

City of Port St. Lucie Eastern Watershed Drainage Report



MARCH 2010



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CITY OF PORT ST. LUCIE
EASTERN WATERSHED
DRAINAGE REPORT
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**CITY OF PORT ST. LUCIE
EASTERN WATERSHED
IMPROVEMENT PROJECT
MARCH 2010**

A. INTRODUCTION

In August 2008, Tropical Storm Fay inundated the City of Port St. Lucie with as much as 14-inches of rainfall during a 48-hour period, which exceeded the rainfall amounts from Hurricanes Frances and Jeanne that struck Port St. Lucie in 2004. This amount of rainfall exceeds the South Florida Water Management District's (SFWMD) criteria for a 100-year, 3-day storm event and therefore, exceeds the rainfall amount typically utilized to set Finish Floor Elevations in the City of Port St. Lucie. Based on these comparisons, Tropical Storm Fay was a significant rainfall event for the City.

Tropical Storm Fay caused flooding of streets, businesses and residences in Eastern Port St. Lucie, and flooded one of the City's main transportation corridors, U.S. Highway No. 1 (US-1). Therefore, the Port St. Lucie City Council authorized this drainage study to determine what caused the flooding during Tropical Storm Fay and what improvements can be provided to reduce the impacts of these types of significant rainfall events. This study analyzes four (4) Drainage Basins within Eastern Port St. Lucie; models the existing Primary Conveyance Systems of canals, piping and pump facilities of stormwater infrastructures within the watershed and models the storm event experienced during Tropical Storm Fay. In conclusion, the study provides a list of recommendations for primary stormwater infrastructure improvements throughout the City of Port St. Lucie Eastern Watershed.

B. WATERSHED DESCRIPTION

The City of Port St. Lucie Eastern Watershed is defined by four (4) separate stormwater drainage basins depicted in *Exhibit 1*. They are generally bounded by US-1/Morningside Boulevard to the west, the Ballantrae Subdivision/Martin County line to the south, Green River Parkway/The Savannas to the east and Hog Pen Slough/Port St. Lucie City limits to the north. The four (4) Stormwater Drainage Basins and their major conveyance

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systems are described in the SFWMD Stormwater Management Permits obtained in the 1980's by General Development Corporation (GDC) and are summarized as follows:

1. Howard Creek Drainage Basin (1,200± acres)

- a. Boundaries: US-1/Morningside Blvd to the west, Lennard Road to the east, Tiffany Avenue to the north and the Ballantrae Subdivision/Martin County line to the south.
- b. The primary Basin facilities provide major conveyance of stormwater flows from north to south through a system of canals, large stormwater pipes and a natural drainage outfall (Howard Creek).
- c. Discharges stormwater through Howard Creek into the North Fork of the St. Lucie River through the Ballantrae Subdivision.

2. Eastport Phase 1/Tiffany Drainage Basin (900± acres)

- a. Boundaries: Tiffany Avenue to the north, Lennard Road to the west, Eastport Phase 2 to the east and the Martin County line to the south.
- b. The primary Basin facilities provide major conveyance of stormwater flows from south to north through the Seybold Waterway into the Tiffany pump station.
- c. Discharges stormwater into the Midport Drainage Basin, north of Tiffany Avenue.

3. Midport Drainage Basin (985± acres)

- a. Boundaries: Hog Pen Slough to the north, The Savannas to the east, US-1/North Fork to the west and Howard Creek/Eastport Phases 1 and 2 to the south.
- b. The primary Basin facilities provide major conveyance of stormwater flows from east to west in a system of canals, lakes, wetlands and pipe crossings.
- c. Discharges stormwater into the North Fork of the St. Lucie River through natural drainage outfalls west of US-1.

4. Eastport Phase 2/Blackwell Drainage Basin (1,460± acres)

- a. Boundaries: The Savannas to the north and east, Martin County line to the south and the Eastport Phase 1/Midport Basin to the west.
- b. The primary Basin facilities provide major conveyance of stormwater flows from north to south through the Gate Waterway, to the Blackwell pump station and into the Blackwell Reservoir.
- c. Discharges stormwater from the Blackwell Reservoir across Green River Parkway into the Savannas and ultimately discharges southward through Warner Creek, in Martin County, and into the St. Lucie River.

The Eastern Watershed area was developed in the 1980's by GDC and the SFWMD permitted these stormwater systems utilizing criteria that were acceptable during that time. The 1980's permit criteria for minimum finished floor and roadway elevations were less stringent than current requirements. The original permits allowed more storage of stormwater in roadways and utilized pump systems to protect homes from flooding, while current SFWMD and City criteria typically requires detention ponds to store runoff and does not allow significant roadway storage.

In addition, it should be noted that the natural grade of the land for these four (4) Drainage Basins slopes from north to south and east to west, or from the Eastport Phase 2/Blackwell Basin through the Eastport Phase 1/Tiffany Basin to the Howard Creek Basin. The Eastport Phase 1/Tiffany Basin and the Eastport Phase 2/Blackwell Basin were designed and permitted to utilize two large pump stations to overcome the natural slope of the land, which also limited the volume of runoff directed toward Howard Creek. These stormwater systems are designed and permitted to store significant amounts of stormwater in the streets and if the capacities of these pump stations are exceeded, they will naturally overflow toward the low lying areas of the Howard Creek Basin. The difference in average elevation between the Blackwell Basin and the Howard Creek Basin is approximately 8 ft. The road elevations within the study area east of US Highway 1 range from approximately 13 feet NGVD (Lennard Road/US-1) to 21 feet NGVD along Green River Parkway. Please refer to attached **Exhibit-2** for details.

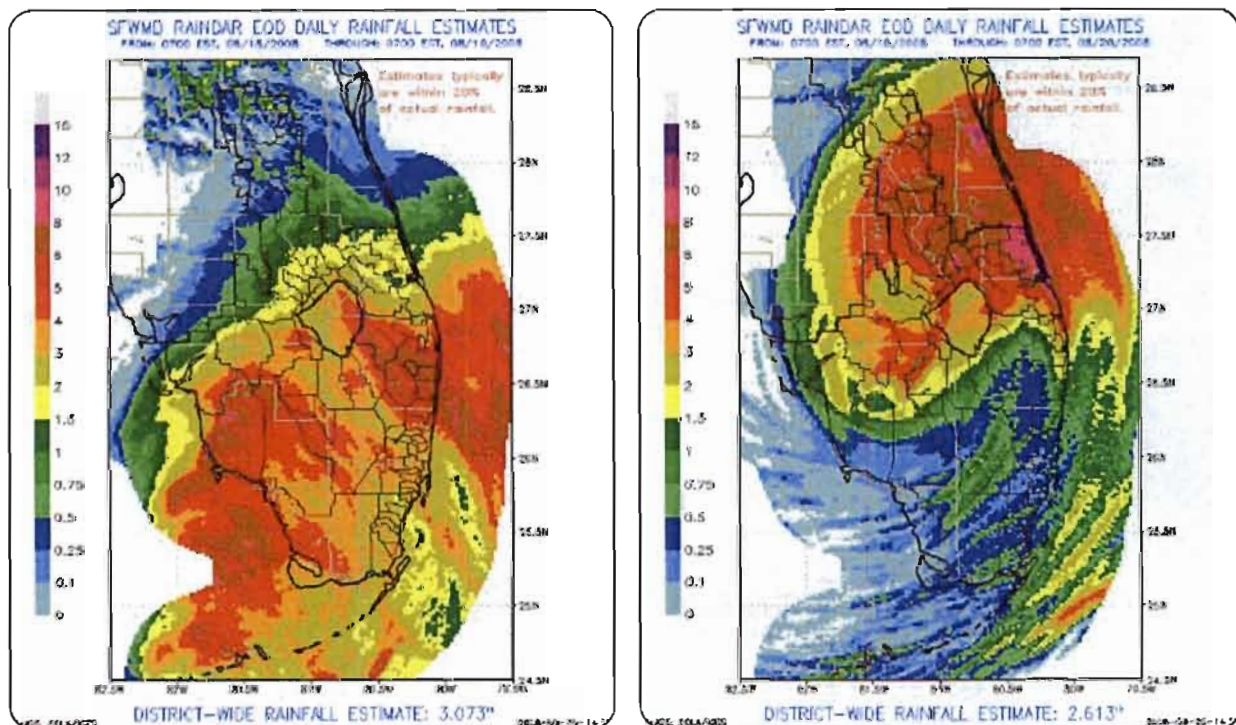
The USGS Quadrangle Map for the study area is attached as **Exhibit-5**. The overall basin, sub-basin boundaries are depicted on **Exhibit-8/9**. The Eastern Watershed of Port St. Lucie consists primarily of residential area, commercial and institutional developments.

FEMA Flood Insurance Rate Map (**Exhibit-6**) indicates portion of Midport development (SFWMD Permit # 56-00274-S) is located within floodplain Zone AH (EL. 17.0). The downstream portion of Howard Creek south of Westmoreland Boulevard is located in FEMA flood Zone X (El. 7.0 feet NGVD). The Savannahs areas south and east of Eastport developments are located in FEMA flood zone AH (EL. 17.0 feet NGVD).

The study area contains a wide range of soil characteristics. Please refer to the attached Soils Map (**Exhibit-7**) for details.

C. TROPICAL STORM FAY

In August 2008, Tropical Storm Fay produced approximately 12 - 14-inches of rainfall in a 48-hour period as shown in the following rainfall maps, provided by the SFWMD:



This storm also caused tidal surges in the St. Lucie River of 3.5-feet and the 48-hour rainfall occurred when the ground water levels were already elevated and the ground was saturated from prior rainfall events. Therefore, the Tropical Storm Fay rainfall exceeded the locally accepted level of service rainfall for a 100-year, 3-day storm event and the Eastern Watershed Basin capacities.

Exhibit 2 illustrates the areas of flooding of streets, businesses and homes during Tropical Storm Fay under current permitted conditions. As stated previously, this large rainfall event exceeded the capacity of the primary facilities and caused flooding throughout the low lying areas. Due to the volume of rain, pumping capacity was compromised after a period of time and stormwater cascaded with the natural grade of the land from north to south and east to west into the Howard Creek Basin. This and other factors contributed to the system failures that caused the flooding.



The Howard Creek Drainage Basin is divided into two (2) sub-basins by US-1. Being that US-1 is a primary evacuation route, it was constructed at a higher elevation than the adjacent properties. Two large box culverts exist under US-1 immediately north and south of the Lennard Road intersection to convey stormwater. These box culverts are not currently utilized to their full capacity because the existing upstream and downstream conveyance systems were designed to lesser storm criteria. This caused US 1 to become a dam which contributed to the flooding.



Unfortunately, the Howard Creek Basin did not have sufficient capacity to handle the volume of excess stormwater from the two upstream basins and therefore, the areas in the vicinity of Lennard Road/Cane Slough Road/Mariposa Avenue/US-1 and

downstream to Westmoreland Blvd. experienced roadway, residential home and business finished floor flooding. This flooding also backed-up northward in the Howard Creek Basin and eastward in the Eastport Basins, where neighborhoods experienced street flooding.

In addition to the flood waters from the adjacent basins, the Howard Creek Basin flooding can be attributed to the current limited discharge capacity of the Howard Creek outfall south of US-1. This is a drainage outfall with limited discharge capacity due to overgrowth of vegetation and the severe flow restriction this creates.



The vegetation overgrowth within the Creek and the debris created from the storm event combined to create a high tailwater effect that greatly reduced the flow from the upstream storm system and severely limited the capacity to discharge stormwater into the North Fork of the St. Lucie River. The following picture illustrates some of the debris removed from the conveyance system after Tropical Storm Fay.



The combination of the large storm event and the performance of the conveyance systems created the system failures which caused the flooding observed during Tropical Storm Fay.

D. STORMWATER MODELING

After reviewing the effects of Tropical Storm Fay, it was determined that the best way to analyze the system failures and to determine required improvements for the Eastern Watershed would be to create a model of the main primary canals, pumps and lakes to replicate the storm event. CAPTEC utilized the Interconnected Channel and Pond Routing (ICPR) Stormwater Model to duplicate the Tropical Storm Fay rainfall event in

the Eastern Watershed. The ICPR existing conditions model indicates cascading flooding effects from Eastport to Howard Creek in the westerly direction through the Watershed. In addition, the model depicts overtopping of existing basin perimeter berms and roadways causing flooding throughout the watershed area. **Exhibit 3** depicts the canals and outfalls in the four (4) Drainage Basins that have been modeled. The ICPR models were prepared separately for each basin and then were combined into one model to create the Eastern Watershed model.

The model illustrates how the main canals/pumps and outfalls perform in various storm events and provides data on flood elevations for each of the basins and sub-basins along the primary canals. It should be noted that the model does not analyze internal neighborhood/local street and business parking lot flooding. This type of localized flooding could occur and would need to be addressed on an individual basis.

The model assumes that the residential neighborhoods are fully developed (all homes built) and that all non-residential areas are modeled in their current condition.

E. ALTERNATIVE ANALYSIS

After completion of the existing conditions Model for the Eastern Watershed Drainage Basins and following weekly coordination meetings with the City Engineering Staff, CAPTEC analyzed various alternatives to develop recommendations to help alleviate the deficiencies in the primary canal/pump/lake systems for the watershed.

1. General Considerations

The following general considerations were the basis to develop the recommendations:

- a. The improvements need to be permittable with all regulatory agencies and be in general compliance with current design criteria set-up for acceptable stormwater practices in South Florida and the City of Port St. Lucie.
- b. The improvements need to be cost effective solutions.
- c. The improvements need to make the system more reliable and provide redundancies to aid in unforeseen issues, such as large storm events that may

have hurricane debris/wind issues/electrical problems and other uncontrollable failures.

- d. The improvements need to provide a reliable upgrade and upsizing of the system to alleviate flooding similar to that experienced during Tropical Storm Fay. Again, improvements depicted in the study are for the primary canal/pipe systems only. Localized system improvements to address issues such as water ponding in a neighborhood may need site specific improvements that would need to be addressed separately.
- e. The improvements should not negatively impact adjacent properties.
- f. The improvements need to be maintainable by the City's Public Works Dept., utilize Best Management Practices to provide pollution and sediment control measures, and where possible, consider water quality benefits.
- g. The improvements will address the two components of stormwater management which are storage and discharge. It is expected that SFWMD will limit discharge to historic rates and therefore, the proposed improvements must provide additional storage that will be created on available vacant property (public and private). The majority of storage areas are needed in the vicinity of the Howard Creek and Eastport Phase 1/Tiffany Basins.

2. Study Criteria

Throughout the development of this study, the Level of Service (LOS) criteria that were agreed upon for the stormwater system for each of the four (4) basins within the Eastern Watershed are as follows:

- a. The Finished Floor Elevations of structures should be at or above the flood elevation of a 100-year, 3-day storm event; and
- b. Roads should have no greater than 8-inches of stormwater over the crown of the road, 12-hours after the peak stage in a 100-year, 3-day storm event to allow for safe passage.

It should be noted that the existing systems were designed and constructed to the 1980's permit criteria and some existing facilities cannot reasonably be adjusted. For example, the roadway and the adjoining properties were designed to store significant amounts of stormwater. It would be unreasonable to assume the roads and the

adjoining properties can be raised to avoid stormwater storage for a large rainfall event. In addition, the peak discharge rates can not be increased. Based on the above criteria, the following proposed improvement models were developed.

3. Alternative Models

During the study, CAPTEC and the City Staff had several meetings to discuss the problems and various solutions to the flooding observed in the Eastern Watershed. During this process CAPTEC completed several model alternatives to attempt to comply with the LOS criteria set in the prior discussion.

The first Alternative Model for improvements utilized available vacant lands for stormwater detention ponds within the four (4) Drainage Basins. The model also improved conveyance of stormwater through the system with the cleaning of all outfalls so that there were no hindrances to the stormwater discharges. The results illustrated that the City could meet the LOS criteria as proposed. These proposed detention storage areas were located throughout the four (4) basins however; the majority of parcels were located in the vicinity of the Lennard Road/Mariposa Avenue/Cane Slough Road/US-1 area. In addition, pump stations were improved for redundancy, an additional internal pump station was provided, and the major conveyance systems were improved upon.

The next several alternatives attempted to reduce the cost of improvements and minimize the number of properties needed for storage/detention areas. Pump station improvements were also minimized to reduce construction costs. Alternative improvement options were considered for the discharge through Howard Creek.

4. Alternative Model Analysis Results

The specific results of the various Alternative Model Analyses of the primary canal systems determined the following:

- a. Providing additional storage in the Eastport Phase 2/Blackwell Basin was not a cost effective improvement, providing minimal benefit due to the higher elevations in this basin.

- b. Added storage ponds in the Howard Creek Basin in the area of Lennard Road/Mariposa Avenue/US-1/Cane Slough Road provided significant benefits.
- c. The Blackwell Reservoir can provide additional storage without increasing stormwater discharge above previously permitted conditions.
- d. The planned interconnectivity of all four (4) Drainage Basins will provide better reliability and increase capacity for all systems.
- e. The improvements to the downstream environmentally sensitive areas of Howard Creek are necessary to provide improved discharge for the total watershed. However, improvements such as Stormwater Treatment Areas (STA) or the creation of wetlands may be necessary to mitigate impacts for these channel improvements. Alternate bypass conveyance with pipe/canal improvements can also provide a significant benefit to the Howard Creek Basin and its outfall system.
- f. All pump stations should be retrofitted for improvements with redundancy and monitoring capabilities to increase their reliability.
- g. The primary stormwater conveyance systems (canal/pipes) should be improved.
- h. The City may need to perform pre-storm draw down in accordance with SFWMD criteria, using the Tiffany and Blackwell Pump Stations, to provide additional storage for these drainage basins.

F. EXISTING DRAINAGE BASINS

The Eastern Watershed study area consists of four major drainage basins: the Howard Creek Drainage Basin, Eastport Phase 1/Tiffany Drainage Basin, the Midport Drainage Basin, and the Eastport Phase 2/Blackwell Drainage Basin.

1. Howard Creek Drainage Basin (1200± acres)

The Howard Creek Drainage Basin is approximately 1200 acres and is bounded by Midport development to the north, Eastport Phase 1 and West Jensen development to the east, existing residential/commercial development to the west, and the St. Lucie River and Ballantrae development to the south.

The following are some of the major SFWMD permitted surface water management systems within the Howard Creek Drainage Basin:

South Lennard Road (SFWMD Permit #56-01501-P, Application No. 0411209-13):

According to the permit, total onsite drainage basin area (HD-13 and HD-12 on **Exhibit-8**) is approximately 8.11 acres (excluding offsite areas) including Cane Slough Road right-of-way and Lennard Road right-of-way from Mariposa Ave to US-1. The permit authorized construction of 1300 linear feet 72" RCP culvert replacing the southern portion of Howard Creek ditch which used to transverse a parcel of land currently developed as Wal-Mart Store. The permit also authorized construction of 500 linear feet of 60" RCP culvert to maintain historic discharge from upstream area of Howard Creek. The surface water management system included roadway culverts, detention pond and a diversion structure to serve both onsite and offsite areas. The permit indicates, the piped portion of Howard Creek was designed and permitted for the 25 year 3 day design storm event and to handle a predicted discharge of 98 cfs from the onsite/offsite contributing areas.

Lennard Road (SFWMD Permit #56-01501-P, Application No. 030915-13):

The surface water management system for the section of Lennard Road from Jennings Road to Mariposa Avenue (HD21-Lennard N on **Exhibit-8**) consists of a wet detention pond located on the northeast corner of Longhorn Avenue and Lucca Street. The surface water management system for this section of Lennard Road accepts runoff from offsite contributing areas including Griggs Industrial Park (SFWMD Permit # 56-01283-S) and discharges into the South Lennard Road system via a Control Structure. The section of Lennard Road from Tiffany Avenue to Jennings Road is designed to discharge into East Lake Village development (SFWMD Permit # 56-01786-P).

East Lake Village (SFWMD Permit #56-01786-P):

The site (HD15-East Lake on **Exhibit-8**) is located on the northwest corner of Lennard Road and Jennings Road intersection. The surface water management system consists of wet detentions areas to provide water quality treatment volume and stormwater attenuation for 97.97± acres of East Lake Village mixed use development, 12.8± acres of Lennard Road right-of-way (from Tiffany Avenue to Jennings Road) and 1.05± acres of Jennings Road right of way. The project discharges to Howard Creek through a control structure and existing 48" RCP culvert under Jennings Road.

Lennard Square (SFWMD Permit #56-01745-P):

The master surface water management system consists of dry detention areas, and an onsite wetland to serve 50.68 acres of Mixed Use Development including Sam's Club and other proposed residential and commercial development. The project discharges into Lennard Road system and ultimately to Howard Creek via the existing 72" RCP culvert. Construction has been completed for Phase 1 which includes the Sam's Club including Outparcel "Tract 4", the onsite wetland (providing water quality treatment volume following pre-treatment, and stormwater attenuation storage), the perimeter berm, and the eastern swale behind existing homesites of Eastport Phase 1 development. Conceptually approved 20.39 acre Multi-family area (Tract "C"), 11.58 acre Commercial area (Tract "B"), and the 3.8 acres outparcels (Tract 1,2,&3) have not been constructed and will need general permit modification for future construction.

Wal-Mart Port St. Lucie (SFWMD Permit #56-01554-P):

The site (HD25-Walmart on **Exhibit-8**) is located along the west right-of-way line of US Highway 1 and the drainage basin area is approximately 27.27 acres. The surface water management system consists of dry detention areas, and an onsite lake to serve 27.27 acres of commercial development known as Wal-Mart Port St. Lucie. The project discharges into the existing 72" RCP culvert and ultimately to the St. Lucie River via Howard Creek.

Market Place (SFWMD Permit #56-01300-P):

The site (HD17-Market Place on **Exhibit-8**) is located on the southeast corner of US Highway 1 and Jennings Road intersection. The total drainage basin area is approximately 22.85 acres. Water quality treatment volume and storm water attenuation are provided within the existing dry detention areas and existing lake. The surface water management system ultimately discharges into Howard Creek via a storm culvert along south right-of-way of Jennings Road.

Port St. Lucie Square (SFWMD Permit #56-00867-S):

The site (HD18-Old Walmart on **Exhibit-8**) is located just to the south of existing Market Place development. The total drainage basin area is approximately 16.65 acres. Water

quality treatment volume and storm water attenuation are provided within the existing dry detention areas and existing lake. The surface water management system ultimately discharges into Howard Creek via a storm culvert along south right-of-way of Jennings Road.

West Jensen Basins 1&2 (SFWMD Permit #43-00884-S):

The project site is located south of Eastport Phase 1 development and is bounded by Bakersfield Street to the west and Eagle Marsh to the east. Total drainage basin area is approximately 422.28 acres which includes US-1 right-of-way. The project is partially developed and outfalls at three different locations. Two control structures (Basin 1, 191.23 acres) of the master surface water management system discharge into the existing ditch along north property line (south of Eastport Phase 1) and the design discharge is 8.51 cfs for a 25 year 3 day design storm event (peak stage). Basin 2 (231.05 acres) of the master surface water management system discharges in to the St. Lucie river via the master control structure near the south property line and via the existing manmade and natural facilities within Ballantrae development to the west. The design discharge for Basin 2 is 17.69 cfs for a 25 year 3 day design storm event (peak stage). These two permitted discharges were entered into the ICPR Model as "boundary flows".

Ballantrae Yacht and Country Club (SFWMD Permit #56-01003-S):

The project site bounded on the south by the North Fork of the St. Lucie River, on the west by the Beau Rivage West development, and on the north by existing Southport development and Club Med (Sandpiper Bay) development. The surface water management systems accepts runoff from existing Southport development (Basin HD29-RES and HD30-RES as shown on **Exhibit-8**) and bypass the discharge into the Howard Creek via an existing ditch and 182 linear feet spreader swale. According to the permit, this bypass system has the flow capacity of 91 cfs for a 25 year 3 day design storm event, however, the outfall canal south of Van Kleef waterway is in need of maintenance. The Ballantrae site also accepts runoff from the existing developments to the east (including the West Jensen, and Beau Rivage projects) and bypasses the flow into Howard Creek through a separate ditch along the south property line and 143 linear

feet spreader swales. The permit indicates these bypass facilities have the design capacity of 36 cfs for a 25 year 3 day design storm event.

2. Eastport Phase 1/Tiffany Drainage Basin (900± acres)

Eastport Phase 1 Drainage Basin is approximately 900 acres and is bounded by Eastport Phase 2 development to the east, Lennard Square and Lennard Road to the west, St. Lucie County/Martin County line to the south, and Tiffany Avenue to the north. This basin discharges into the Midport Surface Water Management System by a 90,000 GPM (200 cfs) Pump Station (Tiffany Pump Station) and ultimately outfalls into the North Fork of the St. Lucie River.

The following are some of the major SFWMD permitted surface water management systems within the Eastport Phase 1 Drainage Basin:

Eastport Phase 1 (SFWMD Permit #56-00038-S):

Eastport Phase 1 (900 acres) development is generally located west of Eastport Phase 2 development and bounded by Lennard Square (SFWMD Permit # 56-01745-P), Lennard Road to the east, and Tiffany Avenue to the north. The surface water management system consists of a primary system consisting of an interconnected waterway (Seybold Waterway), culverts, Pump Station and a secondary system (drains to the primary system) made up of grassed roadside swales and greenways. The swales and greenways collect runoff from residential lots and direct it to the internal waterways. A 90,000 GPM (200 cfs) pump station is located just south of Tiffany Avenue. This pump station pumps runoff from the waterway into the Midport master surface water management system. The permitted peak stages for the 25 year 5 day design storm range from 13.30 feet NGVD to 13.80 feet NGVD. The permitted peak stages for the 100 year 5 day design storm range from 14.80 feet NGVD to 15.20 feet NGVD.

St. Lucie Gardens (SFWMD Permit #56-00935-S):

St. Lucie Gardens (EP 1-11 on **Exhibit-8**) residential development is located on the northeast corner of Jennings Road and Maslan Avenue intersection. The drainage basin area is approximately 18.1 acres. The surface water management system consists of

two wet detention lakes to provide water quality treatment volume and stormwater attenuation. The surface water management system discharges into Seybold Waterway of Eastport Phase 1 development through a control structure and via a drainage ditch to the north.

Camelot Gardens (SFWMD Permit #56-00412-S):

Camelot Gardens (EP 1-14 on **Exhibit-8**) is located just south of Blossom Road and is bounded by Eastport Phase 1 development to the east and south, and future Grove Park (SFWMD Permit # 56-02649-P) to the west. To total drainage basin area is approximately 20.0 acres. The surface water management system consists of small depressed areas around buildings and a dry detention area to provide water quality treatment volume and stormwater attenuation. The surface water management system discharges into Seybold Waterway of Eastport Phase 1 development through two control structures and via a drainage ditch to the south.

Holy Family Catholic Church (SFWMD Permit #56-00776-S):

The Holy Family Catholic Church (EP 1-8A on **Exhibit-8**) is located along south right-of-way line of Mariposa Avenue and is bounded by existing Lennard Square development to the west and Eastport developments to the east and south. The drainage basin area is approximately 13.53 acres. The surface water management system consists of two wet detention lakes to provide water quality treatment volume and stormwater attenuation. The surface water management system ultimately discharges into Seybold Waterway of Eastport Phase 1 development through a control structure and via a drainage ditch to the south.

Grove Park (SFWMD Permit #56-02649-P):

The project site (EP 1-15 on **Exhibit-8**) is located on the southeast corner of Lennard Road and Blossom Road intersection. The total drainage basin area is approximately 18.5 acres consisting of residential and commercial development. Water quality treatment volume and storm water attenuation are proposed to be provided within two wet detention areas. The ultimate outfall is proposed to be the Seybold Waterway via Grand Waterway to the North. The surface water management system is not constructed or in operation until now.

3. Midport Drainage Basin (1300± acres), SFWMD Permit # 56-00274-S

According to the permit (SFWMD Permit # 56-00274-S), total drainage basin area is approximately 1300 acres. The master surface water management permit has been modified for different phase construction of individual sub-basin areas. The overall basin receives 200 cfs offsite run-off from existing Eastport Phase 1 development to the south and existing 1800 acres of developed/undeveloped areas to the north. The Midport area north of Walton Road and west of Lennard Boulevard outfalls into the North Fork of the St. Lucie River via the Hog Pen Slough and the existing Hog Pen Branch Bridge crossing of US Highway 1. The Hog Pen Branch Bridge is a 68'x28' concrete bridge with a minimum bottom span elevation of 8.6' NGVD. Approximately 1800 acres of offsite lands, contribute runoff to the Hog Pen Branch east of the US Highway 1 Bridge from the north. The southern portion of Midport development (south of Walton Road) outfalls into the North Fork of the St. Lucie River via existing control structures, four 8'x4' box culverts under US-1 Highway, multiple culverts under Midport Road, and Natural Sloughs. The portions of the Midport Basin that do not drain to the primary control structure located on Village Green Drive have not been included with this analysis as depicted in **Exhibits 1, 3, 8, and 9**.

4. Eastport Phase 2/Blackwell Drainage Basin (1,460± acres)

Eastport Phase 2 Drainage Basin is approximately 1,460± acres and is bounded by the St. Lucie County/Martin County line to the south, Green River Parkway and the Savannas State Preserve to the east, Eastport Phase 1 to the west, and Tiffany Avenue to the North. This drainage basin discharges into the Savannas State Preserve and ultimately outfalls to the St. Lucie River via Warner Creek.

The following are the major SFWMD permitted surface water management systems within the Eastport Phase 2 Drainage Basin:

Eastport Phase 2 (SFWMD Permit #56-00038-S):

The total drainage basin area is approximately 1460± acres (including the Blackwell Reservoir, 142± acres). The surface water management system consists of grassed

roadside swales, greenways, interconnected waterways (Berkshire, Blackwell, Buttonwood, Gate, Maxim, Rocksprings, and Seybold), culverts, the Blackwell Reservoir and Pump Station, and the control structures that outfall to the Savannas State Preserve. The swales and greenways collect runoff from residential lots and direct it to the internal waterways. A 135,000 GPM (300 cfs) pump station is located just south of the southernmost Blackwell waterway. This pump station pumps runoff from the waterway into the Blackwell Reservoir. One 4,500 GPM (10 cfs) pump also operates to produce low flows for wetland enhancement. Stormwater circulates through the Blackwell Reservoir until it reaches a control structure which discharges it to a dispersion waterway along the eastern border of the project. The ultimate outfall for this Phase 2 development is the Savannas. The SFWMD permit indicates a "Ridge Line" separates Eastport Phase 2 (Control El. 14.0 feet NGVD) development from Eastport Phase 1 (Control El. 11.50 feet NGVD) development. The permitted peak stages for the 25 year 5 day design storm range from 16.0 feet NGVD to 17.3 feet NGVD. The permitted peak stages for the 100 year 5 day design storm range from 18.1 feet NGVD to 18.9 feet NGVD. It should be noted that the eastern portion of Eastport Phase 2 development is above 20.0 feet NGVD, where the southwest portion is at elevation 16.0± feet NGVD. Therefore, any storm event with peak stage above 16.0 feet NGVD will result in additional discharge of stormwater to the Eastport Phase 1 system.

The Savannahs Hospital (SFWMD Permit #56-00550-S):

The Savannahs Hospital (EP 2-SH on **Exhibit-8**) is located along south right-of-way line of Walton Road and is bounded by existing Eastport Phase 2 development to the east and by Midport development to the west and south. The project area is 20.13 acres and the drainage basin area is approximately 16.8 acres. The surface water management system consists of three wet detention lakes to provide water quality treatment volume and stormwater attenuation. The surface water management system ultimately discharges into Gate Waterway of Eastport Phase 2 development through a control structure and via a drainage ditch/greenway to the east.

G. STORMWATER MODELING

To perform the hydraulic analyses for this study, computer models were developed which calculated a runoff hydrograph from each sub-basin and routes it through ditches,

culverts, detention systems, and control structures to their outfalls. The model used for this study is the Interconnected Channel and Pond Routing Model (ICPR) Version 3.10. This model was selected because the branched and interconnected pipes, canals, pumps, and storage conditions of the study areas could be well represented in the culvert/channel routing and Rating Curve functions (for West Jensen PUD).

Stage area estimates were made for each segment/sub-basin utilizing existing SFWMD permits and topographical information of the area provided by the City of Port St. Lucie. This information was utilized in the ICPR model to determine stage-storage data and stormwater runoff attenuation characteristics.

CAPTEC performed computer model runs for various storm events for the existing and proposed system. The 10 year – 24 hour storm event (6.0 inches) was utilized to verify the level of service for the roadways. The 25 year – 72 hour storm (10.19 inches) event was modeled to determine discharge conditions for permitting purposes. The 100 year – 72 hour storm (12.23 inches) event was modeled to verify that flooding of the existing homes would not occur and to determine roadway flooding 12 hours following the design storm event.

H. EXISTING AND PRE-IMPROVEMENT SYSTEM MODELS AND RESULTS

Study of existing surface water management systems of Eastport Phase 1 and Eastport Phase 2 developments indicate that an effective perimeter berm does not exist between Phase 1 (C.E. 11.50 feet NGVD) and Phase 2 (C.E. 14 feet NGVD) developments. Instead these two separately permitted basins have several hydraulic connections as well as boundary overflows for 25 year and 100 year storms. In addition, overflow connections exist between Eastport Phase 1 and the Lennard Road to the west (Howard Creek Basin). The ICPR model for existing conditions prepared by CAPTEC indicates cascading overflows from east to west due to these physical hydraulic connections or potential stormwater overflow locations.

The historic conveyance system of Howard Creek has been altered by recent developments at intersection of Lennard Road and US Highway 1. A long portion of previous Howard Creek (1800± LF) has been replaced with a single 60" and 72" inch

diameter storm pipe. The existing SFWMD permit for Lennard Road south (SFWMD Permit #56-01501-P) indicates that this pipe was designed to handle a 25 Year 72 Hour Design Storm event and a predicted total discharge of 98 cfs. It was not anticipated that additional offsite flows within the areas to the east would have further impact to the system. Stormwater storage capacity of the Eastern Watershed along Howard Creek waterway has also been reduced due to constructions of commercial developments along US-1. Additionally, historic environmental concerns had hindered maintenance of the ultimate outfall of these areas via Howard Creek south of the existing Wal-Mart site. Due to the existence of all these constraints/deficiencies along with densely vegetated and heavily constricted Howard Creek, severe flood conditions were observed during Tropical Storm Fay in 2008. The basis of the "Pre-Improvement" ICPR Model was to emulate the historical drainage of the area prior to the piping of this portion of Howard Creek and the development of the intersection of Lennard and U.S. Highway 1.

The Pre-Improvement ICPR model developed by CAPTEC for Eastern Watershed included portion of existing Howard Creek from its upper end (Jennings Road, HD15-EAST LAKE) up to downstream of Westmoreland Blvd (HD00-TW). Peak tail water elevations of 4.0 feet NGVD at the downstream end of Howard Creek was utilized based on existing high tide and peak storm elevations of the St. Lucie River. CAPTEC utilized data available from existing SFWMD permits for various sub-basins of Eastern Watershed and Howard Creek system.

ICPR model results for the different stormwater events (10-year, 25-year, and 100-year) for the existing conditions at the Howard Creek, Seybold Waterway and Gate Waterway are included in this study for reference and are shown in **Exhibits 11, 12, and 13** as the existing flood profiles for the primary waterways. The existing flood stages for individual sub-basins are summarized in **Exhibit-14**. The developed ICPR model results for 100 year storm are generally consistent with flood stages observed during the tropical storm Fay in 2008.

The results are briefly summarized below focusing on the Eastport Phase 1&2 Basins and Howard Creek Basin:

10-year, 24-hour event: Based on the ICPR model of existing conditions, sub-basins EP 1-02, EP 1-03, EP 1-04, EP 1-05, EP 1-06, EP 1-07, EP 1-08, EP 1-09, EP 1-10, EP 1-12, EP 1-14 of Eastport Phase 1 development, Sub-basins EP 2-01 of Eastport Phase 2 development, sub-basin HD21-LENNARD N (Lennard Road R/W from Jennings Road to Mariposa Avenue), HD29-RES basin will experience localized roadway flooding depending on existing roadway elevations. Storm stages will not overtop existing Howard Creek, Seybold Waterway, and Gate Waterway top of bank elevations.

25-year, 72-hour event: Based on the ICPR model of existing conditions, most sub-basins of Eastport Phase 1 developments, Sub-basins EP 2-01, EP 2-02, EP 2-03, EP 2-04, EP 2-06, EP 2-08 of Eastport Phase 2 developments, US-1 right-of-way, existing Crossroads development, Lennard Road right-of-way, and most commercial development will experience localized roadway flooding depending on existing roadway elevations. Howard Creek from Jennings road to Cane Slough Road (Mariposa Avenue) nearly overtops existing bank elevations.

100-year, 72-hour event: The ICPR model for existing conditions prepared by CAPTEC indicates cascading flood effects from east to west direction. Overtopping of existing permitted Berms and Roadways flooding occur throughout the watershed area. House/Structure flooding occurs in several locations particularly in the triangular basin between US-1, Lennard Road, and Cane Slough Road and also along Lennard Road right-of-way between Jennings Road and Mariposa Avenue. The existing roadway flooding is shown on **Exhibit-2**. The ICPR model results for 100 year storm are generally consistent with flood stages observed during the Tropical Storm Fay in 2008. The existing Billy Bones (FFE 15.06 feet NGVD), Dans Fan (FFE 15.5 feet NGVD), Century 21 (FFE 15.85 feet NGVD), and Laser Center (FFE 15.85 feet NGVD) located in the triangular area were flooded during the Tropical Storm Fay.

I. PROPOSED IMPROVEMENTS

General and specific solutions were researched within the Eastern Watershed to provide; additional storage volume, alternative basin discharges, modifications to existing pump facilities, additional new pump systems and modifications of existing primary culverts/canals. All Basin improvements were selected to reduce stormwater flooding by reducing the flood stages and allow reliable recovery of the primary canals. It should be noted that the drainage basin study modeling was limited to the City's primary drainage canals as shown on *Exhibit 3*. The secondary and tertiary stormwater facilities such as roadside swales/pipes, smaller canals and local business parking lots were not analyzed. Therefore, localized flooding issues may require additional improvements to minimize future occurrences.

Considering different options and analyzing the options with computer modeling, the following improvements are recommended to reduce the flood stages in the four (4) Drainage Basins in the Eastern Watershed. The results indicate that the City needs to enhance the Eastern Watershed Stormwater System to provide more storage and to enhance the discharge capabilities into the North Fork of the St. Lucie River. **All of these improvements must be implemented in order to achieve the agreed upon Level of Service criteria.** The improvements are divided into two phases: *Phase 1 Improvements* do not require significant property acquisition (although the City may need to obtain drainage easements from several private property owners); and *Phase 2 Improvements* required property acquisition. The proposed improvements are shown on *Exhibit 4* and are further described below:

1. Phase I Improvements

Improvement I-1: Howard Creek Channel Cleaning Improvement consists of nuisance and exotic vegetation removal, and shoaling removal from the existing natural creek channel from the Westmoreland Bridge to the open water area just north of Ballantrae Bridge. This improvement will be very similar to the recent channel cleaning work that was completed in Howard Creek north of the Westmoreland Bridge.

The US Army Corps of Engineers (ACOE) and the Florida Department of Environmental Protection (FDEP) issued Howard Creek exotic/nuisance vegetation removal permits in

two phases: Phase 1 extends from Wal-Mart at the north end of Howard Creek to the southern end of Farley Road across from the City's treatment plant; and Phase 2 extends from the southern end of Phase 1 to the Ballantrae Bridge. Phase 1 was further divided into two "segments" with Westmoreland Bridge being the dividing line between Segments 1 and 2. The Phase 1 Segment 1 area channel cleaning work is complete.

The location of this improvement comprises the Phase 1 Segment 2 and the Phase 2 work areas and no additional permits are required to complete the Howard Creek exotic/nuisance vegetation removal work. It should be noted that the existing permits will need to be modified only if mangrove trimming and/or minor channel widening of the existing constricted creek areas is required to restore the Howard Creek conveyance capacity. The City owns several parcels on the west side of Howard Creek between Westmoreland Bridge and Ballantrae (as shown by the blue cross-hatched properties in Exhibit 4) which are identified as contingency parcels that could be used for channel widening or mitigation plantings. Several privately owned properties are also identified in the contingency area.

This improvement is required to restore the Howard Creek drainage capacity and to reduce the tailwater effects on the upstream drainage basins north of the Lennard Road/US-1 intersection. From initial review of available rights-of-way, these improvements can be constructed in the existing Howard Creek drainage right-of-way.

Improvement I-2: Howard Creek Stormwater Treatment Area (STA) Improvement consists of the construction of a 12.5-acre STA (marsh flow way) on a City-owned property and re-alignment of the existing Howard Creek channel to the center of the platted drainage right of way (DROW) for the area immediately downstream from the STA. Construction of the STA will include a 100-ft weir with a V-Notch bleeder and regrading of the County Line Ditch from the west side of the existing US-1 Box Culverts to the STA to ensure positive drainage into the STA. Permits must be obtained from the SFWMD (state authorization) and the ACOE (federal authorization) for construction approval of the STA project.

The re-alignment of the existing Howard Creek channel and regrading of the County Line ditch is required to restore the historic conveyance capacity and to reduce the tailwater effects on the upstream drainage basins. The construction of the STA provides additional detention storage and water quality treatment for the upstream drainage basins north of the Lennard Road/US-1 intersection. This improvement will be constructed on City owned property and within the existing Howard Creek drainage right of way and no additional property is anticipated to be acquired. This improvement is proposed to provide mitigation for any incidental wetland impacts and will improve water quality and attenuation of Howard Creek stormwater flows to the North Fork of the St. Lucie River Estuary.

Improvement I-3: Dalhart Waterway and Ballantrae Outfall Improvement requires installation of a supplemental outfall for the Howard Creek Basin that consists of the installation of an overflow culvert for the Giffen Avenue neighborhood, the installation of larger culverts and inlets under Westmoreland Boulevard and Pyramid Road in the B-34 Canal and construction of a 4 acre pond east of Bur Street to provide additional stormwater storage volume. The City of PSL is also coordinating the necessary removal of nuisance and exotic vegetation in the outfall ditch that discharges into the existing Ballantrae Subdivision (SFWMD Permit No. 56-01003-S). These improvements are required to reduce the flooding along Giffen Avenue and no additional property is required for this improvement. Drainage easements may need to be acquired from some private home owners in the Giffen Avenue neighborhood for installation of the larger culverts and channel improvements. These easements would be obtained prior to work commencing.

Improvement I-4: Blackwell Pump Station and Calais St Pipe Improvement consists of adding a fourth pump to provide back-up capacity for the existing Blackwell Reservoir Pump Station, and removal of the existing 24" culvert inter-connect between the Eastport Phase 1/Tiffany and the Eastport Phase 2/Blackwell Drainage Basins. This 24" culvert is to be removed and the canal plugged at Calais Street within the existing County Line ditch. This improvement is required to provide additional pumping capacity to provide redundancy for the Blackwell Pump Station and to remove a problematic

basin inter-connect. No additional property is anticipated to be acquired for this improvement.

