
ADDENDUM

ENVIRONMENTAL IMPACT ASSESSMENT

GOLDENEYE RESORT DEVELOPMENT

**Oracabessa, St. Mary
Jamaica**

Submitted to

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INTRODUCTION

This document addresses the comments made by the National Environment & Planning Agency in letter dated 11 January 2006 following the review by the relevant technical agencies of the Environmental Impact Assessment report of the proposed resort development at Goldeneye, St. Mary, Jamaica. NEPA's comments are presented in black type (Times New Roman) and the responses by the consultants are presented in blue type (Arial).

**COMMENTS ON ENVIRONMENTAL IMPACT ASSESSMENT
FOR
GOLDENEYE HOTEL AND RESORT DEVELOPMENT
AT
ORACABESSA, ST. MARY
BY
ISLAND JAMAICA LIMITED.**

The National Environment and Planning Agency (NEPA) has received and reviewed the above captioned document. Whereas the EIA attempts to address most of the salient issues related to the project, the following comments were compiled from a review of the document by NEPA and external Agencies:

SPECIFIC COMMENTS

- 38 Mention is made of flooding from the storm water run off from the Spicy Grove Squatter community unto the section of the project site intended for the sewage treatment plant. However the measures to be implemented by the Golden Eye development project to address this flooding risk if it is not adequately addressed by North Coast Highway Project are not mentioned, although the likelihood of it not being addressed by the major road infrastructure project is recognized. Bearing in mind the importance of efficiently functioning sewage facilities to the environmental health of the area this issue must be suitably addressed in the EIA.

The sewage plant is to be built 4'0" above existing grade (elevation = 7.5 Ft) due to the high water table in the area and this will prevent it from being adversely affected by storm water floods. A 24" dia. culvert will be placed under the existing roadway, and the area graded and drained to the gully on the western side of the roadway.

Hue Lyew Chin (HLC), the civil engineers, confirm that the drainage flows are calculated on the assumption that 76.2 acres of land on the landward side of the road drains on to the Goldeneye site.

- 39 The total water demand for the project needs to be stated. Information on the annual production levels of the Pottinger and Bogue Springs as well as White River should also be provided and also the total demand on these sources. Although the existing residential and other demands in the area are apparently being met the magnitude of the proposed development could result in a return to the situation of deficiency if the resources serving the area from the three sources mentioned are insufficient.

NWC was requested to supply 285,000 LITRES/DAY (75,000 USGALS/DAY) for a total equivalent of 150 rooms double occupancy for the first phase of the development, which is now due for completion in mid-2007. Mr. Ian Bennett the Manager, Engineering Design, NWC has responded to the effect that *“The NWC has assessed the requirements for that area and has determined that we are able to provide this service for your development”*. The NWC in their letter has requested certain information, which is being prepared.

- 44 The main beach on the outer bank namely Low Cay Beach is referred to as an undeveloped beach effectively controlled by the Island Group in the EIA. However no mention is made of whether it is currently being used by local residents and fishermen or not. This Bank based on the information in the EIA is presumed to be at least 30 years old. Therefore it is conceivable that users could have been accessing the undeveloped facility for some time.

Low Cay Beach was artificially created 8 years ago, long after Island Jamaica Ltd. (IJL) purchased the land now being developed. It has never been used nor accessed as a public beach. It may be useful to note that the only natural beach in Oracabessa originally was at Murdoch Beach, which is not within the current project area.

- 44 The proposed location of the jet ski rental operation near the fishing beach is likely to result in a possible conflict of uses depending on the magnitude of the jet skiing operations and the fish landing activities if both uses are in close proximity to each other.

The location of the jetski rental operation is roughly 300 – 400 metres away from the fishing beach. It is not likely that the relative locations of both activities will be the cause of water traffic accidents.

- Ref. 45 & 51 A detailed drainage plan is critical. The project site will be generating increased storm water run-off from the development of the property as the built environment area will be increased. In addition the developments on the landward side of the main road will also impact on the storm water flow onto the property and must be taken into account.

Detailed drainage plans are contained in the submissions made for Outline Planning Approval and Building Approval.

Ref. 60 No details are mentioned on the status of the roadway leading to the development. In light of the fact that there will be increased traffic flow associated with the resort, consideration needs to be given to the improvement of the existing access routes that lead to the proposed development, notwithstanding the fact that it is mentioned that vehicular access in the property under normal circumstances will be restricted to the use of Golf Carts.

