

**Comments on the Environmental Impact Assessment for the
Proposed Entertainment Complex at Seventh Harbour Marina,
Palisadoes Road, Kingston by Treasures Limited 200501017-
EP00262, 2005-01017-EP00263, 2005-01017-BL00061, 2005-01017-
EP00261/EL00045**

General Comments

1. *The methodology of how the biological information presented in the EIA was gathered except for the marine component was not highlighted in the document. This should be submitted to NEPA.*
As stated on page 66 of “*the vegetation at the site was characterized by the ecologist from observation and literature review*”. The specific literature included the referenced ESL 1999 survey and other literature available for the Palisadoes. The ecologist was assisted with identification of tree species by a trained forester (Mr. Lascelles Fearon), who also assisted with identification of bird species. Based on the heavily disturbed and degraded nature of the site, it was decided that a more in depth terrestrial survey was unnecessary.
2. *The information on what percentage of the mangroves surrounding the project site will be removed should be provided.*
Approximately 0.5 acres on the western side of the parking lot will be encroached on.
3. *There are no references for Figures 4 and 5 in the document.*
These figures relate to the discussion in Section 1.2.1.1 (Marina and Associated Earthworks), and were done by Smith Warner International Ltd. They are the cross-sections that are referenced in Figure 3 (which is referred to on page 6, paragraph 1) .
4. *Phase I of the proposed 7th Harbour development appears to have limited negative impact on the biological resources; however, it is not clear what will be the level of impacts when Phase II is implemented. Therefore, a strategic impact assessment on the entire development should be conducted in order to determine the likely impacts to the environment.*
NEPA approved Terms of Reference indicates that the EIA would be conducted for Phase I. There is some uncertainty in respect of the conceptual design and timeframes of later phases so any further environmental assessment at this time may become outdated.
5. *In Figure 1, it would appear that a significant amount of the mangrove forest and dunes will be impacted.*
Figure 1 is an artistic Master Plan, for which no permit has been sought, and should not be the subject of environmental assessment at this time. Please see page 114 of the EIA “*Phase 1 of the project is not specifically proposing to encroach on these disturbed wetlands*”.
6. *Sub-titles to the Appendices are required*
These can be included. Please note the list appendices provided on page v.

7. *The content of Appendix 4 needs to be sorted out.*

This addressed in a separate communication.

8. *Avifauna. The list provided is very truncated. Mention is made of Webber and Goodbody (1998 & 2005) reports, therefore a species list from their work could suffice. There is a lot of literature present about the avifauna of the Palisadoes so a list of 7 species is unacceptable. The Orange-crowned Warbler also seems out of place, although there are several records of it here, it is suspected the bird encountered is actually the Yellow Warbler which should be one of the most common birds encountered (if not the most common) yet no mention is made of it. An existing list of birds recorded for the Palisadoes would have helped give an idea of the birds which may be encountered there but not necessarily seen on the day of the assessment (December, 2006) and the time period surveyed.*

The species listed were those that were observed during the site visits. Due to the degraded nature of the site, it may be likely that the full range of birds likely to be found at this site may be less than expected. However, while there is some value in mentioning the more extensive list of Webber and Goodbody, it is potentially misleading to reviewers, in that they may interpret the inclusion of such list to mean that the site presently supports the same wide and diverse avifauna as other less disturbed sites on the Palisadoes. It is advised that preservation of a bird habitat this close to an airport runway is in contravention to international protocols, and represents a major safety risk.

