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## EXECUTIVE SUMMARY

The impacts of the development of a new cemetery for the town of Savanna-la-mar, the subject of this Environmental Impact Assessment has identified potential impacts in the context of current and foreseeable future actions and trends in the region of influence. The proposed project would result in environmental effects to surface soils, water budget, noise, air quality, human health and safety and the economy.

Construction of the Cemetery will occur in Phases I to IV would cause short term effects to surface soils, noise, and aesthetic effects stemming from construction and traffic traversing the cemetery grounds.

### Physical Environment

Presently the areas adjacent to the Gooden's River are prone to flooding; this is normally localized and is caused mainly by the accumulation of water on the lower sections of the area adjacent to the river. This is due to naturally poor drainage conditions specific to that area and inadequate stream channel maintenance.

#### a. Groundwater Contamination

The limestone formation below the clay sequence is sufficiently permeable to function as an aquifer. The low permeability clay above the limestone is most likely functioning as a confining layer, thus protecting the aquifer from contamination. **Groundwater levels are less than 3 metres below ground** while **groundwater flow direction is to the south**. There are no wells down-gradient of the site.

The high groundwater table renders the aquifer vulnerable to surface sources of contamination. Available water quality data sets available at WRA for wells located at Bath Pen, Llandillo2 and Starthbogie which are in closest proximity to the site of the proposed action showed that their water quality generally fell within the World Health Organisation standards for the parameters of chloride, sodium, total dissolved solids, sulphate and nitrate.

In addition, due to the proximity to the marine environment the groundwater is likely to be brackish as observed in the Llandillo2 well.

Measures incorporated by design and mitigation measures would include no subsurface disposal of effluent at the site and the complete concreting of vaults.

#### **b. Water Supply and Demand**

If it is assumed that there will be 100 funerals per year with an average of 150 mourners in attendance, the average annual domestic water demand is 4,261 cubic metres (1.125 million gallons). The highest water demand could be on weekends however; the domestic water demand could be met from the existing domestic supply in the area. It is uneconomic to use domestic water for irrigating such a large area a well would be recommended for the site.

#### **Ecological Impacts and Mitigation Measures**

The required decrease in vegetative cover would inevitably result in a decrease in the numbers of native species found in the immediate vicinity by way of direct destruction and/or displacement. Fortunately, none of the species of plants or animals found are currently considered threatened or endangered. However, the replanting of trees and shrubs will be extensive given the plans for the development of the facility.

#### **Socio-economic Impact Assessment**

The number of employment opportunities at the proposed cemetery would have an insignificant economic impact on Dalling Street and the town of Savanna-la-mar. After the initial construction of the capital facilities on the Property, employment projections indicate employment creation approximately thirty (30) at the cemetery. Employees would be hired locally where possible. Based on information obtained the cemetery would be used by a population drawn from at least a 25-mile radius. Initial interment is expected to last one hour and subsequent visits would last a maximum of 30 minutes.

New businesses that could be attracted to the area because of the cemetery include florists as flowers are allowed at the gravesites and would be available for relatives who may visit.

The proposed Project site on the main road from Savanna-la-mar to Little London and currently is one of the main arterial connecting the Savanna-la-mar and Negril. Proposed road and intersection improvement would be expected to minimize any potential traffic conflicts. Ample parking would be provided within the grounds.

## **Health and Safety Impact**

**Air Quality** - Cremation emissions can contain gases, which are harmful to the environment and to humans. Other emissions include particulate matter such as Solid matter, dusts, and soot ash, unburned particles from cremation containers and remains.

Sources of air emissions are automotive exhaust from construction equipment and trucks, dust from earth moving activities, and dust from vehicles operating on exposed soil during construction. Long-term effects of cemetery development would result in loss of vegetation from the site. Intake of carbon dioxide and release of oxygen during photosynthesis would be temporarily reduced with a reduction of grass cover on the property. Measures to mitigate these impacts would include use of the best available technology also; dust would be suppressed during construction primarily through use of spraying water over the working areas.

**Noise** - Noise levels at the cemetery site could be by traffic on the adjoining roadway. Construction activities would result in local noise disturbances caused by heavy equipment operating on the site following construction completion, frequent noise sources at the cemetery would be lawn-care equipment, visitors' vehicles, and service and delivery vehicles. At least 15,000 visitors per year would visit the proposed cemetery. While there are no national standards for noise generated by construction equipment and vehicles they should be nevertheless be properly maintained to reduce the impact. Construction noise can achieve up to 110 dB<sup>1</sup> at 3 metres. Assuming an exposure of 8 hours per day for 5 days per week medical-acoustic investigations has found that 80dB is a safe limit<sup>2</sup>.

### **a. Soil Pollution**

Landscaping management chemicals such as fertilizers can add nutrients to runoff. The amount of chemicals applied to the soil is critical in determining the pollution load while the construction of graves using cement concrete mixture and the parking lot for the cemetery can result in soil compaction and increase runoff. The emission of mercury during cremation might also affect the soil.

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<sup>1</sup> Nath B. et al. 1993. Environmental Management, Vol. 1 The Compartmental Approach. Brussels. Page 195

<sup>2</sup> Ibid page 197

## **b. Water Pollution**

Cemetery sites have the potential to pollute waterways especially through the contamination of ground water. The main health impacts as far as groundwater is concerned would be from bio-contaminants such as bacteria and viruses and the chemical, formaldehyde.

## **c. Crematorium**

Cremation emissions can contain gases, which are harmful to the environment and to humans; these include nitrogen oxides, sulphur dioxide, Dioxins and furans. Particulate matter in the form of dust from crematory container and remains are potential contaminants.

