DUCK POND

WATERSHED MANAGEMENT PLAN UPDATE

(Known Conditions through October 2005)

Prepared for:

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CHAPTER 1 INTRODUCTION

1.1 OVERVIEW

Hillsborough County has undertaken a program to develop or update watershed management plans for all of unincorporated Hillsborough County areas. These areas are divided between seventeen watersheds. Flood protection issues have been addressed for each of the seventeen watersheds in separate watershed management master plans (WMPs) completed between 2000 and 2002. Since then, changes have occurred within each of the watersheds and affected the hydrologic and hydraulic features. Furthermore, change in standards and reference elevation datum has been considered. The combined changes warrant updating of the existing models used for the WMP development and associated GIS mapping.

Ayres Associates was selected by Hillsborough County to update the Duck Pond Watershed Management Plan as a part of the County's overall watershed management program. The project is being cooperatively funded between Hillsborough County and the Southwest Florida Water Management District's Hillsborough River Basin. The study area is situated in the northern portion of Hillsborough County in the vicinity of the University of South Florida (USF). The location is shown in **Figure 1-1.** Although the study area is identified as the Duck Pond Watershed, it includes portions of the Cypress Creek and Hillsborough River Basins, as defined by the Southwest Florida Water Management District (SWFWMD).

The Duck Pond Watershed Management Plan (WMP) Update is limited to Chapters 1 through 6, pertaining to watershed hydrology and hydraulics, the existing conditions stormwater management model, and the existing conditions Level of Service (LOS). The area of evaluation is concentrated on the watershed area within the Hillsborough County limits, although the model includes hydrologic and hydraulic elements within the City of Tampa and City of Terrace which impact the County's service area (see **Figure 1-2**).

The objectives of this WMP update are to identify/verify flooding problems under the existing condition and to perform an updated Level of Service (LOS) evaluation. Existing conditions are based on: the existing infrastructure and the analysis of computed water surface elevations and flows, latest aerial photographs, and latest topography and land use within the basin.

Where available, Environmental Resource Permit (ERP) data and "as-built" drawings were used to identify significant or new stormwater features. Unless specified otherwise, all elevations have been referenced to NAVD (North American Vertical Datum) 1988. Available land use, soils and topographic maps were employed to derive runoff parameters. Input data for the hydraulic model has been refined based on the physical characteristics of the watershed. Updated model input includes developments reflected in collected ERPs and "As Built" drawings through October 2005.

The results from the updated existing conditions model are used to re-evaluate the location and degree of expected flooding within the study area under the existing conditions for the 2.33-year, 5-year, 10-year, 25-year, 50-year and 100-year design storms. Hillsborough County has a targeted LOS for the primary conveyance features that will protect homes as well as limit street and yard flooding during the 25-year, 24-hour duration storm event. The existing condition 25-year, 24-hour model was used to evaluate LOS.

Where possible, the output from the model was compared with historical high water marks and flooding complaints registered with Hillsborough County. Historical, documented flooding problems were given priority.

1.2 PROJECT SETTING

The total study area encompasses approximately 5,104 acres within the Cypress Creek and Hillsborough River Watersheds. Approximately 1,350 and 3,754 acres are within the Cypress Creek and Hillsborough River Watersheds, respectively. Flooding, water quality and natural systems were evaluated in 2001 for approximately 4,262 acres (6.66 square miles). This 4,262 acres will be identified as the Duck Pond Watershed (DPW) for the remainder of this report. An additional 842 acres south of Fowler Avenue within the City of Tampa was also modeled using the County SWMM stormwater model. Two areas within the DPW study area are modeled hydrologically but not routed hydraulically include Subbasin 629720 (approximately 37 acres) and Subbasin 625000 (approximately 97 acres). Subbasin 629720 is located on the USF golf course and was not modeled in the USF North drainage system because it consists of a marsh wetland isolated from the USF north drainage system. Subbasin 625000 is located on the USF campus adjacent the intersection of Fowler Avenue and Bruce B. Downs Boulevard. Subbasin 625000 was not modeled because it is not hydraulically connected to the Duck Pond Watershed. Subbasin 625000 discharges south through a circular culvert under Fowler Avenue into City of Tampa stormwater systems. A break down of the areas within the study area is shown on **Table 1.1**

As shown in **Figure 1-2** the County watershed is generally bounded by the Hillsborough River on the east, I-275 on the west, Skipper Road / Bearss Avenue on the north, and Fowler Avenue on the south. The watershed area includes the USF campus. The watershed area was sub-divided into the following major drainage systems, each with their own outfall:

- Duck Pond
- Bruce B. Downs
- USF North
- USF East
- Raintree
- USF Campus East

The Bruce B. Downs, USF North, USF East and USF Campus East drainage systems are within the Cypress Creek Watershed and the Duck Pond and Raintree drainage systems are within the Hillsborough River Watershed. The Duck Pond System was further sub-divided into the following sub-drainage systems:

- Nebraska Avenue
- Robbins Lumber
- 131st Avenue
- Mall East and West
- USF Campus West

The Raintree System was further sub-divided into the following sub-drainage systems:

- Raintree North
- Raintree South

Land uses within the DPW boundaries are residential, commercial, industrial and institutional. The residential land uses are primarily multi-family apartment complexes, condominiums and duplexes due to their proximity to the USF campus. There are also some single-family residential sub-divisions east of the USF campus. The majority of the commercial land uses consist of strip shopping centers and office space along the major roadways within the DPW. The University Square Mall is the largest commercial land use within the DPW. The major roads are Fowler Avenue, Fletcher Avenue, 30th Street (Bruce B. Downs Boulevard), Skipper Road / Bearss Avenue, Nebraska Avenue and 56th Street. The University of South Florida, Veterans Administration Hospital and the University Community Hospital are the major institutional land uses within the DPW. Robbins Lumber is the largest industrial land use within the DPW. Little natural systems remain within the DPW due to dense development. However some isolated pockets of wetlands and upland forested areas are scattered throughout the DPW.

TABLE 1.1
Drainage Area Breakdown for Major Drainage Systems

Watershed	Major Conveyance		Area in DPW (acres)	Area in City of Tampa South of Fowler (acres)	Total Area (acres)
Hillsborough River	Duck Pond	Nebraska Ave.	317	0	317
		Robbins Lumber	151	0	151
		131st	691	0	691
		Mall East/West	569	0	569
		USF Campus West	575	0	575
	City of Tampa		0	610	610
	Raintree North		261	0	261
	Raintree South		348	232	580
Cypress Creek	B.B. Downs		442	0	442
	USF North		262	0	262
	USF East		215	0	215
	USF Campus East		431	0	431
Total			**4262**	**842**	**5104**

Few significant land use changes have occurred due to the built out condition of the DPW. However, commercial and institutional development continues on open spaces on the USF campus and Hillsborough County Planners are working towards improving property values with infrastructure improvements on public right-of-ways throughout the DPW.

The primary sources used to develop the 2001 Watershed Management Plan include the following:

- USF Area – Phase I Project Development Plan.
- Peer Review of the Duck Pond Outfall Design (May, 1987).
- Preliminary Design of the Duck Pond Outfall System (April, 1988).
- University of South Florida Master Stormwater Management Plan Study (May 1998).
- Raintree Terrace/Raintree North Subdivision Drainage Improvements Preliminary Study, October, 1999.
- "As-built" construction plans for various roadway, commercial and residential developments.
- Environmental Resource Permits for various developments.
- Aerial Photography with 1-foot contours (1" = 200') Southwest Florida Water Management District, July 1977.
- Year 2000 Aerial Photography (1" = 400') Hillsborough County.
- Hillsborough County Geographical Information Systems (GIS) data base
- Southwest Florida Water Management District data base.

1.3 DATA COLLECTION FOR WMP UPDATE

To properly describe the current condition of the watershed, available information was compiled from a variety of sources. These data included previous studies, existing aerial photographs and topography, latest land use coverage, recent ERP and construction plans, rainfall data, historical lake stage record, stream gage data, flooding complaints information, and a limited field investigation. The following agencies were involved during the data collection:

- Hillsborough County
- Southwest Florida Water Management District (SWFWMD)
- City of Tampa (COT)
- Florida Department of Transportation (FDOT)
- Federal Emergency Management Agency (FEMA)
- United States Geological Survey (USGS)
- Field Review

The following is a discussion of the sources and a listing of the literature review:

Soil Survey of Hillsborough County

The soil data classifies soil types for engineering and planning purposes. This data was in the Geographical Information System (GIS) format and delivered by Hillsborough County.

Land Use

Existing land use coverage was in GIS format and provided by Hillsborough County as obtained from the Southwest Florida Water Management District. This coverage is based on the Florida Land Use Cover Classification System (FLUCCS) 1999.

Roadway Plans, ERPs and CIP Plans

Several public roadway drainage systems were reviewed within the study area, as well as As-Built plans for County capital improvement projects (CIPs) and significant ERP sites. Record drawings were collected to obtain information to update subbasin delineations as well as identify new conveyance features. **Figure 1-2** illustrates the locations of ERPs reviewed for this update. **Table 1.2** lists the reviewed documents.

TABLE 1.2

Environmental Resource Permits Reviewed

ERP	Permit Type	Activity	Project Name	Issue Date
022851000	ERP Standard General	Commercial	Cracker Barrel-Bruce B Downs & Bearss	1/31/2002
018429001	ERP Standard General	Residential	Reflections	9/3/1999
012996002	ERP Standard General	Government	Hills Co-USF University Center	12/16/1999
000660004	MSSW General Permit	Residential	JPI Student Housing Project-Tampa	5/5/1999
023649001	ERP Standard General	Commercial	University Comm Hosp Parking Additions	2/19/2003
020468001	ERP Standard General	Residential	Avalon Heights Apartment Suites	12/21/2000
017978003	ERP Standard General	Government	DOT-I-275 Fletcher/N US 41 #10320-3476	3/22/2002
018952010	ERP Standard General	Commercial	Busch Grdns-Elephant Protective Contact	1/13/2003
000775003	ERP Standard General	Government	Hills Co-Fletcher-Magnolia Intersec Imp	8/27/2004
021443000	ERP Standard General	Commercial	Fletcher Mini Storage (1821 E Fletcher)	1/22/2001
000775001	ERP Standard General	Road Projects	Hills Co-Fletcher Ave-42nd St/N Palm Dr	9/26/2003
006413060	ERP Standard General	Government	USF-Maple Ii-Impervious Correction	6/3/2004
018952000	ERP Conceptual	Commercial	Busch Ent Corp-Master Drainage Plan	8/24/1999
022490001	ERP Standard General	Commercial	University Grove Office Park Phase II	10/9/2003
010932003	ERP Standard General	Government	Hills Co-Museum Of Science And Industry	7/12/2004
024189001	ERP Standard General	Government	Hills Co-Curiosity Creek Ph III	11/20/2003
018651001	ERP Standard General	Commercial	Walmart Tampa University West 2627-00	7/13/1999
002374003	ERP Standard General	Government	James A Haley Veterans Admin Hosp Pkg	8/29/2001
020240000	ERP Standard General	Road Projects	Hills Co-Intersec-131 Ave @ 22st N Recon	3/29/2000
006413047	ERP Standard General	Government	USF-Special Purpose Housing	5/16/2003
006413051	ERP Standard General	Government	USF-Lot 35 Expansion	7/10/2003
026617000	ERP Standard General	Residential	Bella Vista	6/30/2004
021382002	ERP Standard General	Road Projects	Hills Co-Gibson Ave Ph II Drainage Imp	1/5/2005
001850003	MSSW General Permit	Residential	University Village Walkway & Parking Imp	5/21/2001

TABLE 1.2
Environmental Resource Permits Reviewed

ERP	Permit Type	Activity	Project Name	Issue Date
002374004	ERP Standard General	Government	J Haley Veterans Hospital Pearl Prkg Lot	10/21/2004
006413050	ERP Standard General	Government	USF-Willow Drive Extension	5/28/2003
000121008	ERP Standard General	Government	Hills Co-15th St And 127th Ave Drg Impr	11/7/2002
006413027	ERP Standard General	Government	USF-Maple Dr Crosswalks/Sundome/Elm Dr	5/4/2001
021382000	ERP Standard General	Government	Hills Co-58th St & 122nd Ave Drain Impr	2/8/2001
006413056	ERP Standard General	Government	USF Quinn Hall Coll Of Bus Admin Expan	11/20/2003
019439000	ERP Standard General	Commercial	University Self Storage	7/19/1999
018952001	ERP Standard General	Commercial	Busch Gardens East Parking Lot	2/29/2000
006405006	ERP Standard General	Government	USF Idrb And Mtob	1/9/2004
000121007	MSSW Individual Permit	Government	Hills Co- USF Ph 4 Drainage Improvement	1/15/2002
008624002	ERP Standard General	Road Projects	Hills Co-Fowler Ave Pedestrian Overpass	8/28/2003
002090002	ERP Standard General	Semi-Public	All Childrens Hospital-Spec Care/Tampa	6/1/2000
018712002	ERP Standard General	Residential	Abbey @ Tampa (Fna Skipper Pointe Apts)	2/23/2000
006413022	ERP Standard General	Semi-Public	USF-Golf Cart Path Expansion	8/16/2000
023772000	ERP Notice General	Government	Hills Co-Sw USF Water Main Extension	6/27/2002
000121006	MSSW Individual Permit	Government	Hills Co-16th St Drainage Imp CIP#47003	10/22/2001
021586000	ERP Standard General	Government	Hills Co-19th St Drainage Impr-Ph I & II	2/23/2001
024763000	ERP Standard General	Residential	College Court Apartments	4/9/2003
010932002	MSSW General Permit	Government	Hills Co-Museum Of Science & Industry	8/7/2001
022490002	ERP Standard General	Residential	Student Housing At Fletcher Ave-56th St	9/9/2004
001962003	ERP Standard General	Commercial	Lot 5 University Collections	7/20/2000
001153003	ERP Standard General	Road Projects	Hills Co-Fletcher Ave 46th St Intersect	4/21/2005
006413061	ERP Standard General	Government	USF-Childrens Medical Services Elem 4	6/16/2004
002533002	ERP Standard General	Semi-Public	Shriners Expansion At USF	1/17/2001
003153005	ERP Standard General	Government	Hills Co-Raintree Oaks Drg Impr Ph 3	11/2/2000

TABLE 1.2
Environmental Resource Permits Reviewed

ERP	Permit Type	Activity	Project Name	Issue Date
002873008	ERP Standard General	Government	University Charter School	4/4/2003
021074001	ERP Standard General	Government	Hills Co-131st Ave-27th St Drng Imp	10/11/2004
006413043	ERP Standard General	Government	USF-Natural & Environmental Services Bld	11/22/2002
006413052	ERP Standard General	Government	USF Parking Garage	8/22/2003
023045000	ERP Standard General	Government	Hills Co-143rd Ave Drainage Imp	5/14/2002
027193000	ERP Standard General	Government	Hills Co-120th Ave Fm Nebraska To Co Pnd	6/25/2004
000121004	MSSW Individual Permit	Government	Hills Co-Bearss Ave/Duck Pond-Ph II	4/1/1999
022290001	ERP Standard General	Road Projects	40th St (Mckinley)-Busch To Fowler Seg E	9/21/2001

Aerial Photography and Contour Maps

Ayres Associates obtained latest aerial photographs (2004) and 1-foot digital contours (2002) from Hillsborough County.

