19. STORMWATER MANAGEMENT

A. Describe the existing drainage patterns on-site as shown on Map I, including any potential flooding and erosion problems.

The Project Site encompasses several areas that will be redeveloped. Map I shows a conceptual plan indicating proposed drainage patterns. The final design will be subject to the appropriate agency approvals and permits.

There are no off-site areas that drain into the Project site. The Project Site is surrounded by existing developments that provide their own self-contained stormwater management systems and do not drain into the Project Site.

The Project's stormwater management system will retain the runoff from a 100-year frequency storm within its boundaries and will not adversely impact the flood protection of any off-site areas.

B. Describe the various elements of the proposed drainage system shown on Map I, including any wetlands to be used as part of the system, and discuss the design criteria (including stage-storage/stage discharge assumption) to be used for the various elements. Provide typical cross-sections (showing dimensions, slopes and control elevations) for any proposed lakes or swales. Identify the control elevation for all drainage structures. Include information as to what design storm will be used for what portions of the system.

In accordance with state and local regulations, any development exceeding two acres of impervious area or 10 acres of total area must contain the stormwater runoff generated by a 100-year, three-day frequency storm. Storage for the stormwater runoff will be provided above the surface of any proposed lakes, open spaces designated as retention / detention areas, and in swales.

The drainage system will consist of a system of catch basins and swales interconnected to a system of exfiltration trenches and retention / detention areas for qualitative treatment and infiltration into the ground water table. Overflows to any proposed retention / detention areas will be provided to handle the excess runoff. This drainage system will be designed based on a five-year, 24-hour frequency storm.

Map I shows the conceptual plan indicating the general drainage patterns. Detailed drainage plans will be developed and provided when the Environmental Resources Permit Application is processed.

C. From Map I, indicate the total number of acres in each drainage area and specify the acreage of any portions of drainage areas outside the site boundaries. Complete the following table for on-site drainage areas.

Table 19-1, Drainage Areas, indicates the existing and proposed on-site drainage characteristics.

TABLE 19-1
DRAINAGE AREAS

	Impervious Surfaces (Acres)	Surface Retention (Acres)[1]	Open Space (Acres)	Total (Acres)
Proposed	53	0	24	77

[1] Category includes lakes, ponds, storage areas, etc.

Source: David Plummer and Associates

D. Specify and compare the volume and quality of run-off from the site in its existing condition to the anticipated run- off at the end of each phase of development. (The para-meters to be used to define "quality" and methodology should be agreed to by the regional planning council and other reviewing agencies at the preapplication conference stage.) Identify any changes in timing or pattern of waterflows between pre- and post-development conditions. Indicate major points of discharge and ultimate receiving water body(ies). Indicate what provisions will be incorpo-rated in the design of the drainage system, including a summary description of any Best Management Practices to be utilized, to minimize any increase in run-off from the site and to minimize any degradation of water quality in the ultimate receiving body over that occurring in its pre-development state.

The proposed stormwater system will improve the existing conditions by eliminating direct runoff into the aquifer and by providing additional water quality treatment as follows:

- Stormwater runoff will be routed to catch basins equipped with baffles to prevent oil, grease and other surface pollutants from entering the exfiltration trench.
- The exfiltration trenches will be constructed using perforated pipes surrounded by coarse aggregate for filtration purposes.
- The invert of the perforated pipes will be placed above the high ground water level to allow for additional filtration before the runoff reaches the aquifer.

All stormwater runoff will be contained within the Project Site through grading and routing towards inlets, swales, and retention / detention areas. No stormwater runoff is proposed to be directed off the Project Site.

E. Who will operate and maintain the drainage system after completion of the development?

The drainage system within the public road right-of-ways will be maintained by the Florida Department of Transportation, Broward County, and/or the City of Fort Lauderdale. The private stormwater infrastructure will be maintained by the Owner.