
CHAPTER 15

SUBDIVISION COMPONENT

15.1 Proposed Subdivision Plan

A total of 434 acres has been planned as part of the subdivision component. Lot sizes vary and range from 110 feet by 200 feet (0.505 acres) to 170 feet by varied length (2 + acres). This area can accommodate 419 single family residential homes and is considered as a low density type subdivision.

The planned subdivision will also include a network of canals that will be used to gain access to the residential lots.

Table 15.1 Proposed Acreage Plan

Type	Description	Lot/Acres	# of Units	Area (Acres)
A	Estate Lots	2.1	12	25
B	Large Subdivision Lots	0.694	37	26
C	Small Subdivision Lots	0.51	22	15
D	Canal Side Lots	0.5	306	153
E	Commercial Lots	0.6	42	25
Total Area			419	244

All these lots have been planned to suit the foreign retirement population of the US, Canada and Europe. The amenities and services are limited to the marina services and marina commercial center.

15.2 Overall Potable Water Requirements

Table 15.2 shows the number of connections for the residential sector of the proposed subdivision project. This table indicates that 419 units or lots will be developed as residential subdivision, with a total of 1,839 estimated residents. These estimates have been done considering the number of persons per bedroom for residential units.

Based on this average, and the known average consumption rate of 50 gallon/person/day (gpd), a total of 86,540 gpd would be required for the subdivision component after full project implementation.

An additional 10% contingency has been added, leading to a total of 95,194 gallon per person per day for the residential component.

Table 15.2 Projected Water Demand for the Residential Subdivision

Type	Description	Prototype	# of Units	Occupancy	Units (Gals/day)	Water Demand (gals)
A	Estate Lots	3 bedroom	12	72	50	3,600
B	Large Subdivision Lots	3 bedroom	37	222	50	11,100
C	Small Subdivision Lots	2 bedroom	22	88	50	4,400
D	Canal Side Lots	2 bedroom	306	1,224	50	61,200
E	Commercial Lots	4 w/estab	42	168	30	5,040
Total Residential Demand			419	1,774		85,340

*Two person per bedroom

15.3 Waste Management Plan

The proposed undertaking will be producing waste as part of its construction and operational process. The solid and liquid waste management has been discussed in detail, each in separate chapters. This section is a simplification of the findings of these sections for the residential subdivision.

a) *Liquid Waste Management*

As stated in Chapter 6, it is anticipated that the residential component can be best serviced by a well designed communal sewage treatment system capable of handling the fluctuating wastewater volumes. Table 15.3 details the projected wastewater for the residential section of the project. This table is a condensed version of Table 6.2. A total of 64,960 gallon/day would be produced for the entire residential subdivision after full project implementation, after approximately ten years. The maximum estimated effluent production per person has been used, thus rendering these figures well within the “worst case” scenario.

Table 15.3 Estimated Wastewater Productions for Subdivision Component

Type	Description	Prototype	# of Units	Occupancy	Wastewater Vol.(gal/day)
A	Estate Lots	3 bedroom	12	72	2,520
B	Large Subdivision Lots	3 bedroom	37	222	7,770
C	Small Subdivision Lots	2 bedroom	22	88	3,080
D	Canal Side Lots	2 bedroom	306	1,224	42,840
E	Commercial Lots	4 w/estab	42	168	3,528
Total Residents Wastewater			419	1,774	59,738

While effluent loadings are much greater for the residential subdivision, lot sizes are large, averaging half an acre per household. Recommendations are for the residential units to be hooked up to the wastewater treatment system for the project.

The treatment system will need to be in place before any resident occupies the subdivision. Regulatory connection saddles will be used to ‘hook up’ the residents. The treatment system will consist of a series of pump stations and man holes.

b) Solid Waste Management Plan

Solid waste management plans have been previously discussed in Chapter 7 of this EIA document. Nonetheless, a summary of the management plan is presented in this section. The volume of solid waste production will entail a well-planned solid waste management plan, the draft being proposed here.

The estimated solid waste to be generated by the residential sector will be approximately 6.1 short tons per day or 36.7 short tons per week considering a six day week. These projected values are without considering any waste minimization strategy involving either recycling, reusing or reduction practices. The following table summarizes the projected solid waste for the residential component.

Table 15.4 Projected Solid Waste Productions for Residential Component

Type	Facility	No of Producers	Lbs per Capita per day (ppcd)	Daily Waste Production (lbs)	Weekly Waste Production (lbs)
A	Estate Lots	72	3.3	237.6	1,425.6
B	Large Subdivision Lots	222	3.3	732.6	4,395.6
C	Small Subdivision Lots	88	3.3	290.4	1,742.4
D	Canal Side Lots	1,224	3.3	4,039.2	24,235.2
E	Commercial Lots	168	3.3	554.4	3,326.4
Residential Waste Production		1774		5,854.2	35,125.2

In considering volume, this weight can be translated to 5.8 yd³ a day and 35.1 yd³ a week considering that 1000 lbs of compacted weight is equivalent to 1 yd³. The proper packaging and containment of household waste will be the responsibility of individual home owners. Waste collection will be contracted out to the private sector. Collection will not be the responsibility of the project owners or residents, since enforcement needs to be ensured by the same. Collection should be at least twice weekly for residential sites, as the need arises.

As part of the contractual agreement for the collection and disposal of waste, an educational program will be included, in order to educate users of the service.

All waste will be transported to the Placencia Area Regional dumpsite. Under the NSWMP it is proposed to make these transfer sites. This will be discussed with local and national authorities, should this option be approved.

Waste services will lead to further income generation within the project, and its enforcement shall be the responsibility of the developer, through the Environmental Advisory Board and the Restrictive Code of Covenants.

15.4 Energy Consumption

The energy consumption for the residential subdivision has been discussed previously in Chapter 8 of this EIA document. It is imperative to state that this consumption is based on a holistic approach and can vary from resident to resident. It is through this approach that the energy demand for the project is summarized in the following table.

Table 15.5 Projected Energy Consumption for Residents

Type	Resident Type	Units	Occupancy	Yearly Energy Demand(KWh)	Daily Demand (KWh)
A	Estate Lots	12	72	180,000	500.0
B	Large Subdivision Lots	37	222	555,000	1541.7
C	Small Subdivision Lots	22	88	220,000	611.1
D	Canal Side Lots	306	1,224	3,060,000	8,500.0
E	Commercial Lots	42	168	630,000	1,750.0
Totals		419	1,774	4,645,000	12,902.78

From the above table, it can be seen that the residential components will consume a yearly total of 4,645,000 KWh or will require a daily demand of 12,902 KWh. This demand will be verified by a certified electrical engineer who will review the layout plan. With this in mind, it is anticipated that the generators will be installed according to the various development phases of the proposed development.

15.5 Restrictive Code Of Covenants

It is imperative that the residents of the proposed subdivision development follow a code of covenants that will assist in ensuring their compliance with the intended development plan of the area. These codes should focus on various issues, especially on environmental protection and enhancement. A generic Restrictive of Code Covenant is included in Annex X It is envisioned that the developer of the project will formulate a more comprehensive code prior to any sale of land.