The proposed RSF will treat 1,421 acres of untreated tributary area, and therefore will reduce sediment load. However, the land on which this facility is proposed is not owned by the City. The location of the RSF is shown on **Figure 4.5.4**. This location has a great potential for creation of a recreational area for citizens next to the RSF. **Table 4.5.6** shows the conceptual cost estimates for this alternative.

Alternative SG3 – Sugar Creek Stream Restoration North of Baytree Road

During the extensive field investigations along with the geomorphologic assessment of Sugar Creek, about 2,000 linear feet of creek north of Baytree Road were found to be in immediate need of attention and restoration. Widespread channel erosion and loss of trees was noticed. Some form of stream restoration/intervention is proposed for this section of Sugar Creek. Spot intervention at specific strategic locations along this section of Sugar Creek can also prove to be beneficial.

Along with the stream restoration structures, a grade control structure just downstream of Baytree Road Bridge is also proposed. This will act as an energy dissipater and also help in reducing the velocities in the stream. The kind of stream restoration structure to be implemented in this stream is subject to more detailed analysis of the stream. The location of this project is shown on **Figure 4.5.5**. **Table 4.5.7** shows the conceptual costs estimates for this alternative.

Alternative SG4 – Grade Control Structures at four locations throughout the Sugar Creek Sub-basin

During the geomorphologic assessment of the Sugar Creek basin, several locations for appropriate stream intervention were identified. Section 3 of this report provides in detail the geomorphologic assessment of the Sugar Creek basin. Based on the velocities, stresses and channel erosion observed in certain sections of Sugar Creek, grade control structures were recommended to be constructed at specific strategic locations. For the Sugar Creek sub-basin, four such locations have been identified. The locations are (two grade control structures north of River Street, one south of confluence with Browns Canal, one south of confluence with One Mile Branch and two south of confluence with Hightower Creek.

In addition to providing reduction in channel erosion and reduction in high velocities in the stream, this intervention is a part of a basin-wide effort to stabilize and restore the stream. The approximate location of the grade control structures is shown on **Figure 4.5.6**. The design of the drop structure is beyond the scope of this planning level analysis. **Table 4.5.8** shows the conceptual costs estimates for this alternative.

CDM recommends detailed geomorphologic assessment is carried out before commencing any design or construction for a grade control project.