Mitigation measures recommended include **the use of cement concrete in the construction of vaults to limit the escape of leachate from the grave** and the best available technology, which would meet NEPA standards for stack emissions and ambient air, would be introduced. To minimize carbon monoxide emissions from cremation a minimum temperature of 1400° F is recommended along with the proper amount of oxygen and sufficient turbulence for adequate mixing.

## **Occupational Health and Safety Considerations**

Four (4) types of occupational hazards are associated with the handling of deceased humans; these are biological, chemical, ergonomic and psychological. In addition, physical hazards such as noise exposure and ultra violet radiation (UVR), nuisance dust exposure and general housekeeping safety considerations are discussed.

### **a. Worker protection measures**

Engineering solutions would mitigate negative impacts to employees, when such measures are impractical and/or inappropriate, adequate and appropriate Personal Protection Equipment (PPE) would be utilized. Local exhaust (fitted with appropriate control systems for ambient air) is indicated as a means of controlling worker exposure to dust at the "urn-filling" work station. Also mechanical lifting aids and UVR shields are other engineering solutions indicated.



## **Monitoring and Management Plan**

The operation of the cemetery and the crematorium will be monitored to ensure compliance with national environmental standards set by the NEPA. Management would ensure the careful selection, training and supervision of staff provision. The availability of PPE would be ensured and there would be collaboration and cooperation with local health department and other regulatory agencies in the monitoring of the operation.

## **1.0 INTRODUCTION**

### **1.1 Background**

The Honeyghan Funeral Services commissioned the preparation of this draft document. The consultant was required to prepare an Environmental Impact Assessment of 10 acres (4.05 hectares) at 104 Dalling Street where it is proposed that the West Palm Memorial Gardens would be developed. It is proposed that the development would provide interment for approximately 1,000 on 3.24 hectares (8 acres) of the Dalling Street Property.

On visual inspection the site boundaries are defined by the Dalling Street Road to the west, the Tate and the Roman Catholic Church cemeteries to the south and various private landowners north of the site. The Dalling Street Property is located approximately 0.5 kilometres from downtown Savanna-la-mar (Map 1).

Savanna-la-mar is served by three cemeteries, which are the publicly owned Tate cemetery (7 acres/ 2.8 hectares) that is at its capacity and the privately owned St. George's (4 acres/1.62 hectares) and the St. Joseph's (2 acres/0.81 hectares) cemeteries. The Westmoreland Parish Council is in the process of identifying a site for a new public cemetery.

The proposed Dalling Street Cemetery forms part of the Dalling Street Property which comprises of six (6) lots. The Development Plan for the cemetery envisages a multifunctional memorial gardens facility, which would include a Chapel and a Crematorium.

For further information and/or a copy of the EIA, please contact the National Environment Planning Agency, 10 Caledonia Avenue, Kingston 5 and the Westmoreland Parish Council, 19A Union Street, Savanna-la-mar, Westmoreland.

## **2.0 PROJECT DESCRIPTIONS AND NEED**

### **2.1 Introduction**

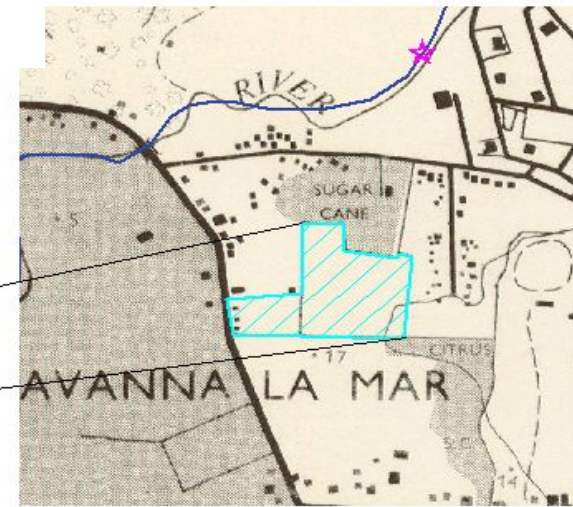
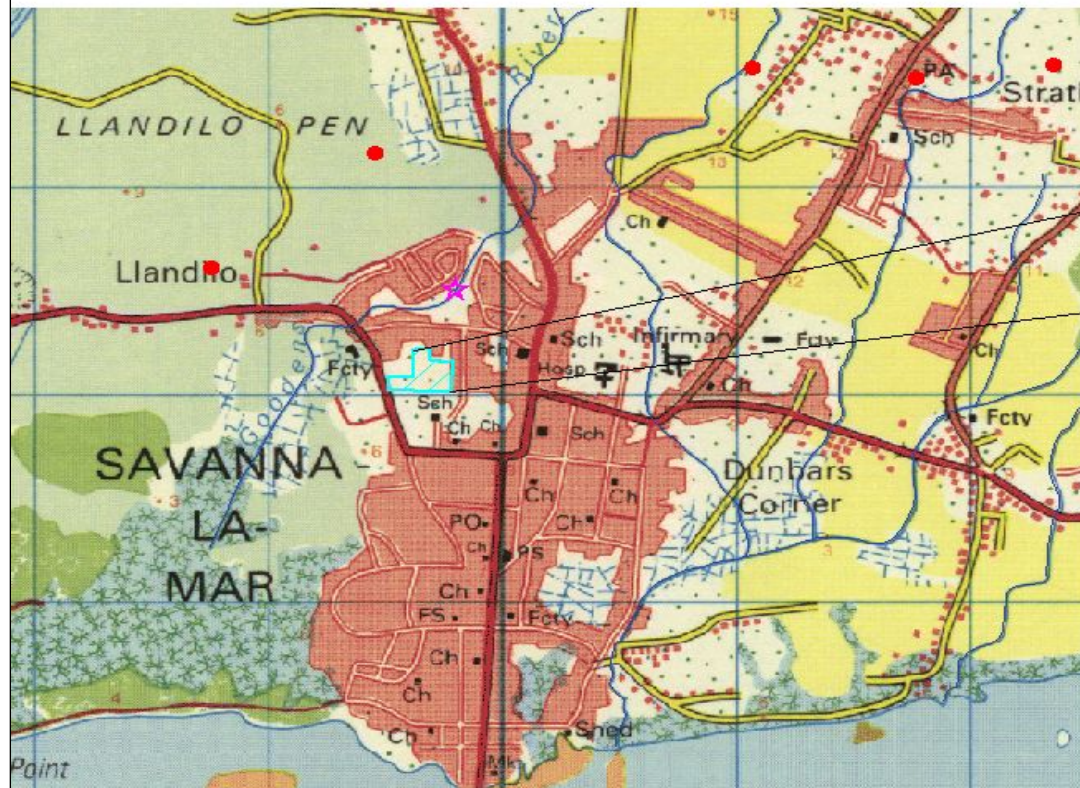
This Environmental Impact Assessment (EIA) report is intended to fulfill the requirements of the National Environment and Planning Agency (NEPA) under the Natural Resources Conservation Act and the Permits and Licences Regulations of 1996. It provides baseline information, outlines the potential impacts of the project and suggests mitigation measures. These mitigation measures when implemented would serve to limit the extent of significant impacts on the receiving environment. A Management/Monitoring Plan, which would identify their impacts, which could require management and monitoring, will also be outlined in this, EIA report. This information would form the basis by which the project would be evaluated. At the end of the process, it is expected that an Environmental Permit would be granted.

