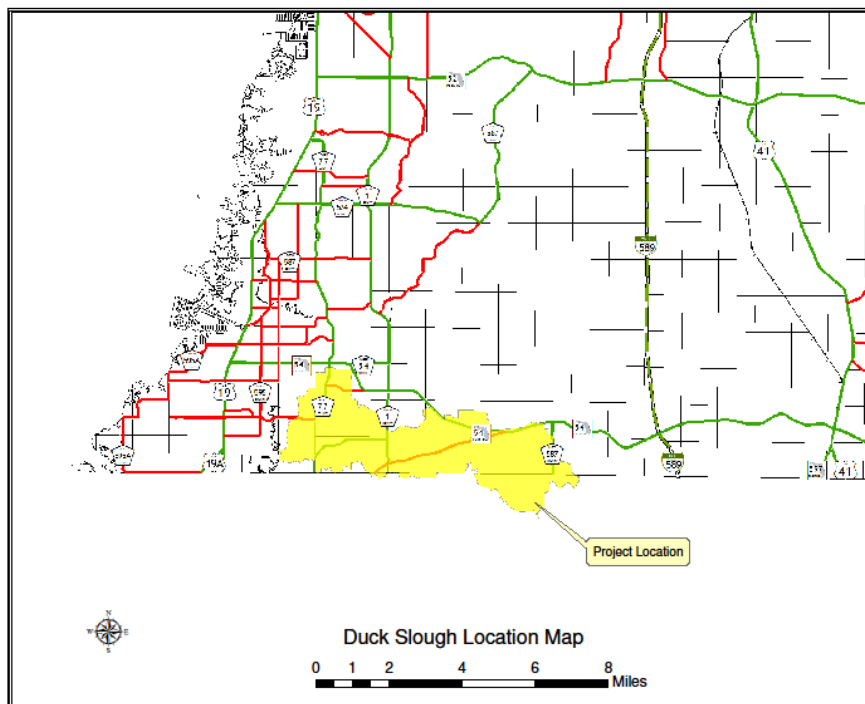


## Thousand Oaks and Trinity Oaks

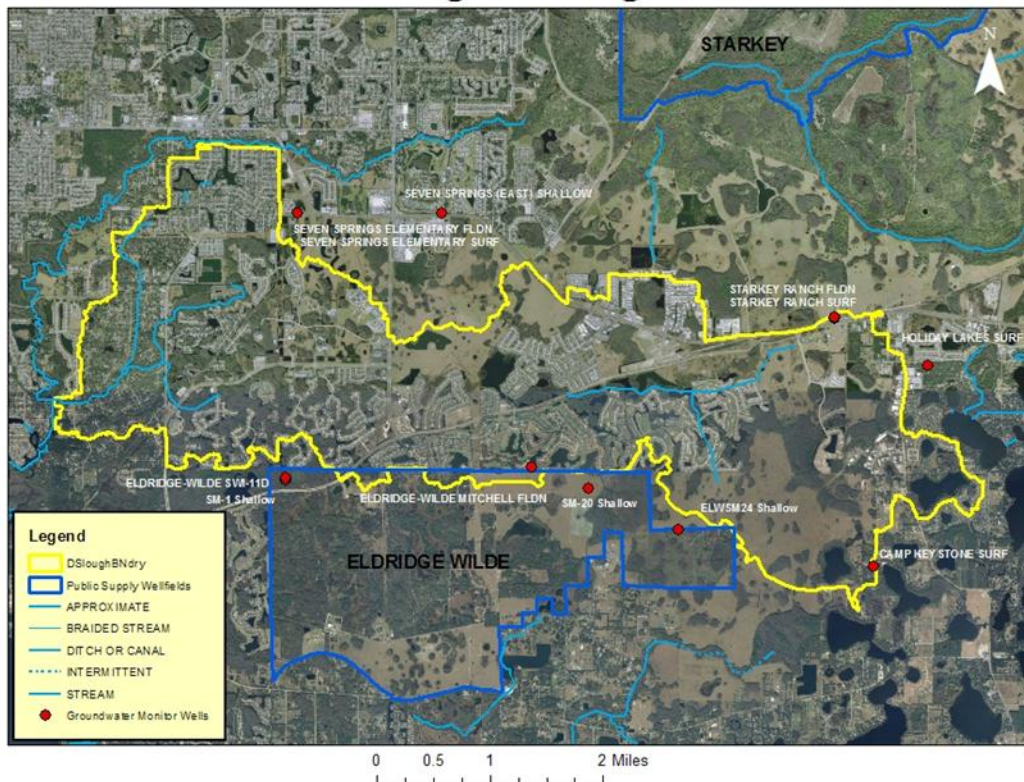
(October 15, 2013)