9. *While crocodiles may be seen along the Palisadoes from time to time they do not seem to reside there. This is because there is no freshwater system such as ponds or rivers for them. Instead they seem to visit the area from nearby wetlands such as Hunt's Bay and Portmore/Hellshire. Sightings of crocodiles along the Palisadoes are rare but when spotted, they usually appear to be large animals. It is therefore believed that these crocodiles are either trying to find new territories or making use of opportunistic feeding from garbage discarded into the Kingston Harbour. Crocodiles are not expected to be a threat to the proposed development during either the developmental or operational phases. During the latter phase however, rare sightings will be expected.*

It is uncertain what the reviewer would like modified in the EIA from this comment. Initial assessment, suggested that crocodiles were not a major environmental concern at this location. NEPA in its review of the TORs for the EIA indicated: "The area is frequented by crocodiles; therefore the EIA must look at what mitigation measures will be put in place to protect both the animals and users of the facility" NEPA January 9th 2007.

10. *What methods will be used to prevent waste from entering the sea?*

These are listed on page 109 under the heading "manageability" discussed in respect of the potential impact on coastal water quality. This list includes:

- **Use of turbidity barriers during dredging.**
- **Bunding of stockpiles.**
- **Minimizing bare soils and early landscaping.**
- **Phasing earthworks.**
- **Use of portable lavatories during construction.**
- **Monitoring of the wastewater effluent.**
- **Use of the mangrove system to remove nutrients and sediments from site effluents.**

11. *What are the steps to be taken to minimize the impact of dust pollution?*

These are listed on page 102 under the heading “manageability” discussed in respect of the potential impact on air quality. This list includes:

- Ensuring that contractors maintain the vehicles properly.
- Smoky vehicles should not be allowed to operate.
- Provision of workers with dust masks.
- Wetting of stockpiles and unpaved access roads.
- Covering of haulage vehicles, onsite stockpiles.
- Phasing of vegetation clearance and earthworks.
- Early re-establishment of ground cover (landscaping).
- Minimizing periods of work stoppage during earth works.

12. *Will the mangroves to be affected be destroyed or replanted in other areas?*

Approximately 0.5 acres of wetland vegetation will be removed to facilitate the parking area. Viable specimens will be relocated to an area earmarked for rehabilitation within the larger wetland complex to the west of site. The figure below identifies areas that have been identified for replanting of the mangroves.



13. *Will there be any rehabilitation roadway(s) destroyed during the construction phase?*

Roadways outside of the project boundaries will not be destroyed during the construction phase. Some upgrade to the existing road is proposed.

14. *Different types will be generated (marina and restaurant). Will separation be done to facilitate effective disposal of same?*

All human waste generated both onshore and offshore will go to the sewage treatment plant. Solid waste will not be separated.

15. *It is proposed that after treatment, one option is to send to the mangrove system. Will the nutrient content of the sewage be significantly reduced?*

Page 25 of the EIA states “*Final tertiary effluent shall be monitored for suitability for the proposed outfall to the mangrove system or reuse for irrigation purposes*”. The developer wishes to use the effluent for landscaping purposes as a means of water conservation and to remove nutrients that would otherwise enter the marine environment. This will be done only if the effluent meets national irrigation standards. The environmental consultants recommend that the treated effluent be discharged to the mangroves as a means of removal of nutrients and settling of suspended sediments as a better alternative to direct harbour (end of pipe) outfall.

If effluent cannot be completely used for irrigation, then the overflow will go into the mangrove and not the harbor. The plant will be designed to meet NEPA and Ministry of Health standards for tertiary treated effluent.

16. *What plans are proposed to be put in place in the event of a system failure?*

Page 140 (Section 7.3.2.3) indicates that malfunction of the STP will be evaluated and planned for as part of the Emergency Response Plan.

17. *What methods will be used to prevent garbage from reaching the sea as a result of run-off?*

Section 1.3.1.7 (page 25) of the EIA indicates that provision have been made for a solid waste collection area behind the restaurant and near the VIP Parking area. The baseline for solid waste in this area is described on page 51 (Section 3.2.5.1) and suggests that garbage tends to accumulate here because of the current patterns within the harbour. Page 103 (Section 5.3.1.3, Table 35) further indicates that the developer proposes to remove the waste from the shoreline and undertake routine garbage collection from the shoreline. Further waste management precautions are listed on page 139 (Section 7.3.1.3).