The eastern road leading to the site will be improved; re-graded and paved with storm water drains installed beside the road. Storm water from this road will be discharged into the publicly owned storm water drain located to the west of James Bond Beach that runs across IJL land. This drain takes storm water from the main road in the town.

In addition the Master Plan shows that Staff Housing provision for the resort will be located on a section of the property across the main road through Oracabessa (The proposed North Coast Highway)., Consideration should therefore be given to the construction of an overpass or underpass to minimize the movement across the main arterial highway linking major urban centres along the north coast.

This is an unusual and unreasonable request. It suggests that there should be over/underpasses provided for pedestrians at all built up areas along the north coast highway. This is the responsibility of the government, not the developer.

Parking on the resort property is predominantly hard surface in a compact setting. Consideration should be given to the provision of soft parking.

It is fully intended that the surfaces of parking areas will be pervious. It should also be noted that no trees would be removed from the parking areas.

Ref. 39 & 78 With increasing demand for water resources/supplies, measured should be in place to ensure that the community supply will not be affected.

The National Water Commission has written to say that it is able to meet the demand for water by the project.

Ref. 60 & 79 A detailed landscape and landscape maintenance plan should be incorporated.

A detailed soft-landscape plan for the site has not yet been prepared and that, an expensive non-essential undertaking at this stage, awaits NEPA's approval of the project. For the time being it is sufficient to know that it is intended that very few

trees will be removed during building and that building footprints have been carefully aligned so as to save trees. Native coastal species will be used for new planting.

Some degree of clarity is required as to the number of phases in which the development will take place. If there is indeed a phase three then the document should state clearly what will occur in that phase.

The development for which approval is currently being sought will be done in two phases. Phase 3 is not part of this development and will not be undertaken before 2008. The sewage plant has been sized for a total of three phases albeit the exact details of the third phase are still to be specified.

- Page 14

Under the description of the terrestrial the vegetation cover described is not representative of Old Golden Eye which is said to be heavily wooded.

Admittedly the term heavily wooded is inappropriate and was used because of the contrast of the relatively well-wooded nature of the 'Old Goldeneye' site as compared to the Outer Bank and the reclaimed portion of the mainland.

- Page 42

2.9.7 Land use issues: There is no mention of Stingray City, an ecotourism activity permitted by the NRCA to be conducted in Oracabessa Bay. This issue needs to be addressed by the consultant as the development activities could affect that project.

ESL was never informed of the existence of an ecotourism project by NEPA despite the fact that it is pre-dated by the Goldeneye project. The document provided by the promoters of Stingray City, apparently the basis upon which a permit has been granted by NEPA, does not provide any information that allows the determination of the impacts of either project on the other. It needs to be borne in mind that the stingrays are kept within an enclosure at the eastern side of the James Bond promontory and it is not likely that there will be any reciprocal conflicts, rather that the Goldeneye project will complement the ecotourism project. As there are also no estimates available for the numbers of visitors and induced traffic expected, it is anticipated that NEPA can provide advice on what the potential issues are likely to be regarding the juxtaposition of the projects.

- Page 66

5.3.3 Land clearing – loss of terrestrial habitat and biodiversity: The mitigation measures and development impact has focused on Santa Maria Island, however, no mention is made of 'Old' Goldeneye, an area said to be "...heavily wooded...". There is development expected on this site, as shown by figure 1.2. There the

consultant needs to indicate what will be the effect of disturbing this location and the mitigation measures to be put in place.

The response above at [Page 14](#) applies again here – ‘the term heavily wooded is inappropriate’. It is to be noted that the proposed development at ‘Old Goldeneye’ will be low density, no trees will be removed and the villas will be constructed between, under and around them. Parking areas will be unpaved and surfaced with gravel aggregate, similar to what now obtains.

Treatment Of Waste Water From Spa

With regards to the Thalassotherapy Spa Effluent, a detailed design of the treatment facility for the spa effluent should be presented as an addendum and should include a chemical profile of the quality of the influent stream and the final effluent stream after the tile field before return to the lagoon. In describing the influent stream parameters such as temperature and chemical nature of the oils should be included. The Ministry of Health should be contacted on this matter especially where it relates to water meeting the relevant Recreational Water Quality Standards.