Improvement I-5: Tiffany Pump Station Improvement consists of installation of new pumps and a backup pump in the Tiffany Pump Station, regrading/widening of the existing 13 acre pump station entrance canal, and replacement of existing culverts crossing Grand Drive with a box culvert and headwalls. These improvements are required to increase drainage capacity to permitted levels, provide redundancy in case of pump failure, increase available stormwater storage, and increase conveyance efficiency. No additional property is anticipated to be acquired for this improvement.

Improvement I-6: Village Green Drive at City Center Improvement consists of the replacement of the Midport Drainage Basin (M-D050) primary outfall structure and associated culverts under Village Green Drive, which are failing. These improvements are required to restore drainage capacity and to provide improved system bleed-down/storage recovery. No additional property is anticipated to be acquired for this improvement.

2. Phase II Improvements

The Phase II improvements require the acquisition of property to create approximately additional detention pond area in the Howard Creek and Eastport Phase 1/Tiffany Drainage Basins. The locations for these detention ponds are a combination of existing City-owned parcels as shown on *Exhibit 4*.

Improvement II-1: Loutus Stormwater Treatment Area and Inter-connect Improvement is an alternate outfall for the Tiffany Pump Station that consists of construction of a stormwater detention pond, installation of a new pump system between the Eastport Phase 1 & 2 Drainage Basins, regrading/widening of the existing County Line ditch, and installation of a pressurized storm main from the new pump system to the Blackwell Reservoir. Although the majority of the Eastport Phase 1/Tiffany Basin drainage flow will outfall through the Tiffany Pump Station, this improvement is required to provide an emergency outfall into the Blackwell Reservoir and into Howard Creek. This will improve the conveyance of stormwater to the

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southern box culverts under US-1. The discharge from the Blackwell Reservoir will be limited to the existing system allowable discharge (300 cfs) to avoid downstream impacts. The operation schedule for the proposed new pump (30 cfs/13,500 GPM) according to preliminary design analysis is as follows:

Pump Operation :

Pump On El. 13.8 feet NGVD

Pump Off Elevation 12.5 feet NGVD

Improvement II-2: Lennard Square Bypass Improvement consists of construction of a stormwater detention pond south of the intersection of Mariposa Avenue and Lennard Road, retrofit of the existing diversion box outfall structure in Lennard Road, installation of additional outfall structures and piping to direct drainage flow into the existing County Line ditch, and regrading of this existing County Line ditch for connection to the existing US-1 box culverts south of the Lennard Road/US-1 intersection. This improvement is required to supplement the outfall to Howard Creek and to improve drainage of the Lennard Road/US-1 intersection. The installation of culverts from Lennard Road South will require that 1.05 AF water quality currently being provided in the South Lennard Pond (application 001024-8) will need to be provided within the retrofit area.

Improvement II-3: Lennard Road Detention Pond Improvement consists of the construction of a large stormwater detention pond to provide additional storage north of the intersection of Cane Slough Road and Lennard Road, modification of the intake pipe to prevent floatable from entering the pipe network, and additional culverts to improve the drainage characteristics of this area. This improvement is required to provide additional storage volume to lower flood stages and to prevent clogging and provide redundancy for the existing pipe network. The installation of culverts from Lennard Road will require that 0.93 AF water quality currently being provided in the Longhorn Avenue Pond (application 030915-13, Basin 1) will need to be provided within the retrofit area.

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J. PROPOSED ICPR MODEL RESULTS

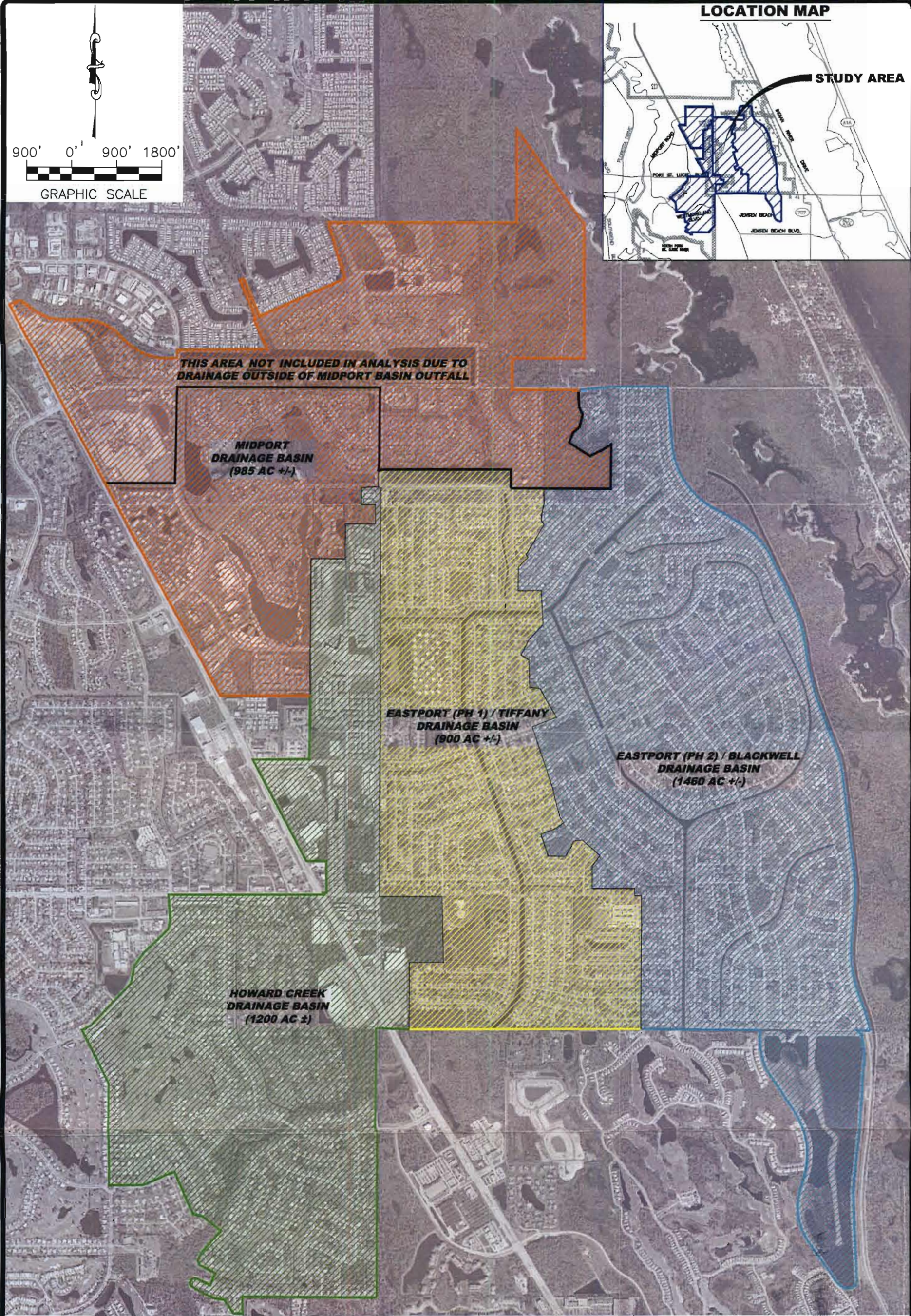
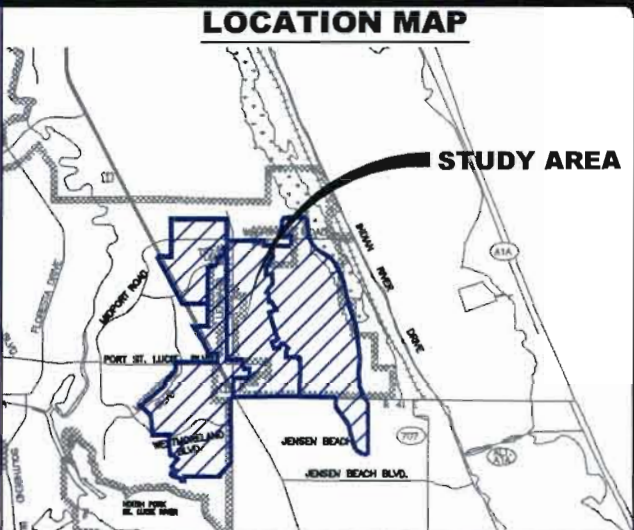
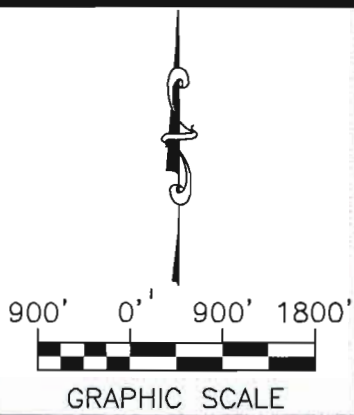
CAPTEC has developed the ICPR model for the above proposed conditions. The proposed improvements will lower the peak storm stages for Howard Creek basin upstream of US-1 box culverts. The ICPR model for proposed conditions along with supplemental pump operation indicates no structure flooding for 100 year storm provided that all proposed conditions are implemented. The pre-improvement and proposed ICPR model results are summarized in **EXHIBIT-14**. The anticipated flood profiles for the three main channels - Howard Creek, Seybold Waterway (Eastport), and Gate Waterway (Eastport) are shown on **Exhibits-11, Exhibit-12, and Exhibit-13** respectively. The proposed Howard Creek profile indicates no significant negative impacts to upstream and downstream basin areas.

K. CONCLUSIONS

This Eastern Watershed drainage basin study was conducted to investigate deficiencies in the four (4) existing primary Drainage Basin systems that caused the severe flooding during Tropical Storm Fay and the proposed improvements that will minimize future flooding occurrences. The proposed improvements will provide a net water quality increase for the basin area and has been designed so as to not cause negative impact to adjacent properties.

It must be noted that the proposed improvements are for the primary drainage systems and secondary stormwater system facilities may need additional improvements to resolve isolated areas of flooding.

END

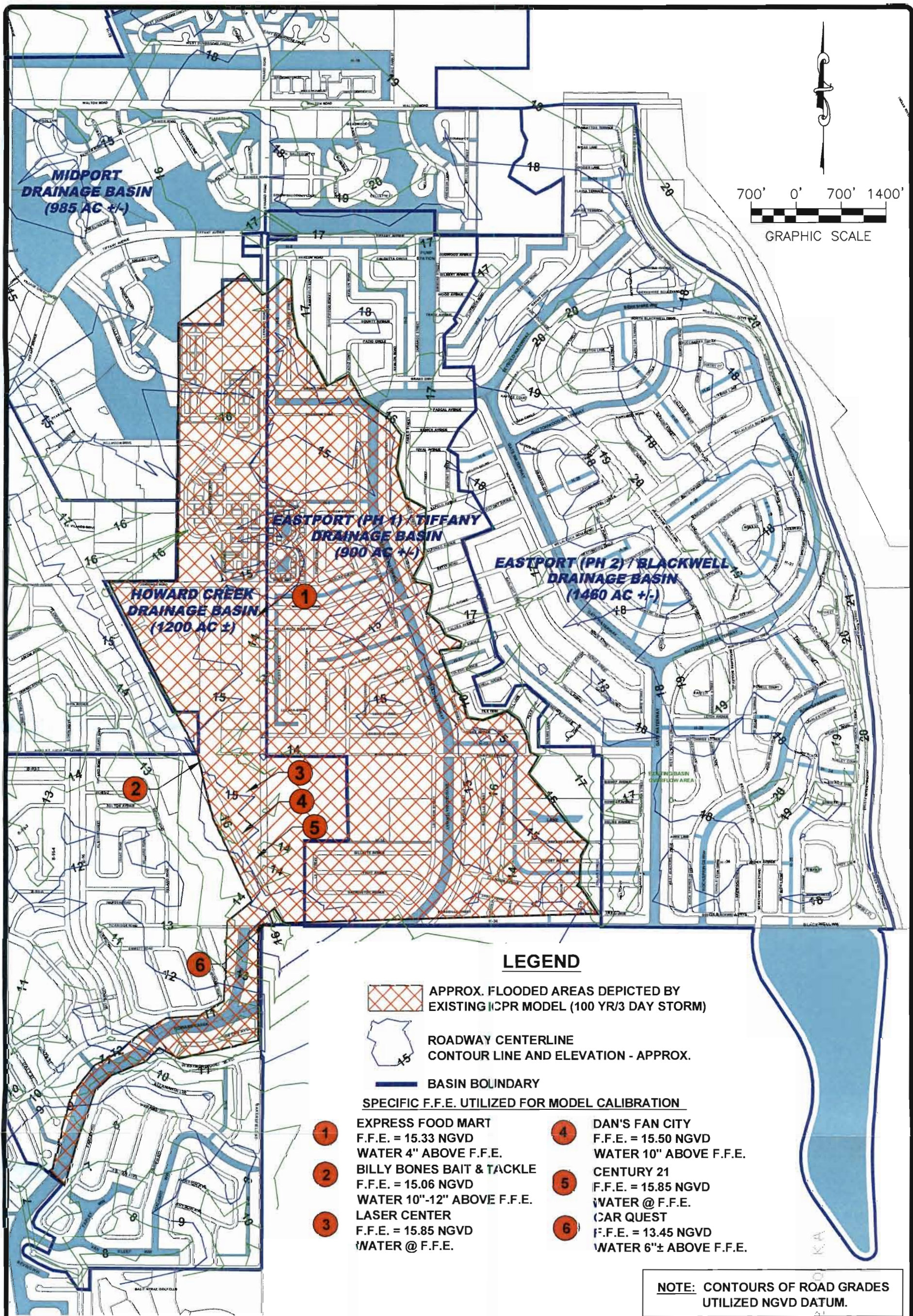


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Engineering Business
No. EB-0007657

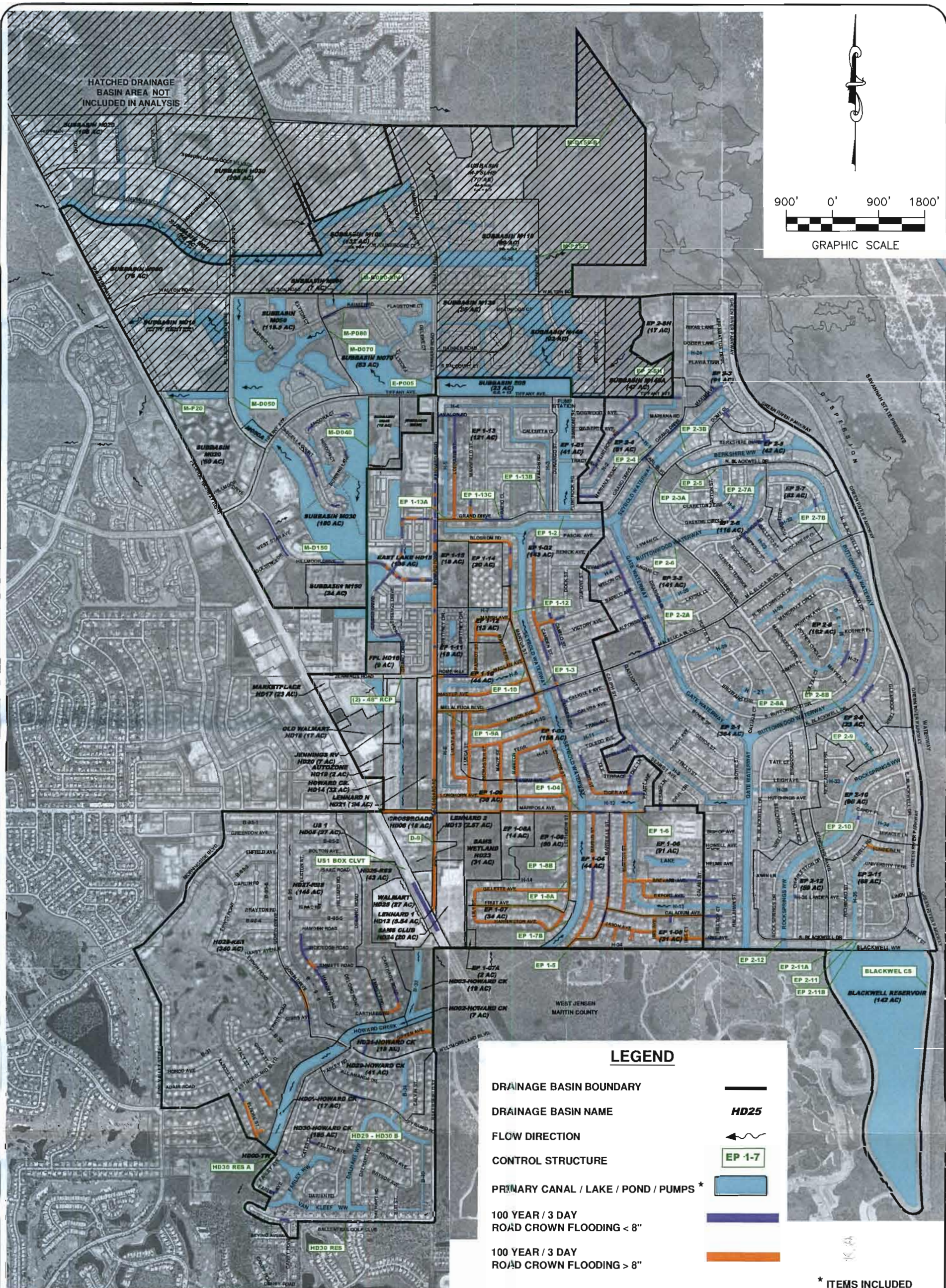
**CITY OF PORT ST. LUCIE
EASTERN WATERSHED
LOCATION / BASIN MAP
EXHIBIT 1**





CITY OF PORT ST. LUCIE EASTERN WATERSHED T.S. FAY PRIMARY FLOOD AREAS EXHIBIT 2





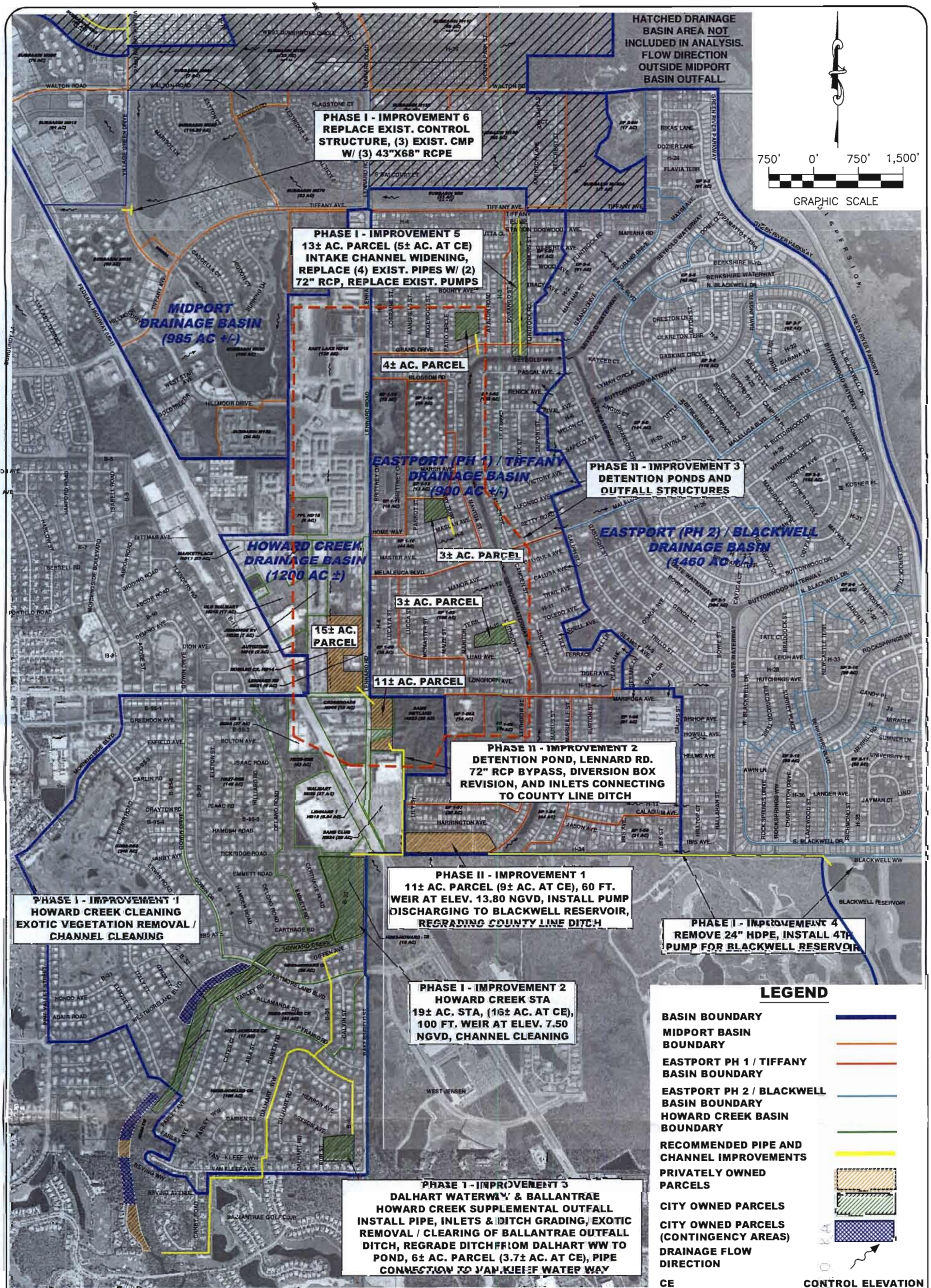
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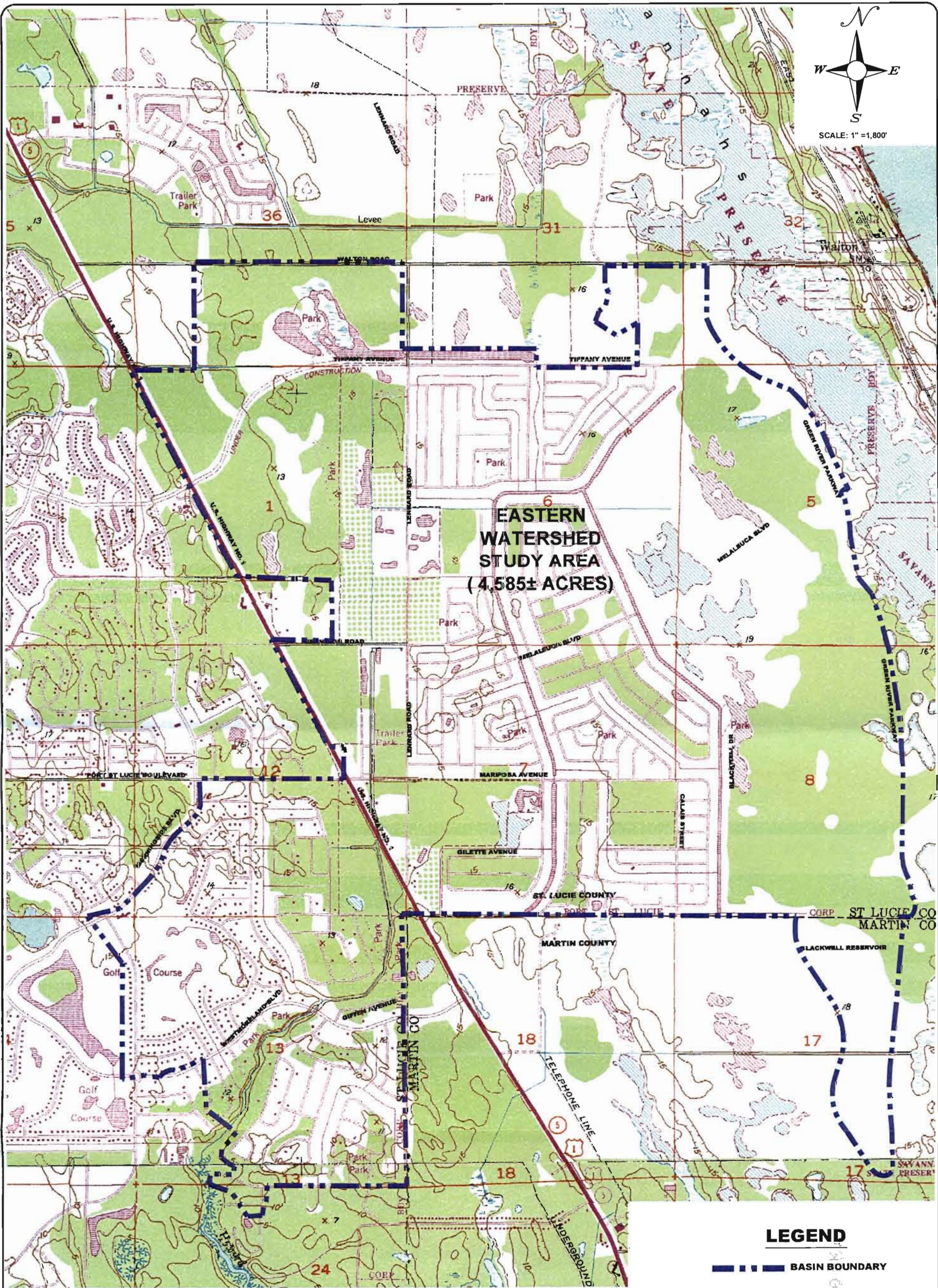
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CITY OF PORT ST. LUCIE EASTERN WATERSHED EXIST. MODEL ROADWAY FLOODING EXHIBIT 3



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LEGEND

— BASIN BOUNDARY



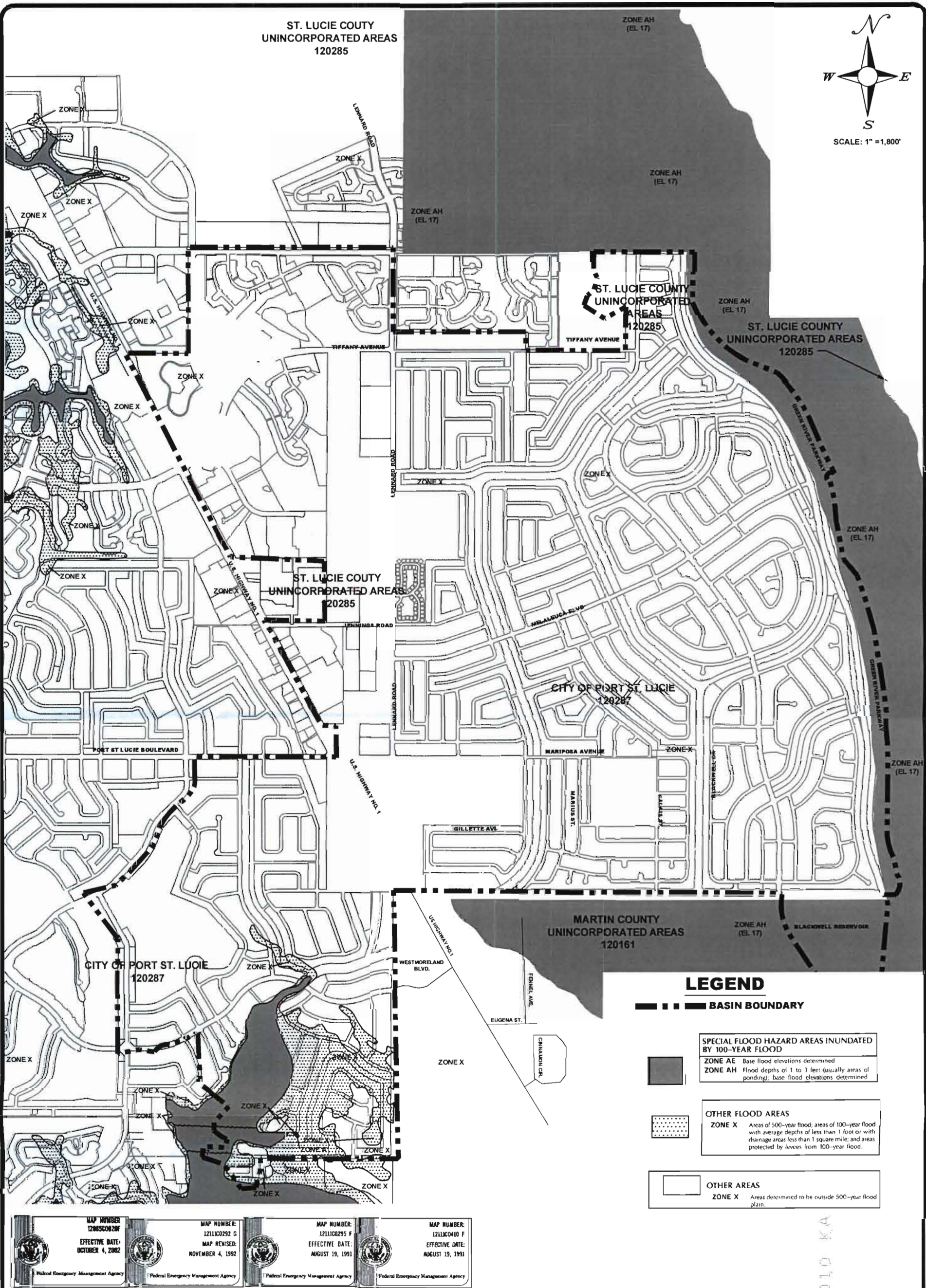
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N. E. 8-0007857

CITY OF PORT ST. LUCIE EASTERN WATERSHED USGS QUADRANGLE MAP Exhibit 5



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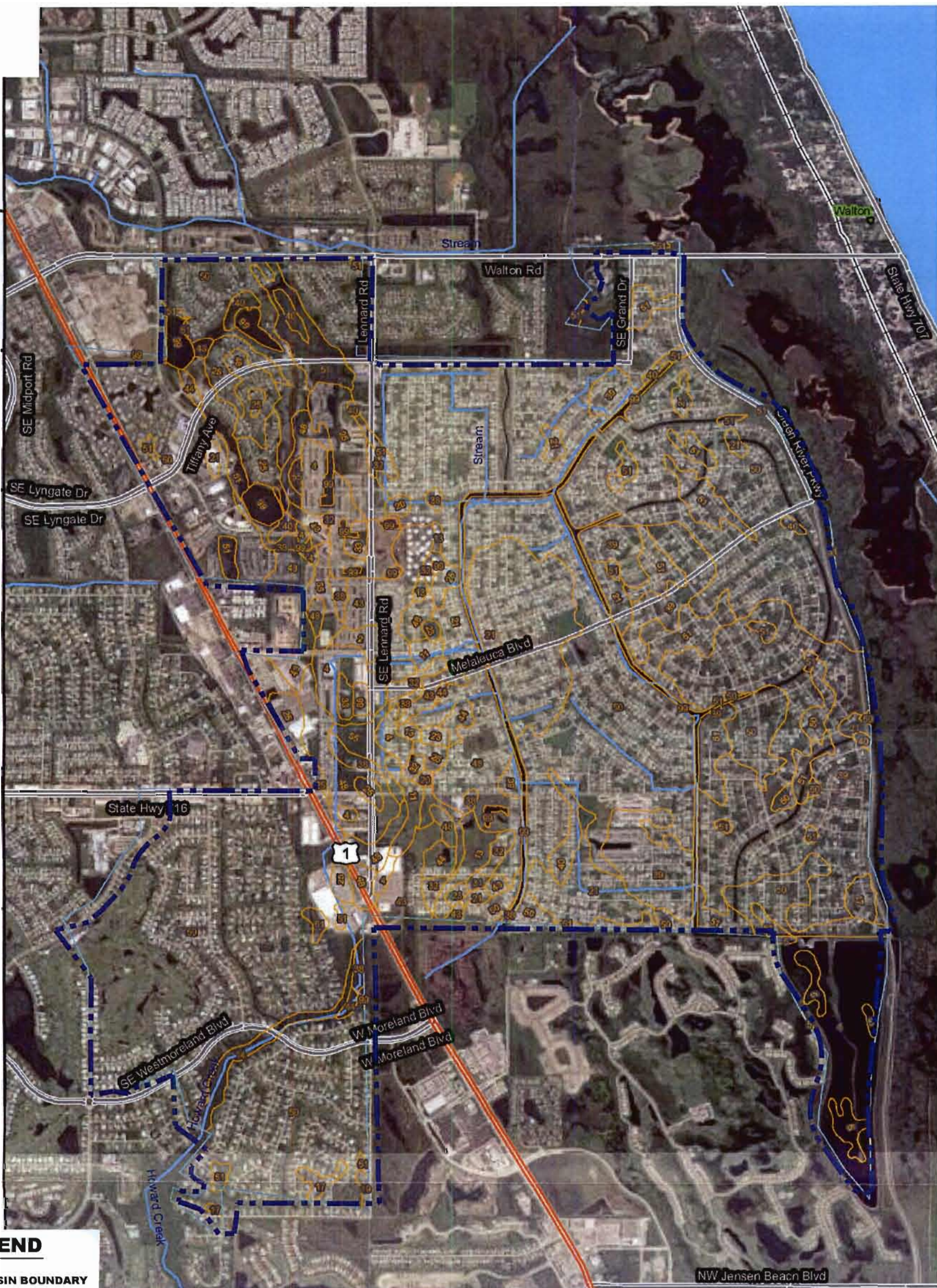
**CITY OF PORT ST. LUCIE
EASTERN WATERSHED
FEMA FLOOD INSURANCE RATE MAP
Exhibit 6**



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LEGEND

--- BASIN BOUNDARY

SOILS LEGEND

2 - ANKONA AND FARMTON SANDS
4 - ARENTS, 0% - 5% SLOPES
11 - CHOTSE LOAMY SAND, DEPRESSIONAL
13 - FLORIDANA SAND, DEPRESSIONAL
14 - FLUVAQUENTS, FREQUENTLY FLOODED
17 - HOBE SAND, 0% - 5% SLOPES
19 - JONATHAN SAND, 0% - 5% SLOPES
20 - KALIGA MUCK, DEPRESSIONAL

21 - LAWNWOOD AND NYAKKA SANDS
23 - MALABAR FINE SAND
25 - NETTLES AND OLDSMAR SANDS
31 - PEPPER AND EUGALLIE SANDS
32 - PINEDA SAND
33 - PITB
38 - RIVIERA FINE SAND
39 - SALERNO AND PUNTA SANDS
40 - SANSULA MUCK, DEPRESSIONAL

43 - SUSANNA AND WAUCHULA SANDS
44 - TANTILE AND POMONA SANDS
48 - WABASSO SAND
50 - WAVELAND AND IMMOKALEE FINE SANDS
51 - WAVELAND-LAWNWOOD COMPLEX, DEPRESSIONAL
55 - WINDER LOAMY SAND
99 - WATER

IMAGE TAKEN FROM THE UNITED STATES
DEPARTMENT OF AGRICULTURE, SOIL
CONSERVATION SERVICE SOIL SURVEY OF
SAINT LUCIE COUNTY



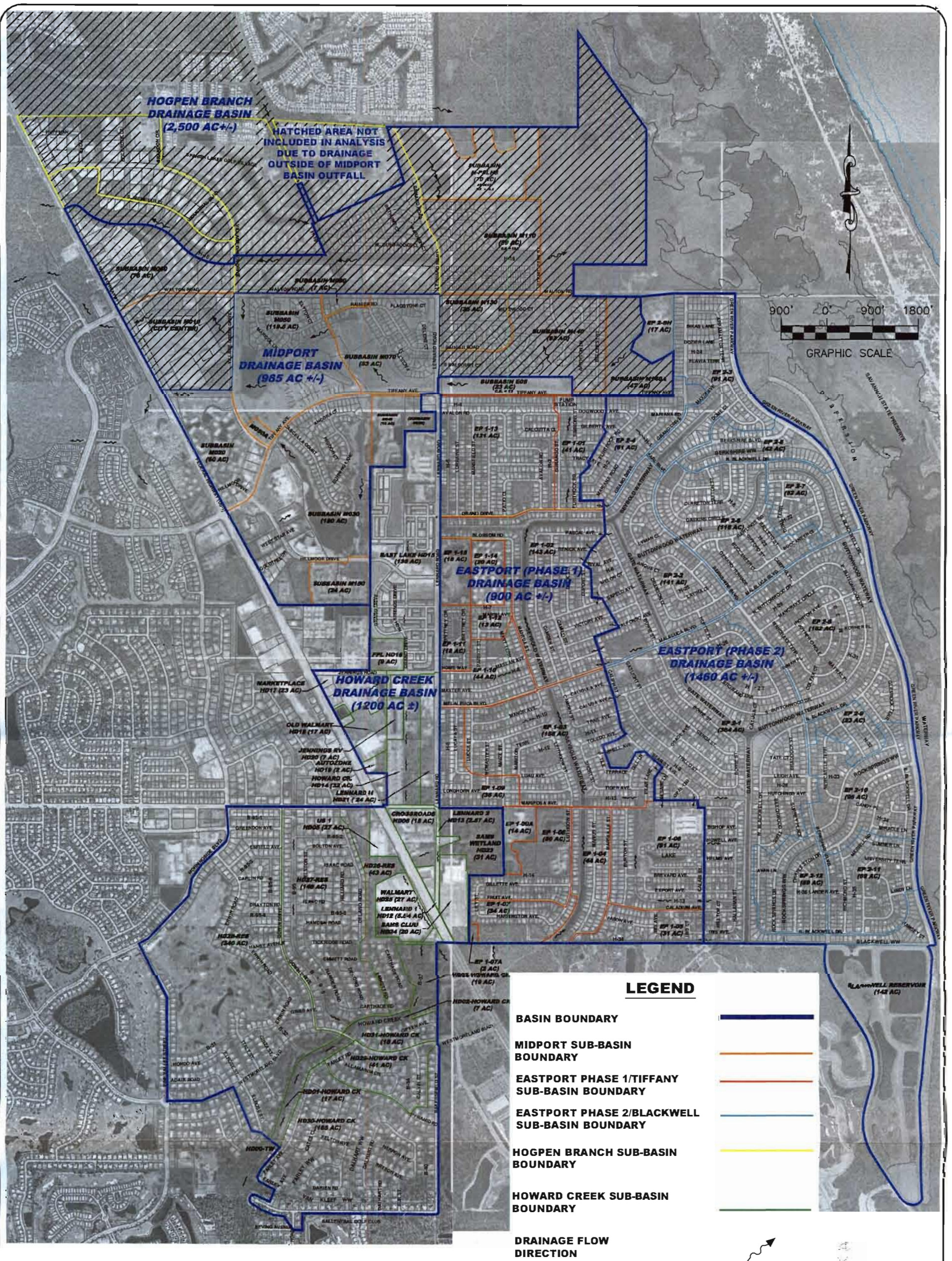
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CITY OF PORT ST. LUCIE EASTERN WATERSHED SCS SOIL SURVEY Exhibit 7



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CITY OF PORT ST. LUCIE **EASTERN WATERSHED** **BASIN/SUB-BASIN BOUNDARIES** **Exhibit 8**



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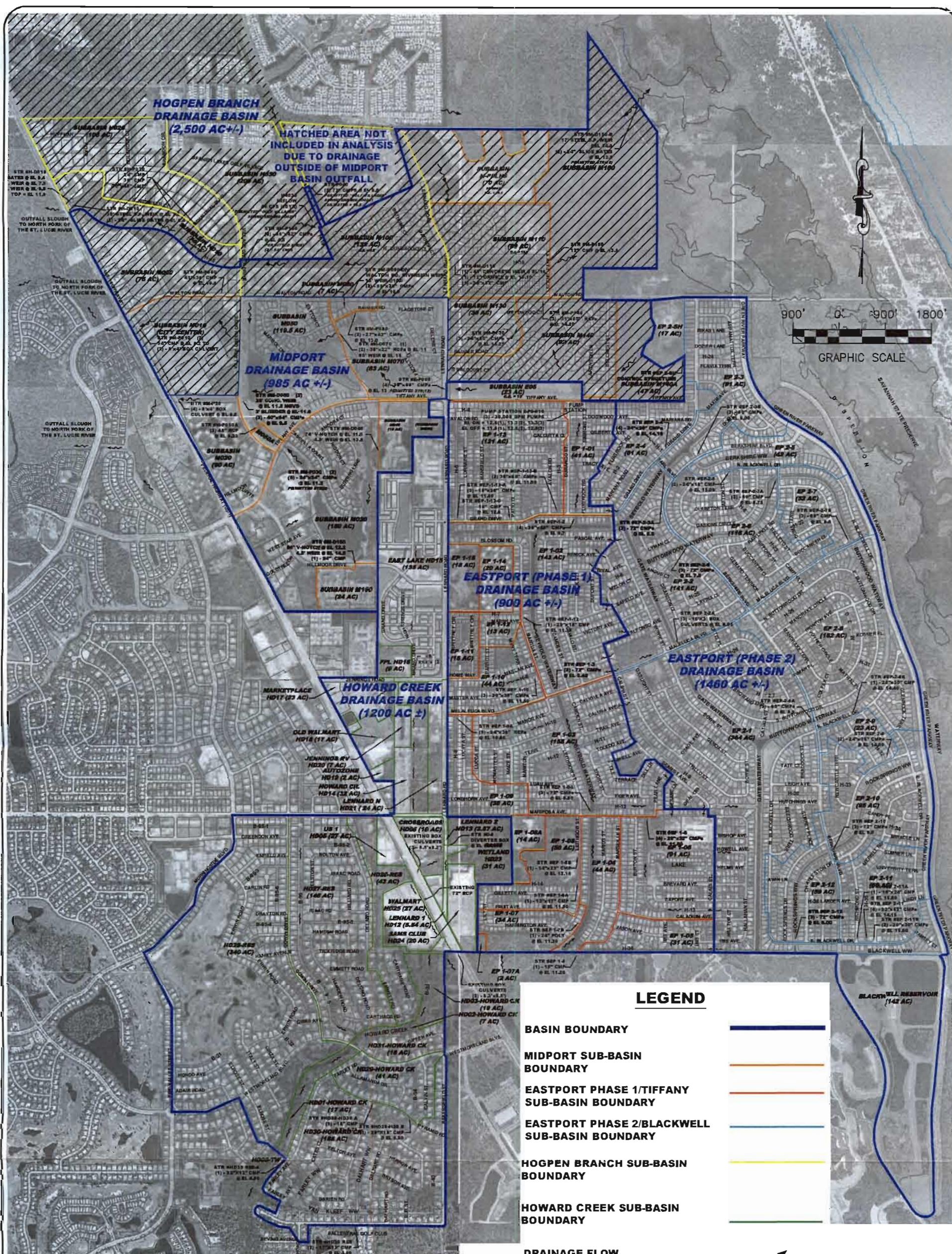