The Thousand Oaks and Trinity Oaks developments are located in southwest Pasco County within the Duck Slough watershed. There are 964 residential dwellings with approximately 2,146 residents affected by the recent activity of Tropical Storm Debby and the subsequent rains.



The Trinity Oaks development was permitted in the late 1980s under the Southwest Florida Water Management District rules that charged an engineer with doing no harm. Thousand Oaks was permitted in 1994 under the same rules. The drainage system that was designed and permitted by the SWFWMD and subsequently built was to rehydrate the wetlands as they had been impacted by well field pumping and drought conditions.

## Duck Slough Drainage Basin



The Duck Slough Watershed is 14.1 square miles in size with 10.1 square miles that flows through the Thousand Oaks and Trinity Oaks communities. The historic drainage flow is from East to West to the Anclote River and then to the Gulf of Mexico. The Thousand Oaks and Trinity Oaks area has experienced flooding during the 2003/2004 El Nino event when the roads were flooded for an extended period of time causing extensive road damage. The roads were repaired using a Federal Disaster Declaration Public Assistance Grant.

In 2005, the County and the SWFWMD cooperatively funded an engineering study that studied the problem and then recommended solutions. The cost of the study was \$500,000. While the engineering study recognized that the ponds did not drain because the wetlands were higher than the ponds, the study recommended that operable structures for flood control be installed as they were the only permissible option.

In 2007/2008, a firm was selected and completed the design/permitting of the operable structures at a cost of \$360,000. In 2010, the operable structures were constructed at a cost of \$1,000,000.

In 2011, with the flood control structures in place the County began the long process of obtaining approvals to re-establish the historic flow way that existed in the wetlands to the west of Kinsmere Drive (Trinity Oaks) in order to make the ponds work.

The County had felt that we had found evidence of apparent substantial historical dredging. A field inspection was conducted by the County consultant and the SWFWMD. Evidence of spoil piles were observed and documented.



Based on the favorable field inspection the County prepared plans to re-establish what we felt was a pre-existing canal in the wetlands and we applied for a maintenance exemption but it was surprisingly **denied** by the SWFWMD. We then began the longer process of permitting on re-establishing a flow way through the wetlands.