### **2.2 Project Description and Phasing**




The proposed West Palm Memorial Gardens will occupy approximately 3.24 hectares (8 acres) of the 4.05 hectares (10-acre) available at the Dalling Street Property, Savanna-la-mar Westmoreland. The remaining 0.81 hectares (2 acres) will account for buildings, such as, the Crematorium, the Chapel along with roads, parking areas and landscaping. The Property has frontage onto Dalling Street about 1 kilometre south of the intersection with the Big Bridge Main Road. A Development Plan is presented in Appendix IX.

Experience indicates the majority of the population in the town would choose to be buried in the public cemetery, however, with the apparent shortage of space in the public cemetery, privately owned cemeteries will stand to benefit, such as, in this proposal that will offer elements of a new and international view of cemeteries. In the absence of specific data on the average radius of a local cemetery service area it is estimated that the greatest majority of burials would come from within a 40.24 km (25-mile) radius. With a shortage of public cemetery facilities the project is expected to relieve the shortfall in Greater Savanna-la-mar Area and the western region of the Island.

## Location Map for Proposed Cemetery

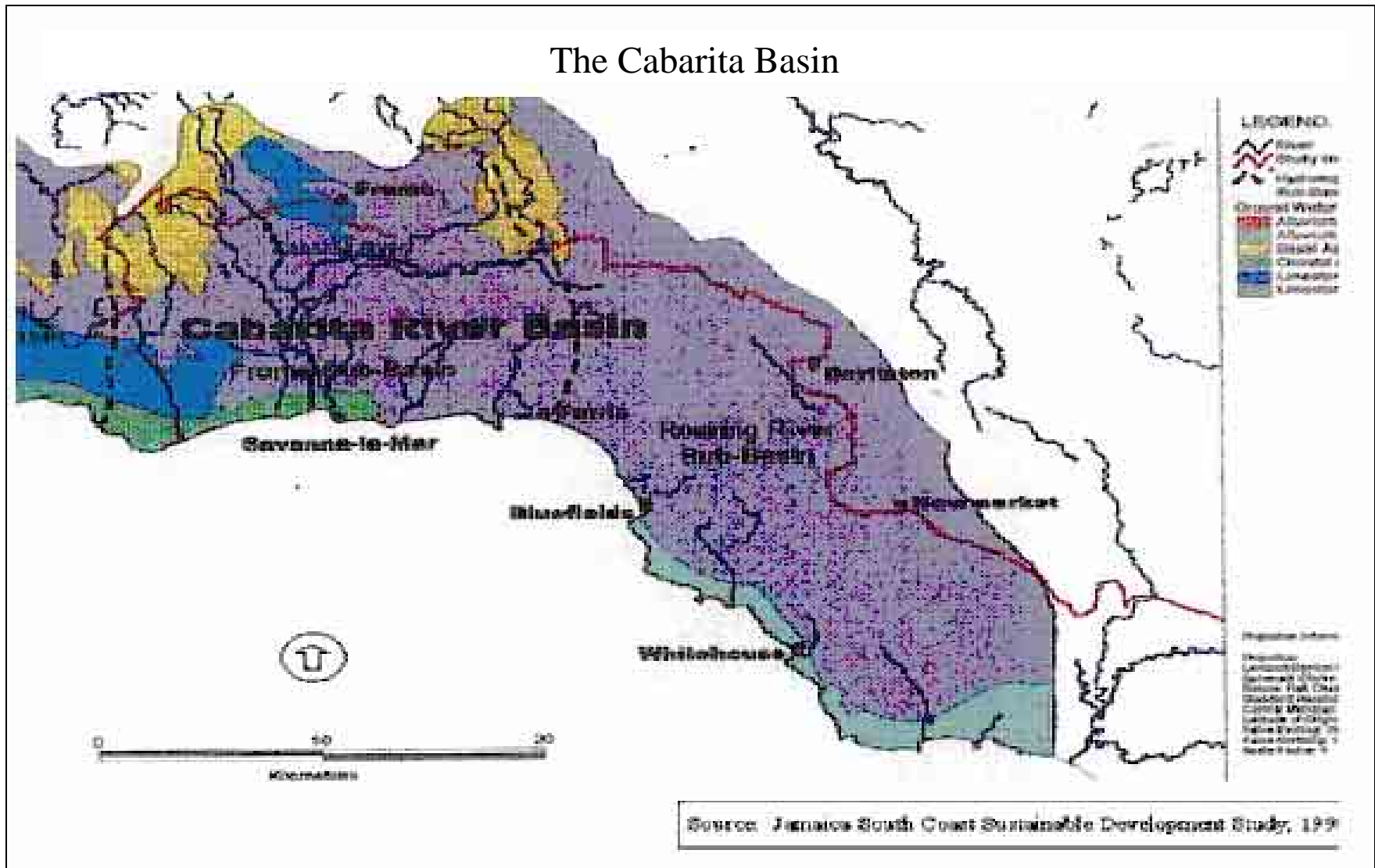


### LEGEND

-  Proposed Cemetery
-  Flood hazard
-  Well
-  River/surface water flow

**Map 1:** Showing location of proposed cemetery

## The Cabarita Basin



**Map 2:** Showing the Cabarita Basin

The proposed action involves Capital facilities components including, an administrative building, a maintenance building for building materials etc., a crematorium, a small chapel, a columbium for urn interment, roads and parking lot(s). The boundary of the cemetery will be defined using decorative fencing. The capital facilities are all included in Phase I of the Project.

The project would be completed in 4 phases:

Phase I would involve developing approximately 2.8 acres (1.13 hectares) of the 10-acre facility within an approximate time frame of 5 years from opening. Besides the construction of approximately 300 vaults, capital facilities (grounds, buildings, utilities, irrigation systems, etc.) would be completed during phase I. The initial construction phase would include the infrastructure required for the first 5 years, all roadways required for the foreseeable future and miscellaneous design features.

Phase II would add an additional 1.05 hectares (2.6 acres) for use over 5 years.

Phase III would include 0.93 hectares (2.3 acres) during the next 5-year period

Phase IV is the final phase and would involve the use of 0.77 hectares (1.9 acres) to begin operation during the final 5 years.

Phase II to Phase IV would only add acreage and burial plots. No additional buildings would be added. All of the area allocated for the Cemetery would be developed with buildings, roads and burial sites.