Exhibit 10 - EASTERN WATERSHED STORMWATER STUDY
SUMMARY OF PRE-IMPROVED AND PROPOSED BASIN ANALYSIS

Sub-Basin Name	Minimum Road Crown (ft - NGVD)	Minimum FFE EI (ft - NGVD)	Storm Event	Maximum Stage Pre-Improved (ft - NGVD)	Maximum Stage Proposed (ft - NGVD)	Change in Stage (ft - NGVD)	Pre Max. Road Flood (100Y) (ft)	Prop. Max. Road Flood (100Y) (ft)	Pre Max. House Flood (100Y) (ft)	Prop. Max. House Flood (100Y) (ft)	Maximum Discharge Pre-Improved (CFS)	Maximum Discharge Proposed (CFS)	Change in Discharge (CFS)
E005	17.0	18.5	010YR1D	15.75	15.99	0.24	-1.25	-1.01	-2.75	-2.51	192.2	187.3	-5
E005	17.0	18.5	025YR3D	16.15	16.46	0.32	-0.85	-0.54	-2.35	-2.04	199.9	199.6	0
E005	17.0	18.5	100YR3D	16.21	16.58	0.37	-0.76	-0.42	-2.29	-1.92	201.2	201.3	0
EP 1-01	16.5	18.0	010YR1D	14.17	13.78	-0.39	-2.33	-2.72	-3.83	-4.22	204.3	200.4	-4
EP 1-01	16.5	18.0	025YR3D	15.22	15.02	-0.20	-1.28	-1.48	-2.78	-2.98	283.4	200.4	-83
EP 1-01	16.5	18.0	100YR3D	15.56	15.39	-0.18	-0.94	-1.12	-2.44	-2.62	193.1	200.4	7
EP 1-02	14.3	15.8	010YR1D	14.23	13.84	-0.39	-0.02	-0.44	-1.52	-1.91	98.3	207.7	109
EP 1-02	14.3	15.8	025YR3D	15.27	15.07	-0.20	1.02	0.82	-0.48	-0.68	378.1	192.3	-186
EP 1-02	14.3	15.8	100YR3D	15.58	15.41	-0.17	1.33	1.16	-0.17	-0.34	443.2	190.1	-253
EP 1-03	14.0	15.5	010YR1D	14.34	13.94	-0.40	0.39	-0.01	-1.11	-1.51	176.1	149.5	-27
EP 1-03	14.0	15.5	025YR3D	15.45	15.26	-0.19	1.50	1.31	0.00	-0.19	605.6	252.9	-353
EP 1-03	14.0	15.5	100YR3D	15.69	15.52	-0.17	1.74	1.57	0.24	0.07	768.0	328.4	-440
EP 1-04	14.2	15.7	010YR1D	14.35	13.96	-0.39	0.15	-0.24	-1.35	-1.74	58.3	70.7	21
EP 1-04	14.2	15.7	025YR3D	15.49	15.28	-0.21	1.29	1.08	-0.21	-0.42	414.1	191.7	-222
EP 1-04	14.2	15.7	100YR3D	15.73	15.55	-0.18	1.53	1.35	0.03	-0.15	583.3	293.4	-290
EP 1-05	14.4	15.9	010YR1D	14.73	14.72	0.00	0.33	0.32	-1.17	-1.18	24.2	176.1	152
EP 1-05	14.4	15.9	025YR3D	15.53	15.32	-0.21	1.13	0.92	-0.37	-0.58	81.8	624.3	542
EP 1-05	14.4	15.9	100YR3D	15.78	15.60	-0.18	1.38	1.20	-0.13	-0.30	85.8	837.1	751
EP 1-06	13.7	15.2	010YR1D	14.64	14.21	-0.42	0.94	0.51	-0.56	-0.99	1.3	73.3	72
EP 1-06	13.7	15.2	025YR3D	15.51	15.44	-0.07	1.81	1.74	0.31	0.24	7.7	416.5	409
EP 1-06	13.7	15.2	100YR3D	15.75	15.60	-0.16	2.06	1.90	0.56	0.40	36.0	595.1	559
EP 1-07	14.2	15.7	010YR1D	14.32	13.95	-0.37	0.17	-0.20	-1.33	-1.70	14.5	28.9	14
EP 1-07	14.2	15.7	025YR3D	15.26	15.08	-0.17	1.11	0.93	-0.40	-0.57	49.9	38.6	-11
EP 1-07	14.2	15.7	100YR3D	15.45	15.30	-0.15	1.30	1.15	-0.20	-0.35	56.0	40.1	-16
EP 1-08	14.2	15.7	010YR1D	14.24	13.74	-0.50	0.09	-0.41	-1.41	-1.91	4.9	18.4	13
EP 1-08	14.2	15.7	025YR3D	15.49	15.28	-0.21	1.34	1.13	-0.16	-0.37	7.3	78.0	71
EP 1-08	14.2	15.7	100YR3D	15.72	15.55	-0.17	1.57	1.40	0.07	-0.10	9.1	82.7	74
EP 1-08A	15.5	18.7	010YR1D	15.27	15.26	-0.01	-0.23	-0.24	-3.43	-3.44	11.0	1.3	-10
EP 1-08A	15.5	18.7	025YR3D	15.92	15.92	0.00	0.41	0.41	-2.79	-2.79	71.1	7.7	-63
EP 1-08A	15.5	18.7	100YR3D	15.95	15.95	0.00	0.45	0.45	-2.75	-2.75	113.5	36.1	-77
EP 1-09	13.5	15.0	010YR1D	14.21	13.86	-0.35	0.71	0.36	-0.79	-1.14	92.1	44.4	-48
EP 1-09	13.5	15.0	025YR3D	15.23	15.04	-0.19	1.73	1.54	0.23	0.04	195.1	36.6	-159
EP 1-09	13.5	15.0	100YR3D	15.52	15.37	-0.15	2.02	1.87	0.52	0.37	297.0	42.4	-225
EP 1-10	13.5	15.0	010YR1D	14.21	13.86	-0.35	0.71	0.36	-0.79	-1.14	12.8	36.9	24
EP 1-10	13.5	15.0	025YR3D	15.25	15.05	-0.20	1.75	1.55	0.25	0.05	50.2	35.2	-15
EP 1-10	13.5	15.0	100YR3D	15.55	15.38	-0.16	2.05	1.88	0.55	0.38	76.9	40.3	-37

Exhibit 10 - EASTERN WATERSHED STORMWATER STUDY
SUMMARY OF PRE-IMPROVED AND PROPOSED BASIN ANALYSIS

Sub-Basin Name	Minimum Road Crown (ft - NGVD)	Minimum FFE EI (ft - NGVD)	Storm Event	Maximum Stage Pre-Improved (ft - NGVD)	Maximum Stage Proposed (ft - NGVD)	Change in Stage (ft-NGVD)	Pre Max. Road Flood (100Y) (ft)	Prop. Max. Road Flood (100Y) (ft)	Pre Max. House Flood (100Y) (ft)	Prop. Max. House Flood (100Y) (ft)	Maximum Discharge Pre-Improved (CFS)	Maximum Discharge Proposed (CFS)	Change in Discharge (CFS)
EP 1-11	15.0	17.0	010YR1D	14.65	14.61	-0.05	-0.35	-0.40	-2.35	-2.40	0.0	4.8	5
EP 1-11	15.0	17.0	025YR3D	15.23	15.13	-0.09	0.23	0.13	-1.77	-1.87	29.2	6.8	-22
EP 1-11	15.0	17.0	100YR3D	15.50	15.41	-0.09	0.50	0.41	-1.50	-1.59	32.3	6.6	-24
EP 1-12	13.7	15.2	010YR1D	14.63	14.59	-0.04	0.93	0.89	-0.57	-0.61	126.2	11.1	-115
EP 1-12	13.7	15.2	025YR3D	15.27	15.07	-0.20	1.57	1.37	0.07	-0.13	203.3	72.1	-131
EP 1-12	13.7	15.2	100YR3D	15.58	15.41	-0.17	1.88	1.71	0.38	0.21	251.0	112.9	-138
EP 1-13	14.5	16.0	010YR1D	14.26	13.86	-0.40	-0.24	-0.64	-1.74	-2.14	529.9	74.9	-455
EP 1-13	14.5	16.0	025YR3D	15.27	15.07	-0.20	0.77	0.57	-0.73	-0.93	1244.0	146.8	-1097
EP 1-13	14.5	16.0	100YR3D	15.59	15.41	-0.17	1.09	0.91	-0.41	-0.59	1600.5	201.2	-1399
EP 1-14	15.5	17.0	010YR1D	15.81	15.81	0.00	0.31	0.31	-1.19	-1.19	178.2	12.8	-165
EP 1-14	15.5	17.0	025YR3D	16.07	16.07	0.00	0.57	0.57	-0.93	-0.93	363.9	50.3	-314
EP 1-14	15.5	17.0	100YR3D	16.10	16.10	0.00	0.60	0.60	-0.90	-0.90	428.3	76.8	-352
EP 1-15	14.5	N/A	010YR1D	12.78	12.70	-0.08	-1.72	-1.81	N/A	N/A	59.6	0.0	-60
EP 1-15	14.5	N/A	025YR3D	14.96	14.65	-0.31	0.46	0.15	N/A	N/A	93.6	10.4	-83
EP 1-15	14.5	N/A	100YR3D	15.25	15.34	0.09	0.75	0.84	N/A	N/A	95.4	90.5	-5
SAVANNAS			010YR1D	13.50	13.50	0.00			EASPORT 2 OUTFALL (BLACKWELL)		126.2	126.2	0
SAVANNAS			025YR3D	15.00	15.00	0.00			BOUNDARY STAGE		203.3	224.4	21
SAVANNAS			100YR3D	17.00	17.00	0.00			PERMITTED 300 CFS MAX DISCHARGE		251.0	274.6	24
EP 2-00-BLACKWL	N/A	25.0	010YR1D	19.39	19.39	0.00	N/A	N/A	-5.61	-5.61	126.2	126.2	0
EP 2-00-BLACKWL	N/A	25.0	025YR3D	20.64	20.80	0.16	N/A	N/A	-4.36	-4.20	203.3	224.4	21
EP 2-00-BLACKWL	N/A	25.0	100YR3D	20.98	21.13	0.15	N/A	N/A	-4.02	-3.87	251.0	274.6	24
EP 2-01	16.0	17.5	010YR1D	16.32	16.32	0.00	0.32	0.32	-1.18	-1.18	876.6	529.9	-349
EP 2-01	16.0	17.5	025YR3D	16.61	16.61	0.00	0.61	0.61	-0.89	-0.89	1331.3	1244.1	-87
EP 2-01	16.0	17.5	100YR3D	16.71	16.71	0.00	0.71	0.71	-0.79	-0.79	1661.8	1600.5	-61
EP 2-02	17.0	18.5	010YR1D	16.43	16.43	0.00	-0.52	-0.52	-2.02	-2.02	84.6	178.2	94
EP 2-02	17.0	18.5	025YR3D	17.07	17.07	0.00	0.12	0.12	-1.38	-1.36	113.6	364.0	250
EP 2-02	17.0	18.5	100YR3D	17.34	17.34	0.00	0.39	0.39	-1.11	-1.11	144.9	428.3	283
EP 2-03	17.0	18.5	010YR1D	16.47	16.47	0.00	-0.54	-0.54	-2.04	-2.04	21.7	59.6	38
EP 2-03	17.0	18.5	025YR3D	17.16	17.16	0.00	0.16	0.16	-1.34	-1.34	48.2	93.6	45
EP 2-03	17.0	18.5	100YR3D	17.43	17.43	0.00	0.43	0.43	-1.07	-1.07	60.6	95.4	35
EP 2-04	17.0	18.5	010YR1D	16.81	16.81	0.00	-0.39	-0.39	-1.89	-1.89	94.7	46.6	-48
EP 2-04	17.0	18.5	025YR3D	17.23	17.23	0.00	0.23	0.23	-1.27	-1.27	198.9	72.1	-127
EP 2-04	17.0	18.5	100YR3D	17.40	17.40	0.00	0.40	0.40	-1.10	-1.10	238.9	107.0	-132
EP 2-05	18.0	19.5	010YR1D	16.47	16.47	0.00	-1.53	-1.53	-3.03	-3.03	33.3	1.9	-31
EP 2-05	18.0	19.5	025YR3D	17.18	17.18	0.00	-0.82	-0.82	-2.32	-2.32	44.4	2.9	-42
EP 2-05	18.0	19.5	100YR3D	17.47	17.47	0.00	-0.54	-0.54	-2.04	-2.04	48.2	2.9	-45
EP 2-06	17.1	18.6	010YR1D	16.45	16.45	0.00	-0.60	-0.60	-2.10	-2.10	75.0	84.6	10
EP 2-06	17.1	18.6	025YR3D	17.15	17.15	0.00	0.10	0.10	-1.40	-1.40	132.7	113.8	-19
EP 2-06	17.1	18.6	100YR3D	17.48	17.48	0.00	0.43	0.43	-1.07	-1.07	177.1	144.9	-32

Exhibit 10 - EASTERN WATERSHED STORMWATER STUDY
SUMMARY OF PRE-IMPROVED AND PROPOSED BASIN ANALYSIS

Sub-Basin Name	Minimum Road Crown (ft - NGVD)	Minimum FFE EI (ft - NGVD)	Storm Event	Maximum Stage Pre-Improved (ft - NGVD)	Maximum Stage Proposed (ft - NGVD)	Change in Stage (ft-NGVD)	Pre Max. Road Flood (100Y) (ft)	Prop. Max. Road Flood (100Y) (ft)	Pre Max. House Flood (100Y) (ft)	Prop. Max. House Flood (100Y) (ft)	Maximum Discharge Pre-Improved (CFS)	Maximum Discharge Proposed (CFS)	Change in Discharge (CFS)
EP 2-07	17.3	18.8	010YR1D	16.45	16.45	0.00	-0.80	-0.80	-2.30	-2.30	98.3	21.7	-77
EP 2-07	17.3	18.8	025YR3D	17.16	17.16	0.00	-0.09	-0.09	-1.60	-1.60	147.4	48.2	-99
EP 2-07	17.3	18.8	100YR3D	17.49	17.49	0.00	0.24	0.24	-1.26	-1.26	173.0	60.6	-112
EP 2-08	17.0	18.5	010YR1D	16.44	16.44	0.00	-0.51	-0.51	-2.01	-2.01	91.5	94.7	3
EP 2-08	17.0	18.5	025YR3D	17.14	17.14	0.00	0.19	0.19	-1.31	-1.31	205.5	198.9	-7
EP 2-08	17.0	18.5	100YR3D	17.47	17.47	0.00	0.52	0.52	-0.98	-0.98	274.9	238.9	-36
EP 2-09	17.6	19.1	010YR1D	16.40	16.40	0.00	-1.20	-1.20	-2.70	-2.70	0.5	33.3	33
EP 2-09	17.6	19.1	025YR3D	17.09	17.09	0.00	-0.51	-0.51	-2.01	-2.01	2.8	44.4	42
EP 2-09	17.6	19.1	100YR3D	17.51	17.51	0.00	-0.09	-0.09	-1.59	-1.59	4.6	48.2	44
EP 2-10	17.4	18.9	010YR1D	16.37	16.37	0.00	-1.03	-1.03	-2.53	-2.53	75.0	75.0	0
EP 2-10	17.4	18.9	025YR3D	16.95	16.95	0.00	-0.45	-0.45	-1.95	-1.95	132.7	132.7	0
EP 2-10	17.4	18.9	100YR3D	17.23	17.23	0.00	-0.17	-0.17	-1.67	-1.67	177.1	177.1	0
EP 2-11	17.7	19.2	010YR1D	16.33	16.33	0.00	-1.37	-1.37	-2.87	-2.87	412.5	96.3	-314
EP 2-11	17.7	19.2	025YR3D	16.72	16.72	0.00	-0.98	-0.98	-2.48	-2.48	927.2	147.4	-780
EP 2-11	17.7	19.2	100YR3D	16.95	16.95	0.00	-0.75	-0.75	-2.26	-2.26	1163.9	173.0	-991
EP 2-12	17.2	18.7	010YR1D	16.35	16.35	0.00	-0.80	-0.80	-2.30	-2.30	246.4	91.5	-155
EP 2-12	17.2	18.7	025YR3D	16.84	16.84	0.00	-0.31	-0.31	-1.82	-1.82	572.7	205.5	-367
EP 2-12	17.2	18.7	100YR3D	17.03	17.03	0.00	-0.12	-0.12	-1.62	-1.62	786.8	274.9	-512
EP 2-SH	18.2	21.0	010YR1D	16.50	16.50	0.00	-1.70	-1.70	-4.50	-4.50	0.2	0.5	0
EP 2-SH	18.2	21.0	025YR3D	17.48	17.48	0.00	-0.72	-0.72	-3.52	-3.52	0.4	2.8	2
EP 2-SH	18.2	21.0	100YR3D	17.96	17.96	0.00	-0.24	-0.24	-3.04	-3.04	13.2	4.6	-9
HD00-TW			010YR1D	4.00	4.00						563.8	457.5	-106
HD00-TW			025YR3D	4.00	4.00						1218.7	1099.6	-119
HD00-TW			100YR3D	4.00	4.00						1552.1	1390.7	-161
HD01-HOWARD CK	N/A	9.8	010YR1D	6.11	5.57	-0.54	N/A	N/A	-3.69	-4.23	429.3	314.7	-115
HD01-HOWARD CK	N/A	9.8	025YR3D	7.14	6.99	-0.15	N/A	N/A	-2.66	-2.81	933.0	844.0	-89
HD01-HOWARD CK	N/A	9.8	100YR3D	7.54	7.38	-0.16	N/A	N/A	-2.27	-2.42	1173.3	1069.2	-104
HD02-HOWARD CK	9.5	11.0	010YR1D	6.21	5.66	-0.55	-3.29	-3.84	-4.79	-5.34	0.4	152.6	152
HD02-HOWARD CK	9.5	11.0	025YR3D	7.32	7.17	-0.15	-2.18	-2.33	-3.68	-3.83	0.6	560.4	560
HD02-HOWARD CK	9.5	11.0	100YR3D	7.74	7.59	-0.15	-1.76	-1.91	-3.26	-3.41	0.7	730.4	730
Z-STA-OUTFALL	12.0	13.5	010YR1D	8.14	6.37	-1.77	-3.86	-5.63	-5.31	-7.08	234.0	102.9	-131
Z-STA-OUTFALL	12.0	13.5	025YR3D	10.06	9.50	-0.56	-1.94	-2.50	-3.39	-3.95	432.8	495.2	62
Z-STA-OUTFALL	12.0	13.5	100YR3D	11.67	10.34	-1.34	-0.33	-1.66	-1.78	-3.11	736.2	668.2	-68
HD03-Howard Ck	12.0	13.5	010YR1D	8.14	8.31	0.17	-3.86	-3.69	-5.36	-5.19	234.0	102.2	-132
HD03-Howard Ck	12.0	13.5	025YR3D	10.06	9.85	-0.21	-1.94	-2.15	-3.44	-3.65	432.8	495.1	62
HD03-Howard Ck	12.0	13.5	100YR3D	11.67	10.66	-1.02	-0.33	-1.34	-1.83	-2.84	736.2	668.1	-68
HD04-HOWARD CK	13.0	14.5	010YR1D	8.13	9.03	0.89	-4.67	-3.97	-6.37	-5.47	33.8	37.6	4
HD04-HOWARD CK	13.0	14.5	025YR3D	10.06	11.14	1.08	-2.95	-1.86	-4.45	-3.36	54.7	123.8	69
HD04-HOWARD CK	13.0	14.5	100YR3D	11.68	12.43	0.75	-1.32	-0.57	-2.82	-2.07	57.9	191.6	134

Exhibit 10 - EASTERN WATERSHED STORMWATER STUDY
SUMMARY OF PRE-IMPROVED AND PROPOSED BASIN ANALYSIS

Sub-Basin Name	Minimum Road Crown (ft - NGVD)	Minimum FFE EI (ft - NGVD)	Storm Event	Maximum Stage		Change in Stage (ft - NGVD)	Pre Max. Road Flood (100Y) (ft)	Prop. Max. Road Flood (100Y) (ft)	Pre Max. House Flood (100Y) (ft)	Prop. Max. House Flood (100Y) (ft)	Maximum Discharge		Change in Discharge (CFS)
				Pre-Improved (ft - NGVD)	Proposed (ft - NGVD)						Pre-Improved (CFS)	Proposed (CFS)	
HD05-US 1	13.3	16.0	010YR1D	9.09	9.67	0.59	-4.16	-3.58	-6.91	-6.33	99.4	36.7	-63
HD05-US 1	13.3	16.0	025YR3D	11.10	12.44	1.33	-2.15	-0.82	-4.90	-3.57	220.3	116.0	-104
HD05-US 1	13.3	16.0	100YR3D	12.99	14.95	1.95	-0.26	1.70	-3.01	-1.06	282.9	180.4	-103
Z-HD05A-US 1	14.5	N/A	010YR1D	13.81	13.81	0.00	-0.69	-0.69	N/A	N/A	59.2	22.8	-36
Z-HD05A-US 1	14.5	N/A	025YR3D	14.16	14.10	-0.06	-0.34	-0.40	N/A	N/A	70.2	25.4	-45
Z-HD05A-US 1	14.5	N/A	100YR3D	14.31	14.97	0.66	-0.19	0.47	N/A	N/A	79.8	25.7	-54
HD06-CROSS RD	13.5	15.1	010YR1D	9.12	9.67	0.55	-4.38	-3.83	-5.94	-5.39	183.6	51.7	-132
HD06-CROSS RD	13.5	15.1	025YR3D	11.20	12.45	1.24	-2.30	-1.06	-3.86	-2.62	369.4	77.4	-292
HD06-CROSS RD	13.5	15.1	100YR3D	13.21	14.96	1.75	-0.29	1.46	-1.85	-0.10	465.0	80.8	-384
HD07-DL1	14.3	15.1	010YR1D	14.32	9.64	-4.68	0.02	-4.66	-0.74	-5.42	45.0	17.5	-27
HD07-DL1	14.3	15.1	025YR3D	15.26	12.51	-2.75	0.96	-1.79	0.20	-2.55	79.6	66.8	-13
HD07-DL1	14.3	15.1	100YR3D	15.45	14.99	-0.46	1.15	0.68	0.39	-0.08	100.5	66.8	-34
HD08-DL1A	14.3	15.1	010YR1D	N/A	9.56	N/A	N/A	-4.74	N/A	-5.50	N/A	17.5	N/A
HD08-DL1A	14.3	15.1	025YR3D	N/A	12.75	N/A	N/A	-1.55	N/A	-2.31	N/A	67.0	N/A
HD08-DL1A	14.3	15.1	100YR3D	N/A	14.99	N/A	N/A	0.69	N/A	-0.07	N/A	66.7	N/A
HD09-D29	14.5	15.1	010YR1D	10.25	9.47	-0.78	-4.25	-5.03	-4.81	-5.59	0.0	17.5	18
HD09-D29	14.5	15.1	025YR3D	12.96	13.01	0.05	-1.54	-1.49	-2.10	-2.05	0.0	67.3	67
HD09-D29	14.5	15.1	100YR3D	14.20	15.02	0.82	-0.30	0.52	-0.86	-0.04	0.0	67.3	67
HD12-LENNARD 1	12.7	15.1	010YR1D	10.77	9.54	-1.24	-1.90	-3.13	-4.29	-5.52	1.0	17.8	17
HD12-LENNARD 1	12.7	15.1	025YR3D	14.36	13.95	-0.42	1.69	1.28	-0.70	-1.11	5.2	66.8	62
HD12-LENNARD 1	12.7	15.1	100YR3D	14.99	15.06	0.07	2.32	2.39	-0.07	0.00	6.3	66.8	61
HD13-LENNARD 2	13.4	15.1	010YR1D	11.27	9.56	-1.71	-2.13	-3.84	-3.79	-5.50	89.9	18.9	-71
HD13-LENNARD 2	13.4	15.1	025YR3D	14.55	14.18	-0.37	1.15	0.78	-0.51	-0.88	170.8	175.6	5
HD13-LENNARD 2	13.4	15.1	100YR3D	15.23	15.07	-0.16	1.83	1.67	0.17	0.01	205.1	382.9	178
HD14-CREEK	15.0	15.3	010YR1D	12.34	9.57	-2.77	-2.67	-5.43	-3.00	-5.76	100.1	15.7	-84
HD14-CREEK	15.0	15.3	025YR3D	15.12	14.43	-0.69	0.12	-0.57	-0.21	-0.90	139.0	98.4	-41
HD14-CREEK	15.0	15.3	100YR3D	15.41	15.19	-0.22	0.41	0.19	0.08	-0.14	142.7	103.8	-39
HD15-EAST LAKE	13.7	17.0	010YR1D	13.55	13.84	0.29	-0.19	0.10	-3.45	-3.17	5.8	12.7	7
HD15-EAST LAKE	13.7	17.0	025YR3D	14.62	15.14	0.52	0.88	1.40	-2.39	-1.86	6.7	37.3	31
HD15-EAST LAKE	13.7	17.0	100YR3D	15.10	15.34	0.25	1.36	1.60	-1.91	-1.66	10.0	120.2	110
HD16-FPL	15.5	17.0	010YR1D	13.14	13.14	0.00	-2.36	-2.36	-3.86	-3.86	5.4	2.4	-3
HD16-FPL	15.5	17.0	025YR3D	14.52	14.01	-0.51	-0.98	-1.49	-2.48	-2.99	7.8	15.0	7
HD16-FPL	15.5	17.0	100YR3D	14.82	14.57	-0.25	-0.69	-0.93	-2.19	-2.43	8.1	14.6	6
HD17-MARKET	15.0	17.0	010YR1D	14.90	14.90	0.00	-0.10	-0.10	-2.10	-2.10	36.2	1.6	-35
HD17-MARKET	15.0	17.0	025YR3D	15.78	15.75	-0.03	0.78	0.75	-1.23	-1.25	228.3	2.8	-225
HD17-MARKET	15.0	17.0	100YR3D	16.01	15.99	-0.02	1.01	0.99	-1.00	-1.01	280.6	4.1	-276
HD17A-MANHOLE	15.0	17.0	010YR1D	12.40	9.94	-2.46	-2.60	-5.06	-4.60	-7.06	0.0	4.5	5
HD17A-MANHOLE	15.0	17.0	025YR3D	15.23	14.80	-0.62	0.23	-0.40	-1.77	-2.40	0.0	9.1	9
HD17A-MANHOLE	15.0	17.0	100YR3D	15.58	15.39	-0.19	0.58	0.39	-1.42	-1.61	0.0	11.2	11

Exhibit 10 - EASTERN WATERSHED STORMWATER STUDY
SUMMARY OF PRE-IMPROVED AND PROPOSED BASIN ANALYSIS

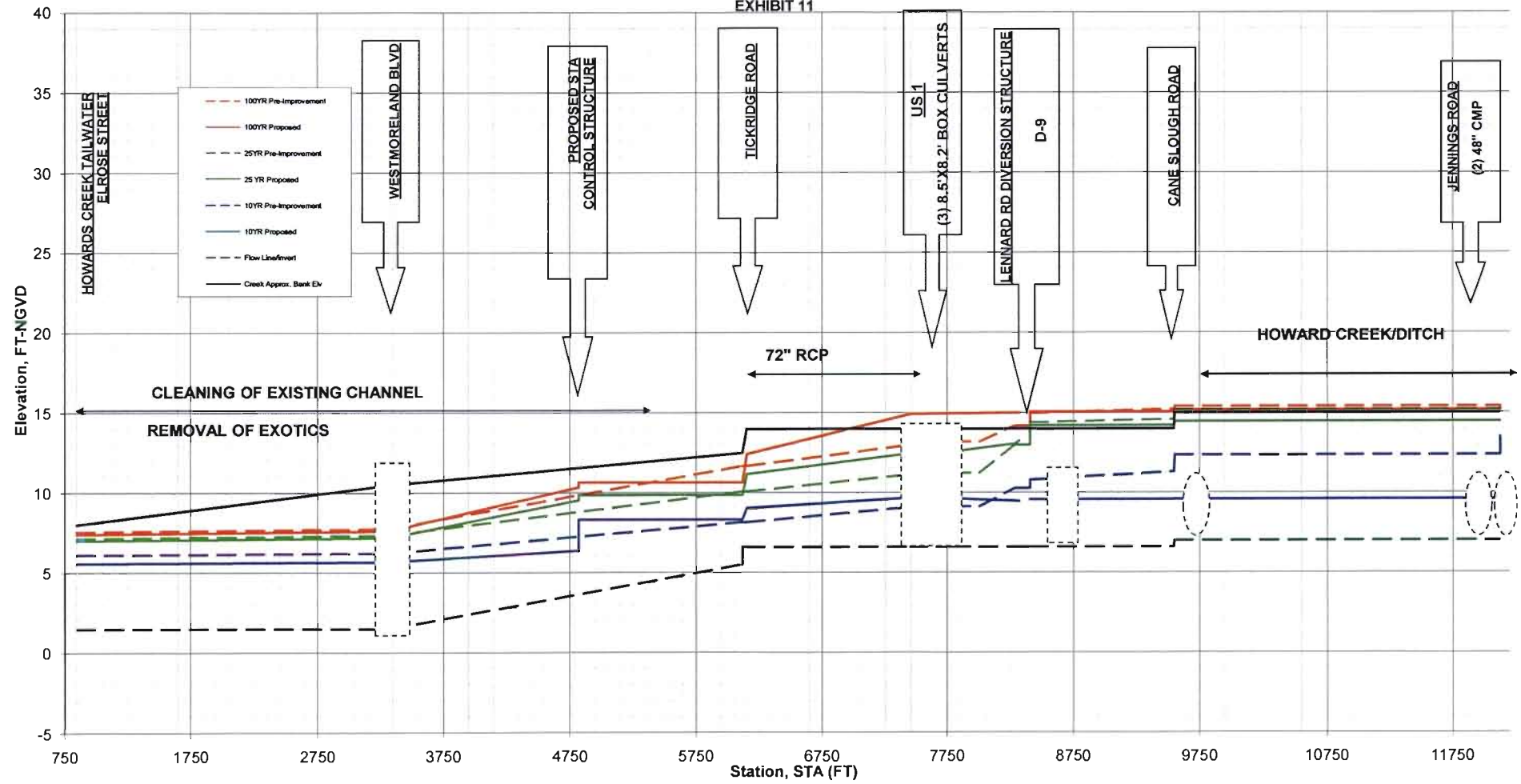
Sub-Basin Name	Minimum Road Crown (ft - NGVD)	Minimum FFE EI (ft - NGVD)	Storm Event	Maximum Stage		Change in Stage (ft-NGVD)	Pre Max. Road Flood (100Y) (ft)	Prop. Max. Road Flood (100Y) (ft)	Pre Max. House Flood (100Y) (ft)	Prop. Max. House Flood (100Y) (ft)	Maximum Discharge		Change in Discharge (CFS)
				Pre-Improved (ft - NGVD)	Proposed (ft - NGVD)						Pre-Improved (CFS)	Proposed (CFS)	
HD18-OLD WALMT	15.0	17.6	010YR1D	15.02	15.02	0.00	0.02	0.02	-2.58	-2.58	93.6	2.8	-91
HD18-OLD WALMT	15.0	17.6	025YR3D	15.91	15.87	-0.04	0.90	0.87	-1.70	-1.73	272.8	5.7	-267
HD18-OLD WALMT	15.0	17.6	100YR3D	16.18	16.14	-0.04	1.18	1.14	-1.42	-1.47	351.7	6.5	-345
HD19-AUTOZONE	15.0	17.7	010YR1D	14.60	14.60	0.00	-0.39	-0.39	-3.09	-3.09	200.4	0.4	-200
HD19-AUTOZONE	15.0	17.7	025YR3D	15.38	15.27	-0.11	0.39	0.28	-2.31	-2.42	200.4	0.8	-200
HD19-AUTOZONE	15.0	17.7	100YR3D	15.70	15.57	-0.13	0.71	0.58	-1.99	-2.12	200.4	1.0	-199
HD20-JENNING RV	14.3	17.0	010YR1D	12.75	12.65	-0.10	-1.55	-1.65	-4.25	-4.35	164.8	0.7	-154
HD20-JENNING RV	14.3	17.0	025YR3D	15.03	14.43	-0.60	0.73	0.13	-1.97	-2.57	328.0	3.0	-325
HD20-JENNING RV	14.3	17.0	100YR3D	15.34	15.11	-0.23	1.04	0.81	-1.66	-1.89	396.8	8.3	-389
HD21-LENNARD N	14.0	15.3	010YR1D	12.46	12.26	-0.20	-1.54	-1.74	-2.87	-3.07	38.9	28.5	-10
HD21-LENNARD N	14.0	15.3	025YR3D	15.21	14.99	-0.22	1.21	0.99	-0.12	-0.34	55.2	229.3	174
HD21-LENNARD N	14.0	15.3	100YR3D	15.50	15.32	-0.18	1.50	1.32	-0.17	-0.01	75.7	252.6	177
HD23-SAMS WETLD	15.5	15.9	010YR1D	12.72	13.51	0.79	-2.78	-1.99	-3.13	-2.34	217.3	5.6	-212
HD23-SAMS WETLD	15.5	15.9	025YR3D	14.55	14.18	-0.37	-0.95	-1.32	-1.30	-1.67	438.6	119.5	-319
HD23-SAMS WETLD	15.5	15.9	100YR3D	15.23	15.07	-0.16	-0.27	-0.43	-0.62	-0.78	721.3	178.5	-543
HD24-SAMS CLUB	15.1	15.9	010YR1D	N/A	15.06	N/A	N/A	0.01	N/A	-0.79	N/A	47.8	N/A
HD24-SAMS CLUB	15.1	15.9	025YR3D	N/A	15.17	N/A	N/A	0.12	N/A	-0.68	N/A	68.8	N/A
HD24-SAMS CLUB	15.1	15.9	100YR3D	N/A	15.24	N/A	N/A	0.18	N/A	-0.62	N/A	81.9	N/A
HD25-WALMART	15.8	17.5	010YR1D	N/A	15.52	N/A	N/A	-0.23	N/A	-1.98	N/A	1.4	N/A
HD25-WALMART	15.8	17.5	025YR3D	N/A	18.27	N/A	N/A	0.52	N/A	-1.23	N/A	16.4	N/A
HD25-WALMART	15.8	17.5	100YR3D	N/A	16.50	N/A	N/A	0.75	N/A	-1.00	N/A	28.1	N/A
HD26-RES	11.5	13.0	010YR1D	10.04	10.04	0.00	-1.46	-1.46	-2.96	-2.96	86.3	33.8	-53
HD26-RES	11.5	13.0	025YR3D	10.48	10.47	-0.01	-1.02	-1.03	-2.52	-2.53	161.7	56.9	-105
HD26-RES	11.5	13.0	100YR3D	11.53	10.67	-0.86	0.03	-0.83	-1.47	-2.33	203.1	69.1	-134
HD27-RES	10.7	12.2	010YR1D	8.14	8.14	0.00	-2.56	-2.56	-4.06	-4.06	167.4	99.4	-68
HD27-RES	10.7	12.2	025YR3D	8.80	8.80	0.00	-1.90	-1.90	-3.40	-3.40	330.0	220.3	-110
HD27-RES	10.7	12.2	100YR3D	9.09	9.08	0.00	-1.62	-1.62	-3.12	-3.12	417.0	287.2	-130
HD28-RES	8.0	9.5	010YR1D	7.63	7.63	0.00	-0.37	-0.37	-1.87	-1.87	253.8	184.1	-70
HD28-RES	8.0	9.5	025YR3D	8.52	8.48	-0.04	0.52	0.48	-0.98	-1.02	497.9	373.5	-124
HD28-RES	8.0	9.5	100YR3D	8.92	8.86	-0.05	0.91	0.86	-0.59	-0.64	630.1	469.9	-160
HD29-RES	7.7	9.2	010YR1D	7.55	7.60	0.05	-0.16	-0.10	-1.66	-1.60	99.7	26.3	-73
HD29-RES	7.7	9.2	025YR3D	7.82	7.85	0.02	0.12	0.15	-1.38	-1.36	150.1	106.1	-44
HD29-RES	7.7	9.2	100YR3D	7.90	7.91	0.01	0.20	0.21	-1.30	-1.29	183.3	152.5	-31
HD30-RES	6.4	7.9	010YR1D	5.75	5.47	-0.29	-0.67	-0.96	-2.17	-2.46	290.2	153.5	-137
HD30-RES	6.4	7.9	025YR3D	6.40	6.06	-0.34	-0.02	-0.37	-1.52	-1.87	522.6	289.6	-233
HD30-RES	6.4	7.9	100YR3D	6.72	6.30	-0.42	0.30	-0.12	-1.20	-1.62	695.3	359.5	-336
HD31-HOWARD CK	9.1	11.9	010YR1D	10.88	9.54	-1.35	1.78	0.44	-1.01	-2.35	35.2	21.7	-14
HD31-HOWARD CK	9.1	11.9	025YR3D	11.68	10.30	-1.38	2.58	1.20	-0.21	-1.59	61.2	25.1	-36
HD31-HOWARD CK	9.1	11.9	100YR3D	12.00	10.62	-1.38	2.90	1.52	0.11	-1.27	75.1	26.6	-49

Exhibit 10 - EASTERN WATERSHED STORMWATER STUDY
SUMMARY OF PRE-IMPROVED AND PROPOSED BASIN ANALYSIS

Sub-Basin Name	Minimum Road Crown (ft - NGVD)	Minimum FFE EI (ft - NGVD)	Storm Event	Maximum Stage		Change in Stage (ft-NGVD)	Pre Max. Road Flood (100Y) (ft)	Prop. Max. Road Flood (100Y) (ft)	Pre Max. House Flood (100Y) (ft)	Prop. Max. House Flood (100Y) (ft)	Maximum Discharge		Change in Discharge (CFS)
				Pre-Improved (ft - NGVD)	Proposed (ft - NGVD)						Pre-Improved (CFS)	Proposed (CFS)	
M020	13.4	16.5	010YR1D	9.86	9.80	-0.06	-3.54	-3.60	-6.64	-6.70	89.9	84.8	-5
M020	13.4	16.5	025YR3D	11.04	10.93	-0.11	-2.36	-2.47	-5.46	-5.57	234.6	184.5	-50
M020	13.4	16.5	100YR3D	11.53	11.46	-0.06	-1.87	-1.94	-4.97	-5.04	297.4	244.0	-53
M030	13.8	15.0	010YR1D	13.08	13.03	-0.05	-0.74	-0.79	-1.92	-1.97	281.0	42.4	-239
M030	13.8	15.0	025YR3D	14.43	14.33	-0.10	0.61	0.51	-0.57	-0.67	473.9	72.5	-401
M030	13.8	15.0	100YR3D	15.00	14.92	-0.08	1.18	1.10	0.00	-0.08	583.3	80.5	-503
M040	13.5	15.0	010YR1D	13.05	13.01	-0.04	-0.45	-0.49	-1.95	-1.99	52.2	0.9	-51
M040	13.5	15.0	025YR3D	14.38	14.27	-0.10	0.88	0.77	-0.62	-0.73	76.2	5.2	-71
M040	13.5	15.0	100YR3D	15.01	14.92	-0.08	1.51	1.42	0.01	-0.08	92.6	5.8	-87
M050	13.9	15.0	010YR1D	13.08	13.03	-0.05	-0.82	-0.87	-1.92	-1.97	208.9	84.9	-124
M050	13.9	15.0	025YR3D	13.89	13.79	-0.10	-0.02	-0.11	-1.12	-1.21	384.3	161.1	-223
M050	13.9	15.0	100YR3D	14.22	14.23	0.00	0.32	0.33	-0.78	-0.77	462.7	205.4	-257
ZZ-M050A	14.7	17.7	010YR1D	13.08	13.03	-0.05	-1.62	-1.67	-4.62	-4.67	42.4	40.1	-2
ZZ-M050A	14.7	17.7	025YR3D	13.90	13.81	-0.10	-0.80	-0.90	-3.80	-3.90	73.7	71.7	-2
ZZ-M050A	14.7	17.7	100YR3D	14.28	14.28	0.00	-0.42	-0.42	-3.42	-3.42	83.7	78.5	-5
M070	15.2	17.0	010YR1D	15.42	15.35	-0.07	0.22	0.15	-1.58	-1.65	191.5	90.1	-101
M070	15.2	17.0	025YR3D	15.67	15.65	-0.02	0.47	0.45	-1.33	-1.35	357.1	135.1	-222
M070	15.2	17.0	100YR3D	15.72	15.72	0.00	0.52	0.52	-1.28	-1.28	417.2	143.2	-274
M080	15.2	16.0	010YR1D	14.76	14.74	-0.02	-0.44	-0.46	-1.24	-1.26	9.2	5.8	-3
M080	15.2	16.0	025YR3D	14.83	14.82	-0.01	-0.37	-0.38	-1.17	-1.18	16.7	4.8	-12
M080	15.2	16.0	100YR3D	14.85	14.85	0.00	-0.35	-0.35	-1.15	-1.15	20.8	10.8	-10
M150	15.4	19.0	010YR1D	13.67	13.67	0.00	-1.73	-1.73	-5.33	-5.33	38.8	5.4	-33
M150	15.4	19.0	025YR3D	14.82	14.78	-0.05	-0.58	-0.62	-4.18	-4.22	61.6	8.1	-54
M150	15.4	19.0	100YR3D	15.38	15.33	-0.05	-0.02	-0.07	-3.62	-3.67	75.8	8.2	-68
NORTH FORK	N/A	N/A	010YR1D	5.00	5.00	N/A					93.6	92.3	-1
NORTH FORK	N/A	N/A	025YR3D	6.25	6.25	N/A					272.8	260.1	-13
NORTH FORK	N/A	N/A	100YR3D	8.00	8.00	N/A					351.7	341.6	-10
ZZZ-US1-BOX-DN	13.5	15.0	010YR1D	9.68	10.11	0.43	-3.77	-3.34	-5.32	-4.89	48.7	78.2	29
ZZZ-US1-BOX-DN	13.5	15.0	025YR3D	11.49	12.37	0.88	-1.96	-1.08	-3.51	-2.63	243.0	412.6	170
ZZZ-US1-BOX-DN	13.5	15.0	100YR3D	11.99	12.83	0.84	-1.46	-0.62	-3.01	-2.17	298.7	527.4	229
ZZZ-US1-BOX-UP	13.5	15.0	010YR1D	9.69	10.14	0.45	-3.76	-3.31	-5.31	-4.86	35.2	66.3	30
ZZZ-US1-BOX-UP	13.5	15.0	025YR3D	11.63	12.85	1.03	-1.62	-0.80	-3.37	-2.35	228.3	399.0	171
ZZZ-US1-BOX-UP	13.5	15.0	100YR3D	12.10	13.36	1.26	-1.35	-0.09	-2.90	-1.64	280.6	511.0	230
MC DITCH-HOWARD	15.1	15.9	010YR1D	9.99	10.21	0.22	-5.11	-4.89	-5.91	-5.69	38.1	66.3	28
MC DITCH-HOWARD	15.1	15.9	025YR3D	11.92	12.79	0.87	-3.18	-2.31	-3.98	-3.11	229.4	399.1	170
MC DITCH-HOWARD	15.1	15.9	100YR3D	12.28	13.48	1.21	-2.83	-1.62	-3.63	-2.42	261.9	511.0	229

