

## **CORKSCREW CROSSING STORMWATER NARRATIVE**

The project was permitted by SFWMD on Dec. 12, 2018, as permit no. 36-08730-P. The project received a thorough review from the local SFWMD office and the managing engineering office in West Palm Beach. In addition the project was peer-reviewed by two (2) independent engineers for modeling accuracy with no modifications required as a result of the review.

The project's stormwater management system consists of a series of inter-connected lakes with outfall structures allowing control discharge to the preserve area. The project also contains a 50-ft wide collector/interceptor swale that collects and conveys surface water flows within the preserve area when those flows exceed a 6-in depth in the adjacent preserve. Those flows are from north of Corkscrew Road and are conveyed under the road via existing and proposed culvert pipes. The swale conveys those higher water levels to the south terminating in a spreader swale along the same preserve edge. The swale is similar to the adjacent Wild Cat Run eastern perimeter swale. In fact, that swale will be reconfigured to accept some of the flow as it currently does.

### **Water Quality:**

Water quality treatment is provided through an interconnected wet detention system. The project provides the total water quality treatment volume of 21.03 acre-feet, which is greater than the required treatment volume of 14.02 acre-ft. The required water quality treatment volume is based on one inch over the controlled basin areas, the standard required volume for a project such as this. The project provides a site-specific water quality evaluation which included pollutant loading calculations based on the removal characteristics associated with the proposed system. The calculations demonstrate that the proposed stormwater management system will reduce the post development loading of nutrients to levels less than the loadings generated under the current condition. Therefore, there will be a net improvement in nutrient water quality. The project provides reasonable assurance that the project will not adversely affect the quality of receiving waters such that State water quality standards will be violated. The owner will implement a Construction Pollution Prevention Plan, an Urban Stormwater Management Program, and a maintenance plan for the conveyance swale as additional reasonable assurance of compliance with water quality criteria during construction and operation. These documents will be part of the homeowners' association recorded documents.

### **Offsite Flows:**

Furthering the discussion above, a Flowway Encroachment Analysis demonstrates that the post development conditions will not increase the 100-year storm event stages at the south side of Corkscrew Road. The flows as permitted by SFWMD for the Wild Blue project (SFWMD Permit No. 36-05075-P) and other incidental flows were estimated at 124 cfs. In addition a technical memorandum analyzes potential impacts to the offsite wetland preserve areas during transitional periods using groundwater modeling. The model provides reasonable assurance that construction of the swale will not have adverse impacts to the storm stages under post development conditions. In addition, a monitoring well will be constructed approximately 100-

feet south of the Corkscrew Road ditch along the northeastern project boundary to monitor groundwater elevations.

As required by SFWMD, the applicant provided reasonable assurance through design calculations that the project will not cause adverse impacts to existing surface water storage and conveyance capabilities. The runoff volume discharged offsite after development will not exceed the volume discharged from the site based on existing conditions.

Further, the applicant provided reasonable assurances that the project will not cause adverse flooding to onsite or offsite properties. The reasonable assurances included an analysis of the pre-development versus post-development project runoff for the 100 year 3-day storm event to demonstrate that the available pre-development surface water storage is not decreased as a result of the proposed development.

As part of the proposed Corkscrew Road widening, the existing culvert that crosses under Corkscrew Road in front of this project will be removed. Additional new culverts will be added under the road but located farther east in front of the Preserve at Corkscrew. This was previously permitted by SFWMD (Permit No. 36-03277-P).

As part of the Development Order review for this project, the stormwater conveyance system will be reanalyzed for newly projected offsite flows into the project of 183 cfs. The applicant has also agreed to analyze for additional increased potential flows to 198 cfs. The owner has agreed to accommodate those increased flows provided there are no adverse impacts to surrounding properties or onsite preserve areas.