

EXECUTIVE SUMMARY

DEVELOPMENT PROFILE

The project planned for development is being proposed by Dreamscapes of Belize Limited, a limited liability company registered in Belize (see **Addendum 2**). The company is proposing to develop a residential community and a sport fishing retreat on two properties (respectively) in the Mullins River Village region of the Stann Creek District in Belize (see **Illustrations 1** and **2**). The environmental impact assessment described herein follows the guidelines specified in **Addendum 3**, and otherwise addresses all phases of development, the first of which is scheduled to commence construction in February of 2008. The primary characteristics of the development are summarized in **Table 1**.

The residential property consists of approximately 403 acres of land adjoining the Coastal (Manatee) Highway at Mile 31, and the retreat property consists of approximately 22.5 acres of land adjoining the north bank of the Mullins River, approximately 1 mile east of the present day Mullins River Village. The 403 acre property is presently owned by Dreamscapes (see **Addendum 4**), and the 22.5 acre property is presently under purchase agreement. Amenities to be concurrently developed with house & lot sets include 2 community centers (each with a pool) and a clubhouse to be established in support of a 9-hole golf course.

The proposed development has been planned for implementation in several phases. The first phase will consist of 187 x 0.25 to 0.33-acre house & lot sets to be established on the 403 acre property; and 61 x 0.25-acre house & lot sets, a wooden boardwalk offering approximately 30 mooring slips for fishing skiffs, and a boat ramp and receiving basin to be established on the 22.5 acre property. The second, third and fourth phases of development will all be established on the 403 acre property and will consist of 180 house & lot sets to be established in phase 2, 275 house & lot sets to be established in phase 3, and 149 house & lot sets to be established in phase 4.

All roads, streets and drains within the 403-acre gated community and 22.5-acre sport fishing retreat will be established by Dreamscapes, with roads and streets to be surfaced with bitumen and stone chip, and otherwise constructed to specifications established by the Belize Ministry of Works for light to medium duty roads. Establishment of the sport fishing retreat will require the excavation of approximately 10,000 M³ of earthen material for 0.2 acre-boat ramp and basin cut into the north bank of Mullins River, but no other excavation or dredging activities are planned by the proposed development. Three boardwalk tails will be established as a pedestrian walk through riverbank mangroves, extending to an over water river front boardwalk to which boat slips will be attached. While the boardwalk is planned to be submersible in the event of flood, slips will be removable and can be stowed on land in the event of flood and/or hurricane.

Green space has been allocated for buffer zones along Wagner Creek and Mullins River, a nature preserve, a park and picnic areas, as privacy barriers, as well as natural lawn area and golf course area. Total green space is estimated at 336 acres, or approximately 79% of total development...

**ILLUSTRATION 1:
LOCATION OF THE PROPOSED DEVELOPMENT**



ILLUSTRATION 2:

2000 LANDSAT-7 SATELLITE IMAGE SHOWING LOCATION OF THE GATED RESIDENTIAL COMMUNITY AND SPORT FISHING RETREAT



TABLE 1
PRIMARY CHARACTERISTICS OF THE DREAMSCAPES OF BELIZE DEVELOPMENT

FEATURE	PARAMETER
Subject Request:	Environmental Clearance for Development
Type of Development:	791 Unit Gated Residential Community, 61 Unit Sport Fishing Retreat ~30 Wet Boat Slips, Boat Ramp & Basin
Total Capital Investment:	≥ US \$ 7.5 M
Labor and Management:	Local, with limited expatriate management support
Land Characteristics	
Total Property Area	425.5 Acres
Workable Land Unit	> 400.0 Acres
Development Plan	~ 90.0 Acres
Development Plan as Percent of Workable Land Unit	< 22.5%
Design Capacity	
Maximum Human Occupation (Guests & Staff)	≤ 2,556
Employment	
Construction Phase	≥ 50
Operating Phase	≥ 25
Wildlife	
Number of Dependent Species:	> 300
Endangered, Threatened or Vulnerable Species	
Ecosystems / Plants:	Mangrove Forest / Mahogany
Reptiles:	Coastal, Non-Specific
Birds:	Rufous Necked Wood Rail
Mammals:	Howler Monkeys, Tapir & Cats

land holdings, based on the assumption of 51.8 acres for carriageway easements, a median roof space per residential unit of 1,917.3 Ft², a capacity build out of 852 residential units, amenity structures totaling 15,000 Ft², and total development land holdings of 425.5 acres.