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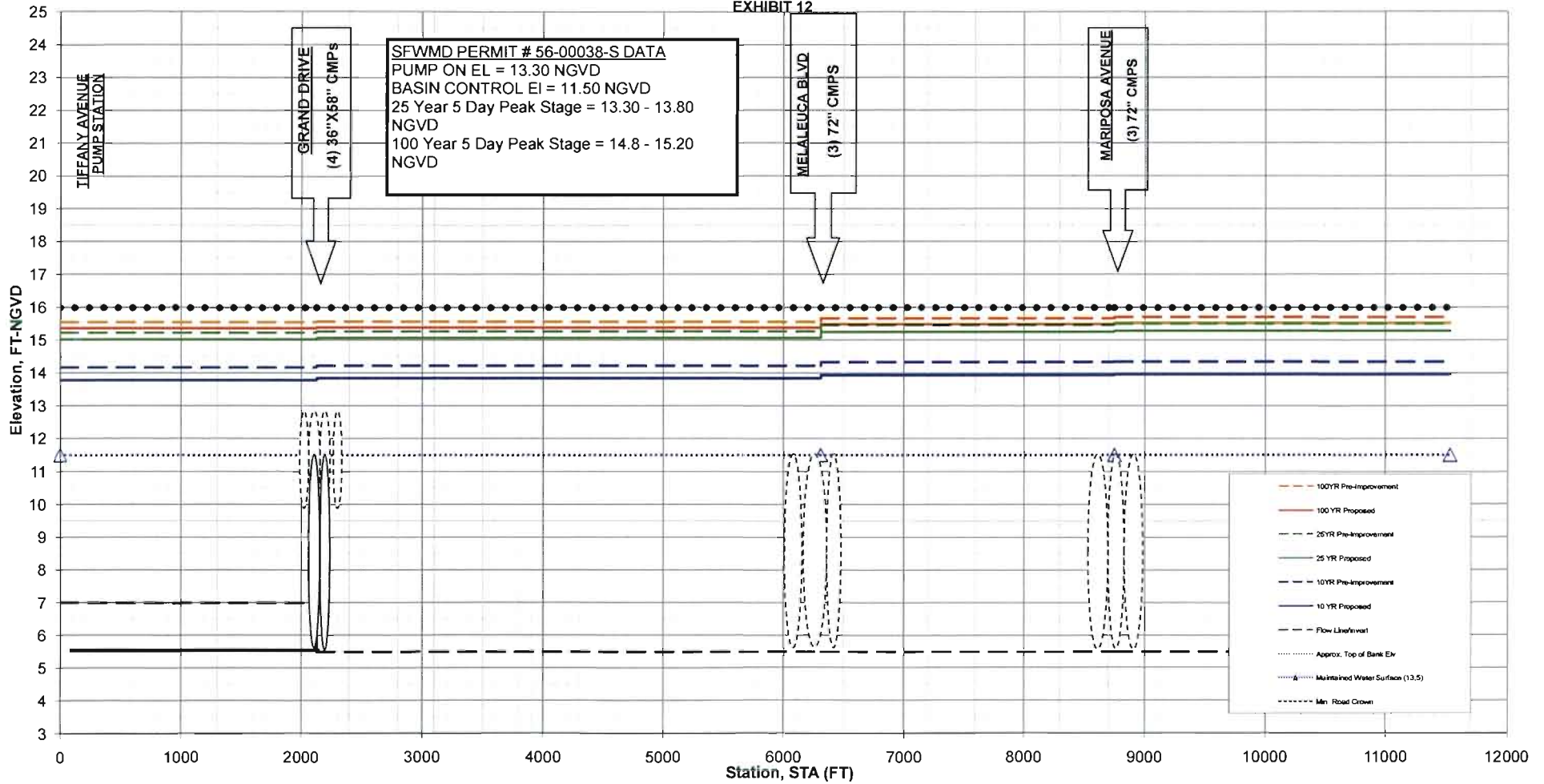
HOWARD CREEK
PRE-IMPROVEMENT/PROPOSED FLOOD PROFILES FOR HOWARD CREEK
EXHIBIT 11



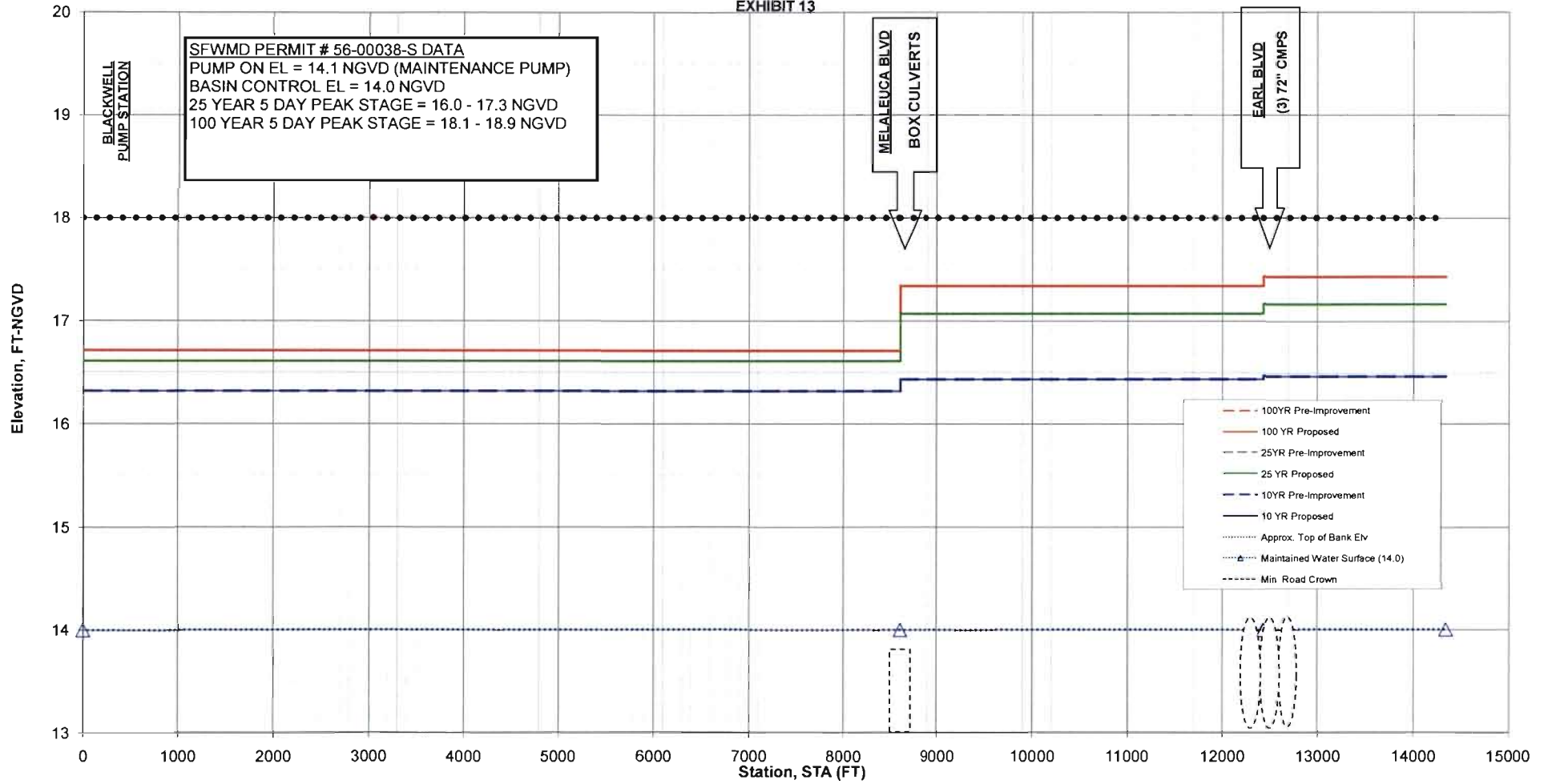
SEYBOLD WATERWAY

PRE IMPROVEMENT/ PROPOSED FLOOD PROFILES FOR SEYBOLD WATERWAY

EXHIBIT 12

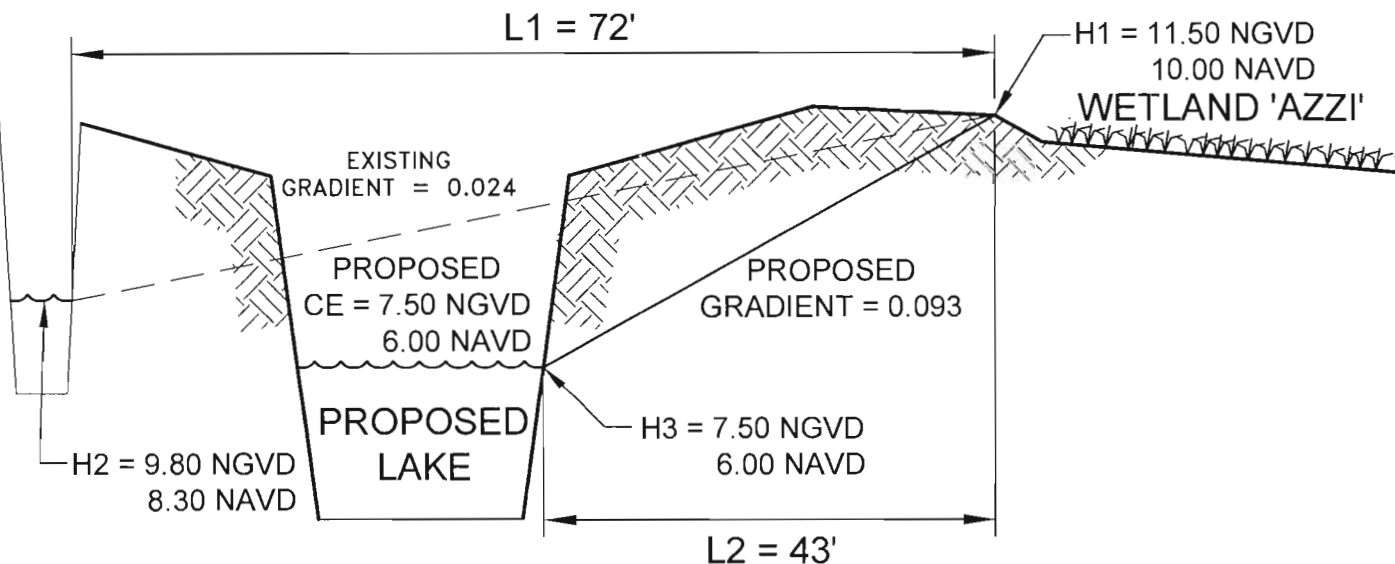


GATE WATERWAY PRE IMPROVEMENT/ PROPOSED FLOOD PROFILES FOR GATE WATERWAY EXHIBIT 13



APPENDIX A-1

LAKE-WETLAND GRADIENT ANALYSIS



WETLAND "AZZI" GRADIENT SECTION

N.T.S.

PRE VS. POST GRADIENT ANALYSIS		
WETLAND	EXISTING GRADIENT	PROPOSED GRADIENT
AZZI	0.024 ft/ft	0.093 ft/ft



Civil Engineering Professionals

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Engineering Business
No. EB-0007657

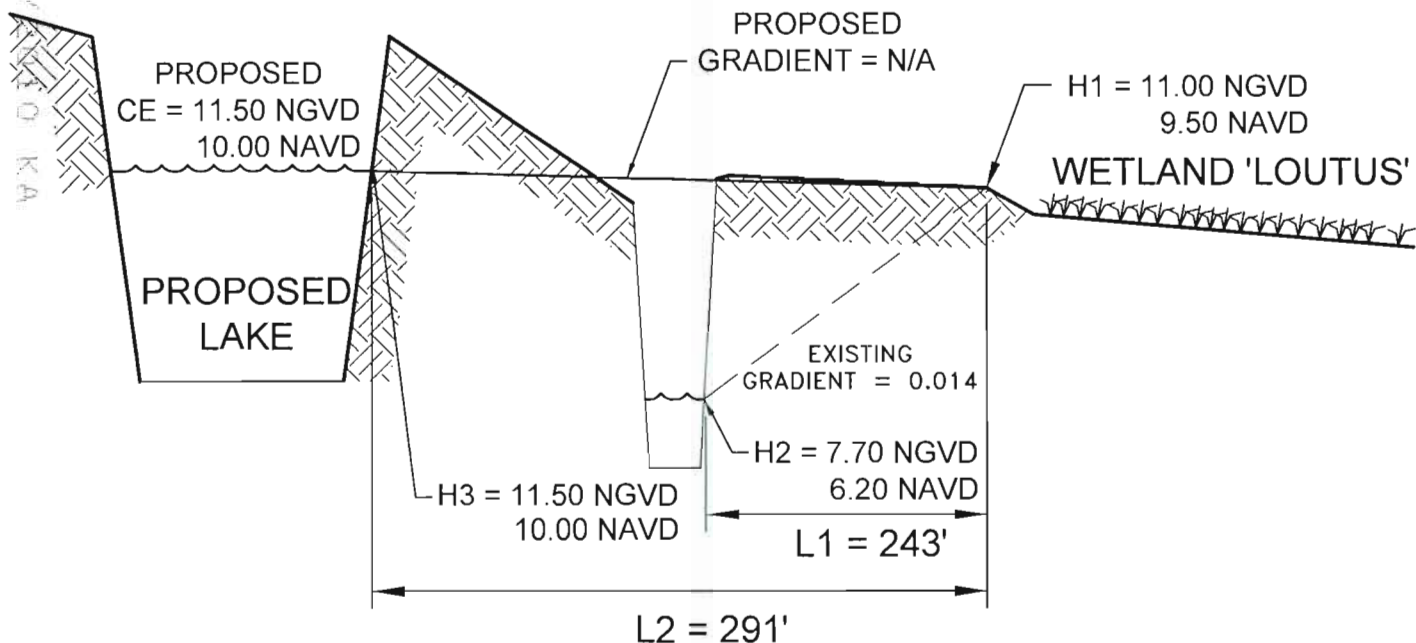
DATE: 02/19/10
DRAWN BY: DAS
DESIGNED BY:
CHECKED BY: JWC
PROJECT No: 801 18
HORZ. SCALE: N/A
VERT. SCALE: N/A
CADD FILE: GRAD ANALYSIS

**EASTERN WATERSHED IMPROVEMENT
PROJECT STORMWATER RETROFIT**
CITY OF PORT ST LUCIE, FLORIDA
**AZZI PARCEL POND
PRE VS. POST DEVELOPMENT
GRADIENT ANALYSIS**

**SCALE
VERIFICATION**
0 0.5
SOLID BAR IS EQUAL TO HALF
AN INCH ON ORIGINAL
DRAWING. ADJUST ALL
SCALED DIMENSIONS
ACCORDINGLY

Sheet No. 1 of 3

SCANNED 03/23/2010 KA



WETLAND "LOUTUS" GRADIENT SECTION

N.T.S.

PRE VS. POST GRADIENT ANALYSIS		
WETLAND	EXISTING GRADIENT	PROPOSED GRADIENT
LOUTUS	0.014 ft/ft	N/A



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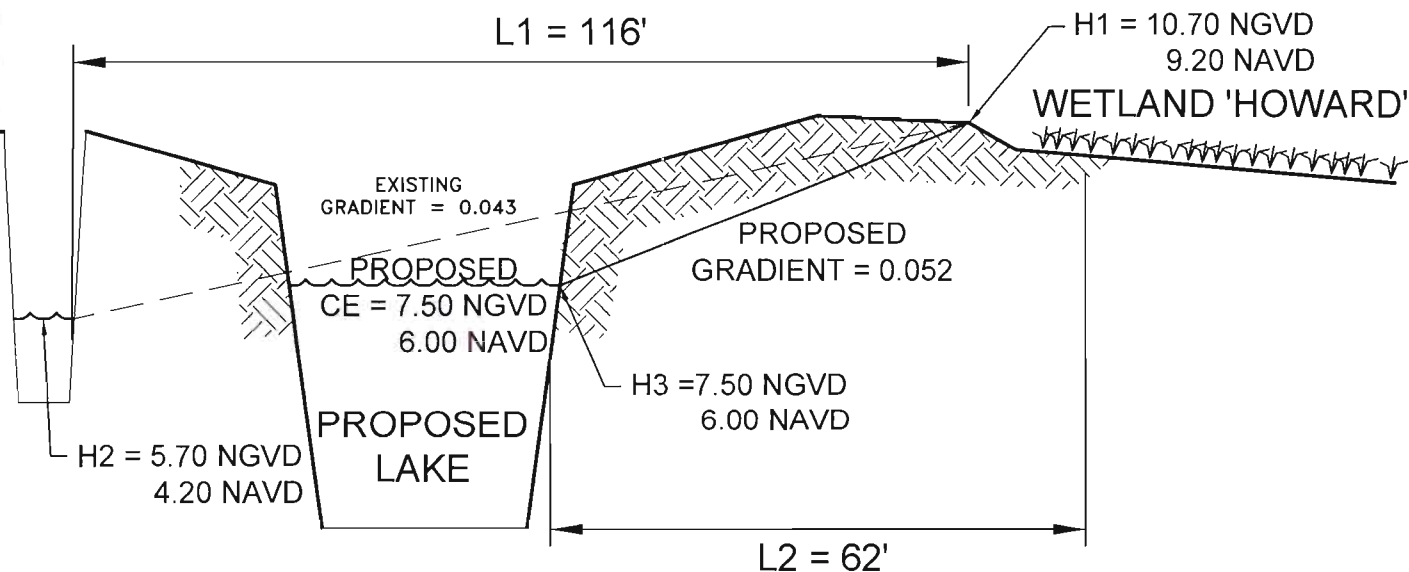
Engineering Business
No EB-0007657

DATE: 01/16/09
DRAWN BY: RRK
DESIGNED BY: RRK
CHECKED BY: JWC
PROJECT No.: 1153
HORZ. SCALE: N.T.S.
VERT. SCALE: N/A
CADD FILE: GRAD ANALY

**EASTERN WATERSHED IMPROVEMENT
PROJECT STORMWATER RETROFIT**
MARTIN COUNTY, FLORIDA
**LOUTUS PARCEL POND
PRE VS. POST DEVELOPMENT
GRADIENT ANALYSIS**

**SCALE
VERIFICATION**
0 0.5
SOLID BAR IS EQUAL TO HALF
AN INCH ON ORIGINAL
DRAWING. ADJUST ALL
SCALED DIMENSIONS
ACCORDINGLY

Sheet No. 2 of 3



WETLAND "HOWARD" GRADIENT SECTION

N.T.S.

PRE VS. POST GRADIENT ANALYSIS		
WETLAND	EXISTING GRADIENT	PROPOSED GRADIENT
HOWARD	0.043 ft/ft	0.052 ft/ft



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Engineering Business
No. EB-0007857

DATE: 01/16/09
DRAWN BY: RRK
DESIGNED BY: RRK
CHECKED BY: JWC
PROJECT No.: 1153
HORZ. SCALE: N T S
VERT. SCALE: N/A
CADD FILE: GRAD ANALY

EASTERN WATERSHED IMPROVEMENT PROJECT STORMWATER RETROFIT

CITY OF PORT ST LUCIE, FLORIDA

HOWARD CREEK STA PRE VS. POST DEVELOPMENT GRADIENT ANALYSIS

SCALE VERIFICATION

0 0.5
SOLID BAR IS EQUAL TO HALF
AN INCH ON ORIGINAL
DRAWING. ADJUST ALL
SCALED DIMENSIONS
ACCORDINGLY

Sheet No. 3 of 3

SCANNED 03/23/2010 KA

APPENDIX A-2

ICPR NODE/BASIN INPUT DATA

Basin Information For: HD-03 HOWARD CREEK STA

Total Drainage Basin Area = 20.89 ac
Total Project Area = 20.89

Impervious Area

Roofline/Bldg. = 0.00 ac
Pavement Area = 0.00 ac
Additional Imp. Area (lakes,etc) = 17.17 ac
Total Impervious Area = 17.17 ac
Total Pervious Area = 3.72 ac
Percent Impervious = 82.2%
Adjusted Soil Storage (2' depth to water table, uncompacted) = 0.45 in
Calculated SCS Curve Number = 96
Time of Concentration = 20.00 min
Allowable Discharge cfs
Min. Road Crown Elevation = 15.05 ft-NGVD
Min. F.F.E. = 15.85 ft-NGVD
Min. Berm EL. = 15.50 ft-NGVD

Stage Storage Calculations for Sub-basin HD-03 HOWARD CREEK STA

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)										
					6.50	7.50	8.50	9.50	10.50	11.50	12.50	13.50	14.50	15.50	16.00
Pond	Vertical	12.45	6.50		0.00	12.45	24.90	37.35	49.80	62.25	74.70	87.15	99.60	112.05	118.27
Pond Slopes	Linear	4.72	6.50	14.00	0.00	0.31	1.26	2.83	5.03	7.87	11.33	15.42	20.06	24.78	27.14
Dry Detention	Vertical	0.00	12.50		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dry Detention Slopes	Linear	0.00	12.50	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pavement	Linear	0.00	15.00	16.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Wetland Buffer	Linear	0.00	13.00	14.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vacant Future Phases	Linear	0.00	13.00	15.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Linear	0.00	15.00	16.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total:		17.17		Totals:	0.00	12.76	26.16	40.18	54.83	70.12	86.03	102.57	119.66	136.83	145.41
ICPR AREA					0.00	13.08	13.71	14.34	14.97	15.60	16.23	16.86	17.33	17.01	17.33

Basin Information For: CROSS ROAD (PRE)

Total Drainage Basin Area = 18.20 ac
Total Project Area = 18.20

Impervious Area

Roofline/Bldg. = 2.60 ac
Pavement Area = 12.00 ac
Offsite Pavement = 0.00
Additional Imp. Area (lakes,etc) = 0.4 ac
Total Impervious Area = 15.00 ac
Total Pervious Area = 3.20 ac
Percent Impervious = 82.4%
Adjusted Soil Storage (3' depth to water table) = 0.87 in
Calculated SCS Curve Number = 92
Time of Concentration = 15.00 min
Allowable Discharge = cfs
Min. Road Crown Elevation = 13.50 ft-NGVD
Min. F.F.E. = 15.00 ft-NGVD
Min. Berm EL. = ft-NGVD

Stage Storage Calculations for Sub-basin CROSS ROAD (PRE)

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)										
					4.10	10.00	11.00	12.00	13.00	13.50	14.00	15.00	15.50	16.00	17.00
Wet detention	Vertical	0.00	4.10		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Wet Detention Slope	Linear	0.40	4.10	15.50	0.00	0.61	0.84	1.09	1.39	1.55	1.72	2.08	2.28	2.48	2.88
Dry Detention	Vertical	0.00	11.50		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dry Detention Slopes	Linear	0.00	11.50	15.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pavement	Linear	12.00	13.50	15.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	9.00	15.00	21.00	33.00
Open Space	Linear	3.20	13.50	15.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27	2.40	4.00	5.60	8.80
	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total:		18.20			Totals:	0.00	0.61	0.84	1.09	1.39	1.55	2.99	13.48	21.28	44.68
ICPR AREA						0.00	0.21	0.24	0.28	0.31	0.33	5.41	15.58	15.60	15.60

Basin Information For: CROSS ROAD

Total Drainage Basin Area = 18.20 ac
Total Project Area = 18.20

Impervious Area

Roofline/Bldg. = 2.60 ac
Pavement Area = 12.00 ac
Offsite Pavement = 0.00
Additional Imp. Area (lakes,etc) = 0.04 ac
Total Impervious Area = 14.64 ac
Total Pervious Area = 3.56 ac
Percent Impervious = 80.4%
Adjusted Soil Storage (3' depth to water table) = 0.97 in
Calculated SCS Curve Number = 91
Time of Concentration = 15.00 min
Allowable Discharge = cfs
Min. Road Crown Elevation = 13.50 ft-NGVD
Min. F.F.E. = 15.00 ft-NGVD
Min. Berm EL. = ft-NGVD

Stage Storage Calculations for Sub-basin CROSS ROAD

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)											
					4.10	10.00	11.00	12.00	13.00	13.50	14.00	15.00	15.50	16.00	17.00	
Wet detention	Vertical	0.04	4.10		0.00	0.24	0.28	0.32	0.36	0.38	0.40	0.44	0.46	0.48	0.52	
Wet Detention Slope	Linear	0.00	10.50	15.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Dry Detention	Vertical	0.00	11.50		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Dry Detention Slopes	Linear	0.00	11.50	15.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pavement	Linear	12.00	13.50	15.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	9.00	15.00	21.00	33.00	
Open Space	Linear	3.56	13.50	15.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30	2.67	4.45	6.23	9.79	
	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total:		18.20			Totals:	0.00	0.24	0.28	0.32	0.36	0.38	1.69	12.11	19.91	27.71	43.31
					ICPR AREA	0.04	0.04	0.04	0.04	0.04	0.04	5.23	15.60	15.60	15.60	15.60

Basin Information For: HD15-LENNARD (PRE)

(SFWMD PERMIT NO. 56-01501-P, APPLICATION NO. 041209-13)

Total Drainage Basin Area = 12.60 ac
Total Project Area = 12.60

Impervious Area

Roofline/Bldg. = 0.00 ac
Pavement Area = 3.40 ac
Additional Imp. Area (Ditch,etc) = 1.89 ac
Total Impervious Area = 5.29 ac
Total Pervious Area = 7.31 ac
Percent Impervious = 42.0%
Adjusted Soil Storage (3' depth to water table) = 2.87 in
Calculated SCS Curve Number = 78
Time of Concentration = 10.00 min
Allowable Discharge = cfs
Min. Road Crown Elevation = ft-NGVD
Min. F.F.E. = ft-NGVD
Min. Berm EL. = ft-NGVD

Stage Storage Calculations for Sub-basin HD15-LENNARD (PRE)

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)										
					11.20	11.50	12.00	12.50	13.00	13.50	14.00	14.50	15.50	16.00	17.50
Ditch West Vertical	Vertical	0.00	11.20		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ditch West Linear	Linear	1.89	11.20	17.50	0.00	0.01	0.10	0.25	0.49	0.79	1.18	1.63	2.77	3.46	5.95
Swale East Vertical	Vertical	0.00	12.50		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Swale East Linear	Linear	1.89	12.50	17.50	0.00	0.00	0.00	0.00	0.05	0.19	0.43	0.76	1.70	2.32	4.73
Pavement	Linear	3.40	14.50	17.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.57	1.28	5.10
Open Space	Linear	5.42	14.50	17.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.90	2.03	8.13
	Linear	0.00	13.00	15.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Linear	0.00	15.00	16.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total:		12.60	Totals:		0.00	0.01	0.10	0.25	0.53	0.98	1.60	2.39	5.94	9.08	23.91
ICPR AREA					0.00	0.09	0.24	0.39	0.73	1.07	1.41	1.75	5.36	7.17	12.60

Basin Information For: HD21-LENNARD NORTH (PRE)

(SFWMD PERMIT NO. 56-01501-P, APPLICATION NO. 041209-13)

Total Drainage Basin Area = 7.41 ac
Total Project Area = 7.41

Impervious Area

Roofline/Bldg. = 0.00 ac
Pavement Area = 1.50 ac
Additional Imp. Area (Ditch,etc) = 0.9 ac
Total Impervious Area = 2.40 ac
Total Pervious Area = 5.01 ac
Percent Impervious = 32.4%
Adjusted Soil Storage (3' depth to water table) = 3.35 in
Calculated SCS Curve Number = 75
Time of Concentration = 10.00 min
Allowable Discharge = cfs
Min. Road Crown Elevation = 12.66 ft-NGVD
Min. F.F.E. = ft-NGVD
Min. Berm EL. = ft-NGVD

Stage Storage Calculations for Sub-basin HD21-LENNARD NORTH (PRE)

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)										
					9.00	10.00	10.50	11.00	11.50	12.00	12.50	13.00	14.00	14.50	15.00
Ditch West Vertical	Vertical	0.00	9.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Linear	0.90	9.00	14.50	0.00	0.08	0.18	0.33	0.51	0.74	1.00	1.31	2.05	2.48	2.93
Swale East Vertical	Vertical	0.00	12.50		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Swale East Linear	Linear	2.00	9.00	14.50	0.00	0.18	0.41	0.73	1.14	1.64	2.23	2.91	4.55	5.50	6.50
Pavement	Linear	1.50	14.00	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38	1.13
Open Space	Linear	3.01	12.50	15.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	1.35	2.41	3.76
	Linear	0.00	13.00	15.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Linear	0.00	15.00	16.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total:		7.41			0.00	0.26	0.59	1.05	1.65	2.37	3.23	4.37	7.95	10.76	14.31
ICPR AREA					0.00	0.53	0.79	1.05	1.32	1.58	1.85	2.71	4.44	6.81	7.41

Basin Information For: S LENNARD POND

(SFWMD PERMIT NO. 56-01501-P, APPLICATION NO. 041209-13)

Total Drainage Basin Area = 5.54 ac
Total Project Area = 5.54

Impervious Area

Roofline/Bldg. = 0.00 ac
Pavement Area = 3.62 ac
Additional Imp. Area (lakes,etc) = 0.92 ac
Total Impervious Area = 4.54 ac
Total Pervious Area = 1.00 ac
Percent Impervious = 81.9%
Adjusted Soil Storage (3' depth to water table) = 0.89 in
Calculated SCS Curve Number = 92
Time of Concentration = 10.00 min
Allowable Discharge = cfs
Min. Road Crown Elevation = 12.66 ft-NGVD
Min. F.F.E. = ft-NGVD
Min. Berm EL. = ft-NGVD

Stage Storage Calculations for Sub-basin S LENNARD POND

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)										
					9.70	10.00	10.50	11.00	11.50	12.00	12.66	13.00	14.00	14.50	15.00
Pond	Vertical	0.92	9.70		0.00	0.28	0.74	1.20	1.66	2.12	2.72	3.04	3.96	4.42	4.88
Pond Slopes	Linear	0.24	9.70	13.00	0.00	0.00	0.02	0.06	0.12	0.19	0.32	0.40	0.64	0.76	0.88
Dry Detention	Vertical	0.00	12.50		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dry Detention Slopes	Linear	0.00	12.50	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pavement	Linear	3.62	12.66	15.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	1.39	2.62	4.24
Open Space	Linear	0.76	12.66	15.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.29	0.55	0.89
	Linear	0.00	13.00	15.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Linear	0.00	15.00	16.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total:		5.54	Totals:		0.00	0.28	0.76	1.26	1.77	2.31	3.04	3.54	6.27	8.34	10.88
ICPR AREA					0.92	0.94	0.98	1.01	1.05	1.09	1.14	1.80	3.67	4.60	5.54

Basin Information For: HD12-LENNARD 1 (PRE)
(SFWMD PERMIT NO. 56-01501-P, APPLICATION NO. 041209-13)

Total Drainage Basin Area = 5.54 ac
Total Project Area = 5.54

Impervious Area

Roofline/Bldg. = 0.00 ac
Pavement Area = 0.76 ac
Additional Imp. Area (Ditches,etc) = 1 ac
Total Impervious Area = 1.76 ac
Total Pervious Area = 3.78 ac
Percent Impervious = 31.8%
Adjusted Soil Storage (3' depth to water table) = 3.38 in
Calculated SCS Curve Number = 75
Time of Concentration = 10.00 min
Allowable Discharge = cfs
Min. Road Crown Elevation = 12.66 ft-NGVD
Min. F.F.E. = ft-NGVD
Min. Berm EL. = ft-NGVD

Stage Storage Calculations for Sub-basin HD12-LENNARD 1 (PRE)

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)										
					9.00	10.00	10.50	11.00	11.50	12.00	12.66	13.00	14.00	14.50	15.00
Pond	Vertical	0.00	9.70		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pond Slopes	Linear	0.00	9.70	13.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dry Detention	Vertical	0.00	12.50		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dry Detention Slopes	Linear	0.00	12.50	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pavement	Linear	0.76	13.00	15.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.43	0.76
Open Space/Ditches	Linear	4.78	9.00	15.00	0.00	0.40	0.90	1.59	2.49	3.59	5.34	6.37	9.96	12.05	14.34
	Linear	0.00	13.00	15.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Linear	0.00	15.00	16.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total:		5.54	Totals:		0.00	0.40	0.90	1.59	2.49	3.59	5.34	6.37	10.15	12.48	15.10
ICPR AREA					0.00	0.80	1.20	1.59	1.99	2.39	2.92	3.19	4.36	4.95	5.54

Basin Information For: HD-13 LENNARD 2 -PROPOSED

(Includes Lennard 1 area(HD12)+Azzi Parcel from "Sams Wetland")

(SFWMD PERMIT NO. 56-01501-P, APPLICATION NO. 041209-13)

Total Drainage Basin Area = 17.18 ac
Total Project Area = 17.18

Impervious Area

Roofline/Bldg. = 0.00 ac
Pavement Area = 2.11 ac
Additional Imp. Area (lakes,etc) = 2.80 ac
Total Impervious Area = 4.91 ac
Total Pervious Area = 12.27 ac
Percent Impervious = 28.6%
Adjusted Soil Storage (3' depth to water table) = 3.54 in
Calculated SCS Curve Number = 74
Time of Concentration = 10.00 min
Allowable Discharge = cfs
Min. Road Crown Elevation = 13.40 ft-NGVD
Min. F.F.E. = ft-NGVD
Min. Berm EL. = ft-NGVD

Stage Storage Calculations for Sub-basin HD-13 LENNARD 2 -PROPOSED

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)									
					7.50	12.50	13.00	13.50	14.00	14.50	15.00	15.50	16.00	16.50
Pond	Vertical	8.08	7.50		0.00	40.40	44.44	48.48	52.52	56.56	60.60	64.64	68.68	72.72
Pond Slopes	Linear	1.40	7.50	15.10	0.00	2.30	2.79	3.32	3.89	4.51	5.18	5.88	6.58	7.28
Dry Detention	Vertical	0.00	12.50		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dry Detention Slopes	Linear	0.00	12.50	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pavement	Linear	5.73	12.66	15.50	0.00	0.00	0.12	0.71	1.81	3.42	5.52	8.14	11.00	13.87
Open Space	Linear	1.97	13.40	16.00	0.00	0.00	0.00	0.00	0.14	0.46	0.97	1.67	2.56	3.55
	Linear	0.00	13.00	15.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Linear	0.00	15.00	16.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total:		17.18			0.00	42.70	47.34	52.51	58.36	64.95	72.27	80.33	88.82	97.41
ICPR AREA					8.08	9.00	9.56	11.11	12.28	14.07	15.24	16.97	17.01	17.35

ac-ft

acre

Basin Information For: HD-13 LENNARD 2 (PRE)
(SFWMD PERMIT NO. 56-01501-P, APPLICATION NO. 041209-13)

Total Drainage Basin Area = 2.57 ac
Total Project Area = 2.57

Impervious Area

Roofline/Bldg. = 0.00 ac
Pavement Area = 0.85 ac
Additional Imp. Area (Ditches, etc) = 0.5 ac
Total Impervious Area = 1.35 ac
Total Pervious Area = 1.22 ac
Percent Impervious = 52.5%
Adjusted Soil Storage (3' depth to water table) = 2.35 in
Calculated SCS Curve Number = 81
Time of Concentration = 10.00 min
Allowable Discharge = cfs
Min. Road Crown Elevation = ft-NGVD
Min. F.F.E. = ft-NGVD
Min. Berm EL. = ft-NGVD

Stage Storage Calculations for Sub-basin HD-13 LENNARD 2 (PRE)

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)										
					10.00	10.50	11.00	11.50	12.00	12.50	13.00	13.40	14.00	14.50	15.00
Ditches	Vertical	0.00	10.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ditches Slopes	Linear	0.50	10.00	14.00	0.00	0.02	0.06	0.14	0.25	0.39	0.56	0.72	1.00	1.25	1.50
Dry Detention	Vertical	0.00	12.50		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dry Detention Slopes	Linear	0.00	12.50	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pavement	Linear	0.85	13.40	15.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.32	0.68
Open Space	Linear	1.22	13.40	15.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.46	0.98
	Linear	0.00	13.00	15.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Linear	0.00	15.00	16.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total:		2.57			0.00	0.02	0.06	0.14	0.25	0.39	0.56	0.72	1.23	2.03	3.16
ICPR AREA					0.00	0.06	0.13	0.19	0.25	0.31	0.38	0.43	1.28	1.92	2.57

Basin Information For: HD-13 LENNARD 2 (Exist)
(SFWMD PERMIT NO. 56-01501-P, APPLICATION NO. 041209-13)

Total Drainage Basin Area = 2.57 ac
Total Project Area = 2.57

Impervious Area

Roofline/Bldg. = 0.00 ac
Pavement Area = 2.11 ac
Additional Imp. Area (lakes,etc) = 0 ac
Total Impervious Area = 2.11 ac
Total Pervious Area = 0.46 ac
Percent Impervious = 82.1%
Adjusted Soil Storage (3' depth to water table) = 0.89 in
Calculated SCS Curve Number = 92
Time of Concentration = 10.00 min
Allowable Discharge = cfs
Min. Road Crown Elevation = 12.66 ft-NGVD
Min. F.F.E. = ft-NGVD
Min. Berm EL. = ft-NGVD

Stage Storage Calculations for Sub-basin HD-13 LENNARD 2 (Exist)

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)										
					9.70	10.00	10.50	11.00	11.50	12.00	13.00	13.40	14.00	14.50	15.50
Pond	Vertical	0.00	9.70		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pond Slopes	Linear	0.00	9.70	13.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dry Detention	Vertical	0.00	12.50		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dry Detention Slopes	Linear	0.00	12.50	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pavement	Linear	2.11	13.40	15.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18	0.61	2.22
Open Space	Linear	0.46	13.40	15.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.13	0.48
	Linear	0.00	13.00	15.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Linear	0.00	15.00	16.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total:		2.57	Totals:		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.74	2.70
ICPR AREA					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.73	1.35	2.57

Basin Information For: HD-14 Howard Creek Proposed

Total Drainage Basin Area = 35.90 ac
Total Project Area = 35.90

Impervious Area

Roofline/Bldg. = 3.00 ac
Pavement Area = 6.34 ac
Offsite Pavement = 0.00
Additional Imp. Area (lakes,etc) = 10.6 ac
Total Impervious Area = 19.94 ac
Total Pervious Area = 15.96 ac
Percent Impervious = 55.5%
Adjusted Soil Storage (3.5' depth to water table) = 3.06 in
Calculated SCS Curve Number = 77
Time of Concentration = 20.00 min
Allowable Discharge = cfs
Min. Road Crown Elevation = 15.00 ft-NGVD
Min. F.F.E. = 16.00 ft-NGVD
Min. Berm EL. = ft-NGVD

Stage Storage Calculations for Sub-basin HD-14 Howard Creek Proposed

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)										
					7.50	9.99	10.00	11.50	12.00	12.50	13.00	13.50	14.00	15.00	16.00
Howards Ditch	Vertical	10.00	7.50		0.00	24.90	25.00	40.00	45.00	50.00	55.00	60.00	65.00	75.00	85.00
Howards Ditch	Linear	0.70	7.50	15.00	0.00	0.29	0.29	0.75	0.95	1.17	1.41	1.68	1.97	2.63	3.33
Other Lakes	Vertical	0.60	10.00		0.00	0.00	0.00	0.90	1.20	1.50	1.80	2.10	2.40	3.00	3.60
Other Lakes Slope	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pavement	Linear	6.34	15.00	16.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.17
Open Space	Linear	15.26	15.00	17.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.82
	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total:		35.90	Totals:		0.00	25.19	25.29	41.65	47.14	52.67	58.21	63.78	69.37	80.62	98.91
ICPR AREA					10.00	10.23	10.83	10.97	11.02	11.07	11.11	11.16	11.21	11.30	25.27

Basin Information For: HD-14 Howard Creek (Existing)

Total Drainage Basin Area = 31.90 ac
Total Project Area = 31.90

Impervious Area

Roofline/Bldg. = 3.00 ac
Pavement Area = 6.34 ac
Offsite Pavement = 0.00
Additional Imp. Area (lakes,etc) = 2.88 ac
Total Impervious Area = 12.22 ac
Total Pervious Area = 19.68 ac
Percent Impervious = 38.3%
Adjusted Soil Storage (3.5' depth to water table) = 4.24 in
Calculated SCS Curve Number = 70
Time of Concentration = 30.00 min
Allowable Discharge = cfs
Min. Road Crown Elevation = 15.00 ft-NGVD
Min. F.F.E. = 16.00 ft-NGVD
Min. Berm EL. = ft-NGVD

Stage Storage Calculations for Sub-basin HD-14 Howard Creek (Existing)

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)										
					9.00	9.99	10.00	11.50	12.00	12.50	13.00	13.50	14.00	15.00	16.00
Howards Ditch	Vertical	1.01	9.00		0.00	1.00	1.01	2.52	3.03	3.53	4.04	4.54	5.05	6.06	7.07
Howards Ditch	Linear	1.27	9.00	15.00	0.00	0.10	0.11	0.66	0.95	1.30	1.69	2.14	2.65	3.81	5.08
Other Lakes	Vertical	0.60	10.00		0.00	0.00	0.00	0.90	1.20	1.50	1.80	2.10	2.40	3.00	3.60
Other Lakes Slope	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pavement	Linear	6.34	15.00	16.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.17
Open Space	Linear	19.68	15.00	16.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.84
	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total:		31.90		Totals:	0.00	1.10	1.12	4.09	5.18	6.33	7.53	8.79	10.10	12.87	28.76
				ICPR AREA	1.01	1.22	1.82	2.14	2.25	2.35	2.46	2.56	2.67	2.88	28.90

Basin Information For: HD-15 East Lake Village

Total Drainage Basin Area = 135.18 ac
Total Project Area = 135.18

Impervious Area

Roofline/Bldg. = 22.60 ac
Pavement Area = 60.16 ac
Offsite Pavement = 0.00
Additional Imp. Area (lakes,etc) = 14.01 ac
Total Impervious Area = 96.77 ac
Total Pervious Area = 38.41 ac
Percent Impervious = 71.6%
Adjusted Soil Storage (3.5' depth to water table, uncompacted) = 1.95 in
Calculated SCS Curve Number = 84
Time of Concentration = 30.00 min
Allowable Discharge = cfs
Min. Road Crown Elevation = 17.00 ft-NGVD
Min. F.F.E. = ft-NGVD
Min. Berm EL. = ft-NGVD

Stage Storage Calculations for Sub-basin HD-15 East Lake Village

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)										
					11.20	13.00	13.80	14.00	14.50	15.00	15.50	15.80	16.00	16.50	17.50
Lake	Vertical	12.49	11.20		0.00	22.48	32.47	34.97	41.22	47.46	53.71	57.45	59.95	66.20	78.69
Lake Slope	Linear	2.94	11.20	14.50	0.00	1.44	3.01	3.49	4.85	6.32	7.79	8.67	9.26	10.73	13.67
Dry Retention	Vertical	1.52	13.80		0.00	0.00	0.00	0.30	1.06	1.82	2.58	3.04	3.34	4.10	5.62
Dry Retention Slope	Linear	0.89	13.80	15.80	0.00	0.00	0.00	0.01	0.11	0.32	0.64	0.89	1.07	1.51	2.40
Open Space (Low)	Linear	22.22	13.50	16.50	0.00	0.00	0.33	0.93	3.70	8.33	14.81	19.59	23.15	33.33	55.55
Parks	Linear	4.29	14.50	15.50	0.00	0.00	0.00	0.00	0.00	0.54	2.15	3.43	4.29	6.44	10.73
Open Space (High)	Linear	8.07	16.00	17.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.67	6.05
Pavement	Linear	60.16	14.50	18.05	0.00	0.00	0.00	0.00	0.00	2.12	8.47	14.32	19.06	33.89	76.25
	Linear		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total:		135.18		Totals:	0.00	23.93	35.82	39.70	50.94	66.91	90.16	107.40	120.13	156.88	248.97
ICPR AREA					12.49	14.09	15.64	23.21	21.76	42.12	50.85	64.10	63.16	83.84	100.35