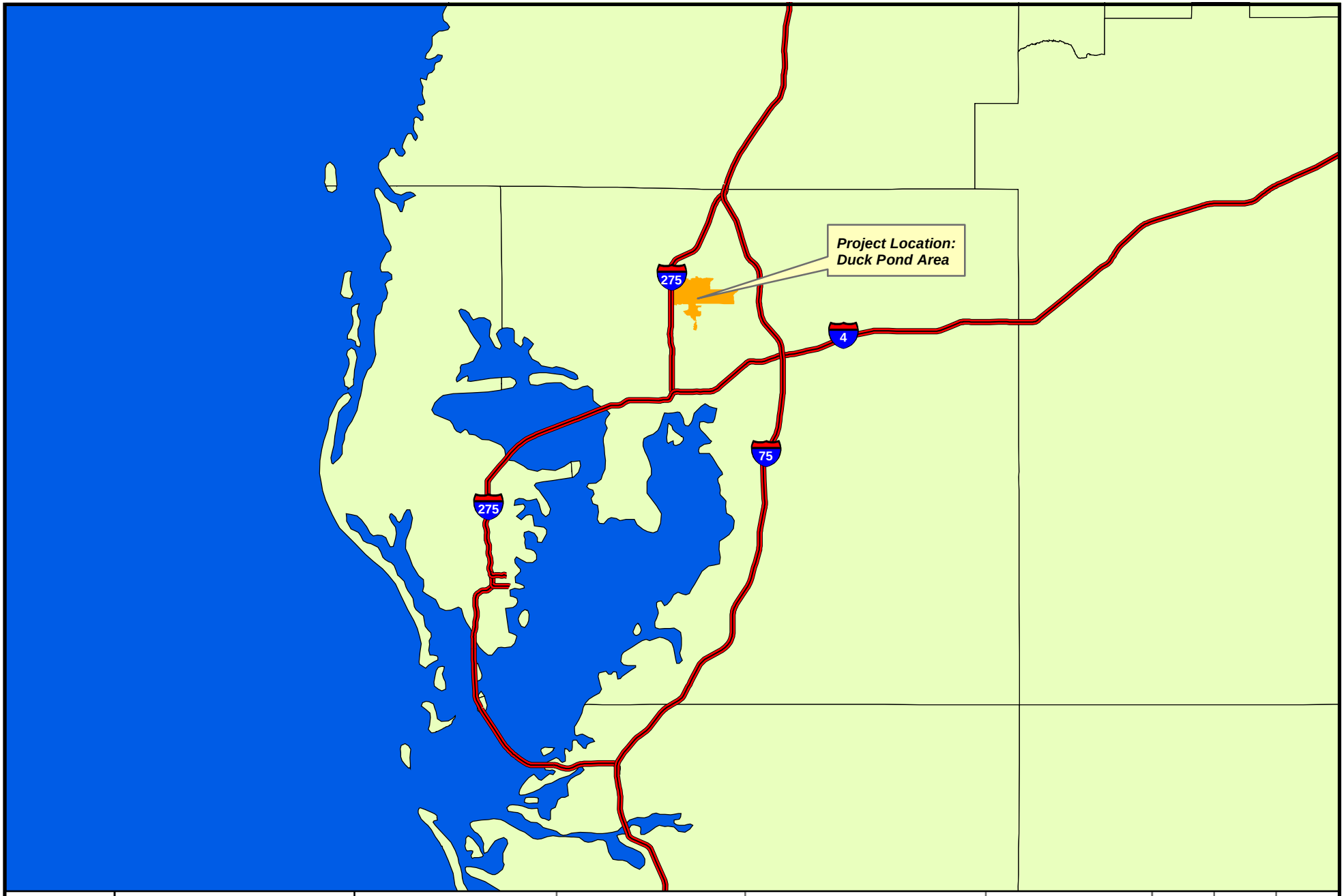
Existing Studies

Ayres Associates performed a literature search for documents that may contain usable information pertaining to the study area. The literature search yielded the following:

- Duck Pond Watershed Management Plan Final Report, Hillsborough County, 2001
- Duck Pond Drainage Area Evaluation, City of Tampa, 2001
- Duck Pond Area Drainage Improvement Summary of Computer Modeling, Hillsborough County, 2005
- Flood in Southwest-Central Florida from Hurricane Frances, USGS, September 2004

Problem Area Documentation

Documentation for the reported flood prone areas was obtained through County records. These records were in GIS format and related to the complaints and locations associated with Hurricane Frances, during the month of September of 2004. In addition, Ayres staff performed a limited document search through SWFWMD and USGS regarding this event.



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Legend

- Interstate Roads
- Duck Pond Area

Notes:

This area is used for general map note information such as map accuracy/standards, source information, elevation information, etc.

0 2 4 8 Miles

Figure 1-1: Duck Pond Area Watershed Location Map

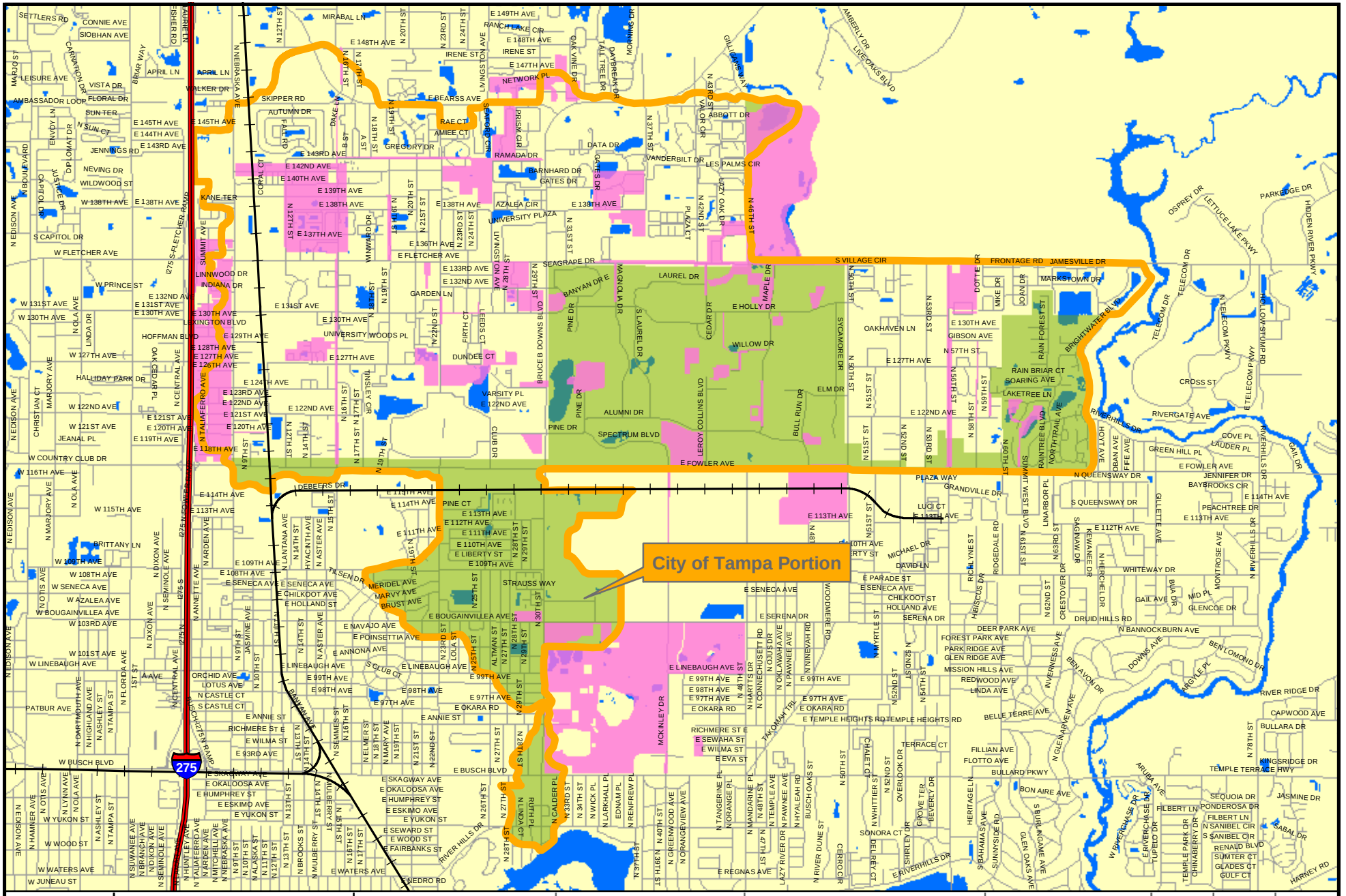
Project: 61-0100.04

Watershed: Duck Pond Area

Hillsborough County: WMP Update Program

Filename:	Map Date:	Map Prepared By:
Figure1-1.mxd	Mar. 31, 2006	Ayres Associates

Date of Photography: N/A



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Legend

- ERPs Reviewed
- Incorporated Areas
- Duck Pond Area
- Water Features

Notes:

This area is used for general map note information such as map accuracy/standards, source information, elevation information, etc.

0 0.15 0.3 0.6 Miles

Figure 1-2: Locations of ERPs Reviewed for the WMP Update

Filename:	Map Date:	Map Prepared By:
Figure 1-2.mxd	Mar. 31, 2006	Ayres Associates

Project: 61-0100.04

Watershed: Duck Pond Area

Hillsborough County: WMP Update Program

Date of Photography: N/A

CHAPTER 2 WATERSHED DESCRIPTION

The general watershed characteristics have not changed since completion of the 2001 Watershed Management Plan. For this reason, much of the watershed description below is excerpted from the 2001 Watershed Management Plan, with expansion and clarification of text, as required. Update of this chapter includes revisions to general physiography and hydrology, including referenced subbasin sizes and number, as well as land use and topography. Figures have been regenerated using more recent land use and topographic data and refined watershed and subbasin delineations.

2.1 OVERVIEW

The Duck Pond Watershed (DPW) covers approximately 6.66 square miles or 4,262 acres in northern Hillsborough County in the vicinity of the USF Campus. The project area is primarily urban, and drains into either Cypress Creek or the Hillsborough River. Several major roads, including Nebraska Avenue, Bruce B. Downs Blvd., 56th Street, Fletcher Avenue, and Fowler Avenue travel through the project area. The basin, shown in **Figure 2-1**, is composed of 192 smaller units or subbasins ranging in size from approximately 0.61 to 251.3 acres. Land elevations in the DPW vary between a high of approximately 88 feet NAVD in the southeast portion of the project area to a low of around 24 feet NAVD. These elevations are shown on **Figure 2-2**.

2.2 CLIMATE

The climate of the DPW and for Hillsborough County as a whole can be classified as humid subtropical. Annual average precipitation is around 52 inches and almost 60% of this total falls during the four-month rainy season that extends from June through September. This time frame coincides with the occurrence of most tropical storms and hurricanes. In addition, the conditions are ripe for regular, convective afternoon and evening thunderstorms. These summer events, which can be very localized, are highly variable in both intensity and volume. The larger, normal summer storm events and those associated with tropical systems can cause flooding problems in areas where there are deficiencies in the existing stormwater, or other, drainage systems.

Winter rainfalls are, for the most part, relatively light and generally associated with the cold fronts that descend from the north through the south. However, some of the largest rain events have occurred in the winter months, and this is especially true in El Niño years (1997-98).

The annual mean temperature in Hillsborough County is about 72°F (Fahrenheit). The mean monthly temperature ranges from a low of approximately 60°F in January to a high of approximately 82°F in August. Typically, summer temperatures range from morning lows in the high 70's and low

80's to afternoon highs that routinely reach into the mid-90's, but rarely do they exceed 100°F. Summer humidity that ranges into the mid to upper 90's can further exacerbate the situation. Conversely, typical winter low temperatures generally range above freezing into the 40's; only occasionally dropping into the low 20's and teens. High temperatures generally reach into the upper 60's or low 70's for most of the season, especially between passages of the cold fronts.

According to the National Weather Service in Ruskin, humidity does not vary as seasonally as temperature and rainfall. The Service keeps daily records for 1 and 7 o'clock A.M. and 1 and 7 o'clock P.M. The 7 A.M. time period generally records the highest humidity with the annual average at 88% with the 1 P.M. time period recording the lowest at an average of 58%.

Evapotranspiration rates vary, and limited data are available for analysis. Estimates of 39 inches per year have been reported. Viessman, et al. (1977) reports the figure to be closer to 48 inches per year. Lake evaporation data often quoted for use in Hillsborough County are those reported from Lake Alfred in Polk County, supplemented by scattered data available from the Lake Padgett weather station. Studies conducted by Tampa Bay Water estimate the lake evaporation rate to average approximately 56 inches per year.

2.3 SOILS

Soil distribution by type is shown in **Figure 2-3**. This information was developed based on Geographical Information Systems (GIS) coverages developed by the Southwest Florida Water Management District (SWFWMD). Much useful information, such as drainage classification, percent slope, water table depth, permeability, natural vegetation and potential uses for development and agriculture, can be obtained by consulting the NRCS Manual for Hillsborough County for each particular soil type.

These soil types can be arranged into four groups based on their runoff-potential; these types are shown in **Figure 2-4.** The hydrologic groups are commonly used in project area planning to estimate infiltration rates and moisture capacity. Soil properties that influence the minimum rate of infiltration obtained for a bare soil after prolonged wetting are: (a) depth to seasonally high water table; (b) intake rate and permeability; and (c) depth to a layer or layers that slow or impede water movement. The major soil hydrologic groups are:

- Group A (low runoff potential) soils have high infiltration rates and a high rate of water transmission even when thoroughly wetted. They have typical infiltration rates of 10 inches per hour (in/hr) when dry and 0.50 in/hr when saturated. Soil types found in the DPW that fall into this group include the Candler fine sands, Orsino fine sand, and the Tavares-Millhopper fine sands.

- Group B (moderately low runoff potential) soils have moderate infiltration rates when thoroughly wetted and a moderate rate of water transmission. They have typical infiltration rates of 8 in/hr when dry and 0.40 in/hr when saturated.

- Group C (moderately high runoff potential) soils have low infiltration rates when thoroughly wetted and a low rate of water transmission. They have typical infiltration rates of 5 in/hr when dry and 0.25 in/hr when saturated. Soil types found in the DPW which fall into this group include Seffner fine sand, and Zolfo fine sand.

- Group D (high runoff potential) soils have very slow infiltration rates when thoroughly wetted and a very low rate of water transmission. They have typical infiltration rates of 3 in/hr when dry and 0. 10 in/hr when saturated. Soil types found in the DPW that fall within this group include Basinger, Holopaw and Samsula, and Chobee muck.