Potable water supply for the development will be obtained from a combination of rainwater capture in cisterns, and reverse osmosis of Mullins River water. Effluent discharge from the development will be treated by batch plant and effluent from swimming pools settled in designated sedimentation ponds. Solid waste management will rely on partial source separation, with combustible and biodegradable waste being treated onsite, and all other solid waste being stored at the regional solid waste storage facility servicing Dangriga, in keeping with the national solid waste management plan.

WILDLIFE PROFILE AND CONSERVATION PLAN

A rapid ecological assessment (REA) of the proposed development site established that the broadleaf forest component of the gated community supported a relatively common assemblage of plants along with one or two uncommon members (e.g. *Cyrilla racemiflora*, *Podocarpus guatemalensis*, and *Sloanea tuerckheimii*), the overall botanical and avian diversity was relatively low, as is characteristic of the adequately protected coastal savanna in Belize. The broadleaf and mangrove forest components of the sport fishing retreat supported a comparatively higher diversity of plant and bird species, including abundant Mahogany and an unusual siting of the Rufous Necked Wood Rail, both species now being listed as protected (see **Illustration 3**).

The broadleaf forest assemblages along creek banks at the gated community have been designed out of the overall development plan for that component of the Dreamscapes development, and as such will be adequately reserved for conservation purposes. Only a small fraction (6%) of the Riverine mangrove forest will be removed for creation of a boat mooring facilities at the sport fishing retreat site, leaving more than 94% intact, which is well above the 10% minimum recommended by the National Protected Areas System Plan (Program for Belize, 1995). Additionally Dreamscapes will set aside approximately 3 acres (20%) of the broadleaf forest assemblage at this site, and will further limit timber removal on private lots as a further conservation measure in defense of the existing stand of Mahogany found at the site. Consequently, the Dreamscapes development, as planned, is not anticipated to create any direct or unmitigated impacts on wildlife species of particular conservation interest noted from either of the two proposed development sites.

LEGAL, POLICY AND ADMINISTRATIVE FRAMEWORK

The legal, policy and administrative framework relevant to the proposed development delineate the obligations and responsibilities of the project proponent as well as those of the Government of Belize with respect to conservation practice. This framework is loosely embodied by international conventions and treaties, the laws of Belize (revised 2003), and policy guidelines developed by national institutions from time to time.

ILLUSTRATION 3: WILDLIFE OF THE PROJECT DEVELOPMENT SITES



Left Column, top to bottom: Grass savanna, pine forest, and pine palmetto forest habitats of the 403-acre development site. **Center Column**, top to bottom: Passiflora sp., Anal, (*Psychotria elata*), and Montezuma's Oropendula from the broadleaf forest of the 403 acre development site. **Right Column**, top to bottom: Gooseberry (*Eugenia* sp.), sea grape, and the Rufus-necked wood rail from the 22.5 acre development site.

International Conventions and Treaties

There are a number of international conventions and treaties that Belize has enjoined which are principally concerned with conservation practices and compliance at the national level (see **Table 2**). The key conventions of particular relevance to the proposed development concern the *International Convention on Biological Diversity*, and the *Central American Biodiversity Convention*, which specifically address conservation of biodiversity, sustainable use and sharing the benefits of biodiversity.

The proposed development serves to reinforce these conventions through allocation of lands for exclusive conservation use; and preservation of native species and wildlife corridors through exclusion of fencing. CITES (Convention on International Trade in Endangered Species) guidelines for conservation of rare, threatened and endangered species will also be adhered to by the proposed development as no ranked or protected species will be captured, traded or eliminated by the proposed development. Consequently none of the proposed development's activities are anticipated to present any unmitigated conflict(s) with Belize's existing framework of conservation conventions and treaties.