Basin Information For: HD-15 East Lake Village (PRE)

Total Drainage Basin Area = 135.18 ac
Total Project Area = 135.18

Impervious Area

Roofline/Bldg. = 2.78 ac
Dirt Road = 0.75 ac
Pavement = 7.18
Additional Imp. Area (lakes,etc) = 13.79 ac
Total Impervious Area = 24.50 ac
Total Pervious Area = 110.68 ac
Percent Impervious = 18.1%
Adjusted Soil Storage (3.0' depth to water table, uncompacted) = 4.42 in
Calculated SCS Curve Number = 69
Time of Concentration = 60.00 min
Allowable Discharge = cfs
Min. Road Crown Elevation = 13.90 ft-NGVD
Min. F.F.E. = ft-NGVD
Min. Berm EL. = ft-NGVD

Stage Storage Calculations for Sub-basin HD-15 East Lake Village (PRE)

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)											
					11.20	12.00	13.00	13.80	13.90	15.00	15.50	15.80	16.00	17.50	18.05	
Lake	Vertical	6.57	11.20		0.00	5.26	11.83	17.08	17.74	24.97	28.25	30.22	31.54	41.39	45.00	
Lake Slope	Linear	1.94	11.20	15.00	0.00	0.16	0.83	1.73	1.86	3.69	4.66	5.24	5.63	8.54	9.60	
Ditch Vertical	Vertical	0.00	10.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Ditch Slope	Linear	6.65	11.20	15.00	0.00	0.56	2.84	5.92	6.38	12.64	15.96	17.96	19.29	29.26	32.92	
Dry Retention	Vertical	0.57	13.80		0.00	0.00	0.00	0.00	0.06	0.68	0.97	1.14	1.25	2.11	2.42	
Dry Retention Slope	Linear	0.43	13.80	15.80	0.00	0.00	0.00	0.00	0.00	0.15	0.31	0.43	0.52	1.16	1.40	
Open Space	Linear	109.06	13.00	16.00	0.00	0.00	0.00	11.63	14.72	72.71	113.60	142.51	163.59	327.18	387.16	
Pavement	Linear	7.18	13.90	18.05	0.00	0.00	0.00	0.00	0.00	1.05	2.21	3.12	3.81	11.21	14.90	
	Linear	0.00	16.00	17.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	Linear		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total:		135.18	Totals:		0.00	5.98	15.49	36.36	40.76	115.88	165.97	200.61	225.62	420.85	493.41	ac-ft
ICPR AREA					6.57	8.38	10.64	41.53	46.55	90.03	110.32	120.67	129.42	130.88	132.97	acre

ac-ft
acre

Basin Information For: HD29-RES

Total Basin Area	=	40.70 ac
No. of Residential Lots (est.)	=	60.00
Residential Area (0.25 ac lots)	=	15.00 ac
No. of Residential Structures	=	60.00
Length of Roadways (60' ROW)	=	4597 ft
Length of Roadways (100' ROW)	=	1746
Length of Roadways (80' ROW)	=	0
Roadway Right of way	=	10.34 ac

Impervious Area

Residential Area (0.40 acres lots, 34% imp.)		
Bldg./Pool/Porch (avg house = 5000 sf)	=	6.89 ac
Lot Driveway/concrete (avg = 1000 sf)	=	1.38 ac
Pavement Area (Assumed 50% of ROW)	=	5.17 ac
Additional Imp. Area (lakes, greenways etc)	=	1.20 ac
Total Impervious Area	=	14.63 ac

Total Pervious Area	=	26.07 ac
Lot Open Space	=	20.90 ac
Roadway Shoulder	=	0.84 ac
Roadway Swale	=	4.33 ac

Percent Impervious	=	36.0%
Adjusted Soil Storage (Flatwoods, 3' to W.S.W.T.E.)	=	3.17 in
Calculated SCS Curve Number	=	76
Time of Concentration	=	15.00 min

ICPR MODEL INPUT DATA

CN	76
TC	15.00
Area	40.70

Min. Road Crown Elevation 7.7
 Max. F.F.E. 14
 Max. Road Crown 12
 All elevations are in NGVD

Canal / Water Way Storage/ Areas

ROW Width	150	100	50	60	65	Lakes
Vertical Storage	100	60	10	0	0	
Linear Storage	50	40	40	60	65	
Length	0	0.00	1044	0	0	
Vertical Area	0.00	0.00	0.24	0.00	0.00	0
Linear Area	0.00	0.00	0.96	0.00	0.00	

Stage Storage Calculations for Sub-basin HD29-RES

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)										
					6.00	6.20	7.42	7.70	8.70	10.00	11.80	12.00	14.00	15.00	16.00
Wet Detention (Canals)	Vertical	0.00	6.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Wet Detention Slopes (Canals)	Linear	0.00	6.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Green Ways	Vertical	0.24	6.00		0.00	0.05	0.34	0.41	0.65	0.96	1.39	1.44	1.92	2.16	2.40
Green Ways Slopes	Linear	0.96	6.00	10.00	0.00	0.00	0.24	0.35	0.87	1.92	3.64	3.83	5.75	6.71	7.67
Pavement (Road right-of-way)	Linear	5.17	7.70	12.00	0.00	0.00	0.00	0.80	0.60	3.18	10.11	11.11	21.45	26.62	31.79
Roadside Swale	Linear	4.33	6.20	12.00	0.00	0.00	0.56	0.84	2.33	5.38	11.69	12.54	21.20	25.52	29.85
	Linear	0.84	7.42	11.80	0.00	0.00	0.00	0.01	0.16	0.64	1.85	2.02	3.71	4.55	5.39
Building/Pool - No Storage	Linear	6.89	0.00	0.00											
Lot Pavement + Open Space	Linear	22.28	8.70	14.00	0.00	0.00	0.00	0.00	0.00	3.55	20.19	22.88	59.03	81.30	103.58
Total:		40.70			Totals:	0.00	0.05	1.14	1.60	4.61	15.63	48.88	53.83	113.05	146.87
					ICPR AREA	0.24	0.29	1.49	1.82	4.20	12.76	24.18	25.41	33.81	33.81

ac-ft

acre

Basin Information For: HD-17 MARKET PLACE

(SFWMD PERMIT NO. 56-01300-P, APPLICATION NO. 961106-3)

Total Drainage Basin Area = 22.85 ac
Total Project Area = 19.18

Impervious Area

Roofline/Bldg. = 3.57 ac
Pavement Area = 11.36 ac
Additional Imp. Area (lakes, etc) = 1.75 ac
Total Impervious Area = 16.68 ac
Total Pervious Area = 6.17 ac
Percent Impervious = 73.0%
Adjusted Soil Storage (4' depth to water table) = 1.82 in
Calculated SCS Curve Number = 85
Time of Concentration = 15.00 min
Allowable Discharge = 2.9 cfs
Min. Road Crown Elevation = 15.00 ft-NGVD
Min. F.F.E. = 17.00 ft-NGVD
Min. Berm EL. = ft-NGVD

Stage Storage Calculations for Sub-basin HD-17 MARKET PLACE

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)										
					12.00	12.99	13.00	14.00	14.50	14.70	15.00	15.90	16.50	17.00	17.50
Wet Detention	Vertical	1.75	12.00		0.00	1.73	1.75	3.50	4.37	4.72	5.25	6.82	7.87	8.75	9.62
Wet Detention Slopes	Linear	0.00	12.00	15.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dry Detention	Vertical	0.84	13.00		0.00	0.00	0.00	0.84	1.26	1.43	1.68	2.44	2.94	3.36	3.78
Wetland Slopes	Linear	0.00	13.00	18.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pavement	Linear	10.58	15.00	17.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.71	4.76	8.46	13.23
Open Space	Linear	2.44	15.00	17.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.49	1.37	2.44	3.66
Offsite Road	Linear	3.67	14.70	15.90	0.00	0.00	0.00	0.00	0.00	0.00	0.14	2.20	4.40	6.24	8.07
	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total:		22.85		Totals:	0.00	1.73	1.75	4.34	5.63	6.15	7.07	13.67	21.35	29.25	38.36
ICPR AREA					1.75	1.75	2.59	2.59	2.59	2.59	3.51	11.17	14.44	17.16	19.28

Basin Information For: HD-18 OLD WALMART

(SFWMD PERMIT NO. 56-00867-S, APPLICATION NO. 900208-B)

Total Drainage Basin Area = 16.65 ac
Total Project Area = 16.65

Impervious Area

Roofline/Bldg. = 3.41 ac
Pavement Area = 9.27 ac
Additional Imp. Area (lakes,etc) = 1.01 ac
Total Impervious Area = 13.69 ac
Total Pervious Area = 2.96 ac
Percent Impervious = 82.2%
Adjusted Soil Storage (4' depth to water table) = 1.45 in
Calculated SCS Curve Number = 87
Time of Concentration = 15.00 min
Allowable Discharge cfs
Min. Road Crown Elevation = 15.00 ft-NGVD
Min. F.F.E. = 17.60 ft-NGVD
Min. Berm EL. = ft-NGVD

Stage Storage Calculations for Sub-basin HD-18 OLD WALMART

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)										
					12.00	12.50	13.00	13.50	14.00	14.50	14.70	15.00	15.90	16.00	17.60
Wet Detention	Vertical	1.01	12.00		0.00	0.50	1.01	1.51	2.02	2.52	2.73	3.03	3.94	4.04	5.66
Wet Detention Slopes	Linear	0.00	12.00	16.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dry Detention	Vertical	0.00	13.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Wetland Slopes	Linear	0.00	13.00	18.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pavement	Linear	9.27	15.00	17.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.44	1.78	12.05
Open Space	Linear	2.96	13.00	17.60	0.00	0.00	0.00	0.08	0.32	0.72	0.93	1.29	2.71	2.90	6.81
Offsite Road	Linear	0.00	14.70	15.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total:		16.65	Totals:		0.00	0.50	1.01	1.60	2.34	3.25	3.66	4.32	8.09	8.72	24.51
ICPR AREA					1.01	1.01	1.01	1.33	1.65	1.98	2.10	2.30	6.08	6.51	13.24

Basin Information For: HD-19 AUTOZONE
(SFWMD PERMIT NO. 56-00826-S-02, APPLICATION NO. 971119-7)

Total Drainage Basin Area = 1.89 ac
Total Project Area = 3.45
Other Undevelopment Area = 1.56

Impervious Area

Roofline/Bldg. = 0.17 ac
Pavement Area = 0.93 ac
Additional Imp. Area (lakes,etc) = 0 ac
Total Impervious Area = 1.10 ac
Total Pervious Area = 0.79 ac
Percent Impervious = 58.2%
Adjusted Soil Storage (3' depth to water table) = 2.07 in
Calculated SCS Curve Number = 83
Time of Concentration = 10.00 min
Allowable Discharge = 0.93 cfs
Min. Road Crown Elevation = 14.99 ft-NGVD
Min. F.F.E. = 17.69 ft-NGVD
Min. Berm EL. = 13.99 ft-NGVD

Stage Storage Calculations for Sub-basin HD-19 AUTOZONE

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)										
					12.00	12.50	13.00	13.50	14.00	14.50	15.00	16.00	17.00	17.70	18.00
Wet Detention	Vertical	0.00	12.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Wet Detention Slopes	Linear	0.00	12.00	16.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dry Detention	Vertical	0.15	13.00		0.00	0.00	0.00	0.07	0.15	0.22	0.30	0.45	0.60	0.70	0.75
Dry Detention Slope	Linear	0.15	13.00	15.00	0.00	0.00	0.00	0.01	0.04	0.08	0.15	0.30	0.45	0.56	0.60
Pavement	Linear	0.93	15.00	17.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.69	1.26	1.53
Open Space	Linear	0.49	15.00	17.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.36	0.66	0.81
Offsite Road	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total:		1.89		Totals:	0.00	0.00	0.00	0.08	0.19	0.31	0.45	1.01	2.10	3.18	3.69
ICPR AREA					0.00	0.00	0.15	0.19	0.23	0.26	0.30	0.83	1.35	1.72	1.72

Basin Information For: HD-20 JENNINGS RV
(SFWMD PERMIT NO. 56-01419-P, APPLICATION NO. 990824-2)

Total Drainage Basin Area = 7.07 ac
Total Project Area = 7.07

Control Structure

3" dia. Orifice, invert elev. = 10.00 NGVD
2" wide sharp crested weir w/ crest elev. = 12.00 NGVD Out falling to Howard Creek
through 15 LF 24" RCP

Impervious Area

Roofline/Bldg. = 0.09 ac
Pavement Area = 1.68 ac
Additional Imp. Area (lakes,etc) = 0 ac
Total Impervious Area = 1.77 ac
Total Pervious Area = 5.30 ac
Percent Impervious = 25.0%
Adjusted Soil Storage (3' depth to water table) = 3.71 in
Calculated SCS Curve Number = 73
Time of Concentration = 10.00 min
Allowable Discharge = cfs
Min. Road Crown Elevation = 14.30 ft-NGVD
Min. F.F.E. = 17.00 ft-NGVD
Min. Berm EL. = 15.00 ft-NGVD

Stage Storage Calculations for Sub-basin HD-20 JENNINGS RV

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)										
					11.00	11.50	12.00	12.50	13.00	13.50	14.00	14.30	14.70	16.00	17.00
Wet Detention	Vertical	0.00	11.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Wet Detention Slopes	Linear	0.00	11.00	15.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dry Detention	Vertical	0.70	11.00		0.00	0.35	0.70	1.05	1.40	1.75	2.10	2.31	2.59	3.50	4.20
Wetland Slopes	Linear	0.14	11.00	14.30	0.00	0.01	0.02	0.05	0.08	0.13	0.19	0.23	0.29	0.47	0.64
Pavement	Linear	1.68	14.30	17.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.90	2.27
Open Space	Linear	4.46	14.30	17.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	2.39	6.02
	Linear	0.00	14.70	15.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total:		7.07			Totals:	0.00	0.36	0.72	1.10	1.48	1.88	2.29	2.54	3.06	13.10
					ICPR AREA	0.70	0.72	0.74	0.76	0.78	0.81	0.83	0.84	1.75	6.98

Basin Information For: HD-23 SAMS WETLAND

(SFWMD PERMIT NO. 56-01745-P, APPLICATION NO. 040712-14)

Total Drainage Basin Area	=	30.74 ac
Total Project Area	=	30.74
Future Phases	=	21.32

Impervious Area

Roofline/Bldg.	=	0.00 ac
Pavement Area	=	0.00 ac
Additional Imp. Area (lakes,etc)	=	7.86 ac
Total Impervious Area	=	7.86 ac
Total Pervious Area	=	22.88 ac
Percent Impervious	=	25.6%
Adjusted Soil Storage (2' depth to water table, uncompacted)	=	1.86 in
Calculated SCS Curve Number	=	84
Time of Concentration	=	20.00 min
Allowable Discharge	=	cfs
Min. Road Crown Elevation	=	15.05 ft-NGVD
Min. F.F.E.	=	15.85 ft-NGVD
Min. Berm EL.	=	15.50 ft-NGVD

Stage Storage Calculations for Sub-basin HD-23 SAMS WETLAND

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)										
					11.50	12.00	12.50	13.00	13.50	14.00	14.50	15.00	15.50	16.00	16.50
Wetland	Vertical	0.00	11.50		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Wetland Slopes	Linear	7.86	11.50	14.00	0.00	0.39	1.57	3.54	6.29	9.83	13.76	17.69	21.62	25.55	29.48
Dry Detention	Vertical	0.00	12.50		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dry Detention Slopes	Linear	0.00	12.50	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pavement	Linear	0.00	15.00	16.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Wetland Buffer	Linear	1.56	13.00	14.00	0.00	0.00	0.00	0.00	0.20	0.78	1.56	2.34	3.12	3.90	4.68
Vacant Future Phases	Linear	21.32	13.00	15.50	0.00	0.00	0.00	0.00	1.07	4.26	9.59	17.06	26.65	37.31	47.97
	Linear	0.00	15.00	16.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total:		30.74	Totals:		0.00	0.39	1.57	3.54	7.55	14.87	24.91	37.08	51.39	66.76	82.13
ICPR AREA					0.00	1.57	3.14	4.72	11.33	17.95	22.21	26.48	30.74	30.74	30.74

Basin Information For: HD-23 SAMS WETLAND (PROPOSED)

(SFWMD PERMIT NO. 56-01745-P, APPLICATION NO. 040712-14)

Total Drainage Basin Area = 21.70 ac
 Total Project Area = 21.70
 Future Phases = 16.57

Impervious Area

Roofline/Bldg. = 0.00 ac
 Pavement Area = 0.00 ac
 Additional Imp. Area (lakes,etc) = 7.86 ac
 Total Impervious Area = 7.86 ac
 Total Pervious Area = 13.84 ac
 Percent Impervious = 36.2%
 Adjusted Soil Storage (2' depth to water table, uncompacted) = 1.59 in
 Calculated SCS Curve Number = 86
 Time of Concentration = 20.00 min
 Allowable Discharge cfs
 Min. Road Crown Elevation = 15.05 ft-NGVD
 Min. F.F.E. = 15.85 ft-NGVD
 Min. Berm EL = 15.50 ft-NGVD

Stage Storage Calculations for Sub-basin HD-23 SAMS WETLAND (PROPOSED)

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)										
					11.50	12.00	12.50	13.00	13.50	14.00	14.50	15.00	15.50	16.00	16.50
Wetland	Vertical	0.00	11.50		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Wetland Slopes	Linear	7.86	11.50	13.00	0.00	0.66	2.62	5.90	9.83	13.76	17.69	21.62	25.55	29.48	33.41
Dry Detention	Vertical	0.00	12.50		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dry Detention Slopes	Linear	0.00	12.50	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pavement	Linear	0.00	15.00	16.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Wetland Buffer	Linear	1.56	13.00	14.00	0.00	0.00	0.00	0.00	0.20	0.78	1.56	2.34	3.12	3.90	4.68
Upland	Linear	12.28	14.00	15.00	0.00	0.00	0.00	0.00	0.00	0.00	1.54	6.14	12.28	18.42	24.56
	Linear	0.00	15.00	16.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total:		21.70		Totals:	0.00	0.66	2.62	5.90	10.02	14.54	20.78	30.10	40.95	51.80	62.65
ICPR AREA					0.00	2.62	5.24	7.86	8.64	9.42	15.56	21.70	21.70	21.70	21.70

Basin Information For: HD-24 SAMS CLUB
(SFWMD PERMIT NO. 56-01745-P, APPLICATION NO. 040712-14)

Total Drainage Basin Area = 19.94 ac
Total Project Area = 19.94

Impervious Area

Roofline/Bldg. = 4.07 ac
Pavement Area = 11.84 ac
Additional Imp. Area (lakes,etc) = 0 ac
Total Impervious Area = 15.91 ac
Total Pervious Area = 4.03 ac
Percent Impervious = 79.8%
Adjusted Soil Storage (4' depth to water table) = 1.65 in
Calculated SCS Curve Number = 86
Time of Concentration = 15.00 min
Allowable Discharge = cfs
Min. Road Crown Elevation = 15.05 ft-NGVD
Min. F.F.E. = 15.85 ft-NGVD
Min. Berm EL. = 15.50 ft-NGVD

Stage Storage Calculations for Sub-basin HD-24 SAMS CLUB

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)										
					12.50	13.00	13.50	14.00	14.50	15.00	15.50	16.00	16.50	17.00	17.50
Wet Detention	Vertical	0.00	11.50		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Wet Detention Slopes	Linear	0.00	11.50	15.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dry Detention	Vertical	0.52	12.50		0.00	0.26	0.52	0.78	1.04	1.30	1.56	1.82	2.08	2.34	2.60
Dry Detention Slopes	Linear	0.26	12.50	14.50	0.00	0.02	0.07	0.15	0.26	0.39	0.52	0.65	0.78	0.91	1.04
Pavement	Linear	11.84	15.00	16.50	0.00	0.00	0.00	0.00	0.00	0.00	0.99	3.95	8.88	14.80	20.72
Open Space	Linear	3.25	15.00	16.50	0.00	0.00	0.00	0.00	0.00	0.00	0.27	1.08	2.44	4.06	5.69
Outparcel Pavement	Linear		15.00	16.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Outparcel Open Space	Linear		15.00	16.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total:		19.94			Totals:	0.00	0.28	0.58	0.93	1.30	1.69	3.34	7.50	14.18	22.11
					ICPR AREA	0.52	0.58	0.65	0.71	0.78	0.78	5.81	10.84	15.87	15.87

Basin Information For: **HD-25 WALMART**

(SFWMD PERMIT NO. 56-01554-P, APPLICATION NO. 010530-13)

Total Drainage Basin Area = 27.27 ac
Total Project Area = 27.27

Impervious Area

Roofline/Bldg. = 5.12 ac
Pavement Area = 15.43 ac
Offsite Pavement = 0.59
Additional Imp. Area (lakes,etc) = 1.02 ac
Total Impervious Area = 22.16 ac
Total Pervious Area = 5.11 ac
Percent Impervious = 81.3%
Adjusted Soil Storage (4' depth to water table) = 1.53 in
Calculated SCS Curve Number = 87
Time of Concentration = 10.00 min
Allowable Discharge = 2.81 cfs
Min. Road Crown Elevation = 15.75 ft-NGVD
Min. F.F.E. = 17.50 ft-NGVD
Min. Berm EL. = 15.90 ft-NGVD

Stage Storage Calculations for Sub-basin HD-25 WALMART

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)										
					10.50	11.49	11.50	12.00	13.00	14.50	15.50	15.75	16.50	17.50	18.00
Wet Detention	Vertical	1.02	10.50		0.00	1.01	1.02	1.53	2.55	4.08	5.10	5.35	6.12	7.14	7.65
Wet Detention Slope	Linear	0.79	10.50	15.50	0.00	0.08	0.08	0.13	0.49	1.26	1.98	2.17	2.77	3.56	3.95
Dry Detention	Vertical	0.20	11.50		0.00	0.00	0.00	0.10	0.30	0.60	0.80	0.85	1.00	1.20	1.30
Dry Detention Slopes	Linear	0.39	11.50	15.50	0.00	0.00	0.00	0.01	0.11	0.44	0.78	0.88	1.17	1.56	1.76
Pavement	Linear	15.43	15.75	17.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.48	13.50	21.22
Open Space	Linear	4.32	15.75	17.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.69	3.78	5.94
	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total:		27.27		Totals:	0.00	1.09	1.10	1.82	3.45	6.38	8.65	9.25	14.23	30.74	41.81
ICPR AREA					1.02	1.18	1.38	1.51	1.76	2.14	2.40	2.40	10.86	22.15	22.15

Basin Information For: HD26-RES

Total Basin Area	=	43.40 ac
No. of Residential Lots (est.)	=	42
Residential Area (0.40 ac lots)	=	16.80 ac
No. of Residential Structures	=	42
Length of Roadways	=	2621 ft
Roadway Right of way	=	3.61 ac

Impervious Area

Residential Area (0.40 acres lots, 34% imp.)		
Bldg./Pool/Porch (avg house = 5000 sf)	=	4.82 ac
Lot Driveway/concrete (avg = 1000 sf)	=	0.96 ac
Pavement Area (Assumed 50% of ROW)	=	1.81 ac
Additional Imp. Area (lakes, greenways etc)	=	0.00 ac
Total Impervious Area	=	7.59 ac

Total Pervious Area	=	35.81 ac
Lot Open Space	=	34.00 ac
Roadway Shoulder	=	0.48 ac
Roadway Swale	=	1.32 ac

Percent Impervious	=	17.5%
Adjusted Soil Storage (Flatwoods, 3' to W.S.W.T.E.)	=	4.08 in
Calculated SCS Curve Number	=	71
Time of Concentration	=	30.00 min

ICPR MODEL INPUT DATA

CN	71
TC	10.00
Area	43.40

Min. Road Crown Elevation	11.5
Max. F.F.E.	15
Max. Road Crown	13
All elevations are in NGVD	

Canal / Water Way Storage/ Areas

ROW Width	150	100	50	60	65
Vertical Storage	100	60	0	0	0
Linear Storage	50	40	50	60	65
Length	0	0.00	0	0	0
Vertical Area	0.00	0.00	0.00	0.00	0.00
Linear Area	0.00	0.00	0.00	0.00	0.00

Stage Storage Calculations for Sub-basin HD26-RES

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)										
					8.00	9.00	10.00	11.22	11.50	12.00	12.50	12.80	14.00	15.00	16.00
Wet Detention (Canals)	Vertical	0.00	9.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Wet Detention Slopes (Canals)	Linear	0.00	9.00	13.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Green Ways	Vertical	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Green Ways Slopes	Linear	0.00	9.00	13.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pavement (Road right-of-way)	Linear	1.81	11.50	14.00	0.00	0.00	0.00	0.00	0.00	0.09	0.36	0.61	2.26	4.06	5.87
Roadside Swale	Linear	1.32	10.00	14.00	0.00	0.00	0.00	0.25	0.37	0.66	1.03	1.30	2.65	3.97	5.29
Roadway Shoulder	Linear	0.48	11.22	12.80	0.00	0.00	0.00	0.00	0.01	0.09	0.25	0.38	0.96	1.44	1.92
Building/Pool - No Storage	Linear	4.82	0.00	0.00											
	Linear	34.97	9.00	15.00	0.00	0.00	2.91	14.36	18.21	26.23	35.70	42.08	72.85	104.91	139.88
Total:		43.40			0.00	0.00	2.91	14.61	18.60	27.07	37.34	44.37	78.71	114.38	152.96 ac-ft
ICPR AREA					0.00	0.00	5.83	13.34	15.15	18.74	22.34	24.49	32.75	38.58	38.58 acre

Basin Information For: HD-27 RES

Total Basin Area	=	146.40 ac
No. of Residential Lots (est.)	=	219.00
Residential Area (0.40 ac lots)	=	87.60 ac
No. of Residential Structures	=	219
Length of Roadways	=	17122 ft
Roadway Right of way	=	23.58 ac

Impervious Area

Residential Area (0.40 acres lots, 34% imp.)		
Bldg./Pool/Porch (avg house = 5000 sf)	=	25.14 ac
Lot Driveway/concrete (avg = 1000 sf)	=	5.03 ac
Pavement Area (Assumed 50% of ROW)	=	11.79 ac
Additional Imp. Area (lakes, greenways etc)	=	13.36 ac
Total Impervious Area	=	55.31 ac

Total Pervious Area	=	91.09 ac
Lot Open Space	=	79.29 ac
Roadway Shoulder	=	3.14 ac
Roadway Swale	=	8.65 ac

Percent Impervious	=	37.8%
Adjusted Soil Storage (Flatwoods, 3' to W.S.W.T.E.)	=	3.08 in
Calculated SCS Curve Number	=	76
Time of Concentration	=	30.00 min

ICPR MODEL INPUT DATA

CN	76
TC	30.00
Area	146.40

Min. Road Crown Elevation	10.7
Max. F.F.E.	17
Max. Road Crown	15
All elevations are in NGVD	

Canal / Water Way Storage/ Areas

ROW Width	150	100	50	60	65
Vertical Storage	100	60	0	0	0
Linear Storage	50	40	50	60	65
Length	0	4718.00	2200	0	0
Vertical Area	0.00	6.50	0.00	0.00	0.00
Linear Area	0.00	4.33	2.53	0.00	0.00

Stage Storage Calculations for Sub-basin HD-27 RES

	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)																
Land use Category					7.00	8.00	9.20	10.42	10.70	11.00	11.70	14.80	16.00	17.00	18.00						
Wet Detention (Canals)	Vertical	6.50	7.00		0.00	6.50	14.30	22.23	24.04	25.99	30.54	50.69	58.49	64.99	71.48						
Wet Detention Slopes (Canals)	Linear	4.33	7.00	11.00	0.00	0.54	2.62	6.33	7.41	8.66	11.70	25.13	30.33	34.66	38.99						
Green Ways	Vertical	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
Green Ways Slopes	Linear	2.53	7.00	11.00	0.00	0.32	1.53	3.69	4.32	5.05	6.82	14.65	17.68	20.20	22.73						
Pavement (Road right-of-way)	Linear	11.79	10.70	16.00	0.00	0.00	0.00	0.00	0.00	0.10	1.11	18.70	31.25	43.04	54.83						
Roadside Swale	Linear	8.65	9.20	16.00	0.00	0.00	0.00	0.95	1.43	2.06	3.97	19.94	29.40	38.05	46.70						
Roadway Shoulder	Linear	3.14	10.42	14.80	0.00	0.00	0.00	0.00	0.03	0.12	0.59	6.89	10.66	13.80	16.95						
Building/Pool - No Storage	Linear	25.14	0.00	0.00																	
	Linear	84.32	11.70	17.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	76.45	147.09	223.45	307.78						
Total:		146.40			Totals:					0.00	7.36	18.45	33.20	37.24	41.99	54.73	212.44	324.89	438.19	559.46	ac-ft
ICPR AREA					6.50	8.21	10.27	13.91	14.95	16.73	19.68	82.06	105.35	121.26	121.26	acres					

Basin Information For: HD28-RES

Total Basin Area	=	307.00 ac
No. of Residential Lots (est.)	=	340.00
Residential Area (0.25 ac lots)	=	85.00 ac
No. of Residential Structures	=	340.00
Length of Roadways (60' ROW)	=	20213 ft
Length of Roadways (100' ROW)	=	6218
Length of Roadways (80' ROW)	=	0
Roadway Right of way	=	42.11 ac

Impervious Area

Residential Area (0.40 acres lots, 34% imp.)		
Bldg./Pool/Porch (avg house = 5000 sf)	=	39.03 ac
Lot Driveway/concrete (avg = 1000 sf)	=	7.81 ac
Pavement Area (Assumed 50% of ROW)	=	21.06 ac
Additional Imp. Area (lakes, greenways etc)	=	14.20 ac
Total Impervious Area	=	82.09 ac

Total Pervious Area	=	224.91 ac
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Lot Open Space	=	203.85 ac
Roadway Shoulder	=	3.71 ac
Roadway Swale	=	17.35 ac

Percent Impervious	=	26.7%
Adjusted Soil Storage (Flatwoods, 3' to W.S.W.T.E.)	=	3.63 in
Calculated SCS Curve Number	=	73
Time of Concentration	=	30.00 min

ICPR MODEL INPUT DATA

CN	73
TC	30.00
Area	307.00

Min. Road Crown Elevation 8
 Max. F.F.E. 17
 Max. Road Crown 15
 All elevations are in NGVD

Canal / Water Way Storage/ Areas

ROW Width	150	100	50	60	65	Lakes
Vertical Storage	100	60	0	0	0	
Linear Storage	50	40	50	60	65	
Length	0	0.00	6493	0	0	
Vertical Area	0.00	0.00	0.00	0.00	0.00	6.75
Linear Area	0.00	0.00	7.45	0.00	0.00	

Stage Storage Calculations for Sub-basin HD28-RES

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)										
					6.00	6.50	7.72	8.00	9.00	10.00	12.00	14.80	15.00	17.00	21.00
Wet Detention (Canals)	Vertical	6.75	6.00		0.00	3.37	11.61	13.50	20.25	27.00	40.50	59.40	60.75	74.25	101.25
Wet Detention Slopes (Canals)	Linear	0.00	6.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Green Ways	Vertical	0.00	6.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Green Ways Slopes	Linear	7.45	6.00	10.00	0.00	0.23	2.76	3.73	8.38	14.91	29.81	50.68	52.17	67.08	96.89
Pavement (Road right-of-way)	Linear	21.06	8.00	21.00	0.00	0.00	0.00	0.00	0.81	3.24	12.96	37.45	39.68	65.60	136.87
Roadside Swale	Linear	17.35	6.50	21.00	0.00	0.00	0.89	1.35	3.74	7.33	18.09	41.20	43.21	65.94	125.75
	Linear	3.71	7.72	14.80	0.00	0.00	0.00	0.02	0.43	1.36	4.80	13.14	13.88	21.31	36.16
Building/Pool - No Storage	Linear	39.03	0.00	0.00											
Lot Pavement + Open Space	Linear	211.66	9.00	17.00	0.00	0.00	0.00	0.00	0.00	13.23	119.06	445.01	416.23	846.62	1603.16
Total:		307.00		Totals:	0.00	3.61	15.26	18.59	33.61	67.06	225.22	646.88	685.93	1140.80	2190.17 ac-ft
				ICPR AREA	6.75	7.68	11.41	12.42	17.62	49.28	108.88	192.31	198.16	256.71	267.97 acre

Basin Information For: HD30-RES Existing

Total Basin Area	=	184.88 ac
No. of Residential Lots (est.)	=	253.00
Residential Area (0.25 ac lots)	=	63.25 ac
No. of Residential Structures	=	253.00
Length of Roadways (60' ROW)	=	22547 ft
Length of Roadways (100' ROW)	=	0
Length of Roadways (80' ROW)	=	3319
Roadway Right of way	=	37.15 ac

Impervious Area

Residential Area (0.40 acres lots, 34% imp.)		
Bldg./Pool/Porch (avg house = 5000 sf)	=	29.04 ac
Lot Driveway/concrete (avg = 1000 sf)	=	5.81 ac
Pavement Area (Assumed 50% of ROW)	=	18.58 ac
Additional Imp. Area (lakes, greenways etc)	=	17.63 ac
Total Impervious Area	=	71.05 ac

Total Pervious Area	=	113.83 ac
Lot Open Space	=	95.25 ac
Roadway Shoulder	=	4.14 ac
Roadway Swale	=	14.43 ac

Percent Impervious	=	38.4%
Adjusted Soil Storage (Flatwoods, 3' to W.S.W.T.E.)	=	3.05 in
Calculated SCS Curve Number	=	77
Time of Concentration	=	30.00 min

ICPR MODEL INPUT DATA

CN 77

TC 30.00
Area 184.88

Min. Road Crown Elevation 6.42
Max. F.F.E. 13.54
Max. Road Crown 11.54
All elevations are in NGVD

Canal / Water Way Storage/ Areas

ROW Width	150	100	50	60	65	Lakes
Vertical Storage	100	15	10	0	0	
Linear Storage	50	85	40	60	65	
Length	0	7031.00	1297	0	0	
Vertical Area	0.00	2.42	0.30	0.00	0.00	0
Linear Area	0.00	13.72	1.19	0.00	0.00	

Stage Storage Calculations for Sub-basin HD30-RES Existing

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)									
					3.10	4.92	6.00	6.14	6.42	7.42	10.04	11.00	11.34	11.54
Wet Detention (Canals)	Vertical	0.00	6.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ditch Bottom	Linear	2.72	3.10	6.00	0.00	1.55	3.94	4.32	5.08	7.80	14.93	17.54	18.46	19.01
Green Ways	Vertical	0.00	6.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ditch Slopes	Linear	14.91	3.10	11.00	0.00	3.13	7.94	8.72	10.40	17.61	45.45	58.90	63.97	66.95
Pavement (Road right-of-way)	Linear	18.58	6.42	11.54	0.00	0.00	0.00	0.00	0.00	1.81	23.77	38.05	43.91	47.55
Roadside Swale	Linear	14.43	4.92	11.54	0.00	0.00	1.27	1.62	2.45	6.81	28.58	40.30	44.94	47.78
	Linear	4.14	6.14	11.34	0.00	0.00	0.00	0.00	0.03	0.65	6.06	9.40	10.77	11.59
Building/Pool - No Storage	Linear	29.04	0.00	0.00										
Lot Pavement + Open Space	Linear	101.06	7.42	13.54	0.00	0.00	0.00	0.00	0.00	0.00	56.68	105.82	126.87	140.15
Total:		184.88		Totals:	0.00	4.68	13.15	14.67	17.97	34.70	175.46	270.01	308.91	333.03
				ICPR AREA	0.00	5.14	10.55	11.12	12.48	20.97	86.48	110.49	118.35	122.81

ac-ft
acre

Basin Information For: HD30-RES Proposed

Total Basin Area	=	184.88 ac
No. of Residential Lots (est.)	=	253.00
Residential Area (0.25 ac lots)	=	63.25 ac
No. of Residential Structures	=	253.00
Length of Roadways (60' ROW)	=	22547 ft
Length of Roadways (100' ROW)	=	0
Length of Roadways (80' ROW)	=	3319
Roadway Right of way	=	37.15 ac

Impervious Area

Residential Area (0.40 acres lots, 34% imp.)		
Bldg./Pool/Porch (avg house = 5000 sf)	=	29.04 ac
Lot Driveway/concrete (avg = 1000 sf)	=	5.81 ac
Pavement Area (Assumed 50% of ROW)	=	18.58 ac
Additional Imp. Area (lakes, greenways etc)	=	21.11 ac
Total Impervious Area	=	74.54 ac

Total Pervious Area	=	110.34 ac
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Lot Open Space	=	91.77 ac
Roadway Shoulder	=	4.14 ac
Roadway Swale	=	14.43 ac

Percent Impervious	=	40.3%
Adjusted Soil Storage (Flatwoods, 3' to W.S.W.T.E.)	=	2.95 in
Calculated SCS Curve Number	=	77
Time of Concentration	=	30.00 min

ICPR MODEL INPUT DATA

CN 77

TC 30.00
Area 184.88

Min. Road Crown Elevation 6.42
Max. F.F.E. 13.54
Max. Road Crown 11.54
All elevations are in NGVD

Canal / Water Way Storage/ Areas

ROW Width	150	100	50	60	65	Lakes
Linear Storage	100	15	10	0	0	
Linear Storage	50	85	40	60	65	
Length	0	7052.00	1303	0	0	
Linear Area	0.00	2.43	0.30	0.00	0.00	3.43 Vertical
Linear Area	0.00	13.76	1.20	0.00	0.00	

Stage Storage Calculations for Sub-basin HD30-RES Proposed

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)									
					3.10	4.92	6.00	6.14	6.42	7.42	10.04	11.00	11.34	11.54
Wet Detention (new pond)	Vertical	3.43	6.00		0.00	0.00	0.00	0.00	1.44	4.87	13.86	17.15	18.32	19.00
Ditch Bottom	Linear	17.68	3.10	6.00	0.00	10.10	25.64	28.12	33.07	50.76	97.09	114.07	120.08	123.62
Green Ways	Vertical	0.00	6.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ditch Slopes	Linear	14.96	3.10	11.00	0.00	3.14	7.96	8.75	10.43	17.67	45.59	59.08	64.17	67.16
Pavement (Road right-of-way)	Linear	18.58	6.42	11.54	0.00	0.00	0.00	0.00	0.00	1.81	23.77	38.05	43.91	47.55
Roadside Swale	Linear	14.43	4.92	11.54	0.00	0.00	1.27	1.62	2.45	6.81	28.58	40.30	44.94	47.78
	Linear	4.14	6.14	11.34	0.00	0.00	0.00	0.00	0.03	0.65	6.06	9.40	10.77	11.59
Building/Pool - No Storage	Linear	29.04	0.00	0.00										
Lot Pavement + Open Space	Linear	97.57	7.42	13.54	0.00	0.00	0.00	0.00	0.00	0.00	54.72	102.17	122.50	135.31
Total:		199.84		Totals:	0.00	13.24	34.88	38.49	47.43	82.57	269.67	380.23	424.67	452.02
				ICPR AREA	0.00	14.54	25.53	26.10	37.75	32.53	110.29	120.03	141.42	132.05

ac-ft
acre

Basin Information For: HD31-HOWARD CK

Total Basin Area	=	18.18 ac
No. of Residential Lots (est.)	=	32
Residential Area (0.40 ac lots)	=	12.80 ac
No. of Residential Structures	=	32.00
Length of Roadways (60' ROW)	=	1911 ft
Length of Roadways (100' ROW)	=	0
Length of Roadways (80' ROW)	=	0
Roadway Right of way	=	2.63 ac

Impervious Area

Residential Area (0.40 acres lots, 34% imp.)		
Bldg./Pool/Porch (avg house = 5000 sf)	=	3.67 ac
Lot Driveway/concrete (avg = 1000 sf)	=	0.73 ac
Pavement Area (Assumed 50% of ROW)	=	1.32 ac
Additional Imp. Area (lakes, greenways etc)	=	0.46 ac
Total Impervious Area	=	6.18 ac

Total Pervious Area	=	12.00 ac
Lot Open Space	=	10.68 ac
Roadway Shoulder	=	0.35 ac
Roadway Swale	=	0.97 ac

Percent Impervious	=	34.0%
Adjusted Soil Storage (Flatwoods, 3' to W.S.W.T.E.)	=	3.27 in
Calculated SCS Curve Number	=	75
Time of Concentration	=	15.00 min

ICPR MODEL INPUT DATA

CN	75
TC	15.00
Area	18.18

Min. Road Crown Elevation 9.1
 Max. F.F.E. 13.54
 Max. Road Crown 11.54
 All elevations are in NGVD

Canal / Water Way Storage/ Areas

ROW Width	150	100	50	60	65
Linear Storage	100	15	10	0	0
Linear Storage	50	85	40	60	65
Length	0	0.00	400	0	0
Linear Area	0.00	0.00	0.09	0.00	0.00
Linear Area	0.00	0.00	0.37	0.00	0.00

Stage Storage Calculations for Sub-basin HD31-HOWARD CK

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)										
					6.00	6.50	7.00	7.50	8.00	8.50	9.00	9.50	10.50	11.50	12.50
Wet Detention (Canals)	Vertical	0.00	6.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Linear	0.09	6.00	6.75	0.00	0.02	0.06	0.10	0.15	0.20	0.24	0.29	0.38	0.47	0.56
Green Ways	Vertical	0.00	6.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ditch Slopes	Linear	0.37	6.00	9.00	0.00	0.02	0.06	0.14	0.24	0.38	0.55	0.73	1.10	1.47	1.84
Pavement (Road right-of-way)	Linear	1.32	9.10	11.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.53	1.55	2.87
Roadside Swale	Linear	0.97	7.60	11.54	0.00	0.00	0.00	0.00	0.02	0.10	0.24	0.44	1.03	1.86	2.83
	Linear	0.35	8.82	11.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.20	0.50	0.85
Building/Pool - No Storage	Linear	3.67	0.00	0.00											
Lot Pavement + Open Space	Linear	11.42	10.10	13.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27	3.25	9.56
Total:		18.18		Totals:	0.00	0.03	0.12	0.24	0.41	0.68	1.03	1.54	3.50	9.11	18.50 ac-ft
				ICPR AREA	0.00	0.12	0.23	0.26	0.43	0.62	0.81	1.21	2.71	8.50	10.29 acre

Basin Information For:

M020

Midport Place

Discharges to canal via 2.3' weir @ 12.7 and 55deg v-notch (1.25') @ 11.5 (assumed direct discharge)

Total Basin Area = 60.00 ac
 No. of Residential Lots (est.) = 165
 Residential Area (0.25 ac lots) = 41.2 ac
 No. of Residential Structures = 165
 Length of Roadways = 4557 ft

Impervious Area

Residential Area (0.25 acres lots, 40% imp.)
 Roofline/Bldg. (avg house = 2000 sf) = 7.57 ac
 Driveway/concrete (avg = 500 sf) = 1.89 ac
 Pavement Area (Roadway/Parking) = 17.09 ac
 Additional Imp. Area (lakes,etc) = 4.27 ac
 Total Impervious Area = 30.82 ac
 Total Pervious Area = 29.18 ac
 Percent Impervious = 51.4%
 Adjusted Soil Storage (Flatwoods, 4' to W.S.W.T.E.) = 3.98 in
 Calculated SCS Curve Number = 72
 Time of Concentration = 30.00 min

