

# **Response to a Review of the “Final Environmental Impact Assessment**

## **MDL Investments Ltd., Deadman Cayes Turneffe Atoll, Belize”**

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Submitted to: Alex Anderson, Executive Director, Turneffe Atoll Trust

### **General Overview of Project Impact**

By far the most significant impact of this development project, should it go forward, would be setting a precedent for construction of tourism facilities within the restricted “general use” zone of the Turneffe Atoll Marine Reserve (TAMR) World Heritage Site and the use of extensive, walkway-connected, over-the-water cabanas and bungalows as an option for developers.

This represents a situation where the current owner of private property within a marine reserve, which may or may not have had “grandfathered” rights conveyed to the original owners but that are likely not attached to the property titles, is requesting the accepted management restrictions to three small keys and surrounding waters be suspended for the development of a largely over-the-water complex to accommodate about 100 people at full capacity. The current owner is at least the third title holder for these properties, having purchased these islands with the full knowledge that they are located within a restricted area of a World Heritage marine reserve that does not allow such development, particularly not within 550 meters of the reef crest (the project site is 140 meters and less from the reef crest). In addition, the potential developer already has a property at Spanish Caye and has a history of not strictly following ecological/ environmental guidelines to the satisfaction of GoB. Even with these conditions presented, proposal states that the development should be considered unless the GoB intends to compensate the owner for not allowing the development to go forward.

This property is set in a very sensitive location, surrounded by a shallow sea floor covered by seagrass beds, mixed Manatee Grass and Turtle Grass containing small-growing corals and other benthic organisms, and large clusters of upside-down jellyfish. These shallow areas are feeding grounds for Caribbean Lobster, Queen Conch, juvenile fishes, Bonefish, Permit, and other game fish. This area is part of the Big Flat, a very important area for sports fishing that supports several fishing guides and local fishing resorts.

The over-the-water structures are proposed as a solution to limiting impact to these shallow habitats, along with the use of composting toilets, composting food waste, removal of solid waste, sediment curtains, and other strategies to create a “green” development. However, these efforts are countered by the impact of dredging, spoil handling and disposal, installation of over about 600 pilings for cabanas and board walks over water and another roughly 600 on the islands, and the continual prop wash and hull damage imposed by boats and barges coming and going to transport construction materials, workers, tourists, supplies, water, food, fuel, and waste.

The area chosen for this project is not suitable, requires constant servicing by boat when under construction and in operation, and shall reduce the quality of habitat for other people in the area who have been utilizing this area for the ecological services it renders, such as the support of a sport fishing industry. Besides, the rules and regulations governing management of the TAMR should not be arbitrarily applied in order to accommodate developers seeking a greater share of tourist dollars.

## Specific Comments

### Construction

The dredging component is rated as having a low impact given that it is reported to be a one-time and rapidly completed task. However, that does not truthfully reflect the long-term significance of establishing a deeper channel in this shallow area. Loss of stabilizing grass cover and root systems creates an area prone to continual erosion from daily tidal movement and from storms. Tidal rise and fall shall follow this deeper channel just as it did to create the original tidal channel this project proposes to dredge out. Being the lower area of the seafloor, this dredge channel may actually accumulate sediments over time, requiring maintenance dredging.

Dredge spoil is to be placed in large de-watering bladders, requiring large cleared space on the islands, and eventually the de-watered spoil material must be transported to and deposited in the designated area on the islands to fill the land.

The barge used for worker accommodations, galley, quarters, tools and materials storage, full bathrooms, and other necessities must be anchored somewhere near the project site, preferably in an area where the vessel does not scrape bottom during low tide. Transport from the barge to the work site shall be a continual activity throughout the construction phase.

Vessels and barges are sources of prop-wash, bow wakes, hull impacts, bilge water, unburned hydrocarbons, anchor scars when anchors are used, and noise. The construction phase can be a one to two year process, requiring 20 to 30 workers. During construction all wastes, solid and liquid, shall be removed and transported back to the mainland.