Drawings for the spa seawater services are included within the set of OMNI Services Ltd. (consulting engineers) drawings already submitted to NEPA and these show the use and treatment of the seawater. Thalassotherapy spas only use naturally occurring algae and plants for their seawater treatments. After the waste seawater has been sterilized by ultraviolet light, the algal residues are removed from in sedimentation and stratification tanks. The effluent seawater is then cooled to ambient temperature and returned to the sea via a tile field in which it is diluted and distributed over a large area such that there is no abnormal temperature or chemical imbalance in the receiving waters.

Natural oils are only used in the massage areas, which are connected to the fresh water disposal system, i.e. a separate system not connected to the seawater disposal system.

GENERAL COMMENTS

There are concerns regarding the setbacks of buildings or structures within the Santa Maria Lagoon area. It is observed that many units are proposed to have sections of the structures located directly on/over water Hence there will be a set back issue.

- What strategies will be employed to construct the villas on the limestone outcrops

The question of setbacks was discussed with NEPA many months ago. They have also been discussed with the National Works Agency who, it is understood, have indicated no objection to the setbacks proposed.

The buildings, made of concrete and timber frames, will be set on conventional concrete pad foundations with elevated ground floors supported on concrete piers. Structures over water will be supported by timber piles approx. 20' to 30' in length.

- The water demand for the development should be indicated and presented in the report.

See response at 39 above.

- The possibility of damage from wind and wave action during natural events must be addressed. In addition public access to the floor and foreshore would be compromised. The possible social repercussions from the exclusion cannot be ignored.

A comprehensive oceanographic study (referred to and referenced in the EIA report) was carried out to inform the design of the marine aspects of the resort, including the matter of shoreline protection. Section 4.3 (pg 52) of the EIA report speaks to this issue.

It is not clear what is meant by the second and third sentences – where and how public access would be compromised and to what would the social repercussions be due? It should be noted that except for the tiny cove immediately north of the Goldeneye house, to which there is no public access, all the other beaches were built by the developer and are not in the public domain although some on the mainland have been made accessible to the public. The public does not use the beaches on the Outer Bank under normal circumstances.

- In assessing the ecosystems of the area, the EIA seems to conduct detail assessment of the marine ecosystems while there is room for improvement concerning the terrestrial ecosystems. Page 7 of the document spoke to the vegetation of the headland and Santa Maria Island. In fact the document stated that observation of the vegetation structure of Santa Maria Island was conducted from the opposite shoreline.

The great majority of the development site is located on reclaimed land and the vegetation is largely opportunistic, secondary and ecologically undifferentiated. On the other hand, the shallow water marine system, albeit impacted by various factors, is diverse and in relatively good condition. It would therefore seem to make good sense to spend more of a limited budget on the more critical and fragile marine system, especially given the proposal to manage it as a marine sanctuary. The developer will extensively use soft landscape in open areas to ultimately create an ambiance similar to at 'old' Goldeneye.

As regards Santa Maria Island, the vegetation on that island by no means represents the original community of plants. Like Navy Island at Port Antonio, the island was completely planted out in rows of coconuts after the turn of the twentieth century and *Kingston 10 Architects* have a photograph taken in 1970 that shows the island in an overgrown state but with a clear preponderance of coconuts.

Visual observation from the opposite shoreline, which was no more than 30m away at any point on three sides of the island, was quite sufficient to determine the dominant tree species. Apart from red mangroves, these include coconuts, sea grape, red birch, *Thrinax* and Santa Maria.

- The fact that Santa Maria Island is natural and has a natural forest vegetation cover, a more detail assessment of this island should be conducted to ensure that there is a comprehensive list of plants and fauna for the island and how they would be impacted by the proposed development.

[See comments above.](#)

- A detailed assessment should be conducted of flora and fauna on Santa Maria Island. The same should be done for Old Golden Eye.

[See comments above.](#)

- A Landscape map illustrating the trees to be kept in relation to proposed buildings on the Headland, Santa Maria Island and Old Golden Eye should be provided.