National Development Guidelines

The proposed development falls outside of any registration zone and/or municipality, which defines the area to be rural, and the proposed density of approximately 2 lots and 6 persons per acre indicates the proposed development should be classified as rural medium/low density, which is consistent with the density designation by the land information center for the proposed area of development. Taken together, these designations establish the planning jurisdiction for the proposed developments to be under the Lands and Surveys Department's Physical Planning Section, within the Ministry of Natural Resources.

Laws of Belize

The governing component of the legal framework is provided by the Substantive Laws of Belize, revised in 2003, the principle acts of which that are likely to be relevant to the proposed development being itemized in **Table 2**. Key points of contact between Belize's national legislation and the proposed development include the following:

- *The Forestry Act (Chapter 213)* provides for the collection of fees for the removal of mangrove forest based on a rate of \$ 0.40 per tree removed. The harvest of several other tree species requires payment of such royalties to the Forestry Department. Although the Act applies to forest reserves and public lands generally, forest products removed from private land appear to be subject to such charges under specific declaration by the Ministry, only.
- *The Environmental Protection Act (Chapter 328)* confers authority to the Department of the Environment for the regulation of pollution, effluent discharge limitations and environmental impact assessments. In particular, effluent regulations under this act define select parametric...

TABLE 2

LEGISLATION RELEVANT TO THE DEVELOPMENT

(For a complete listing of the substantive laws of Belize, revised 2000, see **Addendum 5**)

INTERNATIONAL CONVENTIONS AND TREATIES:

- Convention on Biological Diversity
- Protocol Concerning Specially Protected Areas and Wildlife
- Land-Based Sources of Pollution Protocol
- Convention for the Conservation of Biodiversity and Protection of Priority Areas in Central America
- Central American Biodiversity Convention
- Agreement on Co-Operation for the Protection and the Improvement of the Environment and the Conservation of Natural Resources in the Border Zone
- CITES

LAWS OF BELIZE:

TITLE V Social Services, Health and Education:

- The Social Security Act Chapter 44

TITLE VI Revenue and Currency:

- The Customs Regulation Act Chapter 49
- The Income and Business Tax Act Chapter 55
- The Land Tax Act Chapter 58
- The Sales Tax Act Chapter 63

TITLE XIII National Status:

- The Aliens Registration Act Chapter 160

TITLE XVI Property and Land Law:

- The Aliens Landholding Act Chapter 179
- The Belize Land Development Authority Act Chapter 181
- The Lands Utilization Act Chapter 188
- The Landlord and Tenant Act Chapter 189
- The Law of Property Act Chapter 190
- The Strata Titles Act Chapter 196

Continued...

TABLE 2
LEGISLATION RELEVANT TO THE DEVELOPMENT

(Continued)

TITLE XXVIII Forests, Agriculture, Livestock and Fisheries:

- The Forest Act, Chapter 213
- The Pesticides Control Act Chapter 216
- The Wildlife Protection Act Chapter 220

TITLE XIX Resources and Utilities:

- The Water and Sewerage Act Chapter 222
- The Solid Waste Management Authority Act Chapter 224
- The Mines and Minerals Act Chapter 226

TITLE XXIII Commercial Law:

- The Companies Act Chapter 250
- The Limited Liability Partnerships Act Chapter 258

TITLE XXVI Trade and Commerce:

- The Belize Tourism Board Act Chapter 275
- The Belize National Tourism Council Act Chapter 276
- The Hotels and Tourist Accommodations Act Chapter 285

TITLE XXVIII Labor and Trade Unions:

- The Labor Act Chapter 297
- The Wages Council Act Chapter 302
- The Workmen's Compensation Act Chapter 303

TITLE XXXII Environmental Regulation and Control, Culture and History:

- The Environmental Protection Act Chapter 328
 - Statutory Instrument No. 94 of 1995* (Effluent Limitations)
 - Statutory Instrument No. 107 of 1995* (Environmental Impact Assessments)
 - Statutory Instrument No. 56 of 1996* (Pollution Regulations)
- The Coastal Zone Management Act Chapter 329

TITLE XXXIII Regulation and Control of Miscellaneous Matters:

- The Private Works Construction Act Chapter 337

...End

limits for effluent discharge as being ≤ 50 ppm BOD₅ (at 20 °C), ≤ 100 ppm COD, ≤ 100 ppm total suspended solids (TSS), $\leq 2,000$ ppm total dissolved solids (TDS), ≤ 3 ppm for nitrates (NO₃⁻), ≤ 1 ppm for total ammonium (NH₄⁺), ≤ 5 ppm for phosphate (PO₄³⁻), and 0-10 MPN/100 ml for total Coliform and total fecal Coliform bacteria.

Background (pre-existing) values for these parameters were 89 – 119 ppm for COD; 178 – 786 ntu for Turbidity, 0.04 – 0.6 for phosphate, and 0 – 8 MPN fecal Coliform bacteria/100 ml, suggesting that background levels exceed regulatory standards, and therefore should be supplanted as standards for the proposed development site. The batchplant planned for use will have ex-plant effluent below background COD and TSS values, but will be mixed with brine prior to discharge into the Barrier Reef Lagoon.

- *The Private Works Construction Act (Chapter 337)* requires the proponent to obtain a license from the Minister (unspecified) “...to construct any ...pier, ..., or fill up any land on the shore of the sea or bank of any river in any part of Belize other than Belize City”. The proposed development plans to establish two piers but fill no land along the shore of the sea or bank of any river, and therefore must seek permission from the Minister (unspecified) for pier placement.
- *The Mines and Minerals Act (Chapter 226)* states under PART IV, SECTION 79 (2) in respect of a *Quarry Permit* that “...no permit shall be required in the following cases- ... (b) the owner or occupier of private land taking construction minerals from such land for the construction of buildings, dams roads and similar works on such land for his own use or that of his employees...”. This section of the Act implies that the private land excavation for canals and lagoons and replacement of the material within the property as fill is not subject to royalty charges, fees or permitting requirements as would be the case were the materials in question were removed from the sea or public lands.

IMPACTS AND MITIGATION

The principal unavoidable impacts of the proposed development entail nominal reduction of savanna and broadleaf forest habitats, and 0.2 acres of land clearing and excavation from the north bank of lower Mullins River. Aside from these impacts, the overall land and sea based impacts of the proposed development are reversible and avoidable (see **Table 3**).

Potential impacts related to land and sea-based transportation; material, water and electrical supply; and treatment measures for liquid and solid waste are typical and can be easily mitigated. Potential wildlife impacts have been largely designed out of the proposed development footprint through reserve of ample green space, and intact stands of broadleaf forest extent on both development sites; and through limited use of bio-degradable pesticides as a golf course management tool. The few scattered archaeological remains found on the Mullins River property (only) have been collected, but no settlement formations were resolved during onsite inspections. Consequently, the developer has been advised as to the laws of Belize in regard to finds and reporting obligations, and has agreed to report any finds during further civilization of the development site.

The positive social impacts of the project include the creation of jobs and foreign exchange for Belize. The initial phase of this development is anticipated to create perhaps 50 construction jobs and some 25 permanent on-site jobs on completion of all subsequent phases of development. The project is expected to return in excess of US \$ 10 m in net foreign exchange per year at full-scale development through local expenditures of foreign residents, thereby bringing significant new investments into the economically depressed Mullins River Village and surrounding areas of Belize.

**TABLE 3:
KEY DEVELOPMENT IMPACTS AND MITIGATION MEASURES**

POSITIVE IMPACT OPPORTUNITIES	NEGATIVE IMPACT RISKS	MITIGATING COUNTER IMPACT MEASURES
Foreign Investment through Construction Jobs & Local Expenditures	Limited Broadleaf & Mangrove Forest Reductions.	Post-Construction Re-Landscaping of the Development Site