

FRIENDS OF GRAEME HALL COMMITTEE

Mail Address: #13 Tino Terrace, Warners Ridge, Christ Church, Barbados
Telephone: (246) 437-1273 or 437-0939
graemehallpark@hotmail.com

Mr. Mark Cummins
Chief Town Planner
Town and Country Development Planning Office
Block "C", The Garrison
St. Michael, BB14038

Enclosure: Petition
HAND DELIVERED

27 September 2006

Dear Sir,

Objection Petition

Proposed Water Park Project at Graeme Hall by Caribbean Splash, Inc.

We, the Friends of Graeme Hall Committee, residents, citizens and business owners of Graeme Hall and surrounding areas enclose our petition with over 420 valid signatures indicating our total opposition to the construction of a water park by Caribbean Splash Inc. on Government owned land at Graeme Hall.

We know that the Town and Country Development Planning Office (TCDPO) required the developer to carry out an Environmental and Social Impact Assessment Study (EIA).

As we have stressed previously, we are not opposed to the investment in, or the development of, a water park in Barbados. However, we are opposed to its proposed location in an area that is highly sensitive to environmental impacts, as well as social impacts associated with neighborhood quality of life and public safety.

The EIA commissioned by Caribbean Splash, Inc. was deemed wholly inadequate by the regulatory agencies of the Government of Barbados who were asked to comment on it.

The Environmental Protection Department on Page 16 of the Addendum sums up the total deficiency of this critical document and actually rejects it as an EIA:

“Generally the report was found to be unacceptable because little actual information was provided about the nature, magnitude and scope of the development’s potential impacts. In cases where impacts were assessed as significant or not significant, insufficient information was presented to provide a clear rationale for this assessment. The document provides information at the level of a scoping study, in that it identifies some of the issues and impacts that are likely to be important, but the level of information provided about these issues and impacts is not adequate for this to be considered to be a satisfactory EIA”.

Furthermore, the Environmental Unit (page 6 of the EIA) recommended against this development:

“The Ministry does not support the conversion of agricultural land for this type of development. The Environmental Unit is of the view that a development such as this is not in keeping with the sustainable use and conservation of natural resources”.

And on page 10:

“Graeme Hall is a watershed area that is not fully understood from a hydrological standpoint. There is an assessment project that is currently being undertaken by the Coastal Zone Management Unit (CZMU) of the Ministry of Housing Lands and the Environment in collaboration with other relevant stakeholders on the hydrology of the swamp. The results of such a study will assist decision makers to better understand the dynamics occurring within this watershed so that they may better be able to coordinate developmental projects within the watershed area. The Ministry does not recommend placing a facility of this nature within the watershed area”.

The Friends of Graeme Hall Committee agrees with those in Government who have stated that the Caribbean Splash EIA is technically deficient, and that the proposed location at Graeme Hall is environmentally inappropriate for high density, water-intensive development.

In addition to the above referenced deficiencies throughout the Caribbean Splash EIA submittal, as well as all Addenda, The Friends of Graeme Hall Committee have noted the following deficiencies:

- 1. The Caribbean Splash EIA does not adequately explain or enable the legal basis that entitles Caribbean Splash, Inc. to the proposed Graeme Hall site, either provisionally or specifically.***

The EIA states that the water park is to be built on lands vested in the Barbados Agricultural Development and Marketing Corporation (BADMC) and that “consultations with the Board of Directors of the BADMC **have not indicated any opposition** to making the land available for the Water Park Complex through some

type of lease agreement.” However, change of use of these lands, as well as any other lands under an approved National Physical Development Plan should be the subject of a rigorous public enquiry. The EIA presumption that the BADMC lands would be available for a water park simply because the Directors of the BADMC have not indicated any opposition to such use is inconsistent with due public process.

2. The EIA survey conducted by the developer indicated that about 66% of residents in the surrounding area supported a water park at the proposed Graeme Hall location.