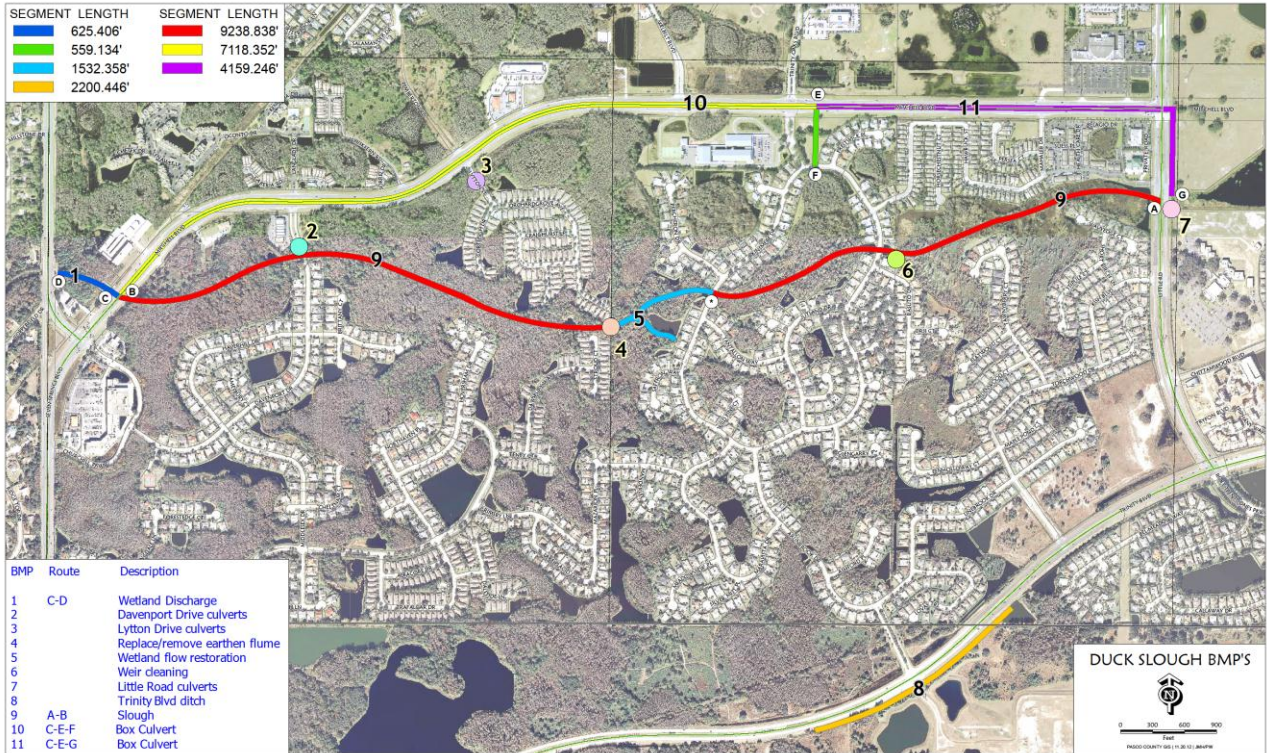
On June 24, 2012 rains from Tropical Storm Debby and then subsequent rains inundated the area and once again flooded the Thousand Oaks and Trinity Oaks developments. However, the rain did not just flood the streets, it has now flooded residences.



On August 9th, a community meeting was held with County staff, County Commissioners, other elected officials, agency officials, and residents from both communities. The residents were understandably upset and were advised that the County cannot take any remedial action until we can obtain the requisite permits from the applicable regulatory agencies. A neighborhood task force was also formed which consists of the community leaders, County and Regulatory staff and consultants hired by the County to review the problem and design and permit the solutions. These meetings are held on a regular schedule.

As part of the Task Force, eleven possible solutions were identified and the analysis began.

SEGMENT LENGTH	SEGMENT LENGTH
625.406'	9238.838'
559.134'	7118.352'
1532.358'	4159.246'
2200.446'	



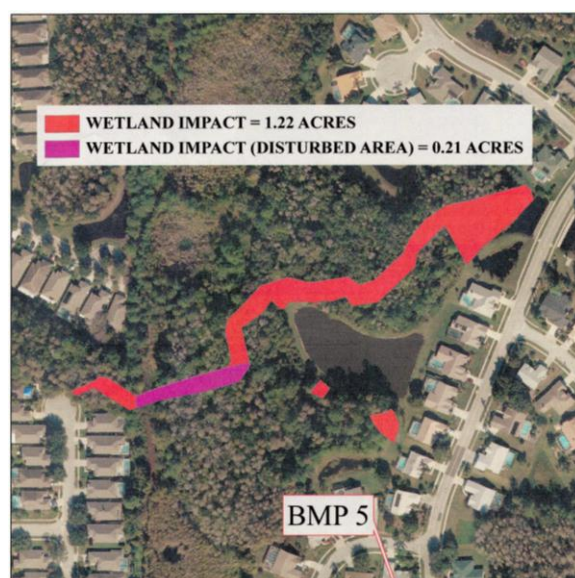
BMP	Route	Description
1	C-D	Wetland Discharge
2		Davenport Drive culverts
3		Lytton Drive culverts
4		Replace/remove earthen flume
5		Wetland flow restoration
6		Weir cleaning
7		Little Road culverts
8		Trinity Blvd ditch
9	A-B	Slough
10	C-E-F	Box Culvert
11	C-E-G	Box Culvert

DUCK SLOUGH BMP'S

0 300 600 900  
Feet  
HARRIS COUNTY GIS (11/20/10) (LAWRENCE)