The general layout would include the following:

The burial gardens would be designed and constructed to conserve space with single, two-tiered and triple-tiered sealed lawn type concrete vaults to prevent the possibility of the seepage of leachate (see plate 1). These vaults would be installed during the initial construction portion of each Phase of the project. Fill material will be used to raise the level of the site from 0.3 metres to 1.22 metres (1 to 4 feet) in relationship with the site topography; the tendency for the clayey site soil to retain water especially during periods above average precipitation and presence of areas of depression at the site given the nature of the development it will be necessary to import topsoil.

Landscaping design would incorporate existing vegetation where feasible, for example, maintain some areas of the tree-lined boundary which would also act as a buffer zone between burial plots and adjacent properties thus preserving native vegetation as far as possible. New plantings would be designed to complement existing vegetation and topographic features.



**Plate 1:** Showing a typical Memorial Garden

## **2.3 Physical Infrastructure**

### **2.3.1 Drainage**

The relatively flat site topography and geomorphic influences provide easy management of site drainage. The aim of the proposed drainage system, however, is to channel storm water run-off through a system of drainage channels, culverts and cross drains and into an existing retention area. The concrete culverts will be utilized to accommodate storm water flows where new roads cross designed drainage paths.

### **2.3.2 Potable Water**

The sources of water to the town are treatment plants at Roaring River, Carawina and Bulstrode and further elaborated on in Section 3.3.3.

### **2.3.3 Electricity/Telephone**

The Jamaica Public Service Company Limited (JPSCo.) will provide electricity to the development. Cable and Wireless (Jamaica) Limited is the main provider of land telephone service, which is available in the town and accessible to the Dalling Street area.

In the case of Cable and Wireless, the company should be advised during the planning stages of the development to ensure that the additional demand will be included in the company's own development plan.

## **2.4 Alternatives to the proposed development**

### **2.4.1 Alternative 1: "No Action"**

The no-action alternative would be not proceeding with the cemetery, which would leave the town of Savanna-la-mar and much of the western region without an adequate cemetery facility.

In the event that this development did not proceed, it is likely that:

- the site would remain undeveloped for some time allowing it to remain as open pasture on which local owners of a few heads of cattle would graze their animals.
- the Westmoreland Parish Council would purchase the property for a use similar to that proposed as it seeks alternative options to the nearing capacity Tate Cemetery.