Min. Road Crown Elevation = 13.40 ft-NGVD
 Min. F.F.E. = 16.50 ft-NGVD
 Avg Low F.F.E. = n.a. ft-NGVD

Stage Storage Calculations for Sub-basin M020

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)										
					8.00	9.00	10.00	11.00	12.00	13.00	14.00	15.00	16.00	17.00	18.00
Wet Detention	Vertical	4.27	8.00		0.00	4.27	8.54	12.81	17.08	21.35	25.62	29.89	34.16	38.43	42.70
Wet Detention Slopes	Linear	1.71	8.00	14.62	0.00	0.13	0.52	1.16	2.06	3.23	4.64	6.30	8.01	9.72	11.43
Dry Detention	Vertical	0.00	12.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dry Detention Slopes	Linear	0.00	12.00	18.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Linear	17.09	14.62	16.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.83	11.00	28.03	45.12
Roadside Swale	Linear	5.02	13.62	14.60	0.00	0.00	0.00	0.00	0.00	0.00	0.37	4.47	9.49	14.51	19.53
Open Space	Linear	24.34	13.00	15.00	0.00	0.00	0.00	0.00	0.00	0.00	6.09	24.34	48.68	73.02	97.36
	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total:		60.00		Totals:	0.00	4.40	9.06	13.97	19.14	24.58	36.72	65.84	111.34	163.71	216.14
				ICPR AREA	4.27	4.53	4.79	5.04	5.30	5.56	18.73	39.50	51.50	53.25	51.62

ac-ft
acre

Basin Information For:

M030

Total Basin Area	=	180.00 ac
No. of Residential Lots (est.)	=	114
Residential Area (0.25 ac lots)	=	28.50 ac
No. of Residential Structures	=	114.00
Length of Roadways (60' ROW)	=	5026 ft
Length of Roadways (100' ROW)	=	2515
Length of Roadways (140' ROW)	=	2000
Roadway Right of way	=	19.58 ac

Impervious Area

Residential Area (0.25 acres lots, 40% imp.)		
Bldg./Pool/Porch (avg house = 4000 sf)+Commercial	=	19.92 ac
Lot Driveway/concrete (avg = 400 sf)+Commercial	=	23.61 ac
Pavement Area (Road of ROW)	=	9.79 ac
Additional Imp. Area (lakes, greenways etc)	=	19.47 ac
Total Impervious Area	=	72.79 ac

Total Pervious Area

Lot Open Space+Lake bank	=	97.42 ac
Roadway Shoulder	=	0.92 ac
Roadway Swale	=	8.87 ac

Percent Impervious	=	40.4%
Adjusted Soil Storage (Flatwoods, 3' to W.S.W.T.E.)	=	2.95 in
Calculated SCS Curve Number	=	77
Time of Concentration	=	30.00 min

ICPR MODEL INPUT DATA

CN	77
TC	30.00
Area	180.00

Min. Road Crown Elevation	14.5
Max. F.F.E.	18
Max. Road Crown	16
All elevations are in NGVD	

Canal / Water Way Storage/ Areas

ROW Width	150	100	50	60	65
Vertical Storage	100	60	0	0	0
Linear Storage	50	40	50	60	65
Length	0	0.00	0	0	0
Vertical Area	0.00	0.00	0.00	0.00	0.00
Linear Area	0.00	0.00	0.00	0.00	0.00

Stage Storage Calculations for Sub-basin M030

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)											
					11.25	13.00	14.00	14.22	14.50	15.00	15.50	15.80	16.00	17.00	18.00	
Wet Detention	Vertical	19.47	11.25		0.00	34.07	53.54	57.83	63.28	73.01	82.75	88.59	92.48	111.95	131.42	
Wet Detention Slopes	Linear	7.79	11.25	15.00	0.00	3.18	7.85	9.16	10.97	14.61	18.50	20.84	22.40	30.19	37.98	
Green Ways	Vertical	0.00	14.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Green Ways Slopes	Linear	0.00	14.00	18.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pavement (Road right-of-way)	Linear	9.79	14.50	17.00	0.00	0.00	0.00	0.00	0.00	0.49	1.96	3.31	4.41	12.24	22.03	
Roadside Swale	Linear	8.87	13.00	17.00	0.00	0.00	1.11	1.65	2.49	4.43	6.93	8.69	9.98	17.74	26.61	
	Linear	0.92	14.22	15.80	0.00	0.00	0.00	0.00	0.02	3.18	0.48	0.73	0.91	1.84	2.76	
Building/Pool - No Storage	Linear	19.92	0.00	0.00												
Lot Pavement + Open Space	Linear	113.24	15.50	18.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.04	5.66	50.96	141.55	
Total:		180.00			Totals:	0.00	37.25	62.51	68.64	76.77	92.72	110.61	124.20	135.84	362.34	
ICPR AREA					19.47	23.11	27.40	28.34	29.71	34.11	37.47	53.07	63.36	114.79	160.08	

Basin Information For: M040

(SFWMD PERMIT NO. 56-01283-P, APPLICATION NO. 960523-7)

Total Drainage Basin Area = 17.65 ac
 Total Project Area = 20.87
 Other Area = 3.22

Impervious Area

Roofline/Bldg. = 1.76 ac
 Pavement Area = 4.36 ac
 Additional Imp. Area (lakes,etc) = 0.97 ac
 Total Impervious Area = 7.09 ac
 Total Pervious Area = 10.56 ac
 Percent Impervious = 40.2%
 Adjusted Soil Storage = 1.60 in
 Calculated SCS Curve Number = 86
 Time of Concentration = 10.00 min
 Allowable Discharge = 3 cfs
 Min. Road Crown Elevation = 13.50 ft-NGVD
 Min. F.F.E. = 14.70 ft-NGVD
 Min. Berm EL. = ft-NGVD

Stage Storage Calculations for Sub-basin M040

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)										
					11.50	12.00	12.50	13.00	13.50	14.00	14.50	15.00	15.50	16.00	16.50
Wet Deteniton	Vertical	2.02	11.50		0.00	1.01	2.02	3.03	4.04	5.05	6.06	7.07	8.08	9.09	10.10
Wet Deteniton Slopes	Linear	0.39	11.50	13.50	0.00	0.02	0.10	0.22	0.39	0.59	0.78	0.98	1.17	1.37	1.56
Wetland	Vertical	2.65	11.50		0.00	1.32	2.65	3.97	5.30	6.62	7.95	9.27	10.60	11.92	13.25
Wetland Slopes	Linear	0.00	13.00	18.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pavement	Linear	0.00	13.50	15.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Open Space	Linear	0.00	12.50	13.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Linear	0.00	13.50	15.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total:		5.06	Totals:		0.00	2.36	4.77	7.22	9.73	12.26	14.79	17.32	19.85	22.38	24.91
ICPR AREA					4.67	4.77	4.87	4.96	5.06	5.06	5.06	5.06	5.06	5.06	5.06

** ABOVE GROUND STORAGE AT 13.50 WAS NEGLECTED IN PERMIT

Basin Information For: M050

Total Basin Area	=	118.20 ac
No. of Residential Lots (est.)	=	118
Residential Area (0.25 ac lots)	=	29.50 ac
No. of Residential Structures	=	118.00
Length of Roadways (60' ROW)	=	6287 ft
Length of Roadways (100' ROW)	=	0.00
Length of Roadways (150' ROW)	=	3623
Roadway Right of way	=	21.13 ac

Impervious Area

Residential Area (0.25 acres lots, 40% imp.)		
Bldg./Pool/Porch (avg house = 4000 sf)	=	11.94 ac
Lot Driveway/concrete (avg = 400 sf)	=	4.95 ac
Pavement Area (Assumed 50% of ROW)	=	10.57 ac
Additional Imp. Area (lakes, greenways etc)	=	20.00 ac
Total Impervious Area	=	47.46 ac

Total Pervious Area	=	70.74 ac
Lot Open Space+Lake bank	=	60.18 ac
Roadway Shoulder	=	1.15 ac
Roadway Swale	=	9.41 ac

Percent Impervious	=	40.1%
Adjusted Soil Storage (Flatwoods, 3' to W.S.W.T.E.)	=	2.96 in
Calculated SCS Curve Number	=	77
Time of Concentration	=	30.00 min

ICPR MODEL INPUT DATA

CN	77
TC	30.00
Area	118.20

Min. Road Crown Elevation 13.4
 Max. F.F.E. 18.5
 Max. Road Crown 16.5
 All elevations are in NGVD

Canal / Water Way Storage/ Areas

ROW Width	150	100	50	60	65
Vertical Storage	100	60	0	0	0
Linear Storage	50	40	50	60	65
Length	0	0.00	0	0	0
Vertical Area	0.00	0.00	0.00	0.00	0.00
Linear Area	0.00	0.00	0.00	0.00	0.00

Stage Storage Calculations for Sub-basin M050

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)																
					11.25	11.50	11.90	13.12	13.40	14.00	14.40	16.00	16.30	17.50	18.00						
Wet Detention	Vertical	20.00	11.25		0.00	5.00	13.00	37.40	43.00	55.00	63.00	95.00	101.00	125.00	135.00						
Wet Detention Slopes	Linear	29.00	11.25	16.00	0.00	0.19	1.29	10.67	14.11	23.09	30.29	68.88	77.58	112.38	126.88						
Green Ways	Vertical	0.00	14.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
Green Ways Slopes	Linear	0.00	14.00	18.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
Pavement (Road right-of-way)	Linear	10.57	13.40	17.50	0.00	0.00	0.00	0.00	0.00	0.46	1.29	8.71	10.84	21.66	26.95						
Roadside Swale	Linear	9.41	11.90	17.50	0.00	0.00	0.00	1.25	1.89	3.71	5.25	14.13	16.27	26.35	31.06						
	Linear	1.15	13.12	16.30	0.00	0.00	0.00	0.00	0.01	0.14	0.30	1.51	1.84	3.22	3.80						
Building/Pool - No Storage	Linear	11.94	0.00	0.00																	
Lot Pavement + Open Space	Linear	36.13	14.40	18.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.28	15.91	42.34	57.10						
Total:		118.20			Totals:					0.00	5.19	14.29	49.33	59.02	82.40	100.13	199.50	223.42	330.96	380.78	ac-ft
					ICPR AREA					20.00	21.53	23.97	33.47	35.75	42.18	46.48	77.74	81.77	97.45	101.86	acres

ac-ft

acre

Basin Information For: M060

Total Basin Area = 76.00 ac
 No. of Residential Lots (est.) = 216
 Residential Area (0.25 ac lots) = 54.1 ac
 No. of Residential Structures = 216
 Length of Roadways = 5722 ft

Impervious Area

Residential Area (0.25 acres lots, 40% imp.)
 Roofline/Bldg. (avg house = 2000 sf) = 9.94 ac
 Driveway/concrete (avg = 500 sf) = 2.48 ac
 Pavement Area (Roadway/Parking) = 19.63 ac
 Additional Imp. Area (lakes,etc) = 3.2 ac
 Total Impervious Area = 35.25 ac
 Total Pervious Area = 40.75 ac
 Percent Impervious = 46.4%
 Adjusted Soil Storage (Flatwoods, 3' to W.S.W.T.E.) = 2.65 in
 Calculated SCS Curve Number = 79
 Time of Concentration = 30.00 min

Min. Road Crown Elevation = 12.20 ft-NGVD
 Min. F.F.E. = ft-NGVD
 Avg Low F.F.E. = ft-NGVD

Stage Storage Calculations for Sub-basin M060

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)										
					10.40	10.90	11.40	11.90	12.40	12.90	13.40	13.90	14.40	14.90	15.40
Wet Detention	Vertical	3.20	10.40		0.00	1.60	3.20	4.80	6.40	8.00	9.60	11.20	12.80	14.40	16.00
Wet Detention Slopes	Linear	1.28	10.40	12.20	0.00	0.09	0.36	0.80	1.41	2.05	2.69	3.33	3.97	4.61	5.25
Dry Detention	Vertical	0.00	12.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dry Detention Slopes	Linear	0.00	12.00	18.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Linear	19.63	11.00	14.80	0.00	0.00	0.41	2.09	5.06	9.32	14.88	21.72	29.85	39.25	49.07
Roadside Swale	Linear	6.30	10.00	13.30	0.15	0.77	1.87	3.45	5.50	8.03	11.03	14.19	17.34	20.49	23.64
Open Space	Linear	35.65	13.00	15.00	0.00	0.00	0.00	0.00	0.00	0.00	1.43	7.22	17.47	32.18	49.91
	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total:		76.00		Totals:	0.15	2.46	5.84	11.14	18.37	27.40	39.62	57.65	81.43	110.93	143.87
ICPR AREA					3.20	6.04	7.47	13.72	15.20	20.93	27.95	44.17	50.94	67.06	64.71 acre

Basin Information For: M070

Total Basin Area = 83.00 ac
 No. of Residential Lots (est.) = 111
 Residential Area (0.25 ac lots) = 27.7 ac
 No. of Residential Structures = 111
 Length of Roadways = 4059 ft

Impervious Area

Residential Area (0.25 acres lots, 40% imp.)
 Roofline/Bldg. (avg house = 2000 sf) = 5.09 ac
 Driveway/concrete (avg = 500 sf) = 1.27 ac
 Pavement Area (Roadway/Parking) = 2.20 ac
 Additional Imp. Area (lakes,etc) = 22 ac
 Total Impervious Area = 30.56 ac
 Total Pervious Area = 52.44 ac
 Percent Impervious = 36.8%
 Adjusted Soil Storage (Flatwoods, 3' to W.S.W.T.E.) = 3.13 in
 Calculated SCS Curve Number = 76
 Time of Concentration = 30.00 min

Min. Road Crown Elevation = 16.00 ft-NGVD
 Min. F.F.E. = ft-NGVD
 Avg Low F.F.E. = ft-NGVD

Stage Storage Calculations for Sub-basin M070

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)										
					13.00	13.50	14.00	14.50	15.00	15.50	16.00	16.50	17.00	17.50	18.00
Wet Detention	Vertical	22.00	13.00		0.00	11.00	22.00	33.00	44.00	55.00	66.00	77.00	88.00	99.00	110.00
Wet Detention Slopes	Linear	8.80	13.00	16.00	0.00	0.37	1.47	3.30	5.87	9.17	13.20	17.60	22.00	26.40	30.80
Dry Detention	Vertical	0.00	14.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dry Detention Slopes	Linear	0.00	14.00	18.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Linear	2.20	16.00	17.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.61	1.38	2.42
Roadside Swale	Linear	4.47	14.50	16.30	0.00	0.00	0.00	0.00	0.31	1.24	2.80	4.92	7.16	9.39	11.63
Open Space	Linear	40.44	13.00	15.00	0.00	2.53	10.11	22.75	40.44	60.65	80.87	101.09	121.31	141.52	161.74
	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total:		83.00		Totals:	0.00	13.89	33.58	59.05	90.61	126.06	162.87	200.76	239.08	277.69	316.60
				ICPR AREA	22.00	33.58	45.15	56.73	69.54	72.25	74.96	76.62	76.63	77.84	77.76

ac-ft
acre

Basin Information For: M080

Total Basin Area = 7.00 ac
 No. of Residential Lots (est.) = 17
 Residential Area (0.25 ac lots) = 4.2 ac
 No. of Residential Structures = 17
 Length of Roadways = 947 ft

Impervious Area

Residential Area (0.25 acres lots, 40% imp.)
 Roofline/Bldg. (avg house = 2000 sf) = 0.78 ac
 Driveway/concrete (avg = 500 sf) = 0.19 ac
 Pavement Area (Roadway/Parking) = 0.43 ac
 Additional Imp. Area (lakes,etc) = 0.61 ac
 Total Impervious Area = 2.02 ac
 Total Pervious Area = 4.98 ac
 Percent Impervious = 28.8%
 Adjusted Soil Storage (Flatwoods, 3' to W.S.W.T.E.) = 3.52 in
 Calculated SCS Curve Number = 74
 Time of Concentration = 30.00 min

Min. Road Crown Elevation = 15.00 ft-NGVD
 Min. F.F.E. = ft-NGVD
 Avg Low F.F.E. = ft-NGVD

Stage Storage Calculations for Sub-basin M080

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)										
					13.00	13.50	14.00	14.50	15.00	15.50	16.00	16.50	17.00	17.50	18.00
Wet Detention	Vertical	0.61	13.00		0.00	0.30	0.61	0.91	1.22	1.52	1.83	2.13	2.44	2.74	3.05
Wet Detention Slopes	Linear	0.24	13.00	15.00	0.00	0.02	0.06	0.14	0.24	0.37	0.49	0.61	0.73	0.85	0.98
Dry Detention	Vertical	0.00	14.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dry Detention Slopes	Linear	0.00	14.00	18.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Linear	0.43	15.00	18.00	0.00	0.00	0.00	0.00	0.00	0.02	0.07	0.16	0.29	0.45	0.65
Roadside Swale	Linear	1.04	14.00	16.50	0.00	0.00	0.00	0.05	0.21	0.47	0.83	1.30	1.83	2.35	2.87
Open Space	Linear	3.89	14.00	15.00	0.00	0.00	0.00	0.49	1.94	3.89	5.83	7.78	9.72	11.67	13.61
	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total:		7.00		Totals:	0.00	0.32	0.67	1.59	3.62	6.27	9.06	11.99	15.01	18.07	21.16
ICPR AREA					0.61	0.67	0.73	2.95	5.16	5.44	5.72	6.00	6.08	6.15	6.22

ac-ft

Basin Information For: M130

Total Basin Area = 35.00 ac
 No. of Residential Lots (est.) = 104
 Residential Area (0.25 ac lots) = 26.0 ac
 No. of Residential Structures = 104
 Length of Roadways = 2196 ft

Impervious Area

Residential Area (0.25 acres lots, 40% imp.)
 Roofline/Bldg. (avg house = 2000 sf) = 4.78 ac
 Driveway/concrete (avg = 500 sf) = 1.19 ac
 Pavement Area (Roadway/Parking) = 2.74 ac
 Additional Imp. Area (lakes,etc) = 0.77 ac
 Total Impervious Area = 9.48 ac
 Total Pervious Area = 25.52 ac
 Percent Impervious = 27.1%
 Adjusted Soil Storage (Flatwoods, 3' to W.S.W.T.E.) = 3.61 in
 Calculated SCS Curve Number = 73
 Time of Concentration = 30.00 min

Min. F.F.E. = ft-NGVD
 Avg Low F.F.E. = ft-NGVD

Stage Storage Calculations for Sub-basin M130

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)											
					15.25	15.75	16.25	16.75	17.25	17.75	18.25	18.75	19.25	19.75	20.25	
Wet Detention	Vertical	0.77	15.25		0.00	0.38	0.77	1.15	1.54	1.92	2.31	2.69	3.08	3.46	3.85	
Wet Detention Slopes	Linear	0.31	15.25	17.60	0.00	0.02	0.07	0.15	0.26	0.41	0.56	0.72	0.87	1.02	1.18	
Dry Detention	Vertical	0.00	16.50		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Dry Detention Slopes	Linear	0.00	16.50	18.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Roadside Swale	Linear	2.74	17.60	18.80	0.00	0.00	0.00	0.00	0.00	0.03	0.48	1.51	2.88	4.24	5.61	
	Linear	2.42	16.60	17.30	0.00	0.00	0.00	0.04	0.73	1.94	3.15	4.36	5.57	6.78	7.99	
	Linear	23.99	16.50	20.00	0.00	0.00	0.00	0.21	1.93	5.35	10.49	17.35	25.92	36.20	47.98	
Open Space	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total:		35.00		Totals:	0.00	0.40	0.84	1.56	4.46	9.65	16.99	26.62	38.31	51.71	66.60	ac-ft
				ICPR AREA	0.77	0.84	0.90	1.98	9.64	11.12	18.27	20.25	26.48	27.12	32.47	acre

Basin Information For: M150 (HILMORE VILLAGE)

Total Basin Area = 24.00 ac

Impervious Area

Roofline/Bldg. = 3.92 ac
 Driveway/concrete = ac
 Pavement Area (Roadway/Parking) = 6.26 ac
 Additional Imp. Area (Wetland,etc) = 2.75 ac
 Total Impervious Area = 12.93 ac
 Total Pervious Area = 11.07 ac
 Percent Impervious = 53.9%
 Adjusted Soil Storage (Flatwoods, 3' to W.S.W.T.E.) = 2.28 in
 Calculated SCS Curve Number = 81
 Time of Concentration = 30.00 min

Allowable Discharge = 10.5 cfs
 Min. Road Crown Elevation = 13.30 ft-NGVD
 Min. F.F.E. = 17.10 ft-NGVD
 Avg Low F.F.E. = 0.00 ft-NGVD

Stage Storage Calculations for Sub-basin M150 (HILMORE VILLAGE)

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)											
					12.20	13.19	13.20	13.50	14.00	14.40	14.50	15.00	15.20	18.00	19.00	
Wetland	Vertical	2.75	12.20		0.00	2.72	2.75	3.57	4.95	6.05	6.32	7.70	8.25	15.95	18.70	
Wetland Slopes	Linear	0.81	12.20	14.50	0.00	0.17	0.18	0.30	0.57	0.85	0.93	1.34	1.50	3.77	4.58	
Dry Retention	Vertical	0.73	13.20		0.00	0.00	0.00	0.22	0.58	0.88	0.95	1.31	1.46	3.50	4.23	
Dry Retention Slopes	Linear	0.08	13.20	14.40	0.00	0.00	0.00	0.00	0.02	0.05	0.06	0.10	0.11	0.34	0.42	
Pavement	Linear	6.26	15.20	18.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.76	15.02	
Roadside Swale	Linear	0.00	15.20	18.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Open Space	Linear	9.45	15.20	18.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.23	22.68	
	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total:		24.00	Totals:		0.00	2.90	2.93	4.09	6.13	7.83	8.26	10.45	11.32	45.55	65.63	ac-ft
ICPR AREA					2.75	3.10	3.83	3.96	4.17	4.33	4.37	4.37	4.37	20.08	20.08	acre

Basin Information For: EP 1-1 Existing

Total Basin Area	=	40.80 ac
No. of Residential Lots (est.)	=	76
Residential Area (0.25 ac lots)	=	18.88 ac
No. of Residential Structures	=	76
Length of Roadways	=	7023 ft
Roadway Right of way	=	9.67 ac

Impervious Area

Residential Area (0.25 acres lots, 40% imp.)		
Bldg./Pool/Porch (avg house = 4000 sf)	=	6.93 ac
Lot Driveway/concrete (avg = 400 sf)	=	0.69 ac
Pavement Area (Assumed 50% of ROW)	=	4.84 ac
Additional Imp. Area (lakes, greenways etc)	=	4.87 ac
Total Impervious Area	=	17.33 ac

Total Pervious Area	=	23.46 ac
Lot Open Space	=	18.63 ac
Roadway Shoulder	=	1.29 ac
Roadway Swale	=	3.55 ac

Percent Impervious	=	42.5%
Adjusted Soil Storage (Flatwoods, 3' to W.S.W.T.E.)	=	2.85 in
Calculated SCS Curve Number	=	78
Time of Concentration	=	30.00 min

ICPR MODEL INPUT DATA

CN	78
TC	30.00
Area	40.80

Min. Road Crown Elevation	16.5
Max. F.F.E.	19.9
Max. Road Crown	17.9
All elevations are in NGVD	

Canal / Water Way Storage/ Areas

ROW Width	150	100	50	60	65
Vertical Storage	100	50	0	0	0
Linear Storage	50	50	50	60	65
Length	2122.00				0
Vertical Area	0.00	2.44	0.00	0.00	0.00
Linear Area	0.00	2.44	0.00	0.00	0.00

Stage Storage Calculations for Sub-basin EP 1-1 Existing

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)											
					11.50	12.70	13.00	15.00	16.00	16.22	16.50	17.50	17.70	18.90	19.90	
Wet Detention (Canals)	Vertical	2.44	11.50		0.00	2.92	3.65	8.53	10.96	11.50	12.18	14.61	15.10	18.02	20.46	
Wet Detention Slopes (Canals)	Linear	2.44	11.50	16.00	0.00	0.39	0.61	3.32	5.48	6.02	6.70	9.13	9.62	12.54	14.98	
Green Ways	Vertical	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Green Ways Slopes	Linear	0.00	11.50	15.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pavement (Road right-of-way)	Linear	4.84	16.50	18.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.01	1.45	5.80	10.64	
Roadside Swale	Linear	3.55	15.00	18.90	0.00	0.00	0.00	0.00	0.45	0.68	1.02	2.84	3.31	6.92	10.46	
Roadway Shoulder	Linear	1.29	16.22	17.70	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.71	0.95	2.50	3.79	
Building/Pool - No Storage	Linear	6.93	0.00	0.00												
	Linear	19.32	17.50	19.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	7.89	23.18	
Total:		40.80			Totals:	0.00	3.31	4.26	11.84	16.90	18.19	19.93	28.31	30.60	53.68	83.52
					ICPR AREA	2.44	3.09	3.25	4.33	5.78	5.98	6.48	10.28	12.64	25.81	33.86

ac-ft
acre

Basin Information For: EP 1-1 PROPOSED

Total Basin Area	=	40.80 ac
No. of Residential Lots (est.)	=	76
Residential Area (0.25 ac lots)	=	18.88 ac
No. of Residential Structures	=	76
Length of Roadways	=	7023 ft
Roadway Right of way	=	9.67 ac

Impervious Area

Residential Area (0.25 acres lots, 40% imp.)		
Bldg./Pool/Porch (avg house = 4000 sf)	=	6.93 ac
Lot Driveway/concrete (avg = 400 sf)	=	0.69 ac
Pavement Area (Assumed 50% of ROW)	=	4.84 ac
Additional Imp. Area (lakes, greenways etc)	=	7.55 ac
Total Impervious Area	=	20.01 ac

Total Pervious Area	=	20.78 ac
Lot Open Space	=	15.95 ac
Roadway Shoulder	=	1.29 ac
Roadway Swale	=	3.55 ac

Percent Impervious	=	49.1%
Adjusted Soil Storage (Flatwoods, 3' to W.S.W.T.E.)	=	2.52 in
Calculated SCS Curve Number	=	80
Time of Concentration	=	15.00 min

ICPR MODEL INPUT DATA

CN	80
TC	15.00
Area	40.80

Min. Road Crown Elevation	16.5
Max. F.F.E.	19.9
Max. Road Crown	17.9
All elevations are in NGVD	

Canal / Water Way Storage/ Areas

ROW Width	150	100	50	60	65	
Vertical Storage	100	50	0	0	0	
Linear Storage	50	50	50	60	65	
Length		0.00		0		
Vertical Area	0.00	0.00	0.00	0.00	0.00	3.56
Linear Area	0.00	0.00	0.00	0.00	0.00	3.99

Addl. Lake

Stage Storage Calculations for Sub-basin EP 1-1 PROPOSED

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)											
					11.50	12.70	13.00	15.00	16.22	16.50	17.50	17.70	18.90	19.00	19.90	
Wet Detention (Canals)	Vertical	3.56	11.50		0.00	4.27	5.34	12.46	16.80	17.80	21.36	22.07	26.34	26.70	29.90	
Wet Detention Slopes (Canals)	Linear	3.99	11.50	19.00	0.00	0.38	0.60	3.26	5.93	6.65	9.58	10.23	14.57	14.96	18.55	
Green Ways	Vertical	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Green Ways Slopes	Linear	0.00	11.50	15.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pavement (Road right-of-way)	Linear	4.84	16.50	18.90	0.00	0.00	0.00	0.00	0.00	0.00	1.01	1.45	5.80	6.29	10.64	
Roadside Swale	Linear	3.55	15.00	18.90	0.00	0.00	0.00	0.00	0.68	1.02	2.84	3.31	6.92	7.27	10.46	
Roadway Shoulder	Linear	1.29	16.22	17.70	0.00	0.00	0.00	0.00	0.00	0.03	0.71	0.95	2.50	2.63	3.79	
Building/Pool - No Storage	Linear	6.93	0.00	0.00												
	Linear	16.64	17.50	19.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	6.79	7.80	19.97	
Total:		40.80		Totals:	0.00	4.66	5.94	15.72	23.41	25.51	35.50	38.16	62.93	65.65	93.32	ac-ft
				ICPR AREA	3.56	4.20	4.36	5.42	7.18	7.83	12.16	14.41	26.88	27.62	33.86	acre

Basin Information For: EP 1-2

Total Basin Area	=	142.98 ac
No. of Residential Lots (est.)	=	396
Residential Area (0.25 ac lots)	=	99.00 ac
No. of Residential Structures	=	396
Length of Roadways	=	19441 ft
Roadway Right of way	=	26.78 ac

Impervious Area

Residential Area (0.25 acres lots, 40% imp.)		
Bldg./Pool/Porch (avg house = 4000 sf)	=	36.36 ac
Lot Driveway/concrete (avg = 400 sf)	=	3.64 ac
Pavement Area (Assumed 50% of ROW)	=	13.39 ac
Additional Imp. Area (lakes, greenways etc)	=	22.09 ac
Total Impervious Area	=	75.48 ac

Total Pervious Area	=	67.50 ac
Lot Open Space	=	54.11 ac
Roadway Shoulder	=	3.57 ac
Roadway Swale	=	9.82 ac

Percent Impervious	=	52.8%
Adjusted Soil Storage (Flatwoods, 3' to W.S.W.T.E.)	=	2.34 in
Calculated SCS Curve Number	=	81
Time of Concentration	=	30.00 min

ICPR MODEL INPUT DATA

CN	81
TC	30.00
Area	142.98

Min. Road Crown Elevation	14.25
Max. F.F.E.	20.05
Max. Road Crown	18.05
All elevations are in NGVD	

Canal / Water Way Storage/ Areas

ROW Width	150	100	50	60	65
Vertical Storage	100	60	0	0	0
Linear Storage	50	40	50	60	65
Length	4786	1462.00	500	0	1128
Vertical Area	10.99	2.01	0.00	0.00	0.00
Linear Area	5.49	1.34	0.57	0.00	1.68

Stage Storage Calculations for Sub-basin EP 1-2

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)											
					11.50	12.75	13.00	13.97	14.25	15.00	15.25	16.00	17.85	19.05	20.05	
Wet Detention (Canals)	Vertical	13.00	11.50		0.00	16.25	19.50	32.11	35.75	45.50	48.75	58.50	82.56	98.16	111.16	
Wet Detention Slopes (Canals)	Linear	6.84	11.50	18.00	0.00	1.19	1.71	4.63	5.74	9.30	10.68	15.38	28.03	36.23	43.07	
Green Ways	Vertical	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Green Ways Slopes	Linear	2.26	11.50	15.00	0.00	0.50	0.73	1.97	2.44	3.95	4.51	6.21	10.38	13.09	15.35	
Pavement (Road right-of-way)	Linear	13.39	14.25	19.05	0.00	0.00	0.00	0.00	0.00	0.78	1.39	4.27	18.08	32.13	45.52	
Roadside Swale	Linear	9.82	12.75	19.05	0.00	0.00	0.05	1.16	1.75	3.94	4.87	8.23	20.27	30.93	40.75	
Roadway Shoulder	Linear	3.57	13.97	17.85	0.00	0.00	0.00	0.00	0.04	0.49	0.75	1.90	6.93	11.21	14.78	
Building/Pool - No Storage	Linear	36.36	0.00	0.00												
	Linear	57.75	15.25	20.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.38	40.66	86.86	138.59	
Total:		142.98		Totals:	0.00	17.94	21.98	39.87	45.72	63.98	70.97	97.87	206.90	308.61	409.21	ac-ft
				ICPR AREA	13.00	15.71	16.64	20.25	21.55	27.12	28.82	42.93	74.93	94.59	106.62	acre

ac-ft
acre

Basin Information For: EP 1-3 Existing

Total Basin Area	=	158.36 ac
No. of Residential Lots (est.)	=	440
Residential Area (0.25 ac lots)	=	110.00 ac
No. of Residential Structures	=	440
Length of Roadways	=	23800 ft
Roadway Right of way	=	32.78 ac

Impervious Area

Residential Area (0.25 acres lots, 40% imp.)		
Bldg./Pool/Porch (avg house = 4000 sf)	=	40.40 ac
Lot Driveway/concrete (avg = 400 sf)	=	4.04 ac
Pavement Area (Assumed 50% of ROW)	=	16.39 ac
Additional Imp. Area (lakes, greenways etc)	=	12.81 ac
Total Impervious Area	=	73.65 ac

Total Pervious Area	=	84.71 ac
Lot Open Space	=	68.32 ac
Roadway Shoulder	=	4.37 ac
Roadway Swale	=	12.02 ac

Percent Impervious	=	46.5%
Adjusted Soil Storage (Flatwoods, 3' to W.S.W.T.E.)	=	2.65 in
Calculated SCS Curve Number	=	79
Time of Concentration	=	30.00 min

ICPR MODEL INPUT DATA

CN	79
TC	30.00
Area	158.36

Min. Road Crown Elevation	13.95
Max. F.F.E.	20
Max. Road Crown	18
All elevations are in NGVD	

Canal / Water Way Storage/ Areas

	150	100	50	60	65	Addl. Lake
ROW Width	150	100	50	60	65	
Vertical Storage	100	60	0	0	0	
Linear Storage	50	40	50	60	65	
Length	2440	0.00	2377	0	1128	
Vertical Area	5.60	0.00	0.00	0.00	0.00	0
Linear Area	2.80	0.00	2.73	0.00	1.68	0

Stage Storage Calculations for Sub-basin EP 1-3 Existing

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)										
					11.50	12.45	13.00	13.67	13.95	14.95	15.00	16.00	17.80	19.00	20.00
Wet Detention (Canals)	Vertical	5.60	11.50		0.00	5.32	8.40	12.16	13.72	19.33	19.61	25.21	35.29	42.01	47.61
Wet Detention Slopes (Canals)	Linear	2.80	11.50	16.00	0.00	0.28	0.70	1.47	1.87	3.70	3.81	6.30	11.34	14.70	17.50
Green Ways	Vertical	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Green Ways Slopes	Linear	4.41	11.50	15.00	0.00	0.57	1.42	2.97	3.78	7.50	7.72	12.13	20.07	25.37	29.78
Pavement (Road right-of-way)	Linear	16.39	13.95	19.00	0.00	0.00	0.00	0.00	0.00	1.62	1.79	6.82	24.06	41.39	57.78
Roadside Swale	Linear	12.02	12.45	19.00	0.00	0.00	0.28	1.37	2.06	5.73	5.97	11.56	26.26	39.37	51.39
Roadway Shoulder	Linear	4.37	13.67	17.80	0.00	0.00	0.00	0.00	0.04	0.87	0.94	2.87	9.03	14.27	18.64
Building/Pool - No Storage	Linear	40.40	0.00	0.00											
	Linear	72.36	14.95	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	7.90	58.19	117.51	182.71
Total:		158.36		Totals:	0.00	6.17	10.80	17.95	21.48	38.76	39.85	72.80	184.24	294.62	405.41
ICPR AREA					5.60	7.39	9.44	11.93	13.26	21.29	22.40	43.49	80.34	103.63	117.96

Basin Information For: EP 1-3 Proposed

Total Basin Area	=	158.36 ac
No. of Residential Lots (est.)	=	440
Residential Area (0.25 ac lots)	=	110.00 ac
No. of Residential Structures	=	440
Length of Roadways	=	23800 ft
Roadway Right of way	=	32.78 ac

Impervious Area

Residential Area (0.25 acres lots, 40% imp.)		
Bldg./Pool/Porch (avg house = 4000 sf)	=	40.40 ac
Lot Driveway/concrete (avg = 400 sf)	=	4.04 ac
Pavement Area (Assumed 50% of ROW)	=	16.39 ac
Additional Imp. Area (lakes, greenways etc)	=	17.07 ac
Total Impervious Area	=	77.90 ac

Total Pervious Area	=	80.46 ac
Lot Open Space	=	64.07 ac
Roadway Shoulder	=	4.37 ac
Roadway Swale	=	12.02 ac

Percent Impervious	=	49.2%
Adjusted Soil Storage (Flatwoods, 3' to W.S.W.T.E.)	=	2.51 in
Calculated SCS Curve Number	=	80
Time of Concentration	=	30.00 min

ICPR MODEL INPUT DATA

CN	80
TC	30.00
Area	158.36

Min. Road Crown Elevation	13.95
Max. F.F.E.	20
Max. Road Crown	18
All elevations are in NGVD	

Canal / Water Way Storage/ Areas

	150	100	50	60	65	Addl. Lake
ROW Width	150	100	50	60	65	
Vertical Storage	100	60	0	0	0	
Linear Storage	50	40	50	60	65	
Length	2440	0.00	2377	0	1124	
Vertical Area	5.60	0.00	0.00	0.00	0.00	3.76
Linear Area	2.80	0.00	2.73	0.00	1.68	0.5

Stage Storage Calculations for Sub-basin EP 1-3 Proposed

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)											
					11.50	12.45	13.00	13.67	13.95	14.95	15.00	16.00	17.80	19.00	20.00	
Wet Detention (Canals)	Vertical	9.36	11.50		0.00	8.89	14.04	20.31	22.94	32.30	32.77	42.13	58.98	70.21	79.57	
Wet Detention Slopes (Canals)	Linear	3.30	11.50	16.00	0.00	0.33	0.83	1.73	2.20	4.37	4.49	7.43	13.37	17.33	20.63	
Green Ways	Vertical	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Green Ways Slopes	Linear	4.41	11.50	15.00	0.00	0.57	1.42	2.96	3.78	7.49	7.71	12.12	20.05	25.33	29.74	
Pavement (Road right-of-way)	Linear	16.39	13.95	19.00	0.00	0.00	0.00	0.00	0.00	1.62	1.79	6.82	24.06	41.39	57.78	
Roadside Swale	Linear	12.02	12.45	19.00	0.00	0.00	0.28	1.37	2.06	5.73	5.97	11.56	26.26	39.37	51.39	
Roadway Shoulder	Linear	4.37	13.67	17.80	0.00	0.00	0.00	0.00	0.04	0.87	0.94	2.87	9.03	14.27	18.64	
Building/Pool - No Storage	Linear	40.40	0.00	0.00												
	Linear	68.11	14.95	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	7.43	54.77	110.60	171.97	
Total:		158.36			Totals:	0.00	9.79	16.56	26.37	31.02	52.38	53.68	90.36	206.51	318.50	429.71
					ICPR AREA	9.36	11.25	13.36	15.92	17.29	25.42	26.50	46.86	82.19	104.47	117.96

ac-ft
acre

Basin Information For: EP 1-4

Total Basin Area	=	44.29 ac
No. of Residential Lots (est.)	=	110
Residential Area (0.25 ac lots)	=	27.50 ac
No. of Residential Structures	=	110
Length of Roadways	=	5632 ft
Roadway Right of way	=	7.76 ac

Impervious Area

Residential Area (0.25 acres lots, 40% imp.)		
Bldg./Pool/Porch (avg house = 4000 sf)	=	10.10 ac
Lot Driveway/concrete (avg = 400 sf)	=	1.01 ac
Pavement Area (Assumed 50% of ROW)	=	3.88 ac
Additional Imp. Area (lakes, greenways etc)	=	9.86 ac
Total Impervious Area	=	24.85 ac

Total Pervious Area	=	19.44 ac
Lot Open Space	=	15.56 ac
Roadway Shoulder	=	1.03 ac
Roadway Swale	=	2.84 ac

Percent Impervious	=	56.1%
Adjusted Soil Storage (Flatwoods, 3' to W.S.W. F.E.)	=	2.17 in
Calculated SCS Curve Number	=	82
Time of Concentration	=	30.00 min

ICPR MODEL INPUT DATA

CN	82
TC	30.00
Area	44.29

Min. Road Crown Elevation	14.2
Max. F.F.E.	19
Max. Road Crown	17
All elevations are in NGVD	

Stage Storage Calculations for Sub-basin EP 1-4

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)										
					11.50	12.70	13.00	13.92	14.20	15.20	16.00	16.80	18.00	19.00	20.00
Wet Detention (Canals)	Vertical	6.18	11.50		0.00	7.42	9.27	14.96	16.69	22.87	27.81	32.75	40.17	46.35	52.53
Wet Detention Slopes (Canals)	Linear	3.68	11.50	16.00	0.00	0.59	0.92	2.39	2.98	5.60	8.28	11.22	15.64	19.32	23.00
Green Ways	Vertical	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Green Ways Slopes	Linear	0.00	11.50	15.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pavement (Road right-of-way)	Linear	3.88	14.20	18.00	0.00	0.00	0.00	0.00	0.00	0.51	1.65	3.45	7.37	11.25	15.13
Roadside Swale	Linear	2.84	12.70	18.00	0.00	0.00	0.02	0.40	0.60	1.68	2.92	4.51	7.54	10.38	13.23
Roadway Shoulder	Linear	1.03	13.92	16.80	0.00	0.00	0.00	0.00	0.01	0.29	0.78	1.49	2.73	3.77	4.80
Building/Pool - No Storage	Linear	10.10	0.00	0.00											
	Linear	16.57	15.20	19.00	0.00	0.00	0.00	0.00	0.00	0.00	1.40	5.58	17.09	31.49	48.06
Total:		44.29			Totals:	0.00	8.00	10.21	17.75	20.28	30.95	42.84	59.01	90.54	122.55
					ICPR AREA	6.18	7.16	7.57	8.81	9.29	12.03	17.70	29.83	34.19	34.19

ac-ft
acre

Basin Information For: EP 1-5

Total Basin Area	=	31.10 ac
No. of Residential Lots (est.)	=	74
Residential Area (0.25 ac lots)	=	18.50 ac
No. of Residential Structures	=	74
Length of Roadways	=	4219 ft
Roadway Right of way	=	5.81 ac

Impervious Area

Residential Area (0.25 acres lots, 40% imp.)		
Bldg./Pool/Porch (avg house = 4000 sf)	=	6.80 ac
Lot Driveway/concrete (avg = 400 sf)	=	0.68 ac
Pavement Area (Assumed 50% of ROW)	=	2.91 ac
Additional Imp. Area (lakes, greenways etc)	=	3.32 ac
Total Impervious Area	=	13.70 ac

Total Pervious Area	=	17.40 ac
Lot Open Space	=	14.49 ac
Roadway Shoulder	=	0.77 ac
Roadway Swale	=	2.13 ac

Percent Impervious	=	44.1%
Adjusted Soil Storage (Flatwoods, 3' to W.S.W.T.E.)	=	2.77 in
Calculated SCS Curve Number	=	78
Time of Concentration	=	15.00 min

ICPR MODEL INPUT DATA

CN	78
TC	15.00
Area	31.10

Min. Road Crown Elevation	14.4
Max. F.F.E.	18.5
Max. Road Crown	16.5
All elevations are in NGVD	