18. *Will the water be filtered before reaching the sea in an effort to reduce the sediment content entering same?*

Filtration is part of the process of the sewage treatment system and will meet specifications set by NEPA.

19. *What will be done to prevent oil and grease etc from motor vehicles being carried to the mangroves and the sea in light of the proposal to have one of the three drains emptying into the mangrove ponds and the other two into the sea?*

In the event of an oil spill, the relevant response from the Emergency Response Plan will be implemented – include call out of relevant personnel, containment and clean-up.

20. *What will be done to reduce the likely impact of fertilizers and pesticides to be used during landscaping on the mangroves and marine community?*

The developer will be guided by the requirements and stipulations of NEPA in this respect. Only pesticides approved by the Pesticide Authority will be used, and this will not be applied on a routine basis. Fertilizer application may not be necessary if treated effluent meets the irrigation standard. Uptake of these nutrients by the landscaping plants will prevent their impact on the marine environment. The quantities applied should be commensurate with the amount of plants. A large concrete promenade is planned for the shorefront so landscaping will be limited.

21. *A comprehensive surface drainage/storm water plan should be submitted with the detailed building application through the relevant authority for its review and recommendation.*

Is the approval of the drainage plan a pre-requisite to the Environmental Permit? This area is not prone to flooding and does not threaten either the access road or any adjacent communities. A summary of the plan is given on page 23 and Figure 12. The comprehensive drainage plan will be submitted with the detailed building application through the relevant authority.

22. *Consultation should be made with the Fire Department to ascertain the requirement with respect to the number of fire hydrants necessary for the proposed development.*

The drawings were stamped and approved by the Fire Department on November 1, 2005. Requirements in respect of fire hydrants have been satisfied.

23. *What proposals are in place for containment of oil spills whether from an accident or during maintenance?*

On pages 123 and 140, it is indicated that an emergency response plan (ERP) will be prepared. As is the norm, it is expected that this will be a post-permit requirement. On page 139, particular precautions in respect of the refuelling station are given.

24. *Based on the archaeological evidence available at this time, the development will not impact negatively on any significant feature; however, the Jamaica National Heritage Trust must be informed of the pre-construction site clearance so that a second appraisal can be conducted.*

The developers agree to do so. See pages 114-5.

25. *What considerations are being given to physically challenged users?*

As shown in the full-set plans of the development submitted to all the relevant government agencies, including NEPA, there are accommodations within all the restrooms and ramp access to buildings.

26. *Consideration should be given to the guidelines in the Manual for Development relating to the provisions for bathroom facilities for this type of development.*

This is not a matter for discussion in the EIA. According to the manual, public sanitary facilities should be provided. This is agreed and so stated in the EIA. The Manual states that “*large leisure complexes such as cinemas will be examined on their merits*”. Page 263 stipulates that *all public buildings shall have at least one toilet specially constructed for disabled persons.*

27. *What will be the impact on the Ramsar site of the proposed development?*

This is discussed on page 114 of the EIA (Section 5.3.2.4).

28. *Were alternative locations looked at and if so, where are these locations?*

This is the only suitable lands controlled by the applicant for the design purposes given.

Specific Comments

1. *Page 1: The Natural Resources Conservation Authority Act (1991) is represented as the Natural Resources Conservation Act (1990). This should be corrected in the document. The error was also made on page ix.*
Revision has been made.

2. *Page 7: Figure 3 (Proposed Marina Layout) shows jetties perpendicular to the shoreline in Phase 1, however in Figure 1 Master Plan: 7th Harbour Development (page 3) the jetties are parallel to the shore. Which one is the correct representation?*
The engineering plan (Figure 3) supersedes the conceptual representation on Figure 1, as is normally the case.