### **2.4.2 Alternative 2: Bath Pen**

Before the current site was selected other locations were considered for the West Palm Memorial Gardens. The Consultant supports the developer in the view that given the site's proximity to the town and the need now faced by the population, this is their best option especially as it met other selection criteria possessing the following assets: -

- A minimum area of 10 acres ( 4.05 hectares)
- Access to a major thoroughfare
- Availability of utility infrastructure
- Within the town
- A high level of compatibility with adjacent land uses



After an evaluation of available sites, such as, Bath Pen approximately 9.7 km (6 miles) to the north the proposed location was considered the most cost effective and relevant, as it would be located adjacent to the Tate and St. Joseph Cemeteries to the south and close to the St. Georges Cemetery to the west which are land uses that are similar and compatible with the proposed project. Besides, the approximately 2.43 hectares (6 acres) at Bath Pen was inadequate to render the activity economically feasible and after consultation with the planning authorities it was decided that the height of the water table at that location made it unsuitable for the type of development being considered.

The proposed action at the selected site would involve specific designed capital facilities components including, an administration building, a chapel, a crematorium, a maintenance building and yard, a committal, vehicle and equipment storage building, roads and parking lot(s). The specific placements of these components are influenced by site topography, and site hydrogeology, adjacent land uses and the Development Plan and the approvals and environmental permits obtained from the relevant authorities.

### 3.0 THE AFFECTED ENVIRONMENT

#### 3.1 The Physical Environment

##### 3.1.1 Topography and Drainage

The site is situated at the southern section of the Georges Plain within the Cabarita River Basin with an area of 591.56 km<sup>2</sup> and specifically within the Deans River Water Management Unit (#24, an area of 96.11 km<sup>2</sup>) one of four (4) Water Management Unit (WMU) as defined by the Water Resources Authority (WRA). The site is fairly flat to gentle undulating, with average elevation in the order of 4.73 metres above mean sea level. The highest slope being towards the Eastern boundary, this elevation decreases gradually westward.

Surface flows occur in a system of manmade and natural depressions and drainage channels (see Plates 2, 3 & 4) in a southerly direction. A north-south earth drain on the site terminates in the centrally located pond. This pond is a remnant of the previous land use, created as a watering hole for cattle grazing on the property (personal communication M. Honeyghan). Storm water runoff from the property flows into a drainage channel that traverses the adjacent Tate Cemetery and into a culvert on Dalling Street, a distance of approximately 500 metres (Plates 3 & 4).



**Plate 2** : Showing culvert along southward drainage channel in the Tate Cemetery



**Plate 3:** Culvert along Dalling Street that transports water runoff from the Tate Cemetery.



**Plate 4:** The system of manholes into which water runoff from the Tate cemetery is deposited.

The proposed site or its immediate environs is not classified as flood prone by the Office of Disaster Preparedness and Emergency Management (ODPEM). However, during heavy rainfall events there may be some accumulation of run off on the roadway and in onsite depressions. The nearest area of this potential hazard is further to the North as shown on Maps 3 and 5.

### **3.1.2 Soils and Geology**

Soils at this location are not unlike that which exists in the general area but remain unclassified by the Ministry of Agriculture, being an urban area. However, the local soil is expected to be alluvial: sand and clay particles. The clays are very tight and the permeability is estimated to be in the order of  $1.0 \times 10^{-9}$  cm/sec. The low permeability of the clays underlying the site leads to its high water retention capacity as evidenced by the poor drainage and marshy condition at about three areas at the site which total less than 10 per cent of the total area.

Savanna-la-mar is incised by a coastal aquiclude and a limestone aquifer, however, the site falls within the area of the limestone aquifer (Map 5). There are no limestone outcrops on the site. The underlying limestone is, however, known to occur below the clay sequence from previous exploratory drilling done in the area. The closest limestone outcrop is at Big Bridge, approximately 1.8 km northwest of the site.