We believe that this percentage is based on flawed survey methodology: *The interviewers did not explain the scope, size or actual location of the proposed water park to those being surveyed and this would have been critical information that any person would need in order to come to an informed decision. The Survey was contradicted by the overwhelming majority of over 200 local residents who attended or spoke at the packed Town Hall meeting held on July 10, 2006 at the Christ Church Parish Church hall.*

3. ***The EIA claim that the sensitive Graeme Hall wetland is NOT an “environmental component of concern” is a gross error of fact, and misleading to those who are not familiar with the basic hydrology of the Graeme Hall area.***

While it is true that the EIA utilizes the National Physical Development Plan to illustrate political boundaries of the Site, the EIA excludes applicable environmental boundary information and is therefore contrary to the intent of the original 1998 National Physical Development Plan and contrary to the recommendations within the 1997 ARA Barbados Tourism Development Programme, Subprogramme C Study. (The US \$800,000 ARA Study was funded in large part by the Inter-American Development Bank, and is the most comprehensive text produced to date concerning preservation, development and management of the Graeme Hall Swamp area, including buffers.)

In fact, the proposed water park would be located within the sensitive Graeme Hall Watershed, and adjacent to the Graeme Hall Swamp Management Buffer Zone, which is in turn directly adjacent to the currently defined Environmental Heritage Site. The Buffer Zone includes Ministry of Agriculture lands.

The Graeme Hall Swamp Management Buffer Zone is illustrated in the 1997 ARA Barbados Tourism Development Programme, Subprogramme C, Part 1, Figure 2-1, and Part 2, page 11-1-3.

As a matter of record, formal notification of the existence of the ARA Study was submitted in writing by Graeme Hall Nature Sanctuary, Inc. to the Caribbean Splash

environmental consultant (CEES, Inc.) during their Survey period. Unfortunately, the ARA Study is not in the EIA reference documents.

4. *The Caribbean Splash EIA fails to mention critical life and health safety issues associated with water park operations and neighborhood quality of life.*

There are over 900 water parks in the United States. On average, 15,000 people are rescued each year in water attractions, 10,000 of those are under 12 years of age. While deaths are rare in water parks, water-borne diseases and infections are a concern. In particular, Cryptosporidium in water park attractions resists chlorine treatment for up to seven (7) days and is known to cause severe diarrhea. There have been large scale outbreaks of water borne illnesses in various water parks internationally.

In regard to traffic congestion and neighborhood quality of life, the EIA shows that the proposed car park (larger than the one at Grantley Adams International Airport), combined with the attractive nuisance of water park lighting, noise and general operations is incompatible and inconsistent with residential and agricultural objectives and use. In addition, the EIA ignores or downplays specific life safety and quality of life problems that would occur with heavy traffic ingress and egress to the site, increased emergency health and police service requirements, noise, and related issues that are detrimental to residential neighborhoods.

5. *The Caribbean Splash EIA claim that the water park will be a significant benefit to tourism is not substantiated.*

The fastest growing segments of the travel industry are eco-tourism and cultural tourism. This is because the largest share of discretionary travel expenditures comes from older and more demanding travelers who are looking for more than just a simple hotel/beach/bar vacation. While it may be true that a few tourists might go to a water park in Barbados, the majority of tourists are looking for new experiences, true Barbadian experiences, in a safe and meaningful environment. The proposed water park is a development that tourists see at home, and so would not be a significant added tourist attraction, and would not add to the tourism base in Barbados.

The proposed Caribbean Splash water park design is a basic “wave, slide and splash” operation similar to many water parks in North America and elsewhere that generally serve local populations.

If Caribbean Splash, Inc. was interested in development of a facility that would compel overseas sports-minded tourists to come to Barbados, perhaps they might consider restructuring their investment to include state-of-the-art moving reef technology (waveloch.com) and other international-class surf and water park features – in a place other than Graeme Hall.

6. *The Caribbean Splash EIA representation of noise levels is deficient and misleading.*

The acoustical treatments proposed within the EIA do not specifically pre-empt the variety of acoustical source points within the complex itself, nor were specific representations presented in the EIA showing estimated decibel values at precise points along the property line.

While the EIA claims that decibel ratings from the development would be “only” 1-3 decibels above existing ambient noise levels, it should be noted that this statement misleads those who are not familiar with such measurements. Example:

Decibel readings are a logarithmic, or relative, function – for example a noise level of 100 decibels is twice the volume as 97 decibels.