- Dual classifications (e.g., A/D or B/D) can be assigned to soils that exhibit substantially different hydrologic characteristics during the wet and dry seasons. During the wet season, these soils become saturated throughout much of the soil column due to elevated water table conditions. Infiltration is thus impeded and the soils exhibit Group D infiltration and runoff rates. During the dry season when the water levels recede, infiltration rates increase and runoff rates decline to Group A or Group B levels.

2.4 PHYSIOGRAPHY AND HYDROLOGY

The DPW lies within the Polk Upland physiographic unit. This unit is part of the Central or Mid-Peninsular physiographic zone, one of three in Florida. This zone is characterized by discontinuous highlands formed by sub-parallel ridges that are separated by broad valleys. The project area has six major drainage systems each with their own outfall. These include; Duck Pond, Bruce. B. Downs, USF North, USF East, USF Campus East and Raintree Systems. The Bruce B. Downs, USF North, USF East and USF Campus East outfall to Cypress Creek. The Raintree System discharges directly to the Hillsborough River. The Duck Pond System outfalls to a City of Tampa storm sewer system south of Fowler Avenue at the University Square Mall. These systems in conjunction handle the majority of the stormwater conveyance within the project area.

There are some lakes, wetland areas and depressions located within the project area. The lakes and other depressional features in the area have been formed by sinkhole formation and other processes associated with the dissolution of the underlying limestone formations.

Hydrologically, surface flows originate for the most part through stormwater runoff with some influence from groundwater flows from lake seepage.

2.5 GEOLOGY AND HYDROGEOLOGY

The area is underlain by a thick sequence of sedimentary strata divided into an upper zone of unconsolidated sediments and lower zone of consolidated carbonate rock.

At land surface, undifferentiated sediments including silt, sand, and clay form surficial deposits, which vary in thickness from less than 10 feet in coastal areas to over 100 feet in paleokarst depressions or in sand ridges. Typical thickness of the surficial deposits varies from 20 feet to 50 feet. In low-lying areas near lakes and streams, thin layers of organic material mix with the surficial deposits. Pleistocene-aged silts and clays form the base of the undifferentiated sediments.

Underlying the unconsolidated material is a series of Tertiary-aged limestones and dolomites that form the carbonate platform of peninsular Florida. The sequence of carbonate rocks includes, in descending order, the following formations: Tampa Member of the Hawthorn Group, Suwannee Limestone, Ocala Group, Avon Park, Oldsmar, and Cedar Key Formations. A lithographic change from limestone and dolomite to a sequence of gypsiferous dolomite begins in the lower portion of the Avon Park Formation and continues into the Oldsmar and Cedar Key Formations. The top of this lithologic change marks the middle confining unit of the Floridan aquifer system. The middle confining unit is generally considered the base of the freshwater production zone of the Upper Floridan aquifer.

The Tampa Member of the Hawthorn Group is a tan-colored carbonate and sand mixture, which can contain variable amounts of clay. The Tampa Member can be fossiliferous and may also contain phosphate grains and chert. The Tampa Member ranges from 50 to 150 feet in thickness. The Suwannee Limestone consists of two rock types; the upper portion is a tan-colored, crystalline limestone containing prominent gastropod and pelecypod molds, and the lower portion is a cream-colored limestone containing foraminifers and pellets of micrite in a finely crystalline limestone matrix. The Suwannee Limestone varies from 150 to 300 feet in thickness.

The Ocala Group contains a series of limestones that are generally soft, friable, porous and fossiliferous. This unit is late Eocene in age and ranges in thickness from 90 to 300 feet. The Avon Park Formation comprises brown, highly fossiliferous, soft to well-indurated, chalky limestone and a gray to brown, very fine microcrystalline dolomite. The Avon Park Formation ranges from 300 to 500 feet in thickness.

The hydrogeologic flow system of the northern Tampa Bay region contains two distinct groundwater reservoirs: the unconfined surficial aquifer and the semi-confined Upper Floridan aquifer. The Upper Floridan aquifer is under water table conditions in areas where the clay confining layer is discontinuous or absent. A general hydrogeologic cross-section of the Tampa Bay region is shown in **Figure 2-5**.

Surficial Aquifer

The surficial aquifer is comprised primarily of unconsolidated deposits of fine-grained sand with an average thickness of 30 feet. Due to the karst geology of the region, thickness of the sand is highly variable. The depth of the water table ranges from near land surface to several tens of feet below land surface. Water table elevation is primarily influenced by rainfall; annual highs in most years occur during the end of the wet season (in Sept.- Oct.), and annual lows occur near the end of the dry season (in May-June). The direction of groundwater flow varies locally and is significantly influenced by the topography of the land surface. The hydraulic gradient (change of elevation per unit length) in the area typically ranges from a few feet per mile to about ten feet per mile. The permeability of the surficial aquifer is generally low and the quality of water within this aquifer is not suitable for human consumption. Water withdrawn from this aquifer is used most often for lawn irrigation. Surficial aquifer wells typically yield less than 20 gallons per minute.

Semi-Confining Zone

Below the surficial aquifer typically is a semi-confining unit comprised of clay, silt and sandy clay that somewhat retards the movement of water between the overlying surficial aquifer and the underlying Floridan aquifer. The confining materials are comprised of blue-green to gray, plastic, sandy clay and clay. The upper portion of the Arcadia Formation (Hawthorn Group) typically forms the semi-confining layer.

Leakage from the surficial aquifer into the Floridan aquifer occurs by infiltration across the semi-confining layer or through fractures or secondary openings in the semi-confining unit caused by chemical dissolution of the underlying limestone. Due to the highly karstic nature of the geologic system, the clay semi-confining layer can be absent in one area but tens of feet thick a short distance away. These localized karst features, in which the clay semi-confining layer is breached or missing, significantly increases hydraulic connection between the two aquifers (Hancock and Smith 1996).

Upper Floridan Aquifer

The Upper Floridan aquifer consists of a continuous series of carbonate units that include portions of the Tampa Member of the Hawthorn Group, Suwannee Limestone, Ocala Limestone and Avon Park Formation. Groundwater within the Upper Floridan aquifer is typically under artesian conditions within the project area.

Near the base of the Avon Park Formation lies the middle confining unit of the Floridan aquifer, an evaporite sequence of very low permeability that is composed of gypsiferous dolomite and dolomitic limestone. The middle confining unit generally delineates the boundary between the freshwater Upper Floridan aquifer and the brine-saturated Lower Floridan aquifer. The evaporites function as a lower confining unit and retard vertical flow across the boundary. In general, the permeability of the Upper Floridan aquifer is moderate in the Tampa Member and Suwannee Limestone, low in the Ocala Limestone and very high in portions of the Avon Park Formation. The limestone and dolomite beds produce significant quantities of water due largely to numerous solution openings along bedding planes and fractures. The Ocala Limestone yields limited amounts of water and may be considered a semi-confining layer within the Upper Floridan aquifer. Overall, the Ocala Limestone tends to act as a semi-confining zone between the overlying Tampa/Suwannee

Formations and the underlying Avon Park Formation. Transmissivity of the Avon Park Formation is very high due to the fractured nature of the dolomite zones.

Ground water flow in the Floridan aquifer originates as rainfall that percolates downward from the surficial aquifer. In areas where the Upper Floridan aquifer outcrops, this recharge can be direct. Recharge rates are generally higher in the northern portion of the County. Recharge can be highly variable throughout the area, however, due to karst features and induced leakage caused by ground-water withdrawals. The regional hydraulic gradient and direction of flow in the Upper Floridan aquifer is generally toward the south and west.

2.6 EXISTING AND FUTURE LAND USE

Existing Land Uses

As stated previously, the DPW encompasses a wide variety of land uses. The existing Land Use Map, obtained from the Hillsborough County Property Appraiser's Office, is shown in **Figure 2-6**. **Table 2.1** provides a breakdown of land use by acreage and percent of land use for the watershed. **Figure 2-7** displays the SWFWMD 1999 Florida Land Use coverage for the watershed.

Future Land Uses

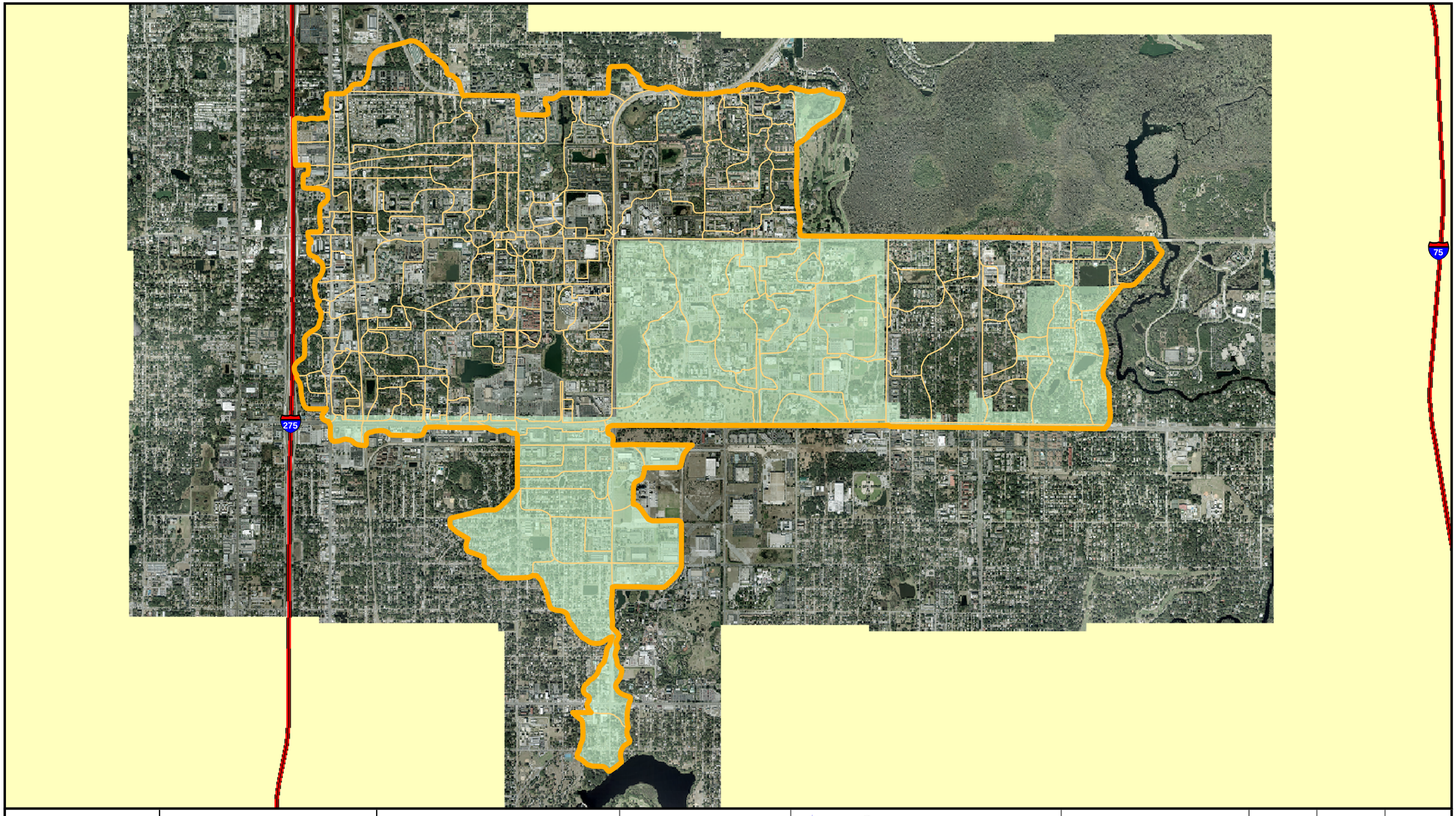
Due to the existing dense residential, commercial and institutional development and essentially built out conditions within the DPW, not many changes in land use are predicted by the Hillsborough County Comprehensive Plan. The expected future land uses for this area are shown in **Figure 2-8.** Definitions of the future land use types are shown on **Table 2.2**. Major Projects, DRIs, & Vested Projects within the watershed can be seen in **Figure 2-9.**

TABLE 2.1
Existing Land Uses (1995) – Duck Pond Watershed

LAND USE CATEGORY	TOTAL ACREAGE	PERCENT OF TOTAL
Commercial Heavy	109.82	2.53%
Commercial Light	379.30	8.73%
Industry Heavy	1.06	0.02%
Industry Light	44.78	1.03%
Multi-Family	704.26	16.22%
Mobile Home Park	149.56	3.44%
Public/Quasi-Public Inst.	365.85	8.42%
Public Communications/Utilities	33.67	0.78%
School University	933.91	21.50%
Single Family/Mobile Home	389.05	8.96%
Two Family	134.16	3.09%
Agriculture	5.49	0.13%
Roadways	886.93	20.42%
Unknown	205.08	4.72%
TOTAL	**4,343**	**100%**

TABLE 2.2
Future Land Use Code Descriptions Shown on Figure 2-8
Duck Pond Watershed

CODE	DESCRIPTION
C	COMMERCIAL
CMU-35	COMMUNITY MIXED USE - 35
ESA	ESA
HC-24	HEAVY COMMERCIAL - 24
LD	LOW DENSITY RESIDENTIAL
LI	LIGHT INDUSTRIAL
LMD	LOW MEDIUM DENSITY RESIDENTIAL
MD	MEDIUM DENSITY RESIDENTIAL
OC	OFFICE COMMERCIAL
P/QP	PUBLIC / QUASI-PUBLIC
R/W	R/W
R-12	RESIDENTIAL - 12
R-20	RESIDENTIAL - 20
R-6	RESIDENTIAL - 6
R/OS	MAJOR RECREATIONAL / OPEN SPACE
ROW	RIGHT OF WAY
SMU-6	SUBURBAN MIXED USE - 6
UMU-20	URBAN MIXED USE - 20
WATER	WATER



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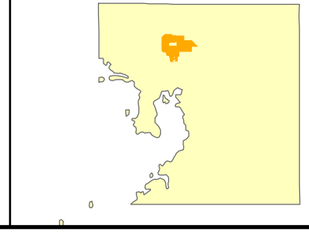


Legend

- Duck Pond Area
- Subbasin Delineations
- Incoporated Areas

Notes:

This area is used for general map note information such as map accuracy/standards, source information, elevation information, etc.