### **3.1.3 Hydrology**

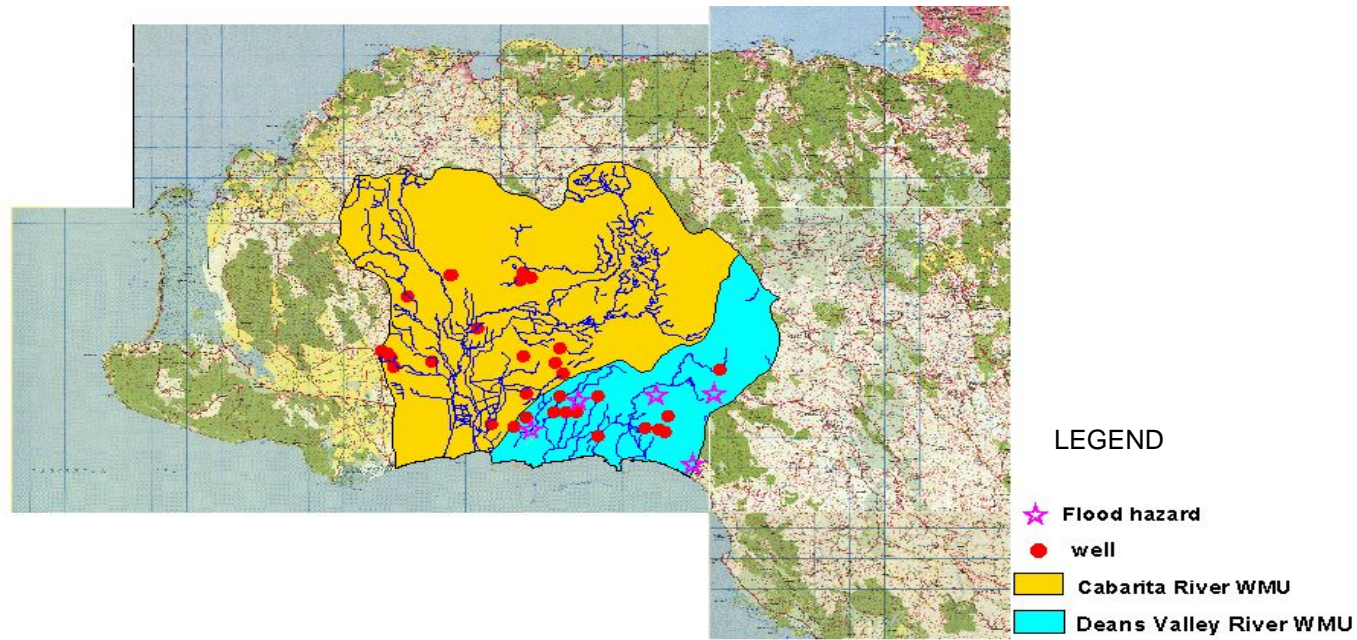
#### ***Surface Water Hydrology***

The proposed site may also be described as being located in the Frome Sub-Basin of the Cabarita River Basin (Map 2). There are no springs on or adjacent to the site, however, the Gooden's River is located approximately 500metres from the northeastern boundary of the site. There is no independent flow data for the Gooden's River since it is not included in the Water Resources Authority stream-flow-monitoring network. The closest spring to the area based on WRA record is one (1) located in Strathbogie to the northeast.

#### ***Groundwater Hydrology***

An alluvial formation, transported and deposited over time by river action, forms the secondary aquifer. The underlying white limestone rocks comprise the primary aquifer into which wells in this area have been drilled.

# The Cabarita River and Deans Valley Watershed Management Units

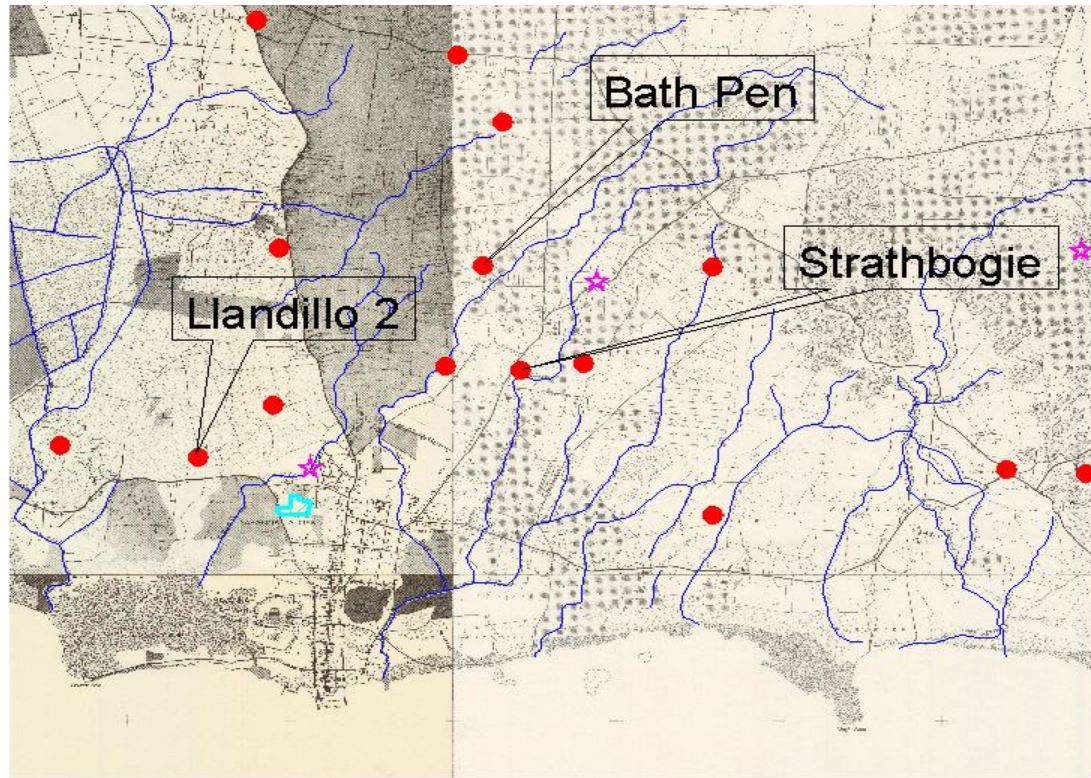


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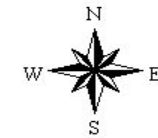
**Map 3:** Showing general hydrological characteristics within the Cabarita River and Deans River Water Management Units