## BMP Nos. 1 and 5

On March 15, 2013, the County submitted permit applications to both the Southwest Florida Water Management District (Application No. 678767) and to the Army Corp of Engineers (Application No. SAJ-2011-02395) for what is known as BMP 1 and 5. BMP 1 is located at the downstream portion of the project, northeast of the intersection of Seven Springs Blvd and Mitchell Blvd. This element of the project entails construction of culverts with operable gates to allow for the temporary draw-down of water levels upstream prior to storm events. BMP 1 in conjunction with BMP No. 5 will help to improve the storage capacity and conveyance of stormwater flows from the upstream portion of the project. The operational schedule of the gates will assure that any effects on wetland water levels will be temporary, tailored to reduce elevated stormwater levels while preserving the natural hydroperiod of the wetland. BMP No. 5 which is located to the west of Kinsmere Drive is to re-establish the historic flow path through the wetland to allow for pond discharge.



The cost of BMP 1 and 5 and the mitigation necessary to offset the impacts to the wetlands totals just less than \$1 million. The County was provided with an out of cycle SWFWMD cooperative funding agreement for the evaluation, design and permitting of the solution(s). Comments on the proposed contract have been provided to the SWFWMD and the County is awaiting a revised contract to review. The County has also applied for additional construction funds for any additional BMPs in the upcoming 2014 Cooperative Funding Cycle.

The County was very fortunate to have Representatives Fasano & Corcoran place One Million Dollars to be distributed to the Southwest Florida Water Management District for Duck Slough/Thousand Oaks flood mitigation in the recent State Budget (SB 1502) provided to the governor.

The permit applications for BMPs 1 and 5 were filed with SWFWMD and Army Corp of Engineers (ACOE) on March 15, 2013. The following is the history of the permit application comments and responses:

SWFWMD:

### Comments from SWFWMD

April 12, 2013  
August 2, 2013  
August 23, 2013

### Response to SWFWMD

July 4, 2013  
August 10, 2013  
September 30, 2013

ACOE:

### Comments from ACOE

June 5, 2013  
August 19, 2013

### Response to ACOE

July 5, 2013  
October 2, 2013

In addition to responding to the RAIs from SWFWMD and ACOE the review of additional upstream solutions are being evaluated.

### **BMP No. 6**

As part of the entire development project, BMP 6 needs to be analyzed to determine if lowering the weir to create upstream storage capacity within the wetlands between Trinity Oaks and Little Road is a feasible project. It is proposed that the consultant will investigate alternatives for drainage improvements associated with BMP No. 6 within the Thousand Oaks/Trinity Oaks project area, specifically drainage improvements associated with the weir and wetland system extending from the east side of Kinsmere Drive then in an easterly direction to Little Road. This task is to investigate alternatives to improve hydroperiod conditions within the upstream wetland, create additional available surface storage prior to the onset of some rain events, and contribute to some improvement in the system's response to storm event rainfall, particularly for smaller magnitude, frequent rainfall events.

This Task Order was approved by the BCC on May 21, 2013. The total cost for these services will not exceed the amount of \$25,000.00, and its time of completion is 180 days from the date of the Notice to Proceed with a delivery of the alternatives modeling results within 45 days from the date of the Notice to Proceed (July 5, 2013 and November 17, 2013).



### **BMP No. 7**

It is proposed that the consultant will investigate alternatives for drainage improvements associated with BMP No. 7 within the Thousand Oaks/Trinity Oaks project area, specifically drainage improvements associated with the weir structure located upstream (east) of Little Road and the potential for impoundment of stormwater on lands upstream of that facility.

This Task Order was approved by the BCC on May 21, 2013. The total cost for these services will not exceed the amount of \$75,000.00, and its time of completion is 180 days from the date of the Notice to Proceed with a delivery of the alternatives modeling results within 90 days from the date of the Notice to Proceed (August 19, 2013 and November 17, 2013).