3. *Page 11: Does the proposed structure to be demolished have asbestos? If yes, what is the procedure for removal and disposal?*
There is no evidence that there is asbestos in the structure. However, if asbestos is encountered at the time of demolition, best practice procedures will be adopted in accordance with any NEPA requirements. An example of best practice procedures is attached.

4. *Page 12: What will be done with waste oil and wash water from the trucks?*
Trucks and equipment will not be washed at the site. All waste oil and oily rags will be disposed of at a suitable landfill site.

5. *Page 13 : The overlay shows that the parking for the facility will intrude into the wetlands. The total area of the mangrove to be removed and replanted should be submitted by the consultant.*
Section 5.3.2.4 indicates: "Phase 1 of the project is not specifically proposing to encroach on these disturbed wetlands (<1% habitat is affected)." This statement was referring to the larger wetland complex rather than the small very disturbed area immediately west of the site. Approximately 0.5 acres on the western side of the parking lot will be encroached on. Figures 8 and 24 are therefore correct.

6. *Page 16: In number 14, the proposed vegetation for landscaping is indigenous ornamental trees and shrubs. Has consideration been given to their suitability in a coastal environment? The use of coastal species for landscaping is recommended.*
Agreed

7. *Page 19: In number 2, will bilge water from the vessels also be collected?*
No

8. *Page 21: A First Aid Kit should be included as part of standard gear for a vessel conducting a boat tour.*
This is not an environmental matter but a matter for TPDCo's permitting process.

9. *Page 21: Fisheries Department should read Fisheries Division.*
The revision has been made.

10. Page 21, Section 1.3.1.2, bullet f. It is noted that the aircrafts from the airport produce a significant amount of noise, however, there should be no addition to this; therefore this development should identify the means to reduce the amount of noise emanating from the site.

Section 3.2.3 (page 45) outlines ambient noise levels, and Section 5.3.2.2 (page 111-112) identifies the means to reduce noise emanating from the site.

11. Page 23, Section 1.3.1.5. Figure 11 refers to “Pump out Facility” on page 19. As such, this reference is incorrect. The reference for Figure 12 should precede the drawing.

The revision has been made.

12. Page 25, Section 1.3.1.7. The second sentence indicates that solid waste can also be collected after an event near the VIP Parking; would this mean that solid waste is not expected to be collected from this area except after an event? If not, this sentence should be edited.

This section speaks to infrastructural provision for a collection area behind the restaurant. Additional space provision near the VIP parking areas is made for waste generated on the 30 planned event days per year.

13. Page 26, Section 1.3.2 : The type of plants used for landscaping in Phase 1 should be carefully selected as the use of fertilizers and pesticides may not be required. In addition, the use of fertilizers and pesticides may or may not run-off into the marine environment.

Agreed. See reply to question 20 in General Comments.

14. Page 26, Section 1.3.3: The lights from the facility should not excessively illuminate the location.

Agreed. See Section 5.3.2.1 of the EIA.

15. Page 30, Section 2.2.3: The document indicates that with the exception of a relatively small mangrove stand on the western perimeter, the development does not call for removal of any significant removal of mangroves. However, in number 2, the clearance of coastal vegetation is envisaged for the marina works and Figure 6 (page 11) is used to depict this typical coastal vegetation on-site, which are mangroves. Is this the western perimeter stand? On page 116, mention is also made that there will be no encroachment into the wetland for Phase 1 at this time. Clarification is therefore being sought as to whether mangroves will indeed be lost in Phase 1 as the sentences are contradictory and if yes, what is the total acreage?

Figure 6 shows vegetation on the western side of the site (near Buccaneer Beach).

These coastal mangroves will not be removed. The statement on page 116 (Section 5.3.2.4) indicating that “Phase 1 of the project is not specifically proposing to encroach on these disturbed wetlands (<1% habitat is affected)” was referring to the larger wetland complex rather than the small very disturbed area immediately west of the site. Approximately 0.5 acres on the western side of the parking lot will be encroached on. Figures 8 and 24 are therefore correct.