## Hydrological Setting of the Proposed West Palm Memorial Gardens



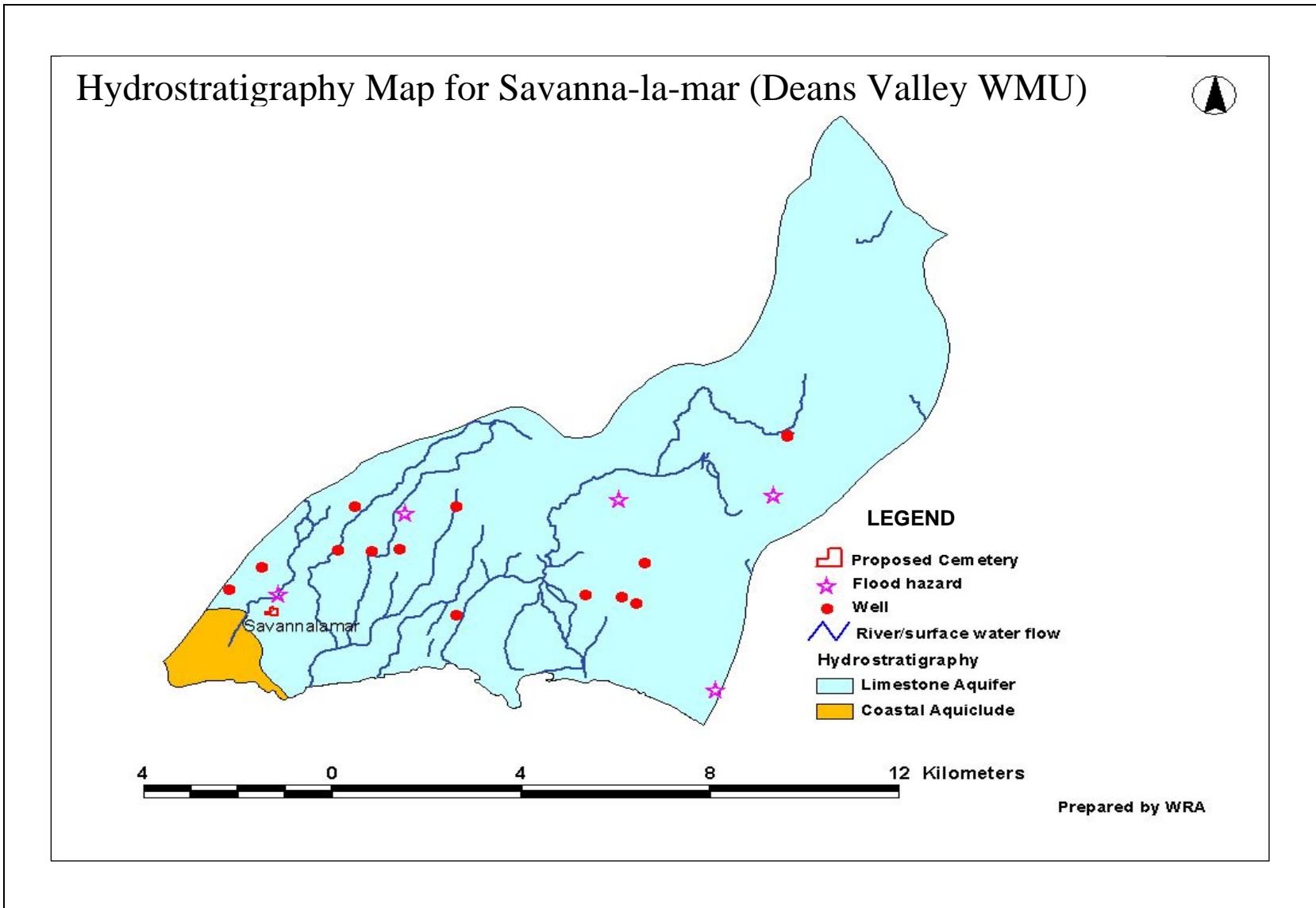
- Well
- Proposed Cemetery
- ~ River/surface water flow
- ★ Flood hazard

1 0 1 2 3 Kilometers



Prepared by WRA

**Map 4:** Showing location of the proposed cemetery with respect to regional hydrological characteristics



**Map 5:** Showing the hydrostratigraphy within the Deans River Water Management Unit

Hydrostratigraphy maps from the WRA confirm the presence of an aquifer as the limestone formation below the clay sequence is sufficiently permeable to function as an aquifer. The low permeability clay above the limestone is most likely functioning as a confining layer, thus protecting the aquifer from contamination.

**Groundwater levels are less than 3 metres below ground while groundwater flow direction is to the south.** There are no wells down-gradient of the site (Appendix VII).

### ***Water Quality***

The high groundwater table renders the aquifer vulnerable to surface sources of contamination. However due to the proximity to the marine environment the groundwater is likely to be brackish. Table 3.1 below shows the most current water quality data sets available at WRA for wells located at Bath Pen, Llandillo2 and Starthbogie. These wells are in closest proximity to the site of the proposed action and their water quality generally fell within the World Health Organisation standards for the parameters indicated and that of the National Irrigation Commission for conductivity. The water quality at the Llandillo well which is the nearest to the proposed site and the coast and was found to be brackish. The levels of chloride were elevated in wells at Bath Pen and Llandillo.

**Table 3.1: Water quality data sets for three wells in closest proximity to the proposed development**

BASIN (Cabarita)		PARAMETERS					
Location	Dates	Conductivity	TDS	Sodium*	Chloride	Sulphate	Nitrate
Bath Pen (limestone)	19/8/70 9/1/73 22/5/75	582	315	11	236	7.16	1.33
Llandillo 2 (limestone)	19/8/70 11/11/73 19/2/75 21/5/75	964	643	62 40	113	0.5	0.92
Stratghbogie (limestone)	19/2/75 21/5/75	835	480	31	43	47.5	2.9

Source: Water Resources Authority

Standard limits set by the World Health Organization for Total Dissolved Solids (TDS) - 1000 mg/l, Sodium -200 mg/l, Chloride 250 mg/l, Sulphate – 250 mg/l and Nitrate - 50mg/l. The National Irrigation Commission, 1998 applies a standard of < 3000µS/cm for conductivity.

\*Values are for the specific dates indicated while the remaining represents the mean for the dates shown.



The presence of the marine environment within 1.9 km of the site requires that appropriate sewage treatment be effected to reduce the risk of contamination of the marine environment.

### 3.1.4 Climate

The 30-year mean long term rainfall data available for the rainfall station at Savanna-la-mar shows ranges from 46 mm in January to 182 mm in May as shown in Table 3.2. The mean annual rainfall is 1415 mm.