The EIA claim that vegetation will provide further attenuation of sound is also misleading – there is no significant reduction in noise unless vegetation is at least 100 feet deep, and over six feet tall. (In fact, 100 feet of thick vegetation will reduce sound only by approximately 0.5 decibel.) To be truly effective, outdoor sound barriers are constructed of earth or concrete, and must be high enough to be substantially above the centre of the noise source.

7. *The Caribbean Splash EIA fails to adequately address potential adverse effects on the sensitive downstream Graeme Hall wetland, specifically in regard to the potential of increasing saline concentrations in both freshwater and brackish water wetlands.*

Based on an average household consumption rate of 258 gallons per day, the Caribbean Splash operation would use the same amount of freshwater as 472 single-family homes.

The estimated daily amount of water needed to run the water park, both potable and non-potable feed water, is 169,000 gallons per day, of which 47,000 gallons would be

immediately discharged as brine. The EIA recommends that if the Barbados Water Authority refuses to allow the remaining 47,000 gallons of brine into the South Coast Sewage sanitary sewer, then it should be allowed to dump the brine into a brine well within the Graeme Hall Watershed, preferably in the Swamp Management Buffer Zone, or in the Environmental Site itself.

There is no scientific or environmental protocol for dumping brine discharge into a wetland aquifer, or a wetland that is a relatively closed site that does not have positive daily interactive estuarine flushing action with the sea.

All contaminated discharges within the Graeme Hall Watershed, both above and below ground, ultimately flow into the Graeme Hall Environmental Heritage Site and the wetland. Based on initial hydrology studies articulated in the 1997 ARA Barbados Tourism Development Programme, Subprogramme C, surface and subterranean stormwater and other flows originate at the higher agricultural uplands and the freshwater springs and flow to the main lake located on Graeme Hall Nature Sanctuary property, before flowing out to sea via the bisecting canal.

Granting permission for an additional pollution sourcepoint, such as brine, upstream of the Environmental Heritage Site, is inappropriate and inconsistent with maintaining a healthy wetland. According to the Journal of Contemporary Water Research and Education (2005), the environmental issues of desalination are significant. For example, if the sourcepoint of groundwater for a proposed desalination plant contains “low levels of dissolved oxygen and high levels of other gases such as carbon dioxide and hydrogen sulfide (will) contribute to the toxicity of (brine) concentrate....This fact somewhat validates the hypothesis that groundwater characteristic may influence the ion toxicity of (brine) toxicity from desalination plants.” (Toumos, Virginia Polytechnic Institute and State University)

These contaminants accumulate over time. In fact, the main 10-acre lake at the Graeme Hall Nature Sanctuary is the lowest point in the Graeme Hall Watershed, and already shows significant accumulations of pollutants from surrounding communities. From water quality testing done by the University of the West Indies and others on waterbodies within the Graeme Hall Environmental Heritage Site, pollutants include abnormally high levels of faecal coliforms from human sewage from surrounding communities and the South Coast Sewage Treatment Plant, high nitrogen from fertilizer and other runoff, corresponding low oxygen concentrations, high turbidity, and concentrations of carbon dioxide and hydrogen sulfide.

- 8. *The Caribbean Splash EIA does not substantively address potential problems on existing brackish and freshwater supplies in the Graeme Hall wetland caused by pumping 94,000 gallons per day of saltwater from a saltwater well.***

The sensitive hydrology in the Graeme Hall Watershed is not fully understood. What is known is that the level and salinity of wetland aquifers is critical to habitat, and can be negatively affected by subterranean pumping of both saltwater and freshwater.

The Caribbean Splash EIA does not offer convincing scientific evidence to support its claim that pumping 94,000 gallons per day of seawater will not affect sensitive environmental areas, or affect irrigation wells located on Ministry of Agriculture lands. The only evidence that the EIA provides is in regard to available capacity, but there is no discussion about how extraction of seawater from below the existing brackish and freshwater lenses will affect the environmental integrity of the Watershed, and the wetland.

Freshwater supplies from springs: Both scientific and anecdotal evidence from spring activity in the Graeme Hall wetland, which is lower and wetter than the area of Well No. 3 located on Ministry of Agriculture lands, indicates periodically low freshwater supplies during drought conditions. Low levels at the Main Lake happen regularly, whether induced by lack of rainfall drainage or by low freshwater replenishment from the natural aquifer. Further degradation of freshwater supplies by the proposed water park from Ministry of Agriculture wells will likely cause substantial increased stress to the Environmental Heritage Site, and the Graeme Hall Nature Sanctuary.