0 0.25 0.5 1 Miles

Figure 2-1: Subbasin Delineations

Project: 61-0100.04

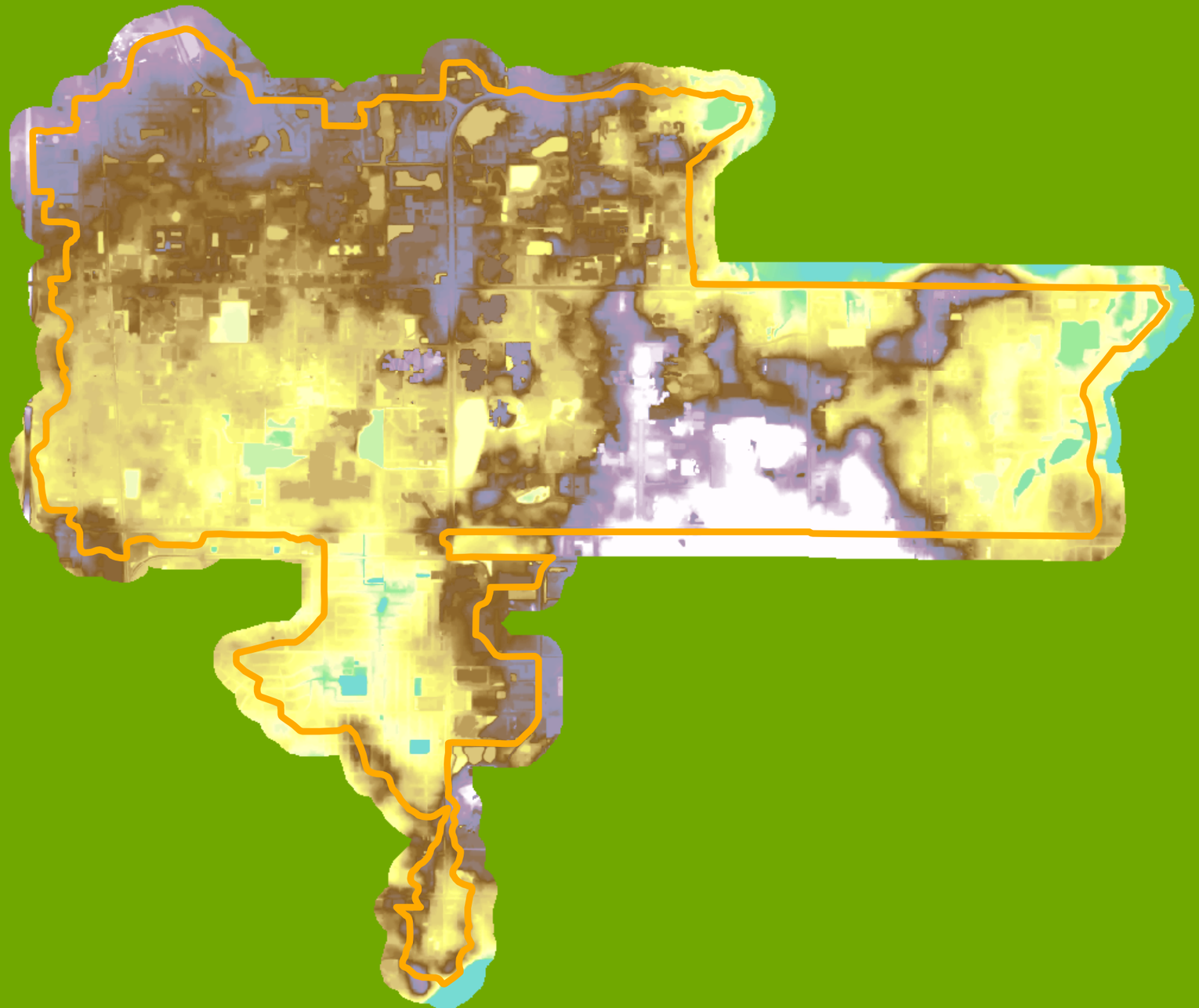
Watershed: Duck Pond Area

Hillsborough County:
WMP Update Program

Filename:	Map Date:	Map Prepared By:
Figure 2-1.mxd	Mar. 31, 2006	Ayres Associates

Date of Photography:

2004



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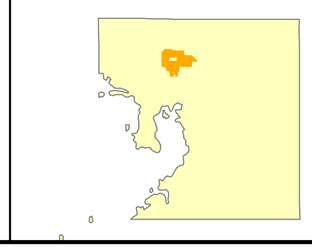

Legend

Elevations (NAVD)

88.00

54.00

19.00

Notes:

This area is used for general map note information such as map accuracy/standards, source information, elevation information, etc.

0 0.25 0.5 1 Miles

Figure 2-2: Topology Map

Project: 61-0100.04

Watershed: Duck Pond Area

Hillsborough County:
WMP Update Program

Filename:	Map Date:	Map Prepared By:
Figure 2-2.mxd	Mar. 31, 2006	Ayres Associates

Date of Photography:

N/A

35 27 18 | 36 27 18 | 31 27 19 | 32 27 19 | 33 27 19 | 34 27 19 | 35 27 19 | 36 27 19

2 28 18 | 1 28 18 | 6 28 19 | 5 28 19 | 4 28 19 | 3 28 19 | 2 28 19 | 1 28 19

11 28 18 | 12 28 18 | 7 28 19 | 8 28 19 | 9 28 19 | 10 28 19 | 11 28 19 | 12 28 19

14 28 18 | 13 28 18 | 18 28 19 | 17 28 19 | 16 28 19 | 15 28 19

23 28 18 | 24 28 18 | 19 28 19 | 20 28 19 | 21 28 19 | 22 28 19

26 28 18 | 25 28 18 | 30 28 19 | 29 28 19 | 28 28 19 | 27 28 19 | 26 28 19 | 25 28 19

Legend

- Section-Township-Range

Soils Duck Pond Area

MUNAME

- ADAMSVILLE FINE SAND
- ARENTS/NEARLY LEVEL
- BASINGER/HOLOPAW/AND SAMSULA SOILS/DEPRESSIONAL
- CANDLER FINE SAND/0 TO 5 PERCENT SLOPES
- CANDLER FINE SAND/5 TO 12 PERCENT SLOPES
- CANDLER-URBAN LAND COMPLEX/0 TO 5 PERCENT SLOPES
- CHOBEE SANDY LOAM/FREQUENTLY FLOODED
- FORT MEADE LOAMY FINE SAND/0 TO 5 PERCENT SLOPES
- MALABAR FINE SAND
- MYAKKA FINE SAND
- MYAKKA-URBAN LAND COMPLEX
- POMELLO FINE SAND/0 TO 5 PERCENT SLOPES
- SEFFNER FINE SAND
- SMYRNA FINE SAND
- ST. JOHNS FINE SAND
- TAVARES-MILLHOPPER FINE SANDS/0 TO 5 PERCENT SLOPES
- TAVARES-URBAN LAND COMPLEX/0 TO 5 PERCENT SLOPES
- WATER
- ZOLFO FINE SAND

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Legend

See above

Notes:

This area is used for general map note information such as map accuracy/standards, source information, elevation information, etc.

0 0.25 0.5 1 Miles

Figure 2-3: Soil Classification Map

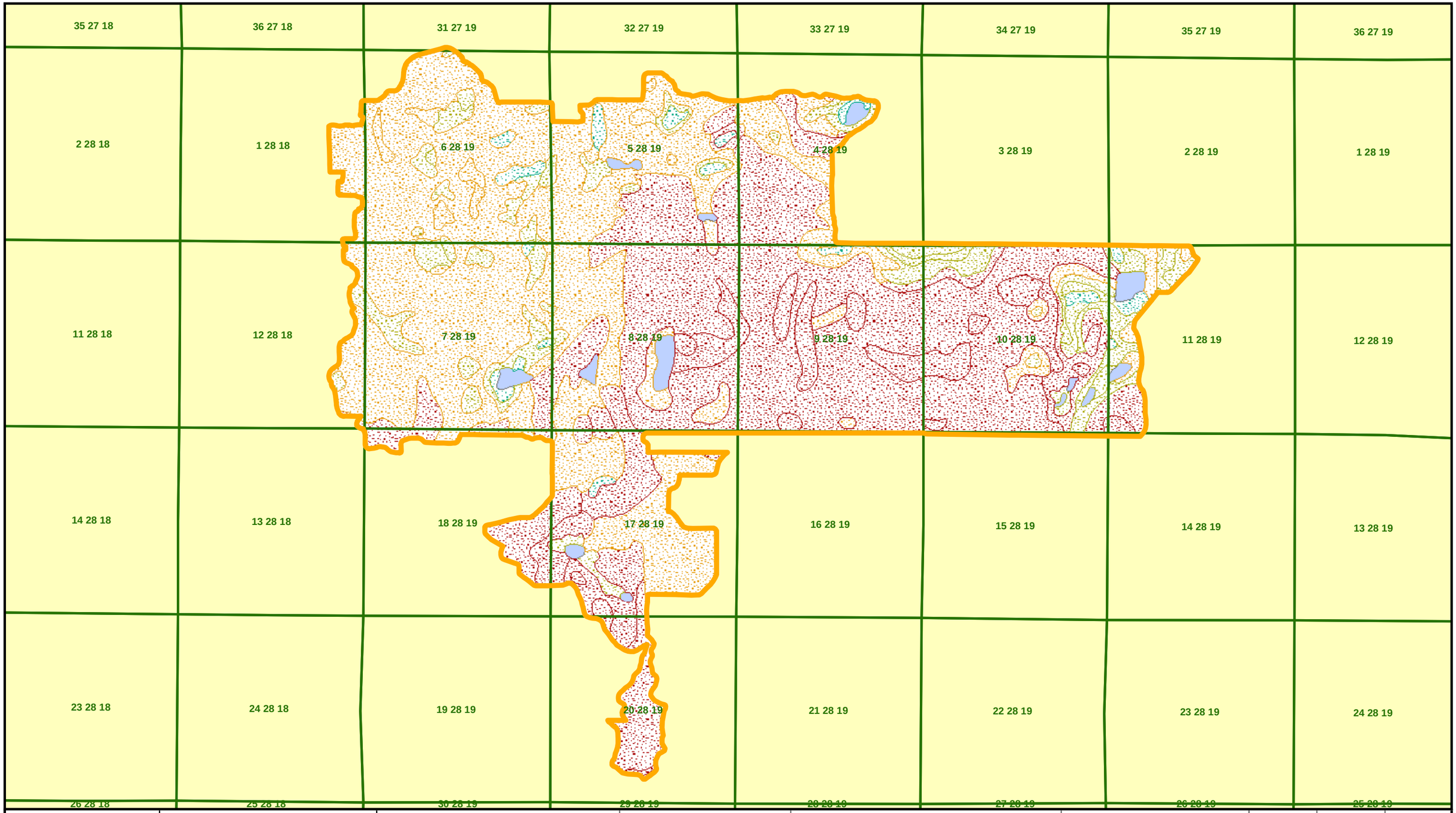
Project: 61-0100.04

Watershed: Duck Pond Area

Hillsborough County:
WMP Update Program

Filename:	Map Date:	Map Prepared By:
Figure 2-3.mxd	Mar. 31, 2006	Ayres Associates

Date of Photography: N/A



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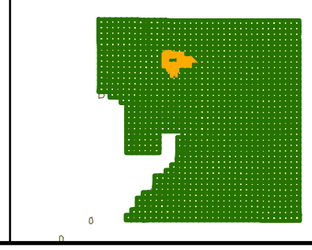


Legend

- Section-Township-Range

Hydrologic Soil Group

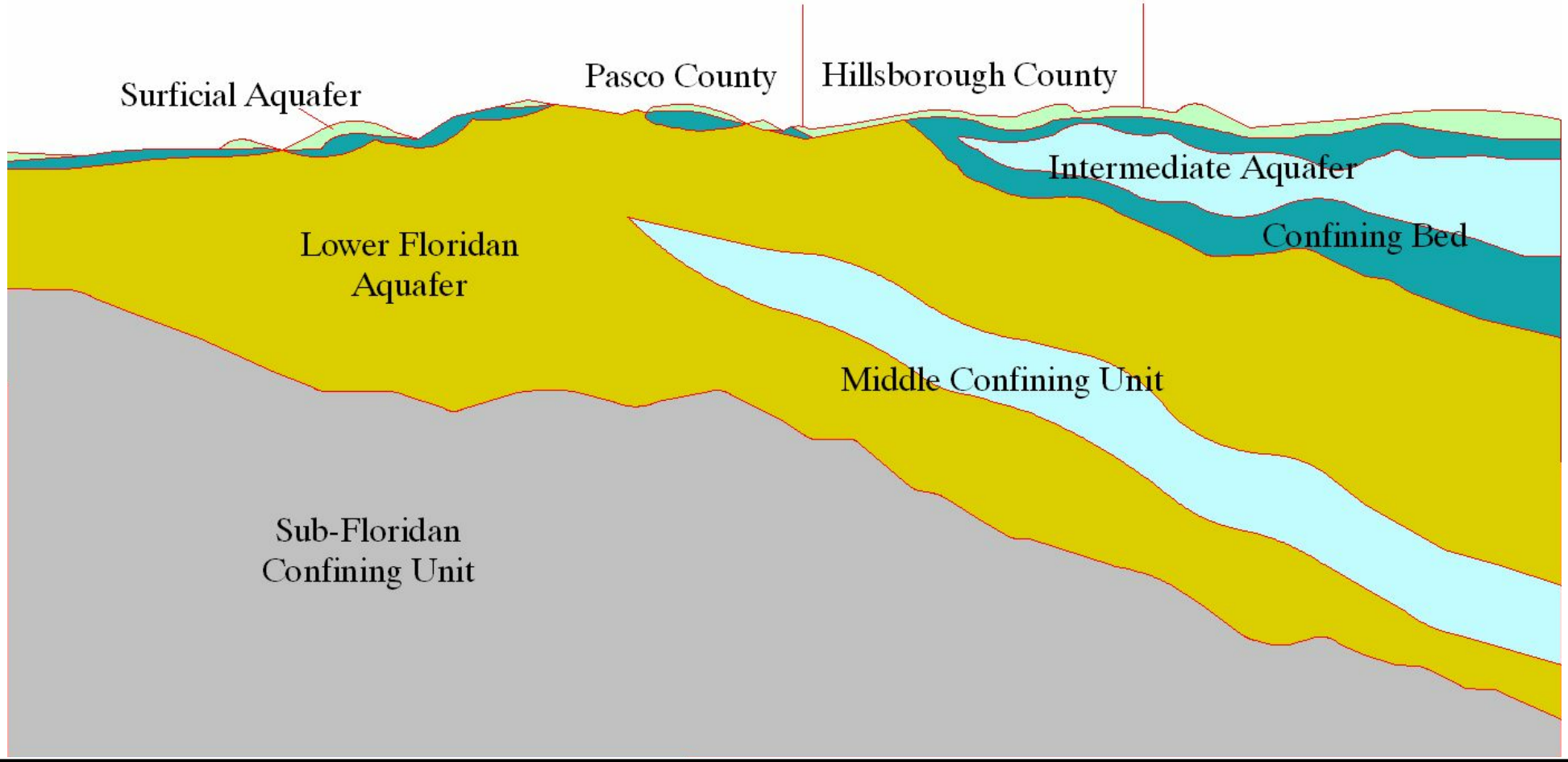
- A
- B/D
- C
- D
- W

Notes:

This area is used for general map note information such as map accuracy/standards, source information, elevation information, etc.