Besides dredging, driving pilings for 12 over-the-water cabanas, each having an estimated 12 pilings based on example photographs and constructing for hurricane conditions (144 in total), and the 1,730 ft. of over-the-water walkway (about 428 pilings if placed 8 ft apart), plus another estimated 570 pilings for over land walkways, bungalows, restaurant, worker housing, and support structures. Pilings are driven down to bedrock or old reef, otherwise the structures slump. This effort shall impose a significant amount of local disturbance. It is arguably not the minimal level of impact indicated by the proposal.

### Impact of Finished Structures

De-vegetation of 20% if the land surface for structures has been recognized and erosion potential recognized. However there shall be local hydrological changes concerning the movement of water into and out of the Big Flat in response to tidal movement, rainfall runoff from the larger island, and storm waves. The channel shall become a major drainage way, funneling water from the shallows into deeper water. Water flowing around all of the pilings can lead to scouring of the side of posts met by moving water and turbulent erosion on the opposite side of the post where divided flow reunites.

Elevated walkways and cabanas shall shade the sea floor beneath and in the long term change the composition of organisms, as seen in many docks and houses over the water. Loss of seagrass and other components that stabilize sediments leads to active sediment movement and erosion potential, especially with storm wave energy is involved.

Once completed, these structures shall require routine maintenance and occasional rebuilding in the event of serious storms. Just from the physical presence of these structures and the continual upkeep within a marine environment, this project shall impose long-term change on on this shallow seafloor and reef crest area.

## Impacts of Operation

Once in operation, the facility can house a maximum of 64 guests and 35 workers. All persons occupying the facility are dependent on boats and barges to bring all the water, food, beverages, fuel, clean laundry, and anything else that is needed from the mainland. All waste materials, including solid waste, compost from composting toilets (estimated at 30 units), and any hazardous waste shall be transported off the island and shall eventually end up in the Mile 22 Landfill.

Boat traffic in this area shall be significant and was not covered in the EIA. A supply barge is to arrive once a week with bulk materials, including potable and bottled water. Smaller boats, probably Mexican skiffs, shall be continually coming and going, bringing new guest and picking up departing ones, taking guests to dive and snorkel sites and other sites within Turneffe, and occasionally handling emergency runs. Each boat introduces erosional energy into the water through prop wash and bow wakes, energy that constantly rolls over surrounding shallow habitats.

Fuel for generators and cooking shall be continually used. Cleaners, disinfectants, pesticides, and other chemicals shall likely be used frequently. Grease and oil from the kitchen and from the grease trap and compost from all of the toilets shall have to be gathered and loaded onto service barges for transport to the mainland. All of these represent potential spill hazards during handling and use, and can impact fragile ecosystems. Gray water (sinks, lavatories, showers, equipment wash stations) is the exception and shall be collected, treated, and recycled on the islands, ending up in sealed evapotranspiration gardens.

Overall, strategies for black water and gray water waste management appear to be feasible, but require constant servicing and maintenance. Also, on these low islands where a category 1 hurricane can inundate the entire Atoll, waste containment and treatment facilities, fuel bunkers, battery banks, and other toxic materials stores on the ground shall be inundated and pollutants released into the immediate environment. In addition, solid waste from buildings and other structures, as well as furnishings, equipment, and supplies, can be scattered throughout the atoll wetlands by large hurricanes.

## Final Word

As an aquatic ecologist, I wish to go on record as agreeing with the Yellow Dog Community Conservation Trust, the Turneffe Atoll Sustainability Association, the Bonefish and Tarpon Trust, and the Turneffe Atoll Trust. This is not the kind of project we should condone for Belize, one that not only introduces large-scale over-the-water tourism facility development, but also promotes removing conservation restrictions within zoned protected areas. I also heed the caution expressed by GoB representatives hesitating to give this particular developer permission to develop in a sensitive and important protected area given his performance at Spanish Caye Resort.

*Ed Boba*