9. *The Caribbean Splash EIA claims, inappropriately, that they cannot provide wastewater solutions based on volumes and the potential characteristics of that wastewater until after final designs for the project have been prepared.*

It is essential and appropriate for an environmental impact assessment report to provide probable engineering estimates of wastewater volumes for this type of endeavour, and to address specific capacities of sanitary sewerage availability.

Not only does this information help make an environmental impact assessment relevant and useful in formulating designs, it also enables government agencies and stakeholders to accurately assess the project.

In fact, much of the information already exists about the project layout and Capacity Matrix (Table 3.1), projected water use and associated discharge mechanisms, based on expected visitor volume, water sourcepoints, and related discharge mechanisms. But the EIA consultant does not bring these relevant factors together into a comprehensive summary of probable engineering estimates associated with water use and discharge.

Example: The Caribbean Splash EIA states that "Wastewater volumes are expected to be 90% of the potable water demand figures plus that from cleaning and spillage (of non-potable water) from the slides." The latter can be calculated based on rule-of-thumb from the water park industry, as are common rule-of-thumb supply and waste values for sanitary bathroom stations, showers, food service, drinking water, irrigation and stormwater runoff.

10. *The Caribbean Splash EIA erroneously justifies potential dumping of contaminants into the Graeme Hall ecosystem, noting that "the lake at Graeme Hall has been earmarked as the overflow site in the event of an emergency at the South Coast Sewerage Project."*

Emergency and other contaminated discharges into the Site may violate the Environmental Terms of Reference agreement between the Inter-American Development Bank and the Government of Barbados/South Coast Sewerage Project, and would violate the terms of the Convention on Biological Diversity.

The Inter-American Development Bank agreement specifies that emergency operations should utilize the Bank-approved Emergency Discharge Canal. The emergency outfall had been specifically designed and built in accordance with Bank-financed studies in the 1980's and early 1990's that recommended emergency discharges to the sea, rather than the Environmental Heritage Site, since the effects of sewage dumping in the Heritage Site are considered to be long-term and cumulatively detrimental to the wetland. Compounding the accumulation is the fact that there is little natural flushing or cleansing action within the Environmental Heritage Site ecosystem.

It should also be noted that future dumping of contaminants into the protected wetland could conflict with future Inter-American Development Bank applications for credit. Under the new Environmental Terms of Reference developed in 2005, new applications for assistance and credit from the Bank will be subject to due diligence review of past environmental compliance.

Bank financing of the South Coast Sewerage Project was, and is, contingent on appropriate operation of the sewage treatment system in accordance with local and multi-lateral agreements such as the United Nations Convention on Biological Diversity (Barbados signed this Convention in 1993), and in accordance with measurable environmental standards such as the numeric limits contained in "*The Pollution Prevention and Abatement Handbook, Part III.*"

11. *The Caribbean Splash EIA fails to address the increased requirement for government-funded police response teams.*

Informal discussions with police personnel indicate that they would expect a significant increase in patrols required for the proposed water park given the anticipated volume of young people, and the fact that it would be a natural gathering place causing potential increased impacts on adjoining residential neighborhoods. No increase in police or health response team budgets were listed in the Caribbean Splash EIA.

The Sanctuary and the rest of the wetland is a sensitive ecosystem that will be affected by any developments in the watershed. A major development such as the proposed water park will have a deleterious effect. The Addendum to the EIA in fact states that the management of Graeme Hall Nature Sanctuary is opposed to the water park.

We do not think that a gamble should be taken with what could be a legacy for future generations of Barbadians. It is our sincere hope that when all of these and other factors are taken into account that the Town and Country Planning Department and our leaders and relevant authorities will reject the proposal by Caribbean Splash Inc. to build a water park at Graeme Hall.

With our respects, please accept this Letter and Petition as part of the Public Record in regard to the above-referenced Caribbean Splash, Inc. application.

Yours Sincerely,

Peter Simmons
Friends of Graeme Hall Committee