To date the following funds have been spent on the project by the County:

<b>Project Task</b>	<b>Consultant</b>	<b>Task Order</b>	<b>Amount</b>	<b>Comments</b>
Thousand Oaks/Trinity Oaks Duck Slough Modeling Analysis	Ardaman & Associates	SMO12-035	\$74,600.00	Using updated model evaluate if the Best Management Practices suggested are beneficial to the Duck Slough watershed to protect structures from 100-year storm and recovery of the drainage pond capacity; eligible for SWFWMD Cooperative Funding reimbursement; SUBSTANTIALLY COMPLETED
Thousand Oaks/Trinity Oaks Permit Package Modeling and Analysis Support	Ardaman	SMO13-020	\$50,000.00	BCC Approved April 23, 2013
General Services/Portion for Thousand Oaks/Trinity Oaks	Ardaman	SMO13-031	\$50,000.00	BCC Approved July 9, 2013
Thousand Oaks/Trinity Oaks Duck Slough Watershed BMP and Wetland Mitigation Analysis	Atkins	SMO12-006	\$12,865.00	Assess the effect of the proposed BMPs on the existing wetlands within Duck Slough; eligible for SWFWMD Cooperative Funding reimbursement.
Thousand Oaks/Trinity Oaks Duck Slough Watershed BMP and Wetland Mitigation Analysis	Atkins	SMO12-037	\$50,000.00	Assess the effect of the proposed BMPs on the existing wetlands within Duck Slough; eligible for SWFWMD Cooperative Funding reimbursement
Thousand Oaks/Trinity Oaks BMP No. 1	Atkins	SMO13-001	\$50,000.00	Design of BMP 1. Eligible for SWFWMD Cooperative Funding reimbursement



Thousand Oaks/Trinity Oaks Permit Package Response Support and BMP No. 1 construction plan support	Atkins	SMO13-022	\$50,000.00	BCC Approved April 23, 2013
Thousand Oaks/Trinity Oaks Duck Slough Watershed BMP and Mitigation Analysis and Wetland Mitigation Design	Scheda Environmental	SMO12-036	\$50,000.00	Working on the assessment of wetland impact and the mitigation design on County property; eligible for SWFMWD Cooperative Funding reimbursement
Thousand Oaks/Trinity Oaks Duck Slough Watershed BMP and Mitigation Analysis and Wetland Mitigation Design	Scheda Environmental	SMO13-015	\$50,000.00	Working on the assessment of wetland impact and the mitigation design on County property; eligible for SWFMWD Cooperative Funding reimbursement
Thousand Oaks/Trinity Oaks BMP No. 5 and Permit Package Coordination	FDC	SMO13-007	\$50,000.00	Design of BMP 5 and Permit Package Coordination. Eligible for SWFMWD Cooperative Funding reimbursement.
Thousand Oaks/Trinity Oaks Permit Package Coordination	FDC	SMO13-016	\$50,000.00	Design of BMP 5 and Permit Package Coordination. Eligible for SWFMWD Cooperative Funding reimbursement.
Thousand Oaks/Trinity Oaks Permit Package Coordination and BMP No. 5 construction plan support	FDC	SMO13-019	\$50,000.00	BCC Approved April 23, 2013
<b>BMPs No. 1 &amp; 5 and Mitigation Subtotal</b>			<b>\$587,465.00</b>	

Thousand Oaks/Trinity Oaks BMP No. 6	Ardaman & Associates	SMO13-027	\$25,000.00	BCC Approved May 21, 2013
Thousand Oaks/Trinity Oaks BMP No. 7	Ardaman & Associates	SMO13-028	\$75,000.00	BCC Approved May 21, 2013
<b>Flood and Pond Recovery Subtotal</b>			<b>\$687,465.00</b>	
<b>SCADA</b>				
SCADA	Applied Sciences	SMO13-003	\$88,666.25	Design of SCADA System. Bid package delivered. Installation of cameras and gates eligible for SWFWMD Cooperative Funding reimbursement. This project was being prepared prior to the TS Debby flooding. It was contemplated to be a SCADA system with Rocky Sink and Duck Slough. After TS Debby, Phase 1 was shifted to be Duck Slough for which construction of the cameras and gates is eligible for SWFWMD Cooperative Funding reimbursement if we enter into the Cooperative Funding Agreement.
SCADA	Applied Science	SMA13-034/SMO13-023	\$26,789.50	SCADA System Construction Support. BCC Approved April 23, 2013
<b>SCADA Subtotal</b>			<b>\$115,455.75</b>	