[See comments at Ref 60 & 79 above.](#)

COASTAL ISSUES

Storm Surge

Storm surges tend to be amplified when waves encounter coastal barriers. It is recommended that the boulder armouring should extend further out to sea, that is, make it wider, thereby lowering the gradient of the armour face. This should assist in dissipating the wave energy before it reaches the upper part of the face thereby reducing the damaging impact to any facilities nearby.

The calculations and basis for recommending a revetment with a softer or less inclined slope are incorporated into the coastal engineering designs undertaken in 2004/05 to determine the needs for shoreline protection. The revetment is being widened but by extending its length back into the land

area on the upper slope to avoid damage to the coral reef immediately north of the headland and to the marine life already growing on the armour rocks.

- As discussed at the public meeting every effort must be made to mitigate against any negative impact on turtles and their nesting areas.

A turtle management plan has been given to Goldeneye to guide the recent attempts to protect turtle nests. It is assumed that the preparation and application of such a plan would be a specific condition of the environmental permit. It should be noted that the turtles are now nesting on the Outer Bank because of the artificial Low Cay Beach created by IJL.

SOCIAL CONCERNS

Issues surrounding the leasing of the lagoon for the proposed uses should be resolved with all the parties involved. The proposal to establish the lagoon around Santa Maria Island as a private waterway will have an adverse negative impact on the existing users and is a likely source of major conflict. Mention is made in the EIA of it being used to a 'very limited extent by fishermen'. This clearly indicates that there is usage and points to the likelihood of enmity in the future between the present users and the future owners of property in the development. The Report needs to clearly state the actual number of fishers that use the area. The current fishers have prescriptive rights and privatisation would inhibit the fishers and impact on their livelihoods. The social upheaval and negative repercussions from this action must be considered in the EIA.

A lease agreement is being negotiated between the fishermen and IJL. It covers a land area of approx. 17,000 SF with a beach frontage of 101 LF. The initial lease term will be for 10 years with options to renew.

IJL has been instrumental in re-establishing the Oracabessa Fishermen's Cooperative, liaising on their behalf with the national Fishermen's Cooperative. IJL has constructed storage, sanitary and fish cleaning facilities at the new Fishermen's Beach and there is no enmity between the fishermen and IJL. There has been a long history of peaceful coexistence plainly evidenced by IJL's sponsorship of fishing tournaments, which the Oracabessa fishermen organise.

There is a clear understanding that the few remaining canoes in the lagoon, located adjacent to where the spa is to be constructed, will relocate when construction works commence. Most fishing boats have already relocated to the Fishermen's Beach.

As mentioned above, it needs to be emphasized that there is no enmity between the fishermen and IJL and it is incorrect to suggest that 'social upheaval and negative repercussions' will ensue. The fishermen do not have prescriptive rights

nor would the 'privatisation' (so called but not the appropriate term!) inhibit the fishermen and impact on their livelihoods.

- Issues regarding public access to the foreshore, public/community beach provision/ usage, and the docking of vessels at the location during severe weather conditions (hurricanes) should be resolved.

These so-called issues have been addressed above. Certainly the project would have no objection to the use of the bay as a hurricane refuge.

- Plans to have the fishermen continue to use the fishing beach during and after the project should be consolidated/agreed to in writing between the parties involved. The length of the lease should also be acceptable to the fisher folks.

See relevant comment above.

- The National Heritage Trust should be contacted as discussed at the public meeting to verify whether or not any articles of historical value is located on the Santa Maria Island.

The JNHT website makes no reference to Santa Maria Island.

However, the likely presence of Taino relics on the project site cannot be dismissed. According to Dianne Golding-Frankson (DG-F/GC pers. com.), a leading authority, Taino settlements have been identified at Wentworth which lies close to Goldeneye and it therefore seems reasonable to assume that both the main property and the Island were part of the area controlled and administered by the same cacique. In fact, Oracabessa derived its name from the Spanish name for the area, Juracabex, which itself was the Taino name for the area. Further, it is now well established that the Tainos settled several of Jamaica's coastal islands, and Spanish records indicate that the Tainos inhabited Isla de Melilla (later named Santa Maria Island). Elsewhere, Golding-Frankson makes the point that irrespective of how degraded a site, close observation of surface material can often yield evidence of Taino occupation. While development cannot indiscriminately be held hostage to every heritage element found, neither can it proceed without a high degree of sensitivity to the irreplaceable loss to the analysis of material culture when individual relics, much less known or suspected settlement sites, are destroyed. Accordingly, it is recommended that JNHT be asked to survey the site, prior to any further disturbance taking place, and that its findings and recommendations guide the determination of the appropriate mitigation measures, if evidence of Taino settlement is found.