16. Page 59: Figure 25 actually refers to an earthquake intensity zonation map (page 63). As such, Figure 25 that depicts the mangrove area is incorrect and should be rectified.

Revision made to typographical error.

17. Page 61, Section 3.2.9: *Gunboat* is represented as *Gun Boat*. This was also done on page 68, section 3.3.2.2. Consistency is required.
The text has been universally changed to Gunboat.
18. Page 67, Table 13: The cactus species identified on the site should be provided as there is no Cactus species called *Cactus*.
Opuntia sp.
19. Page 67, The complete scientific name for “Lead Tree” is required.
Leucaena leucocephala
20. Page 67, Two trees are called ‘Seaside Mahoe’; *Hibiscus tiliaceus* and *Thespesia populnea*, as such, the species present on-site should be double-checked.
Hibiscus tiliaceus
21. Page 67, Oleander is not *Thevetia peruviana*; it is actually *Nerium oleander*.
***Thevetia peruviana* is commonly known as Yellow Oleander or Mexican Oleander. *Nerium oleander* is the Common Oleander.**
22. Page 67, *Vinca lutea* is the old name for *Nightsage*; the name currently used is *Urechites lutea*.
***Vinca lutea* is an accepted synonym for this species, as is *Pentalion lutea*.**
23. Page 69, Table 15: What is the date of the data provided in the table? When was the information provided in the table collected?
This information will be submitted in a separate communication.
24. Page 69 Were any assessments conducted for butterflies in the area? The information provided only speaks to a literature review.
Only a literature review was done. The preliminary scoping done for the TORs did not indicate any particular vulnerability or environmental sensitivities (no rarer or endangered species) in respect of butterflies, so the level of investigation was limited to literature review.
25. Page 69, Section 3.3.2.4 - The consultant should indicate whether nocturnal species were recorded for the site.
No nocturnal species were recorded for this site.
26. Page 71, Section ‘Seagrasses’: Consistency is required in the document with regards to the word ‘seagrass’ versus ‘sea grass’. Both are being used interchangeably.
This has been universally changes to “sea grass”

27. Page 118, Table: 'Reversibility': *No evidence was provided in the document that marine invasive species have already been introduced into the harbour. To date, only one marine invasive species has been recorded which is the Asian Green Mussel, therefore this statement is misleading. Measures should be put forward in the document to address all likely pathways of marine invasive species especially since foreign vessels are expected to dock at the marina.*

We maintain that marine invasive species are very difficult to manage in a harbour, and that lack of documentation is not good evidence that only one such species exists in the Kingston Harbour at this time. According to the Great Barrier Reef Marine Park Authority (inquiry into the regulation, control and management of invasive species and the Environment Protection and Biodiversity Conservation Amendment (Invasive Species) Bill 2002: *"It is also likely that other animals and plants have been introduced into the Marine Park but there is a lack of monitoring and baseline data to confirm this."* Even well funded marine authorities cannot confirm how many invasive species exist in their ports and harbours.

The IUCN has established a specialist working group (Invasive Species Specialist Group), which consists of 146 scientific and policy experts. There is a specialist marine working subgroup. They have produced a key 2005 paper entitled: Gaps and Priorities in Addressing Marine Invasive Species (Meliane I. and Hewitt, C.). This paper stresses prevention (over management) as the most effective. Prevention options include:

1. Prohibition of discharge of ballast water. However, ballast water discharge is not anticipated to be an issue for the types of vessels expected in the marina.
2. Establishment of national hull fouling protocols, bearing in mind the dangers of tributyl tin and other anti-biofouling paint additives.
3. Mandatory use locally supplied live bait by all recreational fishing vessels.

Kingston Harbour and its port continues to be marketed and developed as a major international transshipment hub, which can be expected to have the normal range of associated environmental problems. Whatever measures imposed on the applicant must be imposed universally on all users of the harbour with potential to introduce invasive species.