

## Terms of Reference for EIA for the Proposed Developments at Whim and Brampton Farms

### Introduction

In 2006 a comprehensive EIA was completed for the New Harbour Village (841 lots) by Environmental Solutions Limited (ESL) on behalf of Gore Developments Limited (GDL). The EIA process included:

- ◇ Development of terms of reference,
- ◇ permit application,
- ◇ subdivision approval,
- ◇ submission of a 4-volume EIA report
- ◇ consultations and a public hearing

The following have been granted following submission of the EIA:

- ◇ NEPA environmental permit for development
- ◇ NEPA permit for the sewage treatment plant along with the licence to discharge effluent
- ◇ A water abstraction licence from the Water Resources Authority (WRA)

Various environmental management plans were developed in relation to this project.

The proposed developments at Whim and Brampton Farms are considered as Phases 2 and 3 of GDL New Harbour developments and are located adjacent to Phase I. The proposed developments are briefly described as follows:

#### 1. The Whim

Gore Developments Limited has acquired 111.7 ha ( 276 ac ) of land currently called The Whim, and proposes to construct approximately 1407 lots with a two-bedroom detached home on each. The lot sizes will be a minimum of 375 m<sup>2</sup> (4,000 ft<sup>2</sup>). The project area has been slated for urbanization under the "Portmore to Clarendon Park – Highway 2000 Corridor Development Plan".

The property is sited south of Old Harbour and north of Old Harbour Bay and bordered northern by the Highway 2000. The project's entrance is 200 m from the Old Harbour exit ramp of Highway 2000. The project site is directly across from New Harbour Village. Also across the Old Harbour Bay Main Road is the future housing development Brampton Farms.

Lots will be graded to fall towards the road or drain paths and storm water will be collected into the main central drain, which takes it to the Bower's Gully. South of the main drain, the storm water will be directed into an existing natural ravine in the JPS reserve to be taken across to the Brampton Farms drain at a volume and speed no greater than pre-development.

## 2. Brampton Farms

Brampton Farms will feature approximately 1,000 lots with a minimum of 325 m<sup>2</sup> (3,500 ft<sup>2</sup>) land space featuring a two Bedroom home of 74.3 m<sup>2</sup> (800 ft<sup>2</sup>) on each. Brampton Farms is located south of Old Harbour and north of Old Harbour Bay along the Old Harbour Bay Main Road and directly adjoining to the existing New Harbour Village, which will be completed in July 2009.

The land was used for agriculture by the owners JADF (Jamaica Agricultural Development Foundation), but has been in desolate state since many years.

The entrance to Brampton Farms will be located directly opposite of the proposed southern road reservation at The Whim. This creates an ideal four-way intersection for both phases. Both sides of the entrance road into Brampton Farms create a northern and a southern neighbourhood, with its own green space and parks. The main large community field is located at the eastern section and contains about 3.68 ha (9 acres).

Lots will be graded to fall towards the roads or drain paths within the development and storm water will be retained in several green areas before being discharged into the adjoining large drain south of the project site. The natural drainage pattern runs north to south and slightly easterly.

As the proposed developments are located adjacent to New Harbour Village an examination of the New Harbour I EIA was done to determine certain features that are common to both Whim and Brampton Farms. The similarities are as such:

- ◇ Climate

As the projects geographically border each other the New Harbour I, Whim and Brampton Farms sites share the same climatic conditions, with descriptions, as outlined in Section 5.1.2 of the New Harbour I EIA being applicable to each site.

- ◇ Topography

All three sites are within the southern St. Catherine Plains and are characterized by flat to gently sloping lands, with gradients extending from north to south of each of the properties. Thus, all three sites therefore share the same topographical descriptions, as outlined in Section 5.1.3.

◇ Geology and Hydrostratigraphy

All three sites are located within areas mapped on geological Map Sheet 10, which outlines the dominant superficial geological feature as being alluvial deposits comprised of coarse gravels, sand and clay originating from the Rio Cobre River. Additionally, the soils map of St. Catherine identifies soil types for all three areas as being the Lodge Clay Loam (High Salinity Phase). The Hydrostratigraphy plan outlined in Figure 5.1.4 of the EIA roughly covers all three sites, thus the wells and their associated yields/water quality apply to all three sites.

◇ Legislation

The legislative and regulatory framework governing development in the area also remains the same as was discussed in the EIA of New Harbour Village.

◇ Basic Fauna and Flora

All locations have been disturbed due to previous agricultural activities occurring on the sites. Evaluations of pre-existing aerial images of the New Harbour I, Whim and Brampton Farms sites show that they had similar disturbed vegetation cover. Since terrestrial faunal types are typically linked to vegetation and associated geology, the faunal types found at the New Harbour I site are similar to those found at the other two sites. A similar situation exists where flora is concerned. Therefore, it is suggested that floral and faunal descriptions for New Harbour I is applicable to Whim and Brampton Farms. Note, however that requirements for characterization of flora and fauna in and immediately surrounding the drainage systems transiting these sites is necessary.

◇ Socio-economic Setting

Socio-economic information is usually obtained for a defined sphere of influence extending outside of the borders of the proposed development. The New Harbour I EIA examined and described the socio-economic character of the lands encompassing the Old Harbour to Old Harbour Bay area, as defined in Figure 5.3.1a-b of the EIA. This would therefore suffice as a

description for the new development. However, an evaluation of public sentiment/perception would be critical for the new developments.