0 0.25 0.5 1 Miles

Figure 2-4: Hydrologic Soil Groups	Filename: Figure 2-4.mxd	Map Date: Mar. 31, 2006	Map Prepared By: Ayres Associates
Project: 61-0100.04			
Watershed: Duck Pond Area	Date of Photography: N/A		
Hillsborough County: WMP Update Program			



Duck Pond Area Watershed Management Plan Update
SWFWMD Hydrogeologic Cross-Section

Figure
2-5

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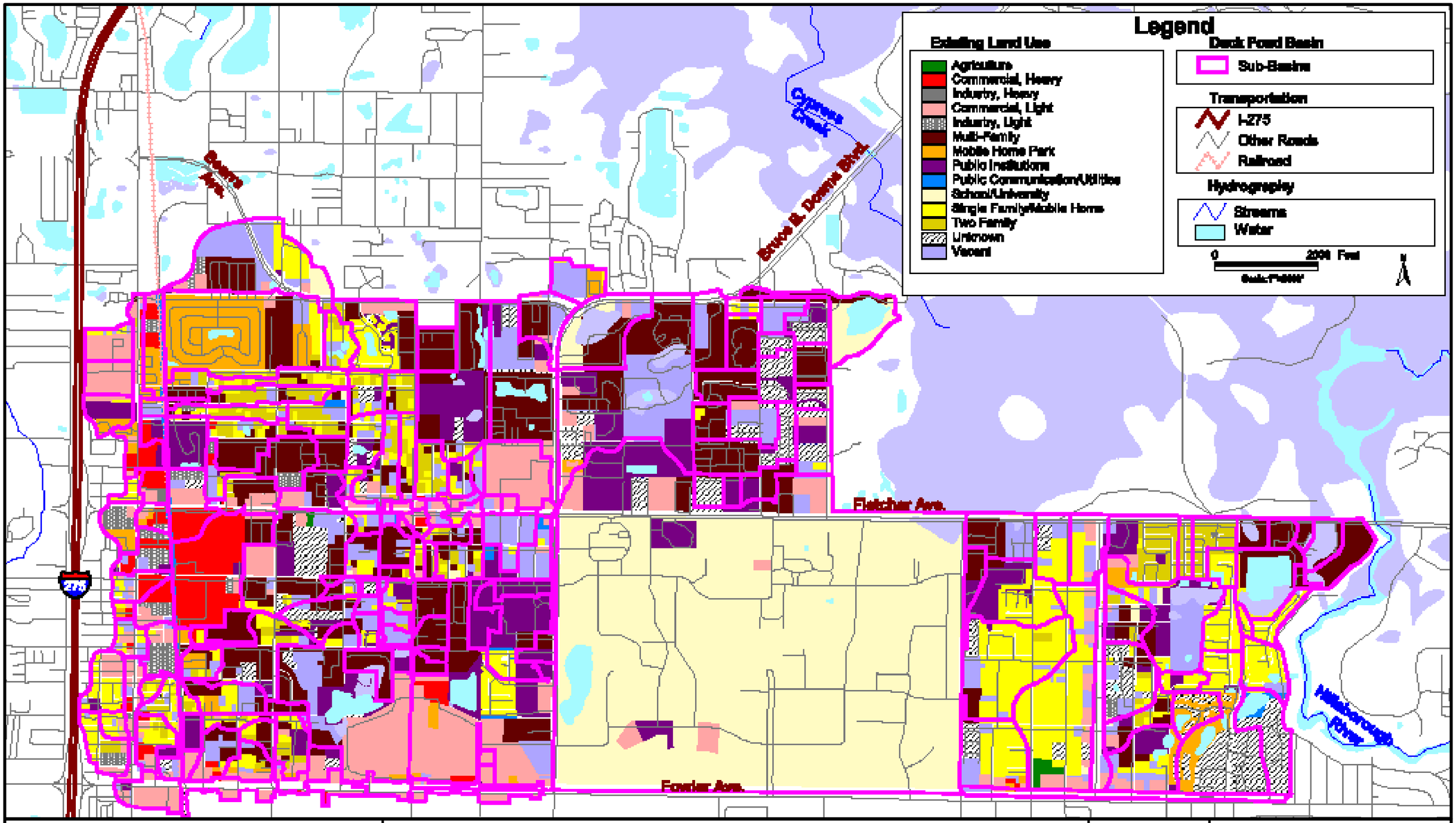

Duck Pond Area Watershed Management Plan Update

Existing Land Use

(Source: Duck Pond Watershed Management Plan, URS Corporation Southern, January 2001)

Figure 2-6

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35 27 18 | 36 27 18 | 31 27 19 | 32 27 19 | 33 27 19 | 34 27 19 | 35 27 19 | 36 27 19

2 28 18 | 1 28 18 | 6 28 19 | 5 28 19 | 4 28 19 | 3 28 19 | 2 28 19 | 1 28 19

11 28 18 | 12 28 18 | 7 28 19 | 8 28 19 | 9 28 19 | 10 28 19 | 11 28 19 | 12 28 19

14 28 18 | 13 28 18 | 18 28 19 | 17 28 19 | 16 28 19 | 15 28 19 | 14 28 19 | 13 28 19

23 28 18 | 24 28 18 | 19 28 19 | 20 28 19 | 21 28 19 | 22 28 19 | 23 28 19 | 24 28 19

26 28 18 | 25 28 18 | 30 28 19 | 29 28 19 | 28 28 19 | 27 28 19 | 26 28 19 | 25 28 19

Legend

FLUCSDESC

- COMMERCIAL AND SERVICES
- COMMUNICATIONS
- CYPRESS
- DISTURBED LAND
- EMERGENT AQUATIC VEGETATION
- FRESHWATER MARSHES
- HARDWOOD CONIFER MIXED
- INDUSTRIAL
- INSTITUTIONAL
- INTERMITTENT PONDS
- LAKES
- LONGLEAF PINE - XERIC OAK
- OPEN LAND
- RECREATIONAL
- RESERVOIRS
- RESIDENTIAL HIGH DENSITY
- RESIDENTIAL LOW DENSITY < 2 DWELLING UNITS
- RESIDENTIAL MED DENSITY 2->5 DWELLING UNIT
- STREAM AND LAKE SWAMPS (BOTTOMLAND)
- TRANSPORTATION
- UTILITIES
- WET PRAIRIES
- WETLAND FORESTED MIXED

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Legend

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Notes:

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0 0.25 0.5 1 Miles

Figure 2-7: SWFWMD 1999 Land Use/Land Cover

Project: 61-0100.04

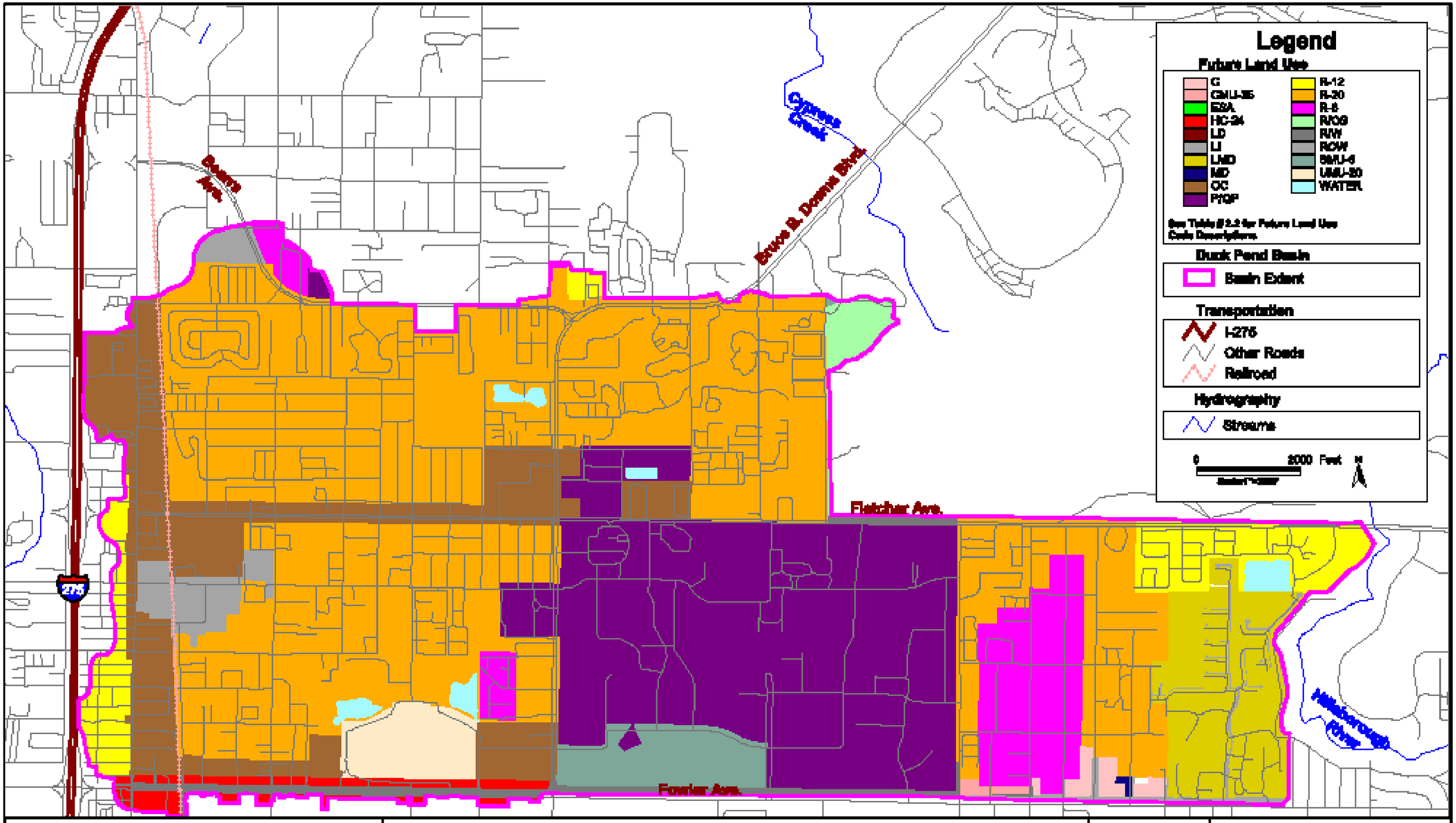
Watershed: Duck Pond Area

Hillsborough County:
WMP Update Program

Filename:	Map Date:	Map Prepared By:
Figure 2-7.mxd	Mar. 31, 2006	Ayres Associates

Date of Photography:

N/A



SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Duck Pond Area Watershed Management Plan Update

Future Land Use

(Source: Duck Pond Watershed Management Plan, URS Corporation Southern, January 2001)

Figure 2-8

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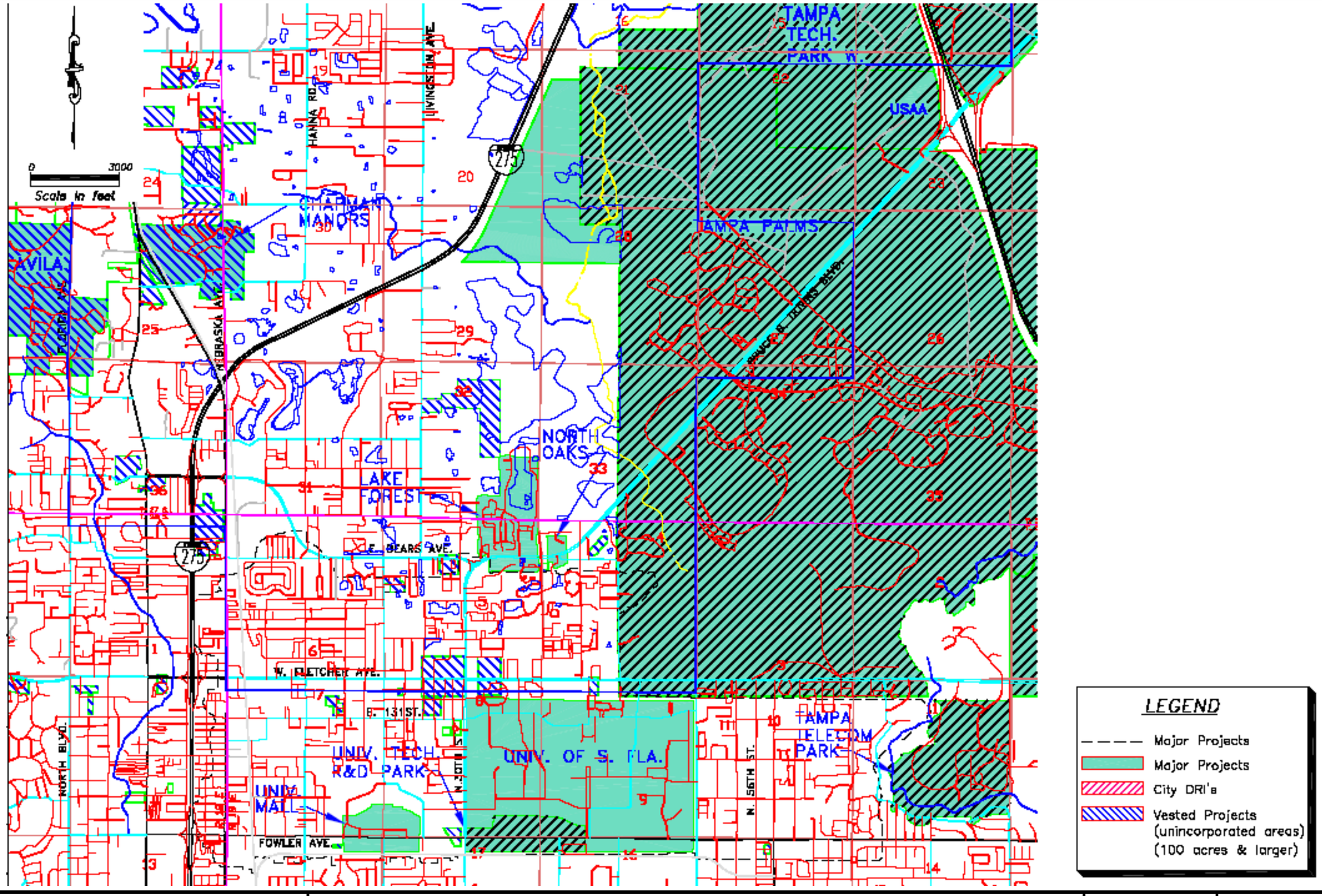

Duck Pond Area Watershed Management Plan Update

Major Projects, DRI's and Vested Projects

(Source: Duck Pond Watershed Management Plan, URS Corporation Southern, January 2001)

Figure 2-9

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CHAPTER 3 MAJOR CONVEYANCE SYSTEMS