Stage Storage Calculations for Sub-basin EP 1-5

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)											
					11.50	12.50	12.90	13.00	14.12	14.40	15.00	15.40	16.30	17.50	18.50	
Wet Detention (Canals)	Vertical	0.00	11.50		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Wet Detenition Slopes (Canals)	Linear	0.00	11.50	16.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Green Ways	Vertical	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Green Ways Slopes	Linear	3.32	11.50	15.00	0.00	0.47	0.93	1.07	3.26	3.99	5.81	7.14	10.13	14.11	17.43	
Pavement (Road right-of-way)	Linear	2.91	14.40	17.50	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.47	1.69	4.50	7.41	
Roadside Swale	Linear	2.13	12.90	17.50	0.00	0.00	0.00	0.00	0.34	0.52	1.02	1.45	2.68	4.90	7.03	
Roadway Shoulder	Linear	0.77	14.12	16.30	0.00	0.00	0.00	0.00	0.00	0.01	0.14	0.29	0.84	1.77	2.55	
Building/Pool - No Storage	Linear	6.80	0.00	0.00												
	Linear	15.17	15.40	18.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.98	10.79	23.52	
Total:		31.10		Totals:	0.00	0.47	0.93	1.07	3.60	4.52	7.14	9.35	17.32	36.08	57.94	ac-ft
				ICPR AREA	0.00	0.95	1.33	1.47	3.05	3.55	5.17	5.87	11.86	19.41	24.30	acre

Basin Information For: EP 1-6

Total Basin Area	=	90.92 ac
No. of Residential Lots (est.)	=	139.00
Residential Area (0.25 ac lots)	=	34.75 ac
No. of Residential Structures	=	139.00
Length of Roadways	=	9967.00 ft
Roadway Right of way	=	13.73 ac

Impervious Area

Residential Area (0.25 acres lots, 40% imp.)		
Bldg./Pool/Porch (avg house = 4000 sf)	=	20.88 ac
Lot Driveway/concrete (avg = 400 sf)	=	4.13 ac
Pavement Area (Assumed 50% of ROW)	=	4.17 ac
Additional Imp. Area (lakes, greenways etc)	=	1.13 ac
Other Surface Water in St. Lucie Gardens	=	2
Total Impervious Area	=	32.31 ac

Total Pervious Area	=	58.61 ac
Lot Open Space	=	49.05 ac
Roadway Shoulder	=	1.83 ac
Roadway Swale	=	7.73 ac

Percent Impervious	=	35.5%
Adjusted Soil Storage (Flatwoods, 3' to W.S.W.T.E.)	=	3.19 in
Calculated SCS Curve Number	=	76
Time of Concentration	=	30.00 min

ICPR MODEL INPUT DATA

CN	76
TC	30.00
Area	90.92

Min. Road Crown Elevation	13.7
Max. F.F.E.	20
Max. Road Crown	18
All elevations are in NGVD	

Stage Storage Calculations for Sub-basin EP 1-6

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)										
					11.50	12.00	12.20	13.42	13.70	14.50	14.70	15.00	17.80	19.00	20.00
Wet Detention/Wetland/Other	Vertical	2.00	11.50		0.00	1.00	1.40	3.84	4.40	6.00	6.40	7.00	12.60	15.00	17.00
Wet Detention Slopes (Canals)	Linear	0.00	0.00	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Green Ways	Vertical	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Green Ways Slopes	Linear	1.13	11.50	15.00	0.00	0.04	0.08	0.60	0.78	1.45	1.65	1.98	5.14	6.50	7.63
Pavement (Road right-of-way)	Linear	4.17	13.70	19.00	0.00	0.00	0.00	0.00	0.00	0.25	0.39	0.66	6.61	11.05	15.22
Roadside Swale	Linear	7.73	12.20	19.00	0.00	0.00	0.00	0.85	1.28	3.01	3.55	4.46	17.82	26.28	34.00
Roadway Shoulder	Linear	1.83	13.42	17.80	0.00	0.00	0.00	0.00	0.02	0.24	0.34	0.52	4.01	6.21	8.04
	Linear	20.88	0.00	0.00											
Lot Pavement + Open Space	Linear	53.18	14.70	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.45	48.21	92.76	140.92
Total:		90.92			0.00	1.04	1.48	5.28	6.48	10.95	12.34	15.07	94.39	157.79	222.81
ICPR AREA					2.00	2.16	2.23	4.01	4.53	6.66	7.20	11.01	45.65	60.00	70.04

ac-ft
acre

Basin Information For: EP 1-7 Existing

Total Basin Area	=	35.48 ac
No. of Residential Lots (est.)	=	74
Residential Area (0.25 ac lots)	=	18.50 ac
No. of Residential Structures	=	74
Length of Roadways	=	3268 ft
Roadway Right of way	=	4.50 ac

Impervious Area

Residential Area (0.25 acres lots, 40% imp.)		
Bldg./Pool/Porch (avg house = 4000 sf)	=	6.80 ac
Lot Driveway/concrete (avg = 400 sf)	=	0.68 ac
Pavement Area (Assumed 50% of ROW)	=	2.25 ac
Additional Imp. Area (lakes, greenways etc)	=	1.07 ac
Total Impervious Area	=	10.80 ac

Total Pervious Area	=	24.68 ac
Lot Open Space	=	22.43 ac
Roadway Shoulder	=	0.60 ac
Roadway Swale	=	1.65 ac

Percent Impervious	=	30.4%
Adjusted Soil Storage (Flatwoods, 3' to W.S.W.T.E.)	=	3.44 in
Calculated SCS Curve Number	=	74
Time of Concentration	=	30.00 min

ICPR MODEL INPUT DATA

CN	74
TC	30.00
Area	35.48

Min. Road Crown Elevation	14.15
Max. F.F.E.	16.85
Max. Road Crown	14.85
All elevations are in NGVD	

Stage Storage Calculations for Sub-basin EP 1-7 Existing

Land use Category	Storage Type	Area (ac.)	From Elev. (NGVD)	To Elev. (NGVD)	Cumulative Stage-Storage (ac-ft)										
					11.50	12.00	12.65	13.00	13.87	14.15	14.65	15.00	15.15	15.85	16.85
Wet Detention (Canals)	Vertical	0.00	11.50		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Wet Detention Slopes (Canals)	Linear	0.00	11.50	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Green Ways	Vertical	0.00	11.50		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Green Ways Slopes	Linear	1.07	11.50	15.00	0.00	0.04	0.20	0.34	0.86	1.07	1.52	1.87	2.03	2.78	3.85
Pavement (Road right-of-way)	Linear	2.25	14.15	15.85	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.48	0.66	1.91	4.16
Roadside Swale	Linear	1.65	12.65	15.85	0.00	0.00	0.00	0.03	0.38	0.58	1.03	1.42	1.61	2.64	4.29
Roadway Shoulder	Linear	0.60	13.87	14.65	0.00	0.00	0.00	0.00	0.00	0.03	0.23	0.44	0.53	0.95	1.55
Building/Pool - No Storage	Linear	6.80	0.00	0.00											
	Linear	23.11	15.15	16.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.33	19.65
Total:		35.48		Totals:	0.00	0.04	0.20	0.38	1.24	1.68	2.95	4.22	4.84	11.62	33.51 ac-ft
				ICPR AREA	0.00	0.15	0.35	0.64	1.35	1.80	3.26	4.01	4.28	15.09	28.68 acre

Basin Information For: EP 1-7 PROPOSED

Total Basin Area	=	33.98 ac
No. of Residential Lots (est.)	=	74
Residential Area (0.25 ac lots)	=	18.50 ac
No. of Residential Structures	=	74
Length of Roadways	=	3268 ft
Roadway Right of way	=	4.50 ac

Impervious Area

Residential Area (0.25 acres lots, 40% imp.)		
Bldg./Pool/Porch (avg house = 4000 sf)	=	6.80 ac
Lot Driveway/concrete (avg = 400 sf)	=	0.68 ac
Pavement Area (Assumed 50% of ROW)	=	2.25 ac
Additional Imp. Area (lakes, greenways etc)	=	8.66 ac
Total Impervious Area	=	18.39 ac

Total Pervious Area	=	15.59 ac
Lot Open Space	=	13.34 ac
Roadway Shoulder	=	0.60 ac
Roadway Swale	=	1.65 ac

Percent Impervious	=	54.1%
Adjusted Soil Storage (Flatwoods, 3' to W.S.W.T.E.)	=	2.27 in
Calculated SCS Curve Number	=	81
Time of Concentration	=	20.00 min

ICPR MODEL INPUT DATA

CN	81
TC	20.00
Area	33.98

Min. Road Crown Elevation	14.15
Max. F.F.E.	16.85
Max. Road Crown	14.85
All elevations are in NGVD	

Stage Storage Calculations for Sub-basin EP 1-7 PROPOSED

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)											
					11.50	12.65	13.00	13.87	14.15	14.65	15.00	15.15	15.85	16.50	16.85	
Wet Detention (Canals)	Vertical	8.66	11.50		0.00	9.96	12.99	20.52	22.95	27.28	30.31	31.61	37.67	43.30	46.33	
Wet Deteniton Slopes (Canals)	Linear	1.46	11.50	16.50	0.00	0.19	0.33	0.82	1.03	1.45	1.79	1.95	2.76	3.65	4.16	
Green Ways	Vertical	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Green Ways Slopes	Linear	0.00	11.50	15.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pavement (Road right-of-way)	Linear	2.25	14.15	15.85	0.00	0.00	0.00	0.00	0.00	0.17	0.48	0.66	1.91	3.38	4.16	
Roadside Swale	Linear	1.65	12.65	15.85	0.00	0.00	0.03	0.38	0.58	1.03	1.42	1.61	2.64	3.71	4.29	
Roadway Shoulder	Linear	0.60	13.87	14.65	0.00	0.00	0.00	0.00	0.03	0.23	0.44	0.53	0.95	1.34	1.55	
Building/Pool - No Storage	Linear	6.80	0.00	0.00												
	Linear	12.56	15.15	16.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.81	6.73	10.68	
Total:		33.98		Totals:	0.00	10.15	13.35	21.73	24.58	30.16	34.45	36.36	47.75	62.12	71.18	ac-ft
ICPR AREA					8.66	9.00	9.28	9.98	10.42	11.87	12.62	12.94	19.60	24.60	27.18	acre

Basin Information For: EP 1-7A PROPOSED

Total Basin Area	=	1.50 ac
No. of Residential Lots (est.)	=	0
Residential Area (0.25 ac lots)	=	0.00 ac
No. of Residential Structures	=	0
Length of Roadways	=	0 ft
Roadway Right of way	=	0.00 ac
Impervious Area		

ICPR MODEL INPUT DATA

CN	88
TC	20.00
Area	1.50

Residential Area (0.25 acres lots, 40% imp.)		
Bldg./Pool/Porch (avg house = 4000 sf)	=	0.00 ac
Lot Driveway/concrete (avg = 400 sf)	=	0.00 ac
Pavement Area (Assumed 50% of ROW)	=	0.00 ac
Additional Imp. Area (lakes, greenways etc)	=	1.07 ac
Total Impervious Area	=	1.07 ac

Total Pervious Area	=	0.43 ac
Lot Open Space	=	0.43 ac
Roadway Shoulder	=	0.00 ac
Roadway Swale	=	0.00 ac

Percent Impervious	=	71.3%
Adjusted Soil Storage (Flatwoods, 3' to W.S.W.T.E.)	=	1.42 in
Calculated SCS Curve Number	=	88
Time of Concentration	=	20.00 min

Stage Storage Calculations for Sub-basin EP 1-7A PROPOSED

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)										
					11.50	12.65	13.00	13.87	14.15	14.65	15.00	15.15	15.85	16.50	16.85
Wet Detention (Canals)	Vertical	1.07	11.50		0.00	1.23	1.60	2.54	2.84	3.37	3.74	3.91	4.65	5.35	5.72
Wet Detention Slopes (Canals)	Linear	0.26	11.50	16.50	0.00	0.03	0.06	0.15	0.18	0.26	0.32	0.35	0.49	0.65	0.74
Green Ways	Vertical	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Green Ways Slopes	Linear	0.00	11.50	15.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pavement (Road right-of-way)	Linear	0.00	0.00	-1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Roadside Swale	Linear	0.00	-1.50	-1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Roadway Shoulder	Linear	0.00	-0.28	-0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building/Pool - No Storage	Linear	0.00	0.00	0.00											
	Linear	0.17	1.00	0.00	1.87	2.07	2.13	2.27	2.32	2.41	2.47	2.49	2.61	2.72	2.78
Total:		1.50			1.87	3.33	3.79	4.95	5.34	6.03	6.53	6.74	7.76	8.72	9.24
					ICPR AREA										
					1.07	1.47	1.15	1.53	1.21	1.57	1.25	1.60	1.30	1.67	1.33

ac-ft
acre

Basin Information For: EP 1-8A

(SFWMD PERMIT NO. 56-00776-S, APPLICATION NO. 050110-8)

Total Drainage Basin Area = 13.53 ac
Total Project Area 19.58

Impervious Area

Roofline/Bldg. = 0.92 ac
Pavement Area = 4.47 ac
Additional Imp. Area (lakes,etc) = 1.5 ac
Total Impervious Area = 6.89 ac
Total Pervious Area = 6.64 ac
Percent Impervious = 50.9%
Adjusted Soil Storage (Flatwoods, 2.5' to W.S.W.T.E.) = 1.96 in
Calculated SCS Curve Number = 84
Time of Concentration = 10.00 min
Allowable Discharge 3 cfs
Min. Road Crown Elevation = 15.50 ft-NGVD
Min. F.F.E. = 18.70 ft-NGVD
Min. Berm EL. = 15.91 ft-NGVD

Stage Storage Calculations for Sub-basin EP 1-8A

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)										
					13.00	13.50	14.00	14.50	15.00	15.50	16.00	16.50	17.00	17.50	18.00
Wet Detention	Vertical	1.50	13.00		0.00	0.75	1.50	2.25	3.00	3.75	4.50	5.25	6.00	6.75	7.50
Wet Detention Slopes	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dry Detention	Vertical	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Undeveloped Open Space	Linear	2.67	15.00	16.50	0.00	0.00	0.00	0.00	0.00	0.22	0.89	2.00	3.34	4.67	6.01
Pavement+Open Space	Linear	8.44	15.00	18.00	0.00	0.00	0.00	0.00	0.00	0.35	1.41	3.17	5.63	8.79	12.66
	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total:		13.53		Totals:	0.00	0.75	1.50	2.25	3.00	4.32	6.80	10.42	14.96	20.21	26.17
ICPR AREA					1.50	1.50	1.50	1.50	1.50	3.80	6.09	8.39	9.80	11.20	12.61

Basin Information For: EP 1-9

Total Basin Area	=	38.10 ac
No. of Residential Lots (est.)	=	117.00
Residential Area (0.25 ac lots)	=	29.25 ac
No. of Residential Structures	=	117.00
Length of Roadways	=	5476.00 ft
Roadway Right of way	=	7.54 ac

Impervious Area

Residential Area (0.25 acres lots, 40% imp.)		
Bldg./Pool/Porch (avg house = 4000 sf)	=	10.74 ac
Lot Driveway/concrete (avg = 400 sf)	=	1.07 ac
Pavement Area (Assumed 50% of ROW)	=	3.77 ac
Additional Imp. Area (lakes, greenways etc)	=	2.04 ac
Total Impervious Area	=	17.63 ac

Total Pervious Area	=	20.47 ac
Lot Open Space	=	16.70 ac
Roadway Shoulder	=	1.01 ac
Roadway Swale	=	2.77 ac

Percent Impervious	=	46.3%
Adjusted Soil Storage (Flatwoods, 3' to W.S.W.T.E.)	=	2.66 in
Calculated SCS Curve Number	=	79
Time of Concentration	=	30.00 min

ICPR MODEL INPUT DATA

CN	79
TC	30.00
Area	38.10

Min. Road Crown Elevation	13.5
Max. F.F.E.	16.8
Max. Road Crown	14.8
All elevations are in NGVD	

Stage Storage Calculations for Sub-basin EP 1-9

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)										
					11.50	12.00	12.50	13.00	13.22	13.50	14.50	14.60	15.00	15.80	16.80
Wet Detention (Canals)	Vertical	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Wet Detention Slopes (Canals)	Linear	0.00	0.00	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Green Ways	Vertical	1.02	11.50		0.00	0.51	1.02	1.53	1.75	2.04	3.06	3.16	3.57	4.39	5.41
Green Ways Slopes	Linear	1.02	11.50	15.00	0.00	0.04	0.15	0.33	0.43	0.58	1.31	1.40	1.79	2.60	3.62
Pavement (Road right-of-way)	Linear	3.77	13.50	15.80	0.00	0.00	0.00	0.00	0.00	0.00	0.82	0.99	1.84	4.34	8.11
Roadside Swale	Linear	2.77	12.00	15.80	0.00	0.00	0.09	0.36	0.54	0.82	2.27	2.46	3.28	5.25	8.02
Roadway Shoulder	Linear	1.01	13.22	14.60	0.00	0.00	0.00	0.00	0.00	0.03	0.60	0.69	1.10	1.90	2.91
Building/Pool - No Storage	Linear	10.74	0.00	0.00											
	Linear	17.77	14.50	16.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.97	6.53	20.44
Total:		38.10			Totals:	0.00	0.55	1.26	2.22	2.73	3.47	8.06	8.75	12.54	48.50 ac-ft
ICPR AREA						1.02	1.17	1.68	2.18	2.41	2.90	6.29	7.40	11.55	27.36 acre

Basin Information For: EP 1-10

Total Basin Area	=	44.15 ac
No. of Residential Lots (est.)	=	123.00
Residential Area (0.25 ac lots)	=	30.75 ac
No. of Residential Structures	=	123.00
Length of Roadways	=	5697.00 ft
Roadway Right of way	=	7.85 ac

Impervious Area

Residential Area (0.25 acres lots, 40% imp.)		
Bldg./Pool/Porch (avg house = 4000 sf)	=	11.29 ac
Lot Driveway/concrete (avg = 400 sf)	=	1.13 ac
Pavement Area (Assumed 50% of ROW)	=	3.92 ac
Additional Imp. Area (lakes, greenways etc)	=	2.04 ac
Total Impervious Area	=	18.39 ac

Total Pervious Area	=	25.76 ac
Lot Open Space	=	21.84 ac
Roadway Shoulder	=	1.05 ac
Roadway Swale	=	2.88 ac

Percent Impervious	=	41.7%
Adjusted Soil Storage (Flatwoods, 3' to W.S.W.T.E.)	=	2.89 in
Calculated SCS Curve Number	=	78
Time of Concentration	=	30.00 min

ICPR MODEL INPUT DATA

CN	78
TC	30.00
Area	44.15

Min. Road Crown Elevation	13.5
Max. F.F.E.	17.65
Max. Road Crown	15.65
All elevations are in NGVD	

ROW Width	150	100	50	60	65
Vertical Storage	100	60	0	0	0
Linear Storage	50	40	50	60	65
Length	0	0.00	1779	0	0
Vertical Area	0.00	0.00	0.00	0.00	0.00
Linear Area	0.00	0.00	2.04	0.00	0.00

Stage Storage Calculations for Sub-basin EP 1-10

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)										
					11.50	12.00	12.50	13.00	13.22	13.50	14.50	15.00	15.45	16.65	17.65
Wet Detention (Canals)	Vertical	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Wet Detention Slopes (Canals)	Linear	0.00	0.00	14.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Green Ways	Vertical	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Green Ways Slopes	Linear	2.04	11.50	15.00	0.00	0.07	0.29	0.66	0.86	1.17	2.63	3.57	4.49	6.94	8.98
Pavement (Road right-of-way)	Linear	3.92	13.50	16.65	0.00	0.00	0.00	0.00	0.00	0.00	0.62	1.40	2.37	6.18	10.10
Roadside Swale	Linear	2.88	12.00	16.65	0.00	0.00	0.08	0.31	0.46	0.70	1.93	2.78	3.68	6.69	9.57
Roadway Shoulder	Linear	1.05	13.22	15.45	0.00	0.00	0.00	0.00	0.00	0.02	0.38	0.74	1.17	2.42	3.47
Building/Pool - No Storage	Linear	11.29	0.00	0.00											
	Linear	22.97	14.50	17.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.91	3.29	16.85	36.17
Total:		44.15			Totals:	0.00	0.07	0.37	0.97	1.32	1.88	5.57	9.41	15.00	68.29 ac-ft
					ICPR AREA	0.00	0.29	0.89	1.49	1.76	2.23	5.14	10.25	14.58	32.86 acre

Basin Information For: EP 1-10 PROPOSED

Total Basin Area	=	44.15 ac
No. of Residential Lots (est.)	=	123.00
Residential Area (0.25 ac lots)	=	30.75 ac
No. of Residential Structures	=	123.00
Length of Roadways	=	5697.00 ft
Roadway Right of way	=	7.85 ac
Impervious Area		

Residential Area (0.25 acres lots, 40% imp.)		
Bldg./Pool/Porch (avg house = 4000 sf)	=	11.29 ac
Lot Driveway/concrete (avg = 400 sf)	=	1.13 ac
Pavement Area (Assumed 50% of ROW)	=	3.92 ac
Additional Imp. Area (lakes, greenways etc)	=	4.56 ac
Total Impervious Area	=	20.91 ac

Total Pervious Area	=	23.24 ac
Lot Open Space	=	19.32 ac
Roadway Shoulder	=	1.05 ac
Roadway Swale	=	2.88 ac

Percent Impervious	=	47.4%
Adjusted Soil Storage (Flatwoods, 3' to W.S.W.T.E.)	=	2.61 in
Calculated SCS Curve Number	=	79
Time of Concentration	=	30.00 min

ICPR MODEL INPUT DATA

CN	79
TC	30.00
Area	44.15

Min. Road Crown Elevation	13.5
Max. F.F.E.	17.65
Max. Road Crown	15.65
All elevations are in NGVD	

Canal / Water Way Storage/ Areas

	150	100	50	60	65	Addl. Lake
ROW Width	150	100	50	60	65	
Vertical Storage	100	60	0	0	0	
Linear Storage	50	40	50	60	65	
Length	0	0.00	1779	0	0	
Vertical Area	0.00	0.00	0.00	0.00	0.00	2.01
Linear Area	0.00	0.00	2.04	0.00	0.00	0.51

Stage Storage Calculations for Sub-basin EP 1-10 PROPOSED

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)												
					11.50	12.00	12.50	13.00	13.22	13.50	14.50	15.00	15.45	16.65	17.65		
Wet Detention (Canals)	Vertical	2.01	11.50		0.00	1.00	2.01	3.01	3.46	4.02	6.03	7.03	7.94	10.35	12.36		
Wet Detention Slopes (Canals)	Linear	0.51	11.50	15.00	0.00	0.02	0.07	0.16	0.22	0.29	0.66	0.89	1.12	1.73	2.24		
Green Ways	Vertical	0.00	11.50		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Green Ways Slopes	Linear	2.04	11.50	15.00	0.00	0.07	0.29	0.66	0.86	1.17	2.63	3.57	4.49	6.94	8.98		
Pavement (Road right-of-way)	Linear	3.92	13.50	16.65	0.00	0.00	0.00	0.00	0.00	0.00	0.62	1.40	2.37	6.18	10.10		
Roadside Swale	Linear	2.88	12.00	16.65	0.00	0.00	0.08	0.31	0.46	0.70	1.93	2.78	3.68	6.69	9.57		
Roadway Shoulder	Linear	1.05	13.22	15.45	0.00	0.00	0.00	0.00	0.00	0.02	0.38	0.74	1.17	2.42	3.47		
Building/Pool - No Storage	Linear	11.29	0.00	0.00													
	Linear	20.45	14.50	17.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.81	2.93	15.00	32.20		
Total:		44.15			Totals:	0.00	1.10	2.45	4.14	5.00	6.19	12.25	17.24	23.70	49.32	78.93	ac-ft
ICPR AREA					2.01	2.37	3.05	3.72	4.02	4.53	7.59	12.37	16.34	26.36	32.86	ac-ft	

Basin Information For: E 1-11

SFWM D PERMIT # 56-00935-S, APPLICATION NO. 900627-10

Total Basin Area = 18.10 ac
 No. of Residential Lots (est.) =
 Residential Area (0.25 ac lots) =
 No. of Residential Structures =
 Length of Roadways =

Min. Road Crown Elevation	15
Max. F.F.E.	17
Min. Berm El.	15.5
Allowable Discharge	10.5 cfs

Impervious Area

Residential Area = 6.30 ac
 Roofline/Bldg. =
 Pavement Area = 2.40 ac
 Additional Imp. Area (lakes,etc) = 2 ac
 Total Impervious Area = 10.70 ac
 Total Pervious Area = 7.40 ac
 Percent Impervious = 59.1%
 Adjusted Soil Storage (Flatwoods, 3' to W.S.W.T.E.) = 2.02 in
 Calculated SCS Curve Number = 83
 Time of Concentration = 15.00 min

Control Structure Design

1 Foot Wide Weir at EL. 12.75' NGVD
 30 Degree V Notch at EL. 12.00

Stage Storage Calculations for Sub-basin E 1-11

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)										
					12.00	12.50	13.00	13.50	14.00	14.50	15.00	15.50	16.00	16.50	17.00
Wet Detention	Vertical	2.00	12.00		0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
Wet Detention Slopes	Linear	0.00	12.00	15.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dry Detention	Vertical	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dry Detention Slopes	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pavement	Linear	2.40	14.00	16.00	0.00	0.00	0.00	0.00	0.00	0.15	0.60	1.35	2.40	3.60	4.80
Roadside Swale	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Open Space + Driveway	Linear	7.40	14.00	16.00	0.00	0.00	0.00	0.00	0.00	0.46	1.85	4.16	7.40	11.10	14.80
	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total:		18.10			0.00	1.00	2.00	3.00	4.00	5.61	8.45	12.51	17.80	23.70	29.60
ICPR AREA					2.00	2.00	2.00	2.00	2.00	4.45	6.90	9.35	11.80	11.80	11.80

Basin Information For:

EP 1-12

Total Basin Area	=	12.50 ac
No. of Residential Lots (est.)	=	38
Residential Area (0.25 ac lots)	=	9.50 ac
No. of Residential Structures	=	38
Length of Roadways	=	1983 ft
Roadway Right of way	=	2.73 ac

Impervious Area

Residential Area (0.25 acres lots, 40% imp.)		
Bldg./Pool/Porch (avg house = 4000 sf)	=	3.49 ac
Lot Driveway/concrete (avg = 400 sf)	=	0.35 ac
Pavement Area (Assumed 50% of ROW)	=	1.37 ac
Additional Imp. Area (lakes, greenways etc)	=	0.90 ac
Total Impervious Area	=	6.10 ac

Total Pervious Area	=	6.40 ac
Lot Open Space	=	5.03 ac
Roadway Shoulder	=	0.36 ac
Roadway Swale	=	1.00 ac

Percent Impervious	=	48.8%
Adjusted Soil Storage (Flatwoods, 3' to W.S.W.T.E.)	=	2.53 in
Calculated SCS Curve Number	=	80
Time of Concentration	=	10.00 min

ICPR MODEL INPUT DATA

CN	80
TC	10.00
Area	12.50

Min. Road Crown Elevation	13.7
Max. F.F.E.	17.1
Max. Road Crown	15.1
All elevations are in NGVD	

Canal / Water Way Storage/ Areas

ROW Width	150	100	50	60	65
Vertical Storage	100	60	0	0	0
Linear Storage	50	40	50	60	65
Length	0	0.00	784	0	0
Vertical Area	0.00	0.00	0.00	0.00	0.00
Linear Area	0.00	0.00	0.90	0.00	0.00

Stage Storage Calculations for Sub-basin EP 1-12

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)										
					11.50	12.20	13.42	13.70	14.00	14.70	14.90	15.00	16.00	16.10	17.10
Wet Detention (Canals)	Vertical	0.00	11.50		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Wet Detention Slopes (Canals)	Linear	0.00	11.50	16.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Green Ways	Vertical	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Green Ways Slopes	Linear	0.90	11.50	15.00	0.00	0.06	0.47	0.62	0.80	1.32	1.49	1.57	2.47	2.56	3.46
Pavement (Road right-of-way)	Linear	1.37	13.70	16.10	0.00	0.00	0.00	0.00	0.03	0.28	0.41	0.48	1.51	1.64	3.00
Roadside Swale	Linear	1.00	12.20	16.10	0.00	0.00	0.19	0.29	0.42	0.80	0.94	1.01	1.85	1.95	2.95
Roadway Shoulder	Linear	0.36	13.42	14.90	0.00	0.00	0.00	0.01	0.04	0.20	0.27	0.31	0.67	0.71	1.07
Building/Pool - No Storage	Linear	3.49	0.00	0.00											
	Linear	5.38	14.20	17.10	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.10	1.89	2.20	6.46
Total:		12.50		Totals:	0.00	0.06	0.67	0.92	1.29	2.61	3.15	3.47	8.40	9.06	16.95
				ICPR AREA	0.00	0.18	0.81	1.02	1.42	2.35	3.06	3.40	6.46	6.77	9.01

ac-ft
acre

Basin Information For: EP 1-13

Total Basin Area	=	121.14 ac
No. of Residential Lots (est.)	=	358
Residential Area (0.25 ac lots)	=	89.38 ac
No. of Residential Structures	=	358
Length of Roadways	=	16294 ft
Roadway Right of way	=	22.44 ac

Impervious Area

Residential Area (0.25 acres lots, 40% imp.)		
Bldg./Pool/Porch (avg house = 4000 sf)	=	32.83 ac
Lot Driveway/concrete (avg = 400 sf)	=	3.28 ac
Pavement Area (Assumed 50% of ROW)	=	11.22 ac
Additional Imp. Area (lakes, greenways etc)	=	7.68 ac
Total Impervious Area	=	55.01 ac

Total Pervious Area	=	66.13 ac
Lot Open Space	=	54.91 ac
Roadway Shoulder	=	2.99 ac
Roadway Swale	=	8.23 ac

Percent Impervious	=	45.4%
Adjusted Soil Storage (Flatwoods, 3' to W.S.W.T.E.)	=	2.70 in
Calculated SCS Curve Number	=	79
Time of Concentration	=	30.00 min

ICPR MODEL INPUT DATA

CN	79
TC	30.00
Area	121.14

Min. Road Crown Elevation 14.5

Max. F.F.E. 20.5

Max. Road Crown 18.5

All elevations are in NGVD

Canal / Water Way Storage/ Areas

ROW Width	150	100	50	60	65
Vertical Storage	100	60	0	0	0
Linear Storage	50	40	50	60	65
Length	0	0.00	6687	0	0
Vertical Area	0.00	0.00	0.00	0.00	0.00
Linear Area	0.00	0.00	7.68	0.00	0.00

Stage Storage Calculations for Sub-basin EP 1-13

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)											
					11.50	12.70	13.00	14.22	14.50	15.00	15.50	17.00	18.30	19.50	20.50	
Wet Detention (Canals)	Vertical	0.00	11.50		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Wet Detention Slopes (Canals)	Linear	0.00	11.50	16.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Green Ways	Vertical	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Green Ways Slopes	Linear	7.68	11.50	15.00	0.00	1.58	2.47	8.11	9.87	13.43	17.27	28.78	38.76	47.97	55.65	
Pavement (Road right-of-way)	Linear	11.22	14.50	19.50	0.00	0.00	0.00	0.00	0.00	0.28	1.12	7.01	16.20	28.05	39.28	
Roadside Swale	Linear	8.23	13.00	19.50	0.00	0.00	0.00	0.94	1.42	2.53	3.96	10.13	17.78	26.75	34.97	
Roadway Shoulder	Linear	2.99	14.22	18.30	0.00	0.00	0.00	0.00	0.03	0.22	0.60	2.83	6.10	9.70	12.69	
Building/Pool - No Storage	Linear	32.83	0.00	0.00												
	Linear	58.19	15.50	20.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.09	45.62	93.11	145.48	
Total:		121.14		Totals:	0.00	1.58	2.47	9.05	11.32	16.47	22.95	61.85	124.48	205.58	288.07	ac-ft
				ICPR AREA	0.00	2.63	3.29	7.51	8.68	11.90	14.02	37.85	58.49	76.67	88.31	ac-ft

ac-ft

acre

Basin Information For: EP 1-13 PROPOSED

Total Basin Area	=	121.14 ac
No. of Residential Lots (est.)	=	358
Residential Area (0.25 ac lots)	=	89.38 ac
No. of Residential Structures	=	358
Length of Roadways	=	16294 ft
Roadway Right of way	=	22.44 ac

Impervious Area

Residential Area (0.25 acres lots, 40% imp.)		
Bldg./Pool/Porch (avg house = 4000 sf)	=	32.83 ac
Lot Driveway/concrete (avg = 400 sf)	=	3.28 ac
Pavement Area (Assumed 50% of ROW)	=	11.22 ac
Additional Imp. Area (lakes, greenways etc)	=	10.19 ac
Total Impervious Area	=	57.52 ac

Total Pervious Area	=	63.62 ac
Lot Open Space	=	52.40 ac
Roadway Shoulder	=	2.99 ac
Roadway Swale	=	8.23 ac

Percent Impervious	=	47.5%
Adjusted Soil Storage (Flatwoods, 3' to W.S.W.T.E.)	=	2.60 in
Calculated SCS Curve Number	=	79
Time of Concentration	=	30.00 min

ICPR MODEL INPUT DATA

CN	79
TC	30.00
Area	121.14

Min. Road Crown Elevation	14.5
Max. F.F.E.	20.5
Max. Road Crown	18.5
All elevations are in NGVD	

Canal / Water Way Storage/ Areas

ROW Width	150	100	50	60	65	
Vertical Storage	100	60	0	0	0	
Linear Storage	50	40	50	60	65	
Length	0	0.00	6687	0	0	
Vertical Area	0.00	0.00	0.00	0.00	0.00	2.51
Linear Area	0.00	0.00	7.68	0.00	0.00	0.9

Addl. Lake

Stage Storage Calculations for Sub-basin EP 1-13 PROPOSED

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)											
					11.50	12.70	13.00	14.22	14.50	15.00	15.50	17.00	18.30	19.50	20.50	
Wet Detention (Canals)	Vertical	2.51	11.50		0.00	3.01	3.76	6.83	7.53	8.78	10.04	13.80	17.07	20.08	22.59	
Wet Detention Slopes (Canals)	Linear	0.90	11.50	18.50	0.00	0.09	0.14	0.48	0.58	0.79	1.03	1.94	2.97	4.05	4.95	
Green Ways	Vertical	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Green Ways Slopes	Linear	7.68	11.50	15.00	0.00	1.58	2.47	8.11	9.87	13.43	17.27	28.78	38.76	47.97	55.65	
Pavement (Road right-of-way)	Linear	11.22	14.50	19.50	0.00	0.00	0.00	0.00	0.00	0.28	1.12	7.01	16.20	28.05	39.28	
Roadside Swale	Linear	8.23	13.00	19.50	0.00	0.00	0.00	0.94	1.42	2.53	3.96	10.13	17.78	26.75	34.97	
Roadway Shoulder	Linear	2.99	14.22	18.30	0.00	0.00	0.00	0.00	0.03	0.22	0.60	2.83	6.10	9.70	12.69	
Building/Pool - No Storage	Linear	32.83	0.00	0.00												
	Linear	55.68	15.50	20.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.53	43.66	89.09	139.21	
Total:		122.04		Totals:	0.00	4.68	6.38	16.36	19.43	26.04	34.02	77.04	142.55	225.69	309.33	ac-ft
				ICPR AREA	2.51	5.30	5.99	10.37	11.58	14.86	17.05	40.31	60.47	78.10	89.19	acre

ac-ft
acre

Basin Information For:

EP 1-14

(SFWMD PERMIT # 56-00412-S, APPLICATION NO. 06221-K)

Total Basin Area	=	20.00 ac
No. of Residential Lots (est.)	=	0
Residential Area (0.25 ac lots)	=	0.00 ac
No. of Residential Structures	=	0
Length of Roadways	=	0 ft
Roadway Right of way	=	0.00 ac

Impervious Area

Residential Area (0.25 acres lots, 40% imp.)	=	
Bldg./Pool/Porch (avg house = 4000 sf)	=	7.56 ac
Lot Driveway/concrete (avg = 400 sf)	=	3.47 ac
Pavement Area (Assumed 50% of ROW)	=	0.00 ac
Additional Imp. Area (lakes, greenways etc)	=	0.00 ac
Total Impervious Area	=	11.03 ac

Total Pervious Area	=	8.97 ac
Lot Open Space	=	8.97 ac
Roadway Shoulder	=	0.00 ac
Roadway Swale	=	0.00 ac

Percent Impervious	=	55.2%
Adjusted Soil Storage (Flatwoods, 2.8' to W.S.W.T.E.)	=	1.91 in
Calculated SCS Curve Number	=	84
Time of Concentration	=	15.00 min

ICPR MODEL INPUT DATA

CN	84
TC	15.00
Area	20.00

Min. Road Crown Elevation	15.5
Max. F.F.E.	17
Min. Berm El.	16
Allowable Discharge	11 cfs

Stage Storage Calculations for Sub-basin EP 1-14

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)										
					13.40	14.40	14.50	15.00	15.50	16.00	16.50	17.00	17.50	18.00	18.50
Wet Detention (Canals)	Vertical	0.00	13.40		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Wet Detention Slopes (Canals)	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dry Detention	Vertical	1.30	13.40		0.00	1.30	1.43	2.08	2.73	3.38	4.03	4.68	5.33	5.98	6.63
	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pavement	Linear	3.47	15.50	17.00	0.00	0.00	0.00	0.00	0.00	0.29	1.16	2.60	4.34	6.07	7.81
Building/Pool - No Storage	Linear	7.56	0.00	0.00											
Open Space	Linear	7.67	15.50	17.00	0.00	0.00	0.00	0.00	0.00	0.64	2.56	5.75	9.59	13.42	17.26
Total:		20.00		Totals:	0.00	1.30	1.43	2.08	2.73	4.31	7.74	13.03	19.25	25.47	31.69
ICPR AREA					1.30	1.30	1.30	1.30	1.30	5.01	8.73	12.44	12.44	12.44	12.44

Basin Information For: EP 2-SH

(SFWMD PERMIT NO. 56-00550-S, APPLICATION NO. 06105-A)

Total Drainage Basin Area = 16.80 ac
Total Project Area 20.13

Impervious Area

Roofline/Bldg. = 1.50 ac
Pavement Area = 2.10 ac
Additional Imp. Area (lakes,etc) = 3.4 ac
Total Impervious Area = 7.00 ac
Total Pervious Area = 9.80 ac
Percent Impervious = 41.7%
Adjusted Soil Storage (Flatwoods, 4' to W.S.W.T.E.) = 4.77 in
Calculated SCS Curve Number = 68
Time of Concentration = 10.00 min
Allowable Discharge 3 cfs
Min. Road Crown Elevation = 18.20 ft-NGVD
Min. F.F.E. = 21.00 ft-NGVD
Min. Berm EL. = 17.40 ft-NGVD

Stage Storage Calculations for Sub-basin EP 2-SH

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)										
					15.50	16.00	16.50	17.00	17.50	18.00	18.50	19.00	19.50	20.00	21.00
Wet Detention	Vertical	3.40	15.50		0.00	1.70	3.40	5.10	6.80	8.50	10.20	11.90	13.60	15.30	18.70
Wet Detention Slopes	Linear	0.00	15.50	18.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dry Detention	Vertical	0.00	13.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dry Detention Slopes	Linear	0.00	13.00	18.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pavement	Linear	0.00	14.10	17.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Roadside Swale	Linear	0.00	13.10	16.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Open Space + Driveway	Linear	11.90	18.00	21.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	1.98	4.46	7.93	17.85
	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Linear	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total:		16.80		Totals:	0.00	1.70	3.40	5.10	6.80	8.50	10.70	13.88	18.06	23.23	36.55
ICPR AREA					3.40	3.40	3.40	3.40	3.40	3.40	5.38	7.37	9.35	11.33	15.30

Basin Information For: EP 2-1

Total Basin Area	=	363.61 ac
No. of Residential Lots (est.)	=	898.50
Residential Area (0.25 ac lots)	=	224.63 ac
No. of Residential Structures	=	898.50
Length of Roadways (60' ROW)	=	49079.50 ft
Length of Roadways (80' ROW)	=	1287.00
Length of Roadways (100' ROW)	=	1350.00
Roadway Right of way	=	73.07 ac

Impervious Area

Residential Area (0.25 acres lots, 40% imp.)		
Bldg./Pool/Porch (avg house = 4000 sft)	=	82.51 ac
Lot Driveway/concrete (avg = 400 sft)	=	8.25 ac
Pavement Area (Assumed 50% of ROW)	=	36.53 ac
Additional Imp. Area (lakes, greenways etc)	=	39.16 ac
Total Impervious Area	=	166.45 ac

Total Pervious Area	=	197.16 ac
Lot Open Space	=	160.62 ac
Roadway Shoulder	=	9.01 ac
Roadway Swale	=	27.52 ac

Percent Impervious	=	45.8%
Adjusted Soil Storage (Flatwoods, 3' to W.S.W.T.E.)	=	2.68 in
Calculated SCS Curve Number	=	79
Time of Concentration	=	30.00 min

ICPR MODEL INPUT DATA

CN 79

TC 30.00

Area 363.61

Min. Road Crown Elevation 16
 Max. F.F.E. 21.55
 Max. Road Crown 19.55
 All elevations are in NGVD

Canal / Water Way Storage/ Areas

ROW Width	150	100	50	60	65	90
Vertical Storage	100	60	0	0	0	0
Linear Storage	50	40	50	60	65	90
Length	6487	1212.00	10046	674	0	765
Vertical Area	14.89	1.67	0.00	0.00	0.00	0.00
Linear Area	7.45	1.11	11.53	0.93	0.00	1.58

Stage Storage Calculations for Sub-basin EP 2-1

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)								19.35	20.55	21.55
					14.00	14.50	15.00	15.72	16.00	17.00	18.00	18.05			
Wet Detention (Canals)	Vertical	16.56	14.00		0.00	8.28	16.56	28.49	33.12	49.68	66.25	67.07	88.60	108.48	125.04
Wet Detention Slopes (Canals)	Linear	8.56	14.00	18.00	0.00	0.27	1.07	3.17	4.28	9.63	17.12	17.55	28.67	38.94	47.50
Green Ways	Vertical	0.00	14.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Green Ways Slopes	Linear	14.04	14.00	18.00	0.00	0.44	1.76	5.19	7.02	15.80	28.08	28.78	47.03	63.88	77.92
Pavement (Road right-of-way)	Linear	36.53	16.00	20.55	0.00	0.00	0.00	0.00	0.00	4.01	16.06	16.87	45.05	83.11	119.64
Roadside Swale	Linear	27.52	14.50	20.55	0.00	0.00	0.57	3.39	5.12	14.21	27.86	28.66	53.50	83.25	110.76
	Linear	9.01	15.72	19.35	0.00	0.00	0.00	0.00	0.10	2.03	6.45	6.74	16.36	27.18	36.19
Building/Pool - No Storage	Linear	82.51	0.00	0.00											
Lot Pavement + Open Space	Linear	168.87	17.00	21.55	0.00	0.00	0.00	0.00	0.00	0.00	18.56	20.46	102.48	233.87	384.19
Total:		363.61			0.00	8.99	19.95	40.23	49.64	95.37	180.37	186.14	381.71	638.71	901.25
					ICPR AREA										
					16.56	19.39	24.49	31.83	35.38	56.09	113.92	116.52	184.35	243.98	281.10

ac-ft
acre

Basin Information For: EP 2-2

Total Basin Area	=	140.88 ac
No. of Residential Lots (est.)	=	326.00
Residential Area (0.25 ac lots)	=	81.50 ac
No. of Residential Structures	=	326.00
Length of Roadways (60' ROW)	=	14848.00 ft
Length of Roadways (80' ROW)	=	2395.00 ft
Length of Roadways (100' ROW)	=	1640.00 ft
Roadway Right of way	=	28.62 ac