The following features require specific treatment in an EIA for the new developments, since these areas were not analysed in the New Harbour Village EIA.

- ◇ Water supply
- ◇ Hydrology and Ecology for Frasers, Whim, and Bowers gullies
- ◇ Drainage plan
- ◇ Sewage treatment and disposal
- ◇ Traffic
- ◇ Cumulative impact of the 3 phases

TORs - The Whim/Brampton EIA should be viewed as an Addendum to the New Harbour Village EIA. The EIA study should address the following specific requirements:

- ◇ **Water supply**

The source of water supply to both Whim and Brampton Farms developments will have to be identified and examined for capacity, sustainability, water quality and cumulative impacts on relevant ground and surface water resources.

- ◇ **Drainage**

An examination of the 1:50,000 metric map covering the project area shows drainage features that directly traverse the proposed sites: (1) the Fraser's Gully (identified in the EIA); (2) a tributary to this gully traversing phase IV of the New Harbour I development; (3) an un-named gully traversing the proposed Whim development site from north to south and; (4) a drainage channel (possibly man-made) that defines the proposed Whim development site's western boundaries.

While these features have similar characteristics due to their underlying substrates, drainage features 2-4 and their upper catchments will have to be characterized in detail, since this was not done in the New Harbour I EIA. Additionally, since a proposed drainage mitigation measure for the newer developments incorporates flows to the Bower's gully, which lies to the west of all drainages listed (and is outside of the development perimeter), this gully's characteristics will also have to be added to the list of drainage features to be examined.

Parameters to be examined for the drainage features will include:

1. Water quality: (DO, salinity, pH, TSS, TDS, BOD, NO<sub>3</sub>-N, PO<sub>4</sub>-P, metals, Oil and Grease, Sulphates and Chlorides) – pre development
2. Discharges: dry and wet periods – pre-development

The disposal of storm water run-off and any risk of impact on surrounding developments and communities along with potential issues with respect to increased surface run-off and sediment loading will be examined and discussed.

In considering the drainage assessment the report will include, but not be limited to:

- ◇ Drainage for the site during construction and operation phases, to include mitigation for sedimentation.
- ◇ Drainage control for the gully/gullies traversing the property, to include impacts that the drains will have on the aesthetics, water quality and sedimentation of the developed area.
- ◇ Hydrology of the area with special emphasis on the impact of planned and existing development upstream of this proposed development. The hydrological assessment must also consider the offsite drainage downstream (particularly the western section of the town of Old Harbour) of the proposed development and the risk posed for communities within proximity of the drainage systems.
- ◇ **Ecology of the Gully Courses** (the sections that traverse the sites as well as down stream portions to the marine discharge points). Fauna and Flora of the immediate gully environments must be described. Consideration should be given to both the terrestrial and aquatic elements.
- ◇ **Sewage Treatment and Disposal**

The Whim and Brampton Farms facilities will utilize a common sewerage system that will be separate from that of New Harbour I. As such an examination of the sewage treatment and disposal systems for the new developments must be undertaken, along with an examination of the proposed recipient environment for the treated effluent (which may be the lower reaches of the Fraser's Gully). The capacity of the proposed system is also to be examined and discussed in the report along with assessment of flooding risk of the proposed STP.

◇ **Traffic**

With the increased numbers of families that will be focused around the new population centres formed by New Harbour I, Whim and Brampton Farms, new and improved traffic management arrangements will become necessary, particularly as they relate to ingress/egress onto the Highway 2000 and into the town of Old Harbour.

Therefore a traffic impact assessment should be conducted and presented. Specific emphasis will be placed on measures to that will be implemented to address the potential changes in traffic flow.

◇ **Socio-economic Setting**

In addition to the New Harbour report this study will assess:

1. The changes in economic situation taking into consideration the advent of new housing developments such as New Harbour Village and how they have affected factors such as crime and employment in the area.
2. The impact of the proposed development along with other housing developments that came on stream after the New Harbour Village EIA.
3. The impact of the proposed Whim and Brampton Farms (New Harbour II) developments on existing social infrastructure.

◇ **Resource Conservation**

Statements on water and energy conservation measures/practices for the proposed developments will be presented.

◇ **Landscaping**

Details on the dimensions of the reservations and the possible relocation of the JPS high voltage lines will be discussed.

◇ **Project Alternatives**

Alternatives to the proposed project including the no-action alternative should be examined and will include the use history of the overall area in which the site is located and the previous uses of the site itself.

◇ **Cumulative impacts**

With three major housing developments ultimately being implemented within proximity to one another, there will likely be cumulative impacts that must be considered. The most likely issues of cumulative interest are:

- Downstream flooding and other impacts on Old Harbour Bay
- Downstream impacts on agriculture, aquaculture and fisheries
- Traffic management
- Solid waste collection and disposal
- Public amenities (health, education, etc)
- Public perception

These and other additional impacts likely as a result of the new developments should be clearly identified and characterised for both the construction and operation phases as was done for New Harbour Village and the appropriate mitigation measures proposed. Also an outline monitoring plan should be presented.

The environmental assessment should be complementary in all respects to the EIA presented for New Harbour Village but should avoid unnecessary repetition and/or duplication of material already presented in that report.