle*), dredging of access channel to the small fish lodge docking facility (marina) and waste management, both liquid and solid waste.

In addition, the project will also have social impacts having direct impacts on the economy in particular to those living in the zone of influence. This development project intends to use existing land base facilities at Sittee Point as its main point of loading and off-loading as required. In addition, the intended work force will also be from this area as well as from Riversdale Community.