- The issue of job availability and training for local residents as discussed at the public meeting should be addressed.

The developer is establishing skill banks that target area residents for the construction phase. Both skilled and unskilled labour will be sourced from local residents during construction. It is proposed to establish a millwork/joinery shop in Oracabessa, managed by the contractor and staffed by members of the community. On completion of the project, it is proposed to hand over this facility to the community.

On completion of construction, both skilled and unskilled labour will also be drawn from the community particularly those familiar with the hospitality industry. 'From acorns, oak trees grow!'

- Any conflict of use of the site in relation to other resort developments up or down gradient of the property should be addressed as raised at the public meeting.

The question needs some clarification. There were no substantial 'conflicts' regarding use of the site raised at the public hearing.

- The issues surrounding the development of Murdoch Beach as raised at the public meeting must be examined and evaluated.

This is a legal issue between the Urban Development Corporation and the St. Mary Parish Council and is outside of the developer's purview.

DRAINAGE CONCERNS

A comprehensive drainage plan should be developed for the property and approved by the National Works Agency.

Detailed drainage drawings are included in the applications for Outline and Building Approval. These will have been submitted by NEPA to the St. Mary Parish Council.

SEWAGE CONCERNS

It is proposed to use a secondary system for sewage treatment comprising of Oxidation Ditch technology, utilizing the nutrient rich effluent for irrigation. The report need to evaluate the impact of nutrient rich wastewater to grounds which drains in the marine environment.

In light of the proximity to coastal waters, low circulation in the lagoon, use of the coastal waters for fishing, and recreation activities and proximity to turtle populations, a tertiary sewage system should be considered which will have capacity to treat all the sewage currently generated and that expected from the new developments.

As a result of a recent meeting with NEPA, the agency's concern over 'nutrient rich effluent' has been clarified and OMNI understands that the real concern relates to the nitrate content of the effluent. The design of the sewage plant provides for an oxidation ditch with two aerators, each controlled by a time clock. The operations of these rotors will be controlled in a manner to ensure that denitrification of the effluent has been properly effected, based on the chemical testing of the effluent. OMNI and NEPA are to meet again to settle this matter.

The specifications for the effluent of the sewage plant are annexed below.

A maintenance plan for the sewage treatment system should be developed at the appropriate time. The efficacy of using non-phosphate detergents should be examined and a recommendation made to the developers.

OMNI agrees with NEPA and endorses their recommendation that phosphate-free detergents should be used at the resort, thereby ensuring that the effluent does not contain levels of phosphate that exceed the effluent quality standard. The hotel operators will ensure that no chlorine-based bleaches or detergent containing phosphates are purchased and used on the property and thus only biodegradable detergents, bleaches and other chemicals that can be safely discharged from the sewage disposal system are purchased and used on the property.

SOLID WASTE CONCERNS

The document should seek to identify alternate means of disposal for solid waste for this project in light of discussions held at the public hearing.

The dump at Haddon, despite its condition, is the designated solid waste disposal site for the Oracabessa region. The project cannot determine alternative means of waste disposal beyond employing the waste reduction and compaction techniques proposed. A waste haulage contractor will be engaged to collect and dispose of the waste generated at the resort on a regular basis.

Annex SEWAGE PLANT SPECIFICATIONS

The plant is designed to provide an effluent quality that meets the following discharge limits after the clarifier and chlorination tank:

BOD5	- 20	MG/L
COD	- 100	MG/L
SUSPENDED SOLIDS	- 20	MG/L
NITRATES	- 10	MG/L
PHOSPATES	- 4	MG/L
PH	- 6 TO 9	
FAECAL COLIFORMS	- 200	MPN/100ML
CL2 RESIDUAL	1.5	PPM (MINIMUM 20 MINS. CONTACT)

And from after the SAND-FILTER and IRRIGATION TANK for irrigation:

BOD5	- 10	MG/L
COD	- 100	MG/L
SUSPENDED SOLIDS	- 15	MG/L
FAECAL COLIFORMS	- 12	MPN/100ML
CL2 RESIDUAL	- 0.5	PPM