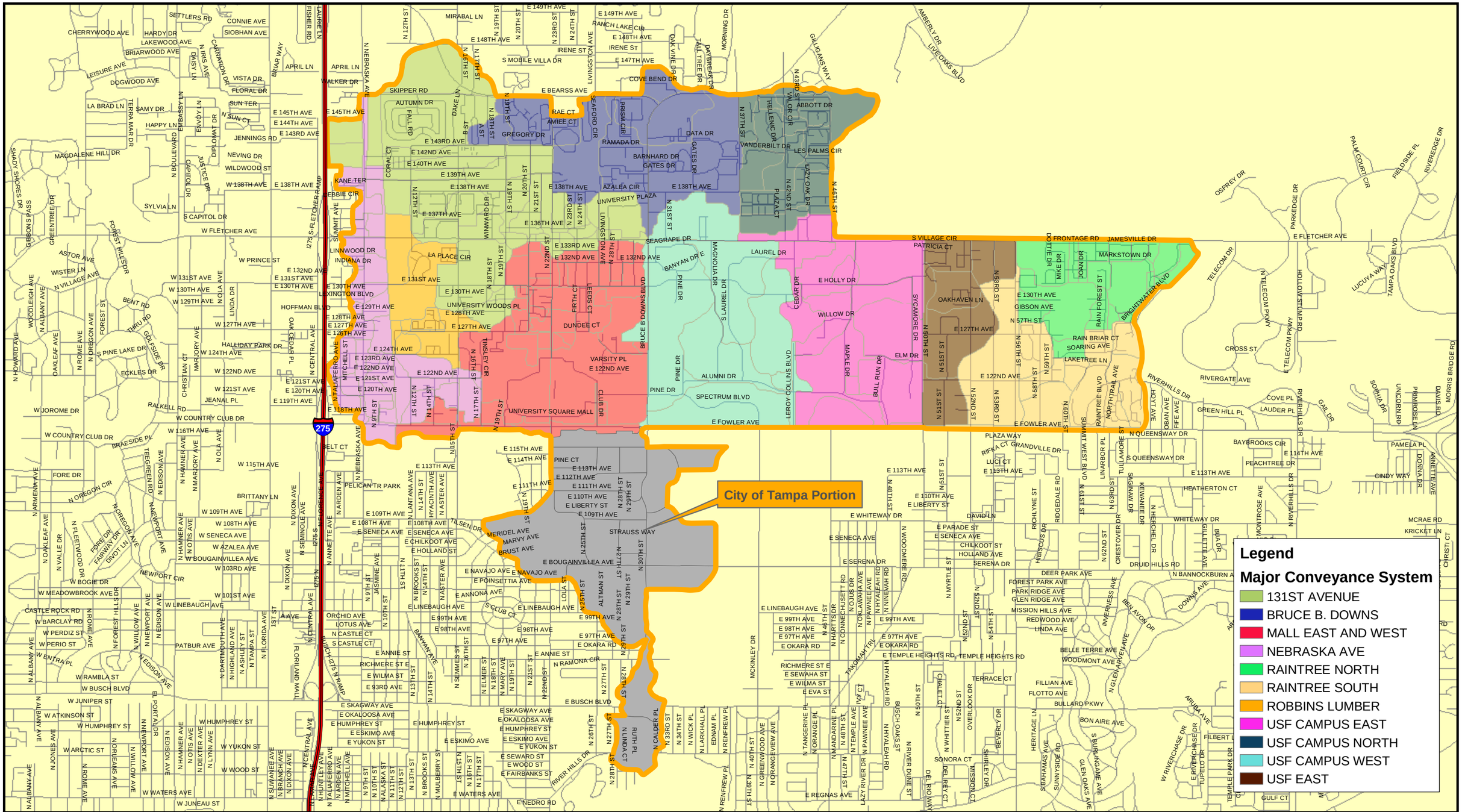
3.1 INTRODUCTION

This chapter contains a general description of the major conveyance systems in the Duck Pond Watershed (DPW). References to subbasin and junction IDs have been updated to reflect watershed-wide renumbering performed as part of this Watershed Management Plan Update. The existing condition system performance for the major conveyance systems is contained in Chapter 4.

The description of major conveyance systems in the DPW has been segmented into six major drainage areas as follows:

- Duck Pond
  - Nebraska Avenue
  - Robbins Lumber
  - 131st Avenue
  - Mall West/East
  - University of South Florida Campus West
- Bruce B. Downs
- USF North
- USF East
- University of South Florida Campus East
- Raintree
  - North
  - South

The dashed sub-systems are divisions or legs of the major drainage systems. **Figure 3-1** identifies locations of the six major drainage systems and sub-systems within the Duck Pond and Raintree systems, as well as other existing condition features within the DPW. **Figures 3-2a** through **3-2c**, located at the end of this Chapter, present the model connectivity for the Duck Pond conveyance systems.



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Legend

See above

Notes:

This area is used for general map note information such as map accuracy/standards, source information, elevation information, etc.

0 0.25 0.5 1 Miles

Figure 3-1: Major Conveyance System Map

Project: 61-0100.04

Watershed: Duck Pond Area

Hillsborough County:
WMP Update Program

Filename:	Map Date:	Map Prepared By:
Figure 3-1.mxd	Mar. 31, 2006	Ayres Associates

Date of Photography: N/A

3.2 DUCK POND SYSTEM

The Duck Pond major drainage area encompasses approximately 2,303 acres and includes the contributing subbasin areas of the Nebraska Avenue, Robbins Lumber, 131st Avenue, Mall West/East and University of South Florida Campus West Systems. The ultimate outfall for these systems is known as Duck Pond.

Originally Duck Pond was a large pond that was in the area of the existing University Square Mall, a regional mall located west of the USF campus. During the mall construction Duck Pond took on the more defined shape it has presently and is located northwest of the mall. Another pond was constructed for the surrounding development and is located northeast of the mall. For the purpose of this report, the pond northwest of the mall will be referred to as Duck Pond West, and the pond northeast of the mall will be referred to as Duck Pond East. Duck Pond West and East are interconnected by a 72-inch reinforced concrete pipe (RCP), which travels through the northern portion of the mall development. Duck Pond East outfalls southward through double 48-inch RCPs which drain to a 4-foot by 4-foot box culvert under Fowler Avenue. This culvert has a 54-inch RCP segment at the down stream end. The 4-foot by 4-foot box culvert and the 54-inch RCP are part of an FDOT drainage system. The 54-inch culvert discharges to a ditch on the south side of Fowler Avenue. Fowler Avenue is the boundary between Hillsborough County and the City of Tampa, with the City stormwater system beginning on the south (downstream) side of the Fowler Avenue cross drain.

3.2.1 Nebraska Avenue System

The major conveyance system that borders the west side of the DPW is called the Nebraska Avenue system. This system encompasses approximately 317 acres and drains all of Nebraska Avenue (U.S. 41) from Skipper Road to Fowler Avenue with adjacent drainage areas that lie between Interstate 275 and the CSX Railroad line. The storm sewer along Nebraska Avenue begins approximately 250 feet south of Skipper Road. The storm sewer drains, via 24" up to 36" RCP, to a pond located adjacent to the CSX Railroad and approximately 700 feet north of Fletcher Avenue. The pond is behind a business and the inlet and outlet of the pond runs through the same easement from Nebraska Avenue to the pond.

The storm sewer continues south, via 30" up to 66" RCP to 120th Avenue and turns east and discharges to a Hillsborough County maintained pond located at the southwest quadrant of 12th Street and 122nd Avenue. A portion of the Fowler Avenue drainage system also discharges to the same County pond after being treated in an FDOT maintained pond. The outlet from the Hillsborough County pond discharges east along 122nd Avenue within a storm sewer to Duck Pond West. The 122nd Avenue storm sewer also accepts runoff from areas adjacent to 122nd Avenue. Drainage from areas between 122nd Avenue and Fowler Avenue, and east of the CSX Railroad, travels overland to the 122nd Avenue storm sewer. The overland conveyance is inhibited due to low-lying areas between Fowler Avenue and 122nd Avenue.

3.2.2 Robbins Lumber System

The Robbins Lumber drainage basin encompasses approximately 151 acres. This basin contains the Robbins Lumber plant and storage facilities and is located between the CSX Railroad and Duck Pond West, south of Fletcher Avenue and north of 127th Avenue. Robbins Lumber has a National Pollutant Discharge Elimination System (NPDES) industrial permit for stormwater discharge. The Robbins Lumber site discharges to a swale along 127th Avenue, which flows eastward. The storm sewer travels through a parking lot of a private apartment complex located at the southwest quadrant of 15th Street and 127th Avenue. The storm sewer discharges to an open channel on the east side of 15th Street between 122nd and 127th Avenues. The open channel then meanders southeasterly through residential areas and is connected to Duck Pond West.

3.2.3 131st Avenue System

The 131st Avenue System encompasses approximately 691 acres and is the conveyance system that discharges a large drainage area north of Fletcher Avenue to a large regional County stormwater pond located at 131st Avenue and 15th Street. The pond is commonly referred to as the 131st Avenue pond. The regional pond discharges to Duck Pond West via an existing Concrete Box Culvert (CBC) storm drain outfall.

The existing 131st Avenue system begins north of the apex of Skipper Road and Bearss Avenue. Some drainage area north of the apex along 16th and 17th Streets discharge into two small stormwater ponds at said apex. The west pond at the apex appears to have been constructed for a commercial development just west of the pond. The other pond appears to have been constructed for the Bearss Avenue extension roadway project. These ponds, with other drainage area northeast of the apex, drain to a ditch that discharges southward to the intersection of 143rd Avenue and 15th Street. The ditch is approximately 1,400 feet long. A large mobile home park discharges directly to the south end of the ditch. The Mobile Home Park, formerly known as the Four Seasons Mobile Home Park, is privately maintained and has a stormwater management and conveyance system within it.

The ditch enters a closed storm drain conveyance system at the 143rd Avenue and 15th Street intersection. A new CBC storm drain system has been constructed beginning at the south end ditch along 15th Street to Fletcher Avenue, and on to the aforementioned 131st Avenue pond. The CBC storm drain system was included in the existing conditions model.

Most of the drainage area between the CSX Railroad and 15th Street, south of 143rd Avenue discharges via a swale and side drain conveyance system to 15th Street. Areas along the east side of 15th Street between 143rd Avenue and Fletcher Avenue also drain toward 15th Street. A majority of the properties in this area are residential homes or apartments. A proposed system of lateral storm sewers has been designed to replace and or augment the existing conveyance systems along 142nd, 140th, 139th and 137th Avenues and discharge to the CBC storm sewer along 15th Street. There is some existing storm sewer along 140th Avenue, which will be used within the proposed lateral. These proposed laterals will extend from 15th Street to 12th Street along 140th, 139th, and 138th Avenues. The lateral at 142nd extends to the west side of the CSX Railroad. The lateral on 137th

Avenue will extend to its intersection with Cecelia Street where an existing County pond is located northwest of the intersection.

There are two commercial developments located west of Nebraska Avenue that discharge to a storm drain west of the CSX Railroad on 142nd Avenue. The storm drain runs along the north side of a mobile home park. The two commercial developments contain a Suncoast Roofing Supply store and the Malibu Grand Prix mini car race track and amusement center. The stormwater runoff from the Malibu Grand Prix appears to discharge to the stormwater management system that serves the adjacent commercial development. The stormwater management system for the commercial development has an underground vault and pump station that discharges east across Nebraska Avenue to the storm drain system north of the mobile home park. This storm drain system north of the mobile home park reportedly floods often.

The Hillsborough County Parks and Recreation Maintenance facility has a stormwater pond that serves the facility. Stormwater management systems of other commercial areas south of the Maintenance facility drain to a swale south of the Maintenance facility pond. A swale along the east side of the CSX Railroad connects to the swale south of the Maintenance facility. The swale south of the Maintenance facility eventually discharges across 12th Street via a cross drain to a vacant lot that lies north of Fletcher Avenue. The vacant lot does not appear to have a readily available outfall.

In the area of the Hillsborough County Parks and Recreation Maintenance facility the swale along the east side of the CSX Railroad is also connected to a cross drain at Fletcher Avenue. The cross drain connects to a swale and blind drainage area in the southwest quadrant of Fletcher Avenue and the CSX Railroad intersection. The blind drainage area contains a construction supply facility and some of the Robbins Lumber storage area. Within this blind basin there is a pond approximately 500 feet south of the intersection of Fletcher Avenue and the CSX Railroad which does not appear to have an outfall.

The drainage area along 19th Street originates south of 143rd Avenue and flows south to Fletcher Avenue via a storm drain system. The 19th Avenue storm drain consists of swales, side drains, and some storm sewer that lies mostly along the west side of 19th Street. There are various sizes of side drains along 19th Street.

The 19th Street storm drain system accepts drainage from a large swale approximately 600 feet south of 143rd Avenue. The large swale connects to a low area according to Doug Beam, of the Hillsborough County West Service Unit, is referred to as Lake Navajo and is owned by Hillsborough County. Near the same location where the swale discharges to the 19th Street storm drain system is where a cross drain discharges runoff from drainage areas east of 19th Street. A large private pond is located approximately half way between 143rd Avenue and Fletcher Avenue on the east side of 19th Street. The pond discharges to the 19th Street storm drain system.

The drainage areas along 20th, 22nd, 23rd Streets and Livingston Avenue drain to those roadways but the existing conveyance systems are swale and side drain systems which do not function well. The

drainage eventually discharges to a closed storm drain system located along Fletcher Avenue. The Fletcher Avenue storm drain system travels from Bruce B. Downs Boulevard to east of 15th Street and discharges to the 131st Avenue pond. The 131st Avenue pond is approximately 16 acres in size.

The 131st Avenue pond accepts runoff from drainage areas adjacent to it via storm drain systems along with accepting flows from the 15th Avenue and Fletcher Avenue storm drainage systems. The 131st Avenue pond has a control structure with a broad crested weir and discharges into an existing CBC storm drain system. The existing CBC storm drain system accepts runoff from drainage areas along 19th Street and discharges south to Duck Pond West.

3.2.4 Mall West/East System

The Mall West/East System encompasses approximately 569 acres and is located at the south central portion of the DPW. The ultimate collection points in this system are Duck Pond West and Duck Pond East. A 72-inch equalizer pipe connects Duck Pond West with Duck Pond East. The portion of the system draining to Duck Pond West includes Fowler Avenue from Nebraska Avenue to the west entrance at the University Square Mall, approximately 60-percent of the University Square Mall, and residential and commercial areas north of the University Square Mall from 127th Avenue to Fletcher Avenue between 19th Street and Livingston Avenue. Fowler Avenue drains to a wet detention pond owned and maintained by the Florida Department of Transportation (FDOT). This pond is located adjacent to the Sports Authority parking lot and discharges to a ditch connected to Duck Pond West. The west side of the University Square Mall drains directly to Duck Pond through a closed storm sewer system. The residential and commercial properties north of the University Square Mall drain to a series of open and closed drainage systems along 20th and 22nd Streets. These drainage systems drain to double 48-inch pipes parallel to 127th Avenue. The double 48-inch pipes flow west to an open channel which drains south to Duck Pond. Additionally, Duck Pond West is the ultimate outfall for the Nebraska Avenue, 131st Avenue Pond, and Robbins Lumber Drainage Systems.

The portion of the system draining to Duck Pond East includes approximately 40-percent of the University Square Mall, the west side of the University of South Florida, and residential and commercial areas from Fowler Avenue to Fletcher Avenue between Bruce B. Downs Boulevard and Livingston Avenue. The east side of the University Square Mall drains directly to Duck Pond (East) through a closed storm sewer system. Storm water from the west side of the University of South Florida campus drains to Lake Behnke prior to discharging to an open channel which flows west to Duck Pond (East). This ditch also collects storm water from commercial and residential areas between Fowler Avenue and 127th Avenue. Detention ponds at the Veterans Administration Hospital outfall to a concrete lined ditch along 127th Avenue which also discharges to Duck Pond (East).

Duck Pond East is the last storage area in the Duck Pond System before it ultimately outfalls south to the City of Tampa. This final outfall begins on the south side of Duck Pond East where it is routed through various size pipes which discharge to the south side of Fowler Avenue into a City of Tampa closed channel system. It is then routed through a piped culvert under the CSX Railroad.

The flow is finally routed through various closed channels and ponds to the City of Tampa's pump station, which discharges, into the Hillsborough River via a 72-inch pipe.

3.2.5 University of South Florida Campus West

The University of South Florida (USF) Campus West system encompasses approximately 580 acres. Approximately 478 acres is within the DPW and drains west to Duck Pond East. The remaining 97 acres is outside of the DPW and drains south and leaves the USF Campus through a circular culvert under Fowler Avenue. The USF West system is generally bordered by Bruce B. Downs Boulevard to the west, North Palm Drive and Leroy Collins Boulevard to the east, Alumni Drive to the south, and Fletcher Avenue to the north; with the exception of two off-campus subbasins. One of the off-campus subbasins is north of Fletcher Avenue and the second off-campus subbasin is west of Bruce B. Downs Boulevard across Lake Behnke.

Elevations vary from approximately 65-feet at the center of the campus along the ridge line to 30-feet at Lake Behnke with a mild to moderate slope. Land uses include large impervious areas such as campus parking lots and buildings, large open green spaces, undeveloped wooded areas and Lake Behnke.

The majority of the USF Campus west system drains to two interconnected wet detention ponds recently permitted by the Southwest Florida Water Management District (SWFWMD). The first pond is 4 acres in area at the top of bank and is located east of Magnolia Drive. This pond discharges through a drop structure with two 42-inch RCP culverts to a 4-foot by 8-foot CBC under Magnolia Drive, which then discharges to the second interconnected pond. The second pond is 2.0 acres at the top of bank and is located west of Magnolia Drive. The second pond discharges directly to Lake Behnke through a drop structure with a 5-foot by 9-foot CBC. Drainage to Lake Behnke is through a series of stormwater conveyance piping systems and overland flow. The only portions of the USF Campus west system draining directly to Lake Behnke are located at the north west section of campus, the USF botanical gardens and the off-site area west of Bruce B.Downs Boulevard. Lake Behnke discharges to Duck Pond East through a drop structure with three 23-inch by 24-inch elliptical RCP culverts under Bruce B. Downs Boulevard.

3.3 BRUCE B. DOWNS SYSTEM

The Bruce B. Downs system encompasses approximately 442 acres and is located at the northern portion of the DPW. The system originates at a lake in the Pine Lake subdivision located south of Bearss Avenue and east of 19th Street. The lake drains east to a channel and low area at 142nd Street and 22nd Street. This channel flows east to Bruce B. Downs Boulevard. Runoff from several apartment complexes and commercial areas also drain to the channel. The channel crosses under Bruce B. Downs Boulevard and drains to a wetland area on the east side of Bruce B. Downs and Bearss Avenue intersection. Several residential and commercial complexes located north of University Hospital and east of Bruce B. Downs Boulevard also drain to the wetland area via gravity and pump station systems. This area then flows north under Bruce B. Downs Boulevard to a

channel in the Lake Forest subdivision. This channel flows north to a lake in Lake Forest and combines with the 149th Street outfall system. The system ultimately discharges to Cypress Creek.

3.4 USF NORTH SYSTEM

The USF North system encompasses approximately 262 acres and is located directly north of the USF campus. Approximately 225 acres is located between 37th Street and 46th Street north of Fletcher Avenue. The remaining 37 acres is on the USF Golf Course east of 46th Street. The USF North drainage area is bounded by commercial properties along Fletcher Avenue on its south side, 46th Street on the east, 37th Street on the west, and an extension of Skipper Road on its north side. The entire drainage area is almost entirely built out with residential complexes. There is a private residential complex in the northwest corner of this drainage area that is closed. There are two outfall locations for the USF North system.

The majority of the USF North area drains north within the 42nd Street right-of-way. The 42nd Street right-of-way contains a storm sewer and three force mains which run north, almost to Skipper Road, to a large main line system. The main line storm sewer turns east and travels through the Breckenridge residential area along Abbot Drive and discharges to an outfall ditch that borders a lake located on the north end of the USF Golf Course. The eventual outfall for the USF Golf Course is Cypress Creek.

A residential area located west of the USF Golf Course entrance road drains eastward to a low area on the west side of 46th Street. When the low area becomes full during the wet season it causes a traffic hazard. With enough runoff this low area will overtop 46th Street and drain easterly onto the USF Golf Course.

3.5 USF EAST SYSTEM

The USF East System encompasses approximately 215 acres and is located east of and adjacent to 50th Street. 50th Street runs along the east side of the USF campus, hence the USF East name. The other boundaries of USF East are Fowler Avenue on the south, Fletcher Avenue on the north, and generally 52nd Street on it's east side. Some drainage area between 52nd Street and 53rd Street drains west to the USF East system. The south end of the USF East System consists of a closed subbasin bounded by 50th Street, 52nd Street, 122nd Avenue and Fowler Avenue to the west, east, north and south, respectively. Commercial properties within this closed subbasin along Fowler Avenue drain to a retention pond with no outfall between 50th and 51st Streets. The remaining portion of this subbasin drains to a low area at the south end of 51st Street with no outfall.

Stormwater in the central and north end of the USF East System is collected in two closed storm sewer systems along 127th Avenue and 52nd Street, and roadside ditches along the east side of 50th Street and the south side of Fletcher Avenue. The storm sewer along 127th Avenue collects storm water from residential areas to the north and south of 127th Avenue. This storm sewer is equipped

with a pump station capable of discharging up to approximately 5.0 ft^3/s through a 10-inch force main to a FDOT borrow pit pond located at the north end of 52nd Street. The storm sewer along 52nd Street collects storm water from residential areas to the east and west of 52nd Street. This storm sewer drains by gravity to the FDOT borrow pit pond. The FDOT borrow pit pond has no outfall. Overflow from this pond discharges to a ditch draining to a wetland adjacent to Fletcher Avenue. The roadside ditches along 50th Street and Fletcher Avenue also drain to this wetland. This wetland drains north to Cypress Creek through a 48-inch culvert under Fletcher Avenue.

3.6 RAINTREE SYSTEM

The Raintree System borders the east side of the USF East drainage area, and is predominantly, though not completely, situated within the limits of the City of Temple Terrace. The Raintree system is bordered on the north by Fletcher Avenue, on the south by Fowler Avenue, on the east by the Hillsborough River, and on the west by 56th Street. Some drainage area on the west side of 56th Street and some south of Fowler Avenue are also included. For the purpose of this study, the Raintree drainage system has been divided into a North and South system as described below.

3.6.1 North System

Raintree North encompasses approximately 261 acres and is bordered on the north by Fletcher Avenue, on the south by Raintree Terrace Subdivision, on the east by the Hillsborough River, and on the west by 56th Street. The western area of Raintree North collects stormwater runoff in a wetland located west of Rain Forest Street by means of overland flow and culverts. The flow is routed east under Rain Forest Street to a pond located south of Carlton Arms Apartments. This pond south of Carlton Arms collects the remaining stormwater runoff from the eastern area of Raintree North where it is then routed to the Hillsborough River. The information on this system was taken from the report "Raintree Terrace / Raintree North Subdivision Drainage Improvements Preliminary Study", dated October 1999, and prepared by the Engineering Division at Hillsborough County.

3.6.2 South System

The Raintree south system encompasses approximately 580 acres. Approximately 348 acres is within the study area boundaries as depicted on **Figure 2-1**. An additional 232 acres south of Fowler Avenue is within the system. The area south of Fowler Avenue was considered an off-site area. The area was, however, considered when computing land use and natural systems within the study area and was included in the hydrologic and hydraulic modeling. Raintree South is bordered on the north by Raintree North, on the south by Fowler Avenue, on the east by the Hillsborough River, and on the west by 56th Street. Additional drainage area drains into the Raintree South system from west of 56th Street and south of Fowler Avenue via cross drains. Stormwater runoff is collected upstream on the west side of 56th Street and 122nd Street. It then crosses 56th Street from west to east on the south side of 122nd Street where it is channelled east through several lakes to Lake 3 east of Skylake Place. At this location additional stormwater runoff is combined in Lake 3

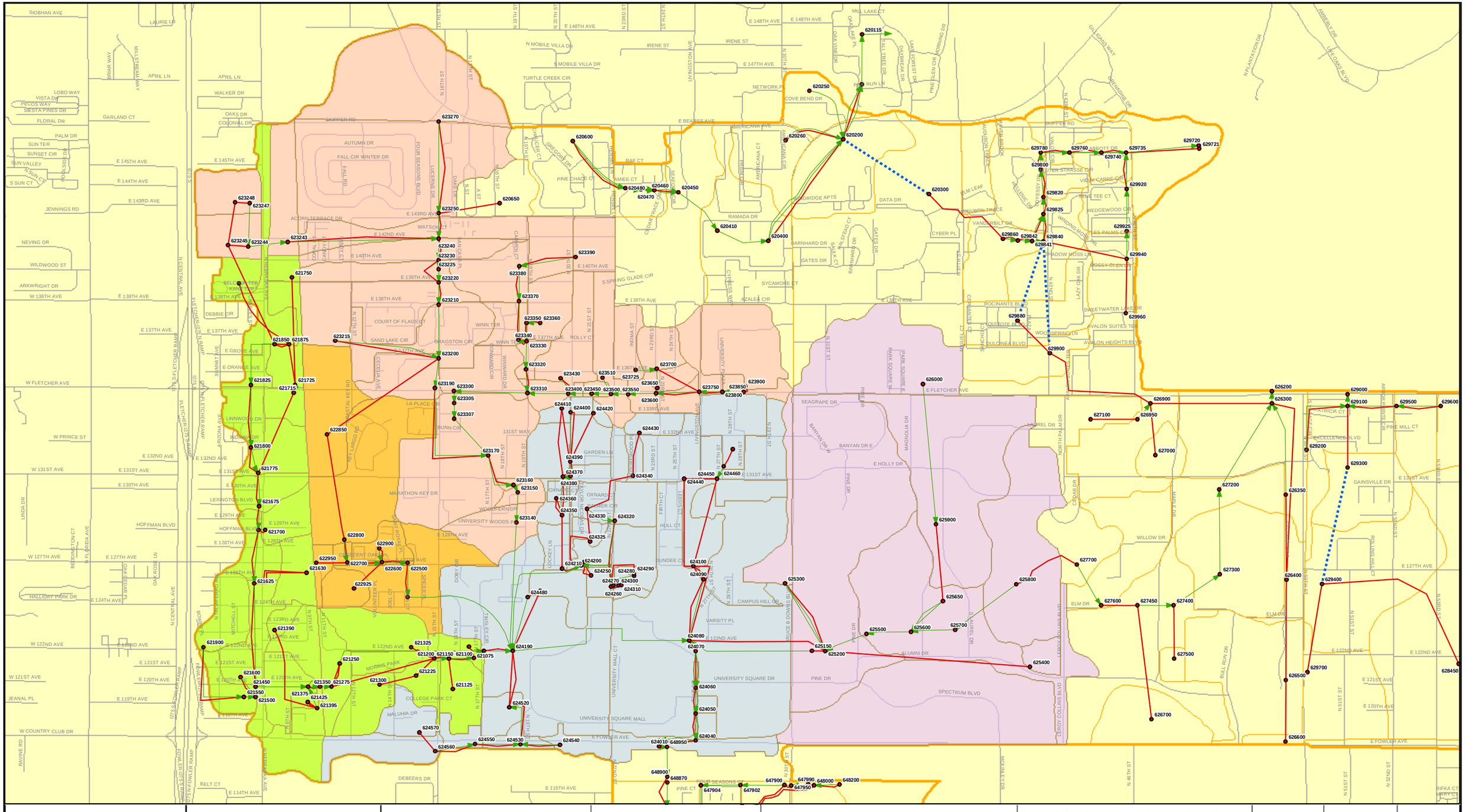
from runoff which originates south of Fowler Avenue. The combined stormwater runoff in Lake 3 then crosses Raintree Boulevard to Lake 2. Stormwater runoff from the north is combined with Lake 2 where it crosses under Brightwater Boulevard into the Hillsborough River. This information on this system was taken from the report "Raintree Drainage Area for USF Model", dated August 1999, and prepared by the Engineering Division at Hillsborough County.

3.7 UNIVERSITY OF SOUTH FLORIDA CAMPUS EAST

The University of South Florida (USF) Campus East system encompasses approximately 431 acres. This system is bordered by North Palm Drive and Leroy Collins Boulevard to the west, 50th Street to the east, Fowler Avenue to the south, and Fletcher Avenue to the north. An off-campus subbasin north of Fletcher Avenue also drains to this system.

Elevations vary from approximately 70-feet in the southeast corner of the basin, to 30-feet in the Buck Hammock wetland in the northeast corner of the USF campus. The slopes within the basin are considered mild to moderate. Land use includes large impervious areas such as campus parking lots and buildings, large open spaces and undeveloped woodland.

Runoff collection within this system is accomplished mainly through closed storm sewer systems and overland flow. The southeastern area of the system drains to a natural depression between Bull Run Drive and 50th Street. The larger central subbasin drains several adjacent subbasins, by overland flow and stormwater piping systems, to the outfall at the northeastern wetland which ultimately outfalls through a 42-inch RCP culvert under Fletcher Avenue to Buck Hammock and Cypress Creek.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FALL TREE DR
DAYBREAK DR
LAKE FOREST DR
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MORNING DR
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OVERMORE DR
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PELLENCE DR
ABBOTT DR
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WINDING MOSS DR
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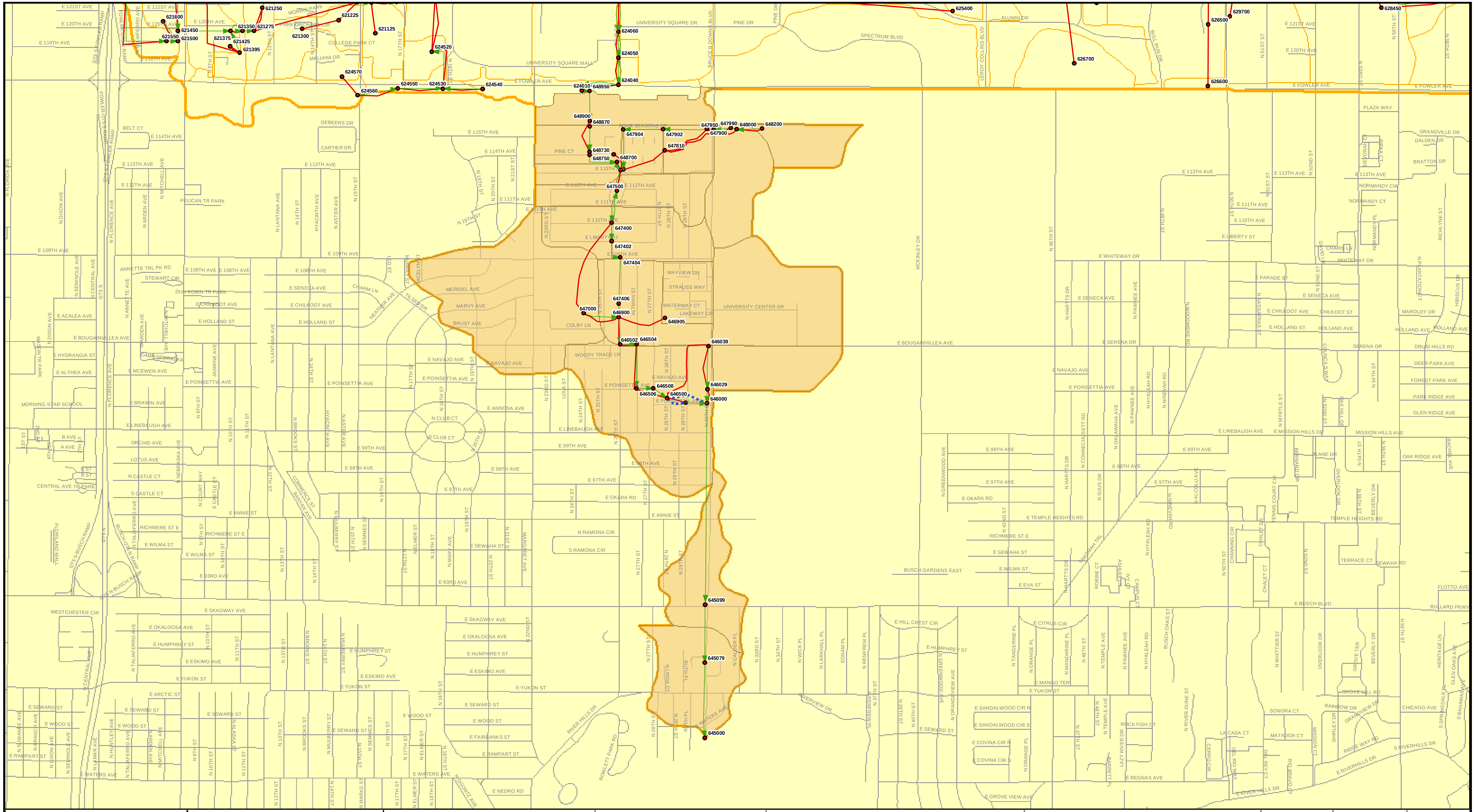

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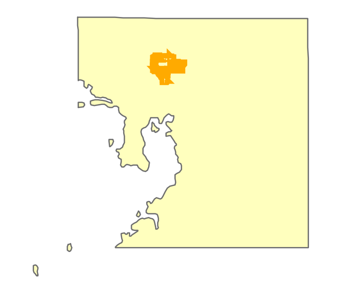


Legend

- ● Stormwater_Junctions
- ➤ Stormwater_Conduits
- — Stormwater_Weirs
- ··· Stormwater_Pumps
- ☐ Basin_Delineations
- ■ Duck Pond System (COT Portion)

Notes:

This area is used for general map note information such as map accuracy/standards, source information, elevation information, etc.

0 0.125 0.25 0.5
Miles

Figure 3-2b: Connectivity Map of Duck Pond System (City of Tampa Portion)

Project: 61-0100.04

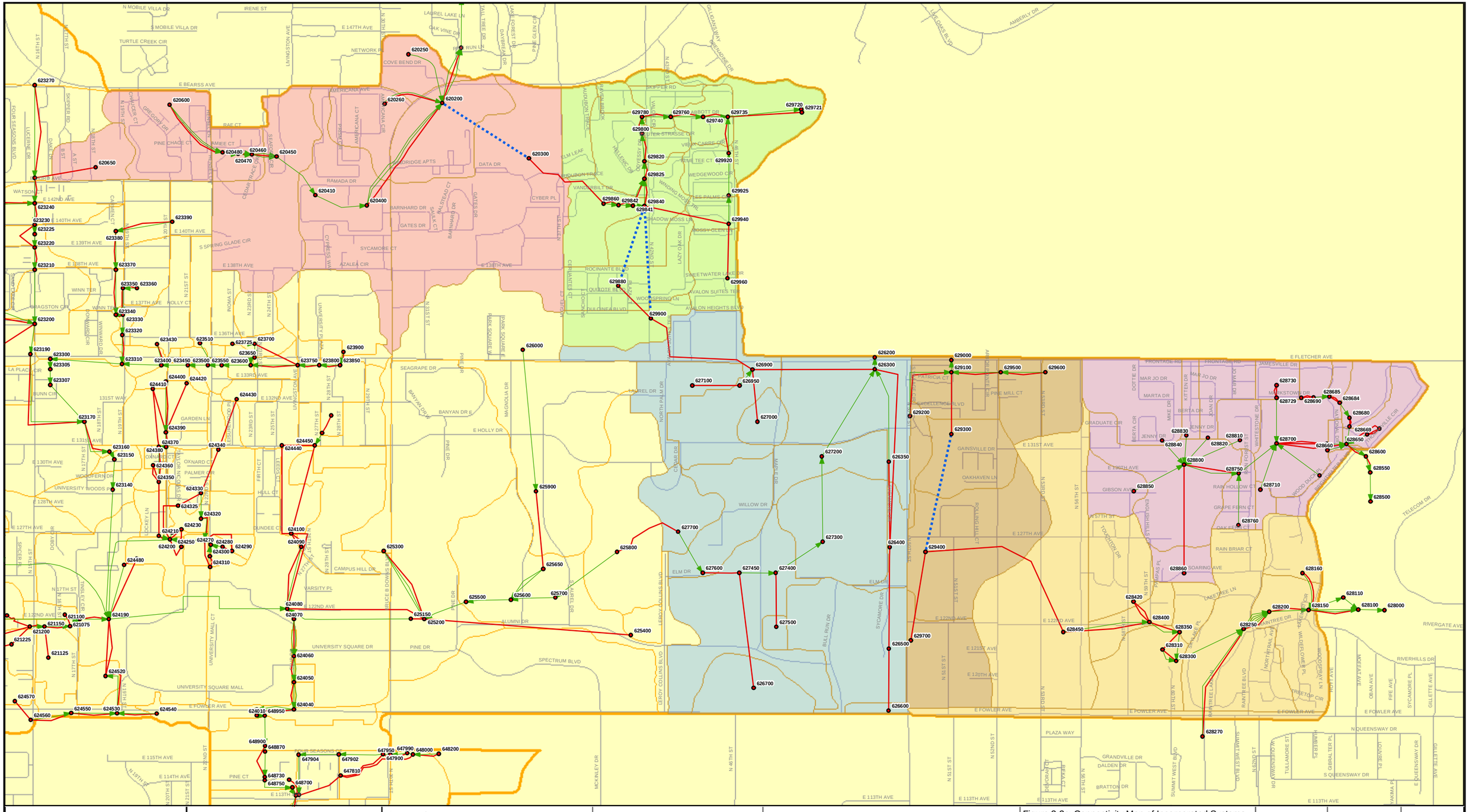
Watershed: Duck Pond Area

Hillsborough County: WMP Update Program

Filename:	Map Date:	Map Prepared By:
Figure 3-2b.mxd	Mar. 31, 2006	Ayres Associates

Date of Photography:

N/A


N MOBILE VILLA DR
IRENE ST
S MOBILE VILLA DR
E 147TH AVE
TURTLE CREEK CIR
LAUREL LAKE LN
OAK VINE DR
TAIL TREE DR
LAKE FOREST DR
DAINTREAN DR
PINE GLEN CIR
NETWORK PL
COVE BEND DR
RUN LN
620250
620200
620260
AMERICANA AVE
AMERICANA CT
AMERICANA CIR
623270
E BEARSS AVE
620600
RAE CT
AMEE CT
620480
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620450
620470
620650
PINE CHASE CT
RAMADA DR
620410
620400
620300
DATA DR
CYBER PL
BARNHARD DR
GATES DR
SALK CT
WALSTEAD CT
SYCAMORE CT
AZALEA CIR
E 138TH AVE
S SPRING GLADE CIR
WATSON CT
E 142ND AVE
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626000
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BANYAN DR E
E HOLLY DR
LA PLACE CIR
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BUNN CIR
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CAMPUS HILL DR
VARSITY PL
E 122ND AVE
ALUMNI DR
UNIVERSITY SQUARE DR
UNIVERSITY SQUARE MALL
SPECTRUM BLVD
PINE DR
MAGNOLIA DR
WILLOW DR
ELM DR
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SKIPPER RD
ABBOTT DR
OUTER STRASSE DR
VIEUX CARRE DR
FIVE TEE CT
WEDGEWOOD CIR
LES PALMES CT
WINDING MOSS TRL
SHADOW MOSS LN
MOSSY GLEN CT
SWEETWATER LAKE DR
AVALON SUITES TER
AVALON HEIGHTS BLVD
WOODSPRING LN
ROCINANTE BLVD
QUIXOTE BLVD
DULCINEA BLVD
AMBERLY DR
LAKE OAKS BLVD
GULLEGANS WAY
GREENMONE DR
E FLETCHER AVE
FRONTAGE RD
JAMESVILLE DR
MARK TWAIN CIR
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RAIN BRIAR CT
RAIN HOLLOW CT
GRAPE FERN CT
OAK FERN CT
GIBSON AVE
SOARING AVE
LAKETREE LN
RAINTREE CIR
RAINTREE BLVD
RIVERGATE AVE
RIVERHILLS DR
TELECOM DR
E FOWLER AVE
PLAZA WAY
GRANDVILLE DR
DALDEN DR
BRATTON DR
N QUEENSWAY DR
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CHAPTER 4 MODEL METHODOLOGY

Several analysis techniques were used to develop the DPW existing condition models. The Duck Pond WMP Update has employed techniques consistent with the previous study and with current Hillsborough County Stormwater Management Technical Guidelines. This chapter provides a general description of those methods and approaches.

4.1 GENERAL METHODOLOGY AND DATABASE DEVELOPMENT

The U.S.D.A. Natural Resources Conservation Service (NRCS) Runoff Curve Number (CN) method was used to generate runoff hydrographs from rainfall data and watershed parameters. This method estimates expected storm water runoff on the basis of soil and land cover characteristics. Runoff hydrographs were developed using the NRCS Dimensionless Unit Hydrograph method. A modification of the HEC-1 computer program (U.S. Army Corps of Engineers) was used to generate runoff hydrographs. This module is a part of the Hillsborough County modified SWMM software, HCSWMM, and replaces the EPA SWMM RUNOFF Block for simulation of runoff hydrographs.

Inflow hydrographs were generated at subbasin loading nodes. Discharges were routed through the system using Hillsborough County's HCSWMM program, which incorporates the EXTRAN Block of the EPA Storm Water Management Model v. 4.31 (SWMM) for hydrodynamic channel routing model. Specific County modifications are described in Section 4.3.

No changes were made to tailwater conditions for this model update, beyond the vertical datum adjustments from NGVD 1929 to NAVD 1988. The source of tailwater information for the portion of the DPW that discharges to Cypress Creek was taken from the *Cypress Creek Stormwater Management Master Plan (December 2000)*. Tailwater conditions for the Duck Pond system's outfall at Fowler Avenue was simulated by appending the previous County model with the City of Tampa Duck Pond HCSWMM model. The City of Tampa Duck Pond Area model encompasses approximately 610 acres (roughly 1 square mile) of the City directly south of the DPW and extends to the ultimate outfall at the Hillsborough River Dam.

4.2 HYDROLOGY

The U.S. Army Corps of Engineers hydrologic computer model HEC-1 was modified to account for the relatively flat terrain of Hillsborough County. The modifications included altering the "shape factor" and the corresponding dimensionless unit hydrograph ordinates. The Hillsborough County Storm Water Management Technical Manual indicates that a value of 256 with a corresponding dimensionless unit hydrograph is appropriate for the County. Therefore the program was modified

to use the "256" shape factor and the recommended dimensionless unit hydrograph.

An initial abstraction coefficient of 0.2 was used throughout the study area. Initial abstraction is computed by HEC-1 as the initial abstraction coefficient multiplied by the soil storage depth. The soil storage depth(s) is computed from the runoff curve number (CN) by HEC-1 on the basis of the NRCS methodology.

Rainfall depths were estimated from isohyetal maps shown in the Southwest Florida Water Management District's (SWFWMD) Environmental Resource Permitting (ERP) Information Manual. The rainfall depths for the 1-Day (24 hours) storm events used in the model simulation are as follows:

STORM EVENT	24-HOUR DEPTH (in.)
Mean Annual	4.50
5-year	5.50
10-year	7.00
25-year	8.00
50-year	10.5
100-year	11.5

The design storm rainfall distribution used was the NRCS 24-Hour Type II Florida Modified as required by SWFWMD and Hillsborough County.

4.2.1 Soil Data

SWFWMD GIS soil coverage was used to obtain soil information for the USF area watershed. The SWFWMD coverage was developed from data in the SCS *Soil Survey of Hillsborough County, Florida*, 1989. Each soil polygon in the GIS coverage is associated with attributes that designate it's soil identification numbers and hydrologic soil group (HSG). Hydrologic soil groups in the DPW consist of four designations - A, C, D, B/D, and Water. The HSG A soils have a high infiltration rate and low runoff potential. HSG C soils have slow infiltration rates and may contain a layer of fine texture soil which impedes the downward movement of water. HSG D soils include poorly-drained, very silty/clayey/organic soils or soils with high groundwater tables. The dual hydrologic classification (B/D) includes soils which have a seasonal high water table but can be drained; the first hydrologic soil group designates the drained condition and the second hydrologic soil group designates the undrained condition of the soil. **Figure 2-3** shows the hydrologic soil groups used in the analysis. It is based on the SWFWMD GIS soil coverage.

4.2.2 Land Use

The previous study utilized 1995 GIS Land Use coverages to derive subbasin runoff characteristics. The 1999 SWFWMD GIS Land Use coverage was used as a base for this model update (refer to **Figure 2-7**). Each land use polygon in the GIS coverage is associated with an attribute that designates a classification from the Florida Land Use Classification System (FLUCCS). In addition, the 2004 aerials and ERP data were evaluated and land use codes manually edited where justified, to better define the existing conditions. **Figure 4-1** denotes polygons in the DPW where 1999 FLUCCS codes were modified to improve the hydrologic characterization for this study.

As impervious area increases, runoff usually increases. However, SWFWMD has been regulating quantity of storm water runoff since 1985. The objective of regulation has been to prevent peak runoff rates under developed conditions from exceeding peak runoff rates associated with predevelopment conditions.

4.2.3 Runoff Curve Numbers

The NRCS Runoff Curve Number method was used to compute rainfall excess values. Runoff Curve number calculations were based on a GIS intersection of the SWFWMD land use coverage with the SWFWMD hydrologic soil coverage and with the DPW subbasin map. The resulting GIS polygons are associated with attributes of a hydrologic soil group and a FLUCCS code as represented in the SWFWMD GIS coverages. The polygons were then assigned a CN value based on these attributes