Impervious Area

Residential Area (0.25 acres lots, 40% imp.)		
Bldg./Pool/Porch (avg house = 4000 sf)	=	29.94 ac
Lot Driveway/concrete (avg = 400 sf)	=	2.99 ac
Pavement Area (Assumed 50% of ROW)	=	14.31 ac
Additional Imp. Area (lakes, greenways etc)	=	17.02 ac
Total Impervious Area	=	64.25 ac

Total Pervious Area	=	76.63 ac
Lot Open Space	=	62.32 ac
Roadway Shoulder	=	2.73 ac
Roadway Swale	=	11.58 ac

Percent Impervious	=	45.6%
Adjusted Soil Storage (Flatwoods, 3' to W.S.W.T.E.)	=	2.69 in
Calculated SCS Curve Number	=	79
Time of Concentration	=	30.00 min

ICPR MODEL INPUT DATA

CN	79
TC	30.00
Area	140.88

Min. Road Crown Elevation	16.95
Max. F.F.E.	22.6
Max. Road Crown	20.6
All elevations are in NGVD	

Canal / Water Way Storage/ Areas

ROW Width	150	100	50	60	65
Vertical Storage	100	60	0	0	0
Linear Storage	50	40	50	60	65
Length	4070	889.00	836	0	0
Vertical Area	9.34	1.22	0.00	0.00	0.00
Linear Area	4.67	0.82	0.96	0.00	0.00

Stage Storage Calculations for Sub-basin EP 2-2

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)										
					14.00	14.50	15.45	16.67	16.95	17.95	18.00	20.40	21.60	22.60	23.00
Wet Detention (Canals)	Vertical	10.57	14.00		0.00	5.28	15.32	28.22	31.18	41.74	42.27	67.63	80.32	90.88	95.11
Wet Deteniton Slopes (Canals)	Linear	5.49	14.00	18.00	0.00	0.17	1.44	4.89	5.97	10.70	10.98	24.15	30.73	36.22	38.42
Green Ways	Vertical	0.00	14.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Green Ways Slopes	Linear	0.96	14.00	18.00	0.00	0.03	0.25	0.86	1.04	1.87	1.92	4.22	5.37	6.33	6.72
Pavement (Road right-of-way)	Linear	14.31	16.95	21.60	0.00	0.00	0.00	0.00	0.00	1.54	1.70	18.31	33.27	47.57	53.30
Roadside Swale	Linear	11.58	15.45	21.60	0.00	0.00	0.00	1.40	2.12	5.88	6.12	23.07	35.61	47.19	51.82
	Linear	2.73	16.67	20.40	0.00	0.00	0.00	0.00	0.03	0.60	0.65	5.09	8.36	11.08	12.18
Building/Pool - No Storage	Linear	29.94	0.00	0.00											
Lot Pavement + Open Space	Linear	65.31	17.95	22.60	0.00	0.00	0.00	0.00	0.00	0.00	0.02	42.15	93.56	151.85	177.97
Total:		140.88		Totals:	0.00	5.49	17.02	35.36	40.34	62.34	63.65	184.63	287.22	391.14	435.51
ICPR AREA					10.57	11.37	12.91	17.17	18.35	25.66	26.72	74.09	96.90	110.94	110.94

ac-ft
acre

Basin Information For: EP 2-3

Total Basin Area	=	91.15 ac
No. of Residential Lots (est.)	=	195.00
Residential Area (0.25 ac lots)	=	48.75 ac
No. of Residential Structures	=	195.00
Length of Roadways (60' ROW)	=	12134.50 ft
Length of Roadways (80' ROW)	=	2336.00
Length of Roadways (100' ROW)	=	574.38
Roadway Right of way	=	22.32 ac

Impervious Area

Residential Area (0.25 acres lots, 40% imp.)	=	
Bldg./Pool/Porch (avg house = 4000 sf)	=	17.91 ac
Lot Driveway/concrete (avg = 400 sf)	=	1.79 ac
Pavement Area (Assumed 50% of ROW)	=	11.16 ac
Additional Imp. Area (lakes, greenways etc)	=	8.49 ac
Total Impervious Area	=	39.35 ac

Total Pervious Area	=	51.80 ac
Lot Open Space	=	40.64 ac
Roadway Shoulder	=	2.23 ac
Roadway Swale	=	8.93 ac

Percent Impervious	=	43.2%
Adjusted Soil Storage (Flatwoods, 3' to W.S.W.T.E.)	=	2.81 in
Calculated SCS Curve Number	=	78
Time of Concentration	=	30.00 min

ICPR MODEL INPUT DATA

CN	78
TC	30.00
Area	91.15

Min. Road Crown Elevation 17
 Max. F.F.E. 22.15
 Max. Road Crown 20.15
 All elevations are in NGVD

Canal / Water Way Storage/ Areas

ROW Width	150	100	50	30	40	75
Vertical Storage	100	60	0	0	0	0
Linear Storage	50	40	50	30	40	75
Length	1911	157.00	440	199	757	125
Vertical Area	4.39	0.22	0.00	0.00	0.00	0.00
Linear Area	2.19	0.14	0.51	0.14	0.70	0.22

Stage Storage Calculations for Sub-basin EP 2-3

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)											
					14.00	14.50	15.00	15.50	16.72	17.00	18.00	18.05	19.95	21.15	22.15	
Wet Detention (Canals)	Vertical	4.80	14.00		0.00	2.30	4.60	6.90	12.52	13.81	18.41	18.64	27.39	32.91	37.52	
Wet Detention Slopes (Canals)	Linear	2.34	14.00	18.00	0.00	0.07	0.29	0.66	2.16	2.63	4.68	4.79	9.23	12.04	14.38	
Green Ways	Vertical	0.00	14.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Green Ways Slopes	Linear	1.55	14.00	18.00	0.00	0.05	0.19	0.44	1.44	1.75	3.10	3.18	6.13	8.00	9.55	
Pavement (Road right-of-way)	Linear	11.16	17.00	21.15	0.00	0.00	0.00	0.00	0.00	0.00	1.34	1.48	11.70	23.16	34.32	
Roadside Swale	Linear	8.93	15.50	21.15	0.00	0.00	0.00	0.00	1.18	1.78	4.94	5.14	15.65	25.24	34.17	
	Linear	2.23	16.72	19.95	0.00	0.00	0.00	0.00	0.00	0.03	0.57	0.61	3.60	6.27	8.50	
Building/Pool - No Storage	Linear	17.91	0.00	0.00												
Lot Pavement + Open Space	Linear	42.43	18.00	22.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	19.44	50.72	88.04	
Total:		91.15		Totals:	0.00	2.42	5.09	8.00	17.30	19.99	33.04	33.86	93.15	158.34	226.47	ac-ft
				ICPR AREA	4.60	5.09	5.58	6.06	9.18	10.09	16.02	16.78	45.63	63.02	73.24	acre

ac-ft
acre

Basin Information For: EP 2-4

Total Basin Area	=	61.24 ac
No. of Residential Lots (est.)	=	164.00
Residential Area (0.25 ac lots)	=	41.00 ac
No. of Residential Structures	=	164.00
Length of Roadways (60' ROW)	=	6458.00 ft
Length of Roadways (80' ROW)	=	1250.50
Roadway Right of way	=	11.19 ac
Impervious Area		

Residential Area (0.25 acres lots, 40% imp.)		
Bldg./Pool/Porch (avg house = 4000 sf)	=	15.06 ac
Lot Driveway/concrete (avg = 400 sf)	=	1.51 ac
Pavement Area (Assumed 50% of ROW)	=	5.60 ac
Additional Imp. Area (lakes, greenways etc)	=	4.83 ac
Total Impervious Area	=	26.99 ac

Total Pervious Area	=	34.25 ac
Lot Open Space	=	28.65 ac
Roadway Shoulder	=	1.19 ac
Roadway Swale	=	4.41 ac

Percent Impervious	=	44.1%
Adjusted Soil Storage (Flatwoods, 3' to W.S.W.T.E.)	=	2.77 in
Calculated SCS Curve Number	=	78
Time of Concentration	=	30.00 min

ICPR MODEL INPUT DATA

CN	78
TC	30.00
Area	61.24

Min. Road Crown Elevation 17
 Max. F.F.E. 20.5
 Max. Road Crown 18.5
 All elevations are in NGVD

Canal / Water Way Storage/ Areas

ROW Width	150	100	50	60	65	75
Vertical Storage	100	60	0	0	0	0
Linear Storage	50	40	50	60	65	75
Length	0	0.00	1186	0	375	1690
Vertical Area	0.00	0.00	0.00	0.00	0.00	0.00
Linear Area	0.00	0.00	1.36	0.00	0.56	2.91

Stage Storage Calculations for Sub-basin EP 2-4

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)										
					14.00	14.50	15.00	15.50	16.72	17.00	18.00	18.30	19.00	19.50	20.50
Wet Detention (Canals)	Vertical	0.00	14.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Wet Detention Slopes (Canals)	Linear	0.00	14.00	18.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Green Ways	Vertical	0.00	14.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Green Ways Slopes	Linear	4.83	14.00	18.00	0.00	0.15	0.60	1.36	4.47	5.43	9.66	11.11	14.49	16.91	21.74
Pavement (Road right-of-way)	Linear	5.60	17.00	19.50	0.00	0.00	0.00	0.00	0.00	0.00	1.12	1.89	4.48	6.99	12.59
Roadside Swale	Linear	4.41	15.50	19.50	0.00	0.00	0.00	0.00	0.82	1.24	3.45	4.32	6.75	8.82	13.23
Roadway Shoulder	Linear	1.19	16.72	18.30	0.00	0.00	0.00	0.00	0.00	0.03	0.61	0.94	1.77	2.36	3.55
	Linear	15.06	0.00	0.00											
Lot Pavement + Open Space	Linear	30.16	18.00	20.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.54	6.03	13.57	37.70
Total:		61.24			0.00	0.15	0.60	1.36	5.29	6.70	14.84	18.80	33.52	48.65	88.81
				ICPR AREA	0.00	0.60	1.21	1.81	4.63	5.49	10.79	15.63	26.42	34.12	46.18

ac-ft
acre

Basin Information For: EP 2-5

Total Basin Area	=	41.75 ac
No. of Residential Lots (est.)	=	80.00
Residential Area (0.25 ac lots)	=	20.00 ac
No. of Residential Structures	=	80.00
Length of Roadways (60' ROW)	=	3797.00 ft
Length of Roadways (100' ROW)	=	1988.00
Roadway Right of way	=	9.79 ac

Impervious Area

Residential Area (0.25 acres lots, 40% imp.)		
Bldg./Pool/Porch (avg house = 4000 sf)	=	7.35 ac
Lot Driveway/concrete (avg = 400 sf)	=	0.73 ac
Pavement Area (Assumed 50% of ROW)	=	4.90 ac
Additional Imp. Area (lakes, greenways etc)	=	5.92 ac
Total Impervious Area	=	18.90 ac

Total Pervious Area	=	22.85 ac
Lot Open Space	=	17.96 ac
Roadway Shoulder	=	0.70 ac
Roadway Swale	=	4.20 ac

Percent Impervious	=	45.3%
Adjusted Soil Storage (Flatwoods, 3' to W.S.W.T.E.)	=	2.71 in
Calculated SCS Curve Number	=	79
Time of Concentration	=	30.00 min

ICPR MODEL INPUT DATA

CN	79
TC	30.00
Area	41.75

Min. Road Crown Elevation 18
 Max. F.F.E. 21.5
 Max. Road Crown 19.5
 All elevations are in NGVD

Canal / Water Way Storage/ Areas

ROW Width	150	100	50	60	65
Vertical Storage	100	60	0	0	0
Linear Storage	50	40	50	60	65
Length	0	2156.00	845	0	0
Vertical Area	0.00	2.97	0.00	0.00	0.00
Linear Area	0.00	1.98	0.97	0.00	0.00

Stage Storage Calculations for Sub-basin EP 2-5

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)											
					14.00	14.50	15.00	16.00	16.50	17.72	18.00	19.00	19.30	20.50	21.50	
Wet Detention (Canals)	Vertical	2.97	14.00		0.00	1.48	2.97	5.94	7.42	11.05	11.88	14.85	15.74	19.30	22.27	
Wet Detention Slopes (Canals)	Linear	1.98	14.00	18.00	0.00	0.06	0.25	0.99	1.55	3.42	3.96	5.94	6.53	8.91	10.89	
Green Ways	Vertical	0.00	14.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Green Ways Slopes	Linear	0.97	14.00	18.00	0.00	0.03	0.12	0.48	0.76	1.68	1.94	2.91	3.20	4.36	5.33	
Pavement (Road right-of-way)	Linear	4.90	18.00	20.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.98	1.66	6.12	11.02	
Roadside Swale	Linear	4.20	16.50	20.50	0.00	0.00	0.00	0.00	0.00	0.78	1.18	3.28	4.12	8.40	12.60	
Roadway Shoulder	Linear	0.70	17.72	19.30	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.36	0.55	1.39	2.09	
	Linear	7.35	0.00	0.00												
Lot Pavement + Open Space	Linear	18.69	19.00	21.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.34	8.41	23.36	
Total:		41.75			Totals:	0.00	1.58	3.34	7.41	9.73	16.93	18.98	28.32	32.13	56.90	87.56
					ICPR AREA	2.97	3.34	3.71	4.44	4.81	6.99	7.62	11.07	14.35	26.93	34.40

ac-ft
acre

Basin Information For: EP 2-6

Total Basin Area	=	115.91 ac
No. of Residential Lots (est.)	=	310.50
Residential Area (0.25 ac lots)	=	77.63 ac
No. of Residential Structures	=	310.50
Length of Roadways (60' ROW)	=	15406.50 ft
Length of Roadways (80' ROW)	=	917.00
Length of Roadways (100' ROW)	=	1816.45
Roadway Right of way	=	27.08 ac

Impervious Area

Residential Area (0.25 acres lots, 40% imp.)		
Bldg./Pool/Porch (avg house = 4000 sf)	=	28.51 ac
Lot Driveway/concrete (avg = 400 sf)	=	2.85 ac
Pavement Area (Assumed 50% of ROW)	=	13.54 ac
Additional Imp. Area (lakes, greenways etc)	=	7.64 ac
Total Impervious Area	=	52.54 ac

Total Pervious Area	=	63.37 ac
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Lot Open Space	=	49.83 ac
Roadway Shoulder	=	2.83 ac
Roadway Swale	=	10.71 ac

Percent Impervious	=	45.3%
Adjusted Soil Storage (Flatwoods, 3' to W.S.W.T.E.)	=	2.71 in
Calculated SCS Curve Number	=	79
Time of Concentration	=	30.00 min

ICPR MODEL INPUT DATA

CN	79
TC	30.00
Area	115.91

Min. Road Crown Elevation	17.05
Max. F.F.E.	22.15
Max. Road Crown	20.15
All elevations are in NGVD	

Canal / Water Way Storage/ Areas

ROW Width	150	100	50	60	65
Vertical Storage	100	60	0	0	0
Linear Storage	50	40	50	60	65
Length	0	2387.00	1883	0	0
Vertical Area	0.00	3.29	0.00	0.00	0.00
Linear Area	0.00	2.19	2.16	0.00	0.00

Stage Storage Calculations for Sub-basin EP 2-6

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)											
					14.00	14.50	15.00	15.55	16.77	17.05	18.00	18.05	19.95	21.15	22.15	
Wet Detention (Canals)	Vertical	3.29	14.00		0.00	1.64	3.29	5.10	9.11	10.03	13.15	13.32	19.56	23.51	26.80	
Wet Detention Slopes (Canals)	Linear	2.19	14.00	18.00	0.00	0.07	0.27	0.66	2.10	2.55	4.38	4.49	8.66	11.29	13.48	
Green Ways	Vertical	0.00	14.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Green Ways Slopes	Linear	2.16	14.00	18.00	0.00	0.07	0.27	0.65	2.07	2.51	4.32	4.43	8.54	11.13	13.29	
Pavement (Road right-of-way)	Linear	13.54	17.05	21.15	0.00	0.00	0.00	0.00	0.00	0.00	1.49	1.65	13.88	27.75	41.29	
Roadside Swale	Linear	10.71	15.55	21.15	0.00	0.00	0.00	0.00	1.42	2.15	5.74	5.98	18.51	29.98	40.69	
	Linear	2.83	16.77	19.95	0.00	0.00	0.00	0.00	0.00	0.03	0.67	0.73	4.50	7.89	10.72	
Building/Pool - No Storage	Linear	28.51	0.00	0.00												
Lot Pavement + Open Space	Linear	52.68	18.05	22.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.19	61.74	108.00	
Total:		115.91		Totals:	0.00	1.78	3.83	6.40	14.71	17.28	29.76	30.60	96.84	173.30	254.27	ac-ft
ICPR AREA					3.29	3.83	4.38	4.97	8.64	9.72	16.56	16.86	52.87	74.55	87.40	ac-ft

ac-ft
acre

Basin Information For: EP 2-7

Total Basin Area	=	52.10 ac
No. of Residential Lots (est.)	=	120.00
Residential Area (0.25 ac lots)	=	30.00 ac
No. of Residential Structures	=	120.00
Length of Roadways (60' ROW)	=	8068.00 ft
Length of Roadways (100' ROW)	=	0.00
Roadway Right of way	=	11.11 ac

Impervious Area

Residential Area (0.25 acres lots, 40% imp.)		
Bldg./Pool/Porch (avg house = 4000 sf)	=	11.02 ac
Lot Driveway/concrete (avg = 400 sf)	=	1.10 ac
Pavement Area (Assumed 50% of ROW)	=	5.56 ac
Additional Imp. Area (lakes, greenways etc)	=	6.04 ac
Total Impervious Area	=	23.71 ac

Total Pervious Area	=	28.39 ac
Lot Open Space	=	22.83 ac
Roadway Shoulder	=	1.48 ac
Roadway Swale	=	4.07 ac

Percent Impervious	=	45.5%
Adjusted Soil Storage (Flatwoods, 3' to W.S.W.T.E.)	=	2.70 in
Calculated SCS Curve Number	=	79
Time of Concentration	=	30.00 min

ICPR MODEL INPUT DATA

CN	79
TC	30.00
Area	52.10

Min. Road Crown Elevation	17.25
Max. F.F.E.	21.1
Max. Road Crown	19.1
All elevations are in NGVD	

Canal / Water Way Storage/ Areas

ROW Width	150	100	50	60	65
Vertical Storage	100	60	0	0	0
Linear Storage	50	40	50	60	65
Length	0	2204.00	850	0	0
Vertical Area	0.00	3.04	0.00	0.00	0.00
Linear Area	0.00	2.02	0.98	0.00	0.00

Stage Storage Calculations for Sub-basin EP 2-7

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)												
					14.00	15.00	15.75	16.50	16.97	17.25	18.00	18.25	18.90	20.50	21.10		
Wet Detention (Canals)	Vertical	3.04	14.00		0.00	3.04	5.31	7.59	9.02	9.87	12.14	12.90	14.88	19.73	21.55		
Wet Detention Slopes (Canals)	Linear	2.02	14.00	18.00	0.00	0.25	0.77	1.58	2.23	2.67	4.05	4.55	5.87	9.11	10.32		
Green Ways	Vertical	0.00	14.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Green Ways Slopes	Linear	0.98	14.00	18.00	0.00	0.12	0.37	0.76	1.08	1.29	1.95	2.20	2.83	4.39	4.98		
Pavement (Road right-of-way)	Linear	5.56	17.25	20.50	0.00	0.00	0.00	0.00	0.00	0.00	0.48	0.85	2.33	9.03	12.36		
Roadside Swale	Linear	4.07	15.75	20.50	0.00	0.00	0.00	0.24	0.64	0.97	2.17	2.68	4.26	9.68	12.12		
Roadway Shoulder	Linear	1.48	16.97	18.90	0.00	0.00	0.00	0.00	0.00	0.03	0.41	0.63	1.43	3.80	4.69		
	Linear	11.02	0.00	0.00													
Lot Pavement + Open Space	Linear	23.93	18.25	21.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.77	21.26	34.10		
Total:		52.10			Totals:	0.00	3.41	6.46	10.17	12.96	14.82	21.20	23.82	33.36	76.99	100.13	ac-ft
					ICPR AREA	3.04	3.79	4.35	5.55	6.31	6.97	10.04	10.87	18.50	36.04	41.08	acre

Basin Information For: EP 2-8

Total Basin Area	=	181.70 ac
No. of Residential Lots (est.)	=	425.00
Residential Area (0.25 ac lots)	=	106.25 ac
No. of Residential Structures	=	425.00
Length of Roadways (60' ROW)	=	23859 ft
Length of Roadways (100' ROW)	=	1885
Length of Roadways (80' ROW)	=	1593
Roadway Right of way	=	40.12 ac

Impervious Area

Residential Area (0.25 acres lots, 40% imp.)		
Bldg./Pool/Porch (avg house = 4000 sf)	=	39.03 ac
Lot Driveway/concrete (avg = 400 sf)	=	3.90 ac
Pavement Area (Assumed 50% of ROW)	=	20.06 ac
Additional Imp. Area (lakes, greenways etc)	=	15.81 ac
Total Impervious Area	=	78.80 ac

Total Pervious Area	=	102.90 ac
Lot Open Space	=	82.84 ac
Roadway Shoulder	=	4.38 ac
Roadway Swale	=	15.68 ac

Percent Impervious	=	43.4%
Adjusted Soil Storage (Flatwoods, 3' to W.S.W.T.E.)	=	2.80 in
Calculated SCS Curve Number	=	78
Time of Concentration	=	30.00 min

ICPR MODEL INPUT DATA

CN	78
TC	30.00
Area	181.70

Min. Road Crown Elevation	16.95
Max. F.F.E.	21.65
Max. Road Crown	19.65
All elevations are in NGVD	

Canal / Water Way Storage/ Areas

ROW Width	150	100	50	60	65
Vertical Storage	100	60	0	0	0
Linear Storage	50	40	50	60	65
Length	0	4245.00	5284	0	0
Vertical Area	0.00	5.85	0.00	0.00	0.00
Linear Area	0.00	3.90	6.07	0.00	0.00

Stage Storage Calculations for Sub-basin EP 2-8

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)										
					14.00	15.00	15.45	16.67	16.95	17.95	18.00	19.45	21.50	21.65	22.00
Wet Detention (Canals)	Vertical	5.85	14.00		0.00	5.85	8.48	15.61	17.25	23.10	23.39	31.87	43.85	44.73	46.78
Wet Detention Slopes (Canals)	Linear	3.90	14.00	18.00	0.00	0.49	1.02	3.47	4.24	7.60	7.80	13.45	21.44	22.02	23.39
Green Ways	Vertical	0.00	14.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Green Ways Slopes	Linear	6.07	14.00	18.00	0.00	0.76	1.59	5.40	6.60	11.83	12.13	20.92	33.36	34.29	36.39
Pavement (Road right-of-way)	Linear	20.06	16.95	21.50	0.00	0.00	0.00	0.00	0.00	2.20	2.43	13.78	45.63	48.04	55.66
Roadside Swale	Linear	15.68	15.45	21.50	0.00	0.00	0.00	1.93	2.92	8.10	8.42	20.73	47.42	49.77	55.26
	Linear	4.38	16.67	19.45	0.00	0.00	0.00	0.00	0.06	1.29	1.39	6.09	15.07	15.73	17.26
Building/Pool - No Storage	Linear	39.03	0.00	0.00											
Lot Pavement + Open Space	Linear	86.75	17.95	21.65	0.00	0.00	0.00	0.00	0.00	0.00	0.03	26.38	147.73	160.48	190.84
Total:		181.70			Totals:	0.00	7.09	11.10	26.42	31.06	54.12	55.59	133.21	354.51	425.58
					ICPR AREA	5.85	8.34	9.46	15.66	17.52	28.59	30.32	76.75	139.16	142.67

ac-ft
acre

Basin Information For: EP 2-9

Total Basin Area	=	22.67 ac
No. of Residential Lots (est.)	=	63.00
Residential Area (0.25 ac lots)	=	15.75 ac
No. of Residential Structures	=	63.00
Length of Roadways (60' ROW)	=	3665.00 ft
Length of Roadways (100' ROW)	=	0.00
Roadway Right of way	=	5.05 ac

Impervious Area

Residential Area (0.25 acres lots, 40% imp.)		
Bldg./Pool/Porch (avg house = 4000 sf)	=	5.79 ac
Lot Driveway/concrete (avg = 400 sf)	=	0.58 ac
Pavement Area (Assumed 50% of ROW)	=	2.52 ac
Additional Imp. Area (lakes, greenways etc)	=	1.18 ac
Total Impervious Area	=	10.07 ac

Total Pervious Area	=	12.60 ac
Lot Open Space	=	10.08 ac
Roadway Shoulder	=	0.67 ac
Roadway Swale	=	1.85 ac

Percent Impervious	=	44.4%
Adjusted Soil Storage (Flatwoods, 3' to W.S.W.T.E.)	=	2.75 in
Calculated SCS Curve Number	=	78
Time of Concentration	=	15.00 min

ICPR MODEL INPUT DATA

CN	78
TC	15.00
Area	22.67

Min. Road Crown Elevation	17.6
Max. F.F.E.	21
Max. Road Crown	19
All elevations are in NGVD	

Canal / Water Way Storage/ Areas

ROW Width	150	100	50	60	65
Vertical Storage	100	60	0	0	0
Linear Storage	50	40	50	60	65
Length	0	0.00	1030	0	0
Vertical Area	0.00	0.00	0.00	0.00	0.00
Linear Area	0.00	0.00	1.18	0.00	0.00

Stage Storage Calculations for Sub-basin EP 2-9

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)											
					14.00	15.50	16.10	16.50	17.32	17.60	18.00	18.60	18.80	20.00	21.00	
Wet Detention (Canals)	Vertical	0.00	14.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Wet Detention Slopes (Canals)	Linear	0.00	14.00	18.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Green Ways	Vertical	0.00	14.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Green Ways Slopes	Linear	1.18	14.00	18.00	0.00	0.33	0.65	0.92	1.63	1.92	2.36	3.07	3.31	4.73	5.91	
Pavement (Road right-of-way)	Linear	2.52	17.60	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.53	0.76	3.03	5.55	
Roadside Swale	Linear	1.85	16.10	20.00	0.00	0.00	0.00	0.04	0.35	0.53	0.86	1.48	1.73	3.61	5.46	
Roadway Shoulder	Linear	0.67	17.32	18.80	0.00	0.00	0.00	0.00	0.00	0.02	0.11	0.37	0.50	1.31	1.98	
	Linear	5.79	0.00	0.00												
Lot Pavement + Open Space	Linear	10.65	18.60	21.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	4.35	12.79	
Total:		22.67		Totals:	0.00	0.33	0.65	0.96	1.98	2.47	3.41	5.46	6.38	17.02	31.69	ac-ft
ICPR AREA					0.00	0.44	0.62	0.93	1.56	1.90	2.81	4.00	5.29	12.45	16.88	ac-ft

ac-ft
acre

Basin Information For: EP 2-10

Total Basin Area	=	95.45 ac
No. of Residential Lots (est.)	=	210.00
Residential Area (0.25 ac lots)	=	52.50 ac
No. of Residential Structures	=	210.00
Length of Roadways (60' ROW)	=	12750 ft
Length of Roadways (100' ROW)	=	0.00
Length of Roadways (80' ROW)	=	2430
Roadway Right of way	=	22.02 ac

Impervious Area

Residential Area (0.25 acres lots, 40% imp.)		
Bldg./Pool/Porch (avg house = 4000 sf)	=	19.28 ac
Lot Driveway/concrete (avg = 400 sf)	=	1.93 ac
Pavement Area (Assumed 50% of ROW)	=	11.01 ac
Additional Imp. Area (lakes, greenways etc)	=	7.50 ac
Total Impervious Area	=	39.72 ac

Total Pervious Area	=	55.73 ac
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Lot Open Space	=	44.71 ac
Roadway Shoulder	=	2.34 ac
Roadway Swale	=	8.67 ac

Percent Impervious	=	41.6%
Adjusted Soil Storage (Flatwoods, 3' to W.S.W.T.E.)	=	2.89 in
Calculated SCS Curve Number	=	78
Time of Concentration	=	30.00 min

ICPR MODEL INPUT DATA

CN 78

TC 30.00
Area 95.45

Min. Road Crown Elevation 17.4
Max. F.F.E. 22.17
Max. Road Crown 20.17
All elevations are in NGVD

Canal / Water Way Storage/ Areas

ROW Width	150	100	50	60	65
Vertical Storage	100	60	0	0	0
Linear Storage	50	40	50	60	65
Length	0	2408.00	1717	0	0
Vertical Area	0.00	3.32	0.00	0.00	0.00
Linear Area	0.00	2.21	1.97	0.00	0.00

Stage Storage Calculations for Sub-basin EP 2-10

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)										
					14.00	15.00	15.90	16.50	17.12	17.40	18.00	18.40	19.97	21.17	22.17
Wet Detention (Canals)	Vertical	3.32	14.00		0.00	3.32	6.30	8.29	10.35	11.28	13.27	14.59	19.80	23.78	27.10
Wet Detention Slopes (Canals)	Linear	2.21	14.00	18.00	0.00	0.28	1.00	1.73	2.69	3.20	4.42	5.31	8.78	11.43	13.64
Green Ways	Vertical	0.00	14.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Green Ways Slopes	Linear	1.97	14.00	18.00	0.00	0.25	0.89	1.54	2.40	2.85	3.94	4.73	7.82	10.19	12.16
Pavement (Road right-of-way)	Linear	11.01	17.40	21.17	0.00	0.00	0.00	0.00	0.00	0.00	0.53	1.46	9.65	20.76	31.77
Roadside Swale	Linear	8.67	15.90	21.17	0.00	0.00	0.00	0.30	1.22	1.85	3.63	5.14	13.63	22.85	31.52
	Linear	2.34	17.12	19.97	0.00	0.00	0.00	0.00	0.00	0.03	0.32	0.67	3.34	6.15	8.49
Building/Pool - No Storage	Linear	19.28	0.00	0.00											
Lot Pavement + Open Space	Linear	46.64	18.40	22.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.25	47.46	87.92
Total:		95.45			Totals:	0.00	3.84	8.19	11.86	16.66	19.20	26.10	31.91	78.26	212.60 ac-ft
					ICPR AREA	3.32	4.36	5.30	6.92	8.59	9.57	13.43	15.58	43.47	76.17 acre

Basin Information For: EP 2-11

Total Basin Area	=	69.15 ac
No. of Residential Lots (est.)	=	188.00
Residential Area (0.25 ac lots)	=	47.00 ac
No. of Residential Structures	=	188.00
Length of Roadways (60' ROW)	=	11820 ft
Length of Roadways (100' ROW)	=	0
Length of Roadways (80' ROW)	=	0
Roadway Right of way	=	16.28 ac

Impervious Area

Residential Area (0.25 acres lots, 40% imp.)		
Bldg./Pool/Porch (avg house = 4000 sf)	=	17.26 ac
Lot Driveway/concrete (avg = 400 sf)	=	1.73 ac
Pavement Area (Assumed 50% of ROW)	=	8.14 ac
Additional Imp. Area (lakes, greenways etc)	=	2.27 ac
Total Impervious Area	=	29.40 ac

Total Pervious Area	=	39.75 ac
Lot Open Space	=	31.61 ac
Roadway Shoulder	=	2.17 ac
Roadway Swale	=	5.97 ac

Percent Impervious	=	42.5%
Adjusted Soil Storage (Flatwoods, 3' to W.S.W.T.E.)	=	2.85 in
Calculated SCS Curve Number	=	78
Time of Concentration	=	30.00 min

ICPR MODEL INPUT DATA

CN	78
TC	30.00
Area	69.15

Min. Road Crown Elevation 17.7
 Max. F.F.E. 21.5
 Max. Road Crown 19.5
 All elevations are in NGVD

Canal / Water Way Storage/ Areas

ROW Width	150	100	50	60	65
Vertical Storage	100	60	0	0	0
Linear Storage	50	40	50	60	65
Length	0	0.00	1981	0	0
Vertical Area	0.00	0.00	0.00	0.00	0.00
Linear Area	0.00	0.00	2.27	0.00	0.00

Stage Storage Calculations for Sub-basin EP 2-11

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)										
					14.00	15.00	16.20	17.00	17.42	17.70	18.00	18.70	19.30	21.00	21.50
Wet Detention (Canals)	Vertical	0.00	14.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Wet Detention Slopes (Canals)	Linear	0.00	14.00	18.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Green Ways	Vertical	0.00	14.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Green Ways Slopes	Linear	2.27	14.00	18.00	0.00	0.28	1.38	2.56	3.32	3.89	4.55	6.14	7.50	11.37	12.51
Pavement (Road right-of-way)	Linear	8.14	17.70	21.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	1.23	3.16	13.43	17.50
Roadside Swale	Linear	5.97	16.20	21.00	0.00	0.00	0.00	0.40	0.93	1.40	2.01	3.89	5.98	14.33	17.31
	Linear	2.17	17.42	19.30	0.00	0.00	0.00	0.00	0.00	0.05	0.19	0.95	2.04	5.73	6.82
Building/Pool - No Storage	Linear	17.26	0.00	0.00											
Lot Pavement + Open Space	Linear	33.33	18.70	21.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.14	31.49	46.66
Total:		69.15		Totals:	0.00	0.28	1.38	2.96	4.25	5.34	6.87	12.21	20.82	76.35	100.80
				ICPR AREA	0.00	0.57	1.25	2.70	3.46	4.29	5.92	9.33	19.39	45.93	51.89

ac-ft
acre

Basin Information For: EP 2-12

Total Basin Area	=	59.42 ac
No. of Residential Lots (est.)	=	159.00
Residential Area (0.25 ac lots)	=	39.75 ac
No. of Residential Structures	=	159.00
Length of Roadways (60' ROW)	=	8205.00 ft
Length of Roadways (100' ROW)	=	1296.00
Roadway Right of way	=	14.28 ac
Impervious Area		

Residential Area (0.25 acres lots, 40% imp.)		
Bldg./Pool/Porch (avg house = 4000 sf)	=	14.60 ac
Lot Driveway/concrete (avg = 400 sf)	=	1.46 ac
Pavement Area (Assumed 50% of ROW)	=	7.14 ac
Additional Imp. Area (lakes, greenways etc)	=	5.20 ac
Total Impervious Area	=	28.40 ac

Total Pervious Area	=	31.01 ac
Lot Open Space	=	23.88 ac
Roadway Shoulder	=	1.51 ac
Roadway Swale	=	5.63 ac

Percent Impervious	=	47.8%
Adjusted Soil Storage (Flatwoods, 3' to W.S.W.T.E.)	=	2.58 in
Calculated SCS Curve Number	=	79
Time of Concentration	=	30.00 min

ICPR MODEL INPUT DATA

CN	79
TC	30.00
Area	59.42

Min. Road Crown Elevation 17.15
 Max. F.F.E. 21
 Max. Road Crown 19
 All elevations are in NGVD

Canal / Water Way Storage/ Areas

ROW Width	150	100	50	60	65
Vertical Storage	100	60	0	0	0
Linear Storage	50	40	50	60	65
Length	0	2017.00	498	0	0
Vertical Area	0.00	2.78	0.00	0.00	0.00
Linear Area	0.00	1.85	0.57	0.00	0.00

Stage Storage Calculations for Sub-basin EP 2-12

Land use Category	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)										
					14.00	14.50	15.00	15.65	16.87	17.15	18.00	18.15	18.80	20.00	21.00
Wet Detention (Canals)	Vertical	2.78	14.00		0.00	1.39	2.78	4.58	7.97	8.75	11.11	11.53	13.34	16.67	19.45
Wet Detention Slopes (Canals)	Linear	1.85	14.00	18.00	0.00	0.06	0.23	0.63	1.91	2.30	3.70	3.98	5.19	7.41	9.26
Green Ways	Vertical	0.00	14.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Green Ways Slopes	Linear	0.57	14.00	18.00	0.00	0.02	0.07	0.19	0.59	0.71	1.14	1.23	1.60	2.29	2.86
Pavement (Road right-of-way)	Linear	7.14	17.15	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.90	1.25	3.41	10.17	17.31
Roadside Swale	Linear	5.63	15.65	20.00	0.00	0.00	0.00	0.00	0.96	1.46	3.57	4.05	6.42	12.25	17.88
Roadway Shoulder	Linear	1.51	16.87	18.80	0.00	0.00	0.00	0.00	0.00	0.03	0.50	0.64	1.45	3.26	4.77
	Linear	14.60	0.00	0.00											
Lot Pavement + Open Space	Linear	25.34	18.15	21.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.88	15.21	36.10
Total:		59.42			0.00	1.46	3.08	5.41	11.43	13.24	20.94	22.68	33.29	67.26	107.63
					2.78	3.08	3.38	3.78	6.10	6.85	11.26	11.94	20.70	35.93	44.82
					ICPR AREA										

ac-ft
acre

SCANNED 03/23/2010 KA

APPENDIX A-3

ICPR MODEL (DIGITAL)

SCANNED 03/23/2010 KA

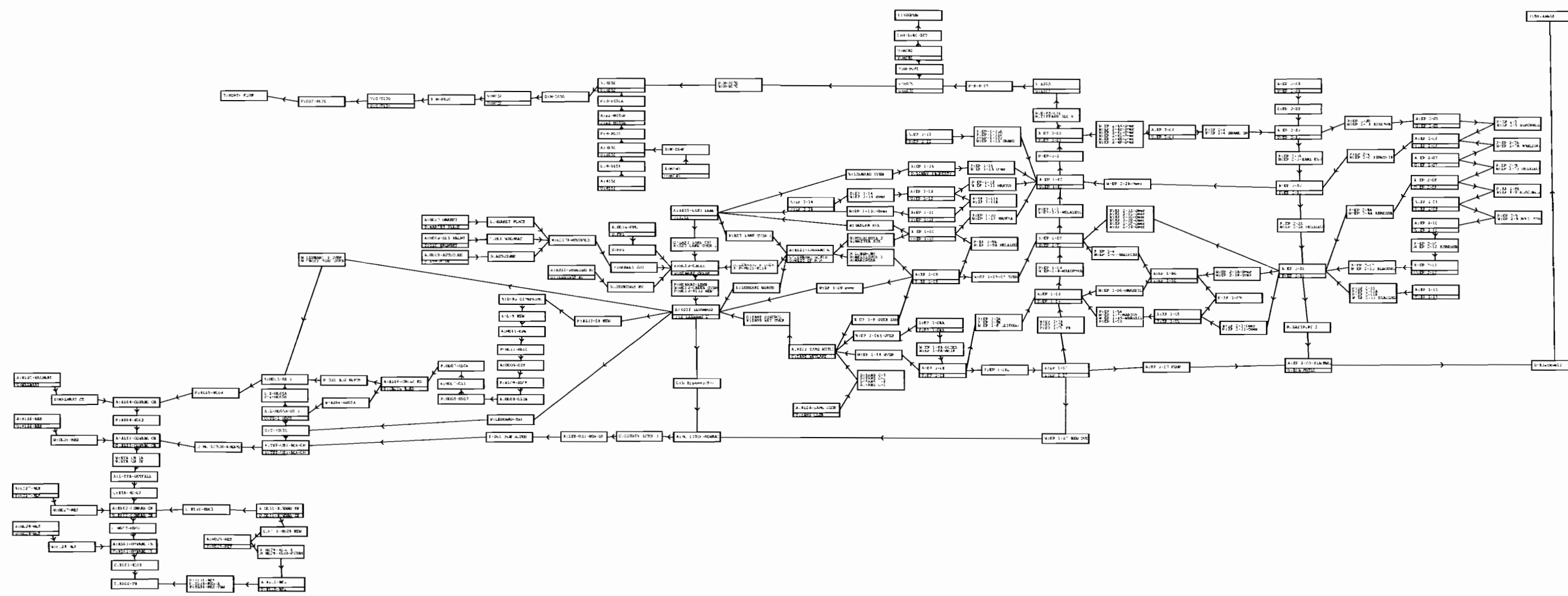
APPENDIX A-4

ICPR MODEL SCHEMATIC NODAL DIAGRAM (PRE-IMPROVEMENT)

APPENDIX A-5

ICPR MODEL SCHEMATIC NODAL DIAGRAM (PROPOSED)

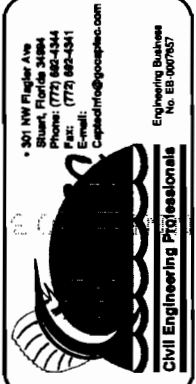
SCA 03/2010 KA



LEGEND

A-HILL-HMNET	NODE (STAGE/AREA)
B-SHARPER PLATE	BASIN NAME
A-HILL-TO	NODE (STAGE/VOLUME)
U-25-2	BASIN NAME
T-HILL-7M	NODE (TIME/STAGE)
DIM-DC-6	BOUNDARY CONDITION
R-EAST-PORT 2	DROP STRUCTURE
P-HILL-PSIC	RATING CURVE
C-HILL-PSIC	STORM PIPE
C-HILL-PSIC	CHANNEL / CREEK / DITCH
W-EP 1-1-03-03 2-2-2	WEIR

NODE/BASIN PREFIXES



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Stuart, Florida 34994
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E-mail: Capra@capra.com

DATE	BY	DATE	BY
DRAWN BY:	JWC	CHECKED BY:	JWC
DESIGNED BY:	JWC	PROJECT NO.:	801.18A
PROJECT NO.:	801.18A	NO. OF SHEETS:	1
NO. OF SHEETS:	1	VERT. SCALE:	N/A
VERT. SCALE:	N/A	HORIZ. SCALE:	N/A
HORIZ. SCALE:	N/A	CADD FILE NAME:	801.18A

SCALE
VERIFICATION
0 6.5
SOLID BAR IS EQUAL
TO HALF AN INCH ON
ORIGINAL DRAWING.
ADJUST ALL SCALED
DIMENSIONS
ACCORDINGLY

EASTERN WATERSHED IMPROVEMENT
PROJECT STORMWATER RETROFIT
CITY OF PORT SAINT LUCIE, FLORIDA
ICPR MODEL
SCHEMATIC NODAL DIAGRAM
(PROPOSED)

Joseph W. Capra
301 N.W. Flagler Ave.
Stuart, Florida 34994
P.E. No. 37638

**CITY OF PORT ST. LUCIE
EASTERN WATERSHED
Project No. 801.18**

100322-14

DRAINAGE STUDY

ORIGINAL SUBMITTAL

SUBMITTED BY:

MAR 22 2010



M / SL

EB#0007657

SCANNED/POSTED
ePERMITTING

**Joseph W. Capra, P.E.
P.E. #37638
CAPTEC Engineering, Inc.
301 NW Flagler Avenue
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(772) 692-4344**

RECEIVED

MAR 22 2010

MSLSC

MARCH 2010