**Table 3.2 30- Year Mean Monthly Rainfall (mm) - Savanna-la-mar, Westmoreland**

Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
46	64	50	97	182	166	173	178	173	183	65	38

Source: National Meteorological Service

The estimated maximum 24-hour rainfall for the rainfall station at Savanna-la-mar shown in Table 3.3 ranges from 107 mm for the 2-Year return period to 239 mm for the 50-Year return period.

**Table 3.3 Estimated Maximum 24-Hour rainfall (mm) - Frome, Westmoreland**

STATION	RETURN PERIOD (YRS)				
	T2	T5	T10	T25	T50
Savanna-la-mar	107	160	195	239	272

Source: *EIA for Proposed Residential Development at Grotto, Savanna-la-mar, Westmoreland, 2001*

The mean annual maximum and minimum temperature is 31°C and 21°C respectively. As is typical for the south coast, during the daytime winds are predominantly east-south easterly with an average speed of 34 km/hr. At night the winds direction is northerly with mean speed of 11 km/hr.

### 3.2 Terrestrial Ecology

The proposed development falls within an urban area and, therefore, is generally species poor with vegetation being primarily secondary growth.



**Plate 5:** View of the Property from Dalling Street



**Plate 6:** Example of vegetation cover at the proposed development site



**Plate 7:** On site vegetation which occurs mainly in the existing watering hole and at the site boundaries

### 3.2.1 Flora

**Table 3.4 Major Plant Species found at the Proposed Development Site, Dalling Street, Westmoreland**

SCIENTIFIC NAME	COMMON NAME	HABIT	COMMENTS/ STATUS
<i>Roystonea spp.</i>	Royal Palm	Tree	Common
<i>Hibiscus elatus</i>	Blue Mahoe	Tree	Common
<i>Melicoccus</i>	Guinep	Tree	Common
<i>Psidium guava</i>	Guava	Tree	Common
<i>Magnifera indica</i>	Mango	Tree	Common
<i>Haematoxylum campechianum</i>	Logwood	Tree	Very common
<i>Propis juliflora</i>	Cashaw	Tree	Common
<i>Mimosa</i>	Mimosa	Shrub	Common
<i>Bidens pilosa var. radiata</i>	Spanish Needle	Shrub	Common
<i>Typha domingensis</i>	Reed	Grass	Common
<i>Citrus aurantifolia</i>	Lime	Tree	Common
		Grass	Common
<i>Artocarpus altillis</i>	Breadfruit	Tree	Common
<i>Blighia sapida</i>	Ackee	Tree	Common

Based on a 1989 zoning map for Savanna-la-mar the site is zoned for agriculture, the previous land use was cattle rearing. The proposed site for the most part is covered with grass and reeds. However several large trees are present, mainly on the periphery of the site these include primarily logwood trees and domestic fruit trees.

**Canopy Height**

Of the species found on the site the logwood and cashaw trees were the most common. Logwood trees were found mainly on the southern boundary of the site. Their average diameter is 7 cm, with a canopy of approximately 10 metres. The cashaw trees found throughout the site also have an average diameter of 7cm, but with a mean canopy height of approximately 4 metres. The canopy of some of the other trees on the periphery of the property, such as, the mango trees reached a height of approximately 15 metres.

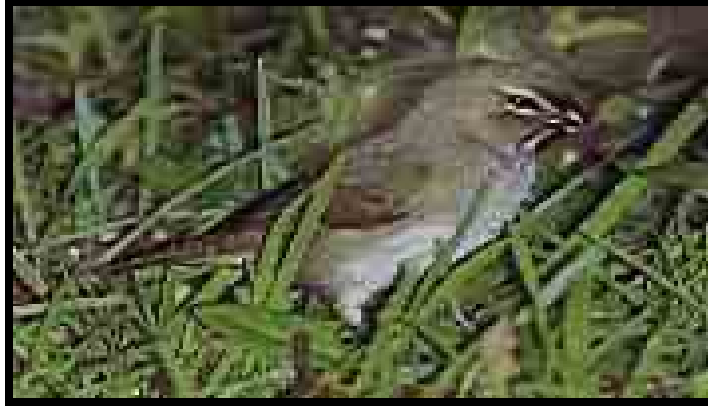
**3.2.2 Fauna**

The results obtained showed very few species and individuals use this habitat. Three (3) species were observed on the site, none of which are endemic. The number of individuals seen was very low, with less than two (2) individuals of any species seen.

**Table 3.5 Bird Species Observed at the Dalling Street Site**

<b>SPECIES</b>	<b>SCIENTIFIC NAME</b>	<b>COMMENTS/ STATUS</b>
Grass Squit	<i>Tiaris bicolor (olivacea)</i>	Locally common
Ground Dove	<i>columbina passerina</i>	Very common
Cling Cling	<i>Quiscalus niger</i>	Very common

The results of the field observations seem to confirm that the area is not an important habitat for fauna species. However, it should be noted that this investigation was conducted over a short time period, and thus the analysis of seasonal changes was beyond the scope of this study.



Source: Rey-Millet, Yves Jacques, *Birds of Jamaica*

**Plate 8:** Example of a Grass Squit observed at the site

### 3.2.3 Surrounding Area

In Savanna-la-mar, an urban centre, the dominant land uses of the immediate vicinity are residential, institutional (a church and a school) and two cemeteries at the southern boundary.

In keeping with the town's urban characteristics there are neither significant vegetated areas nor predominance of faunal species in the vicinity.



**Plate 9:** The Tate and St. Josephs cemeteries located adjacent to the proposed site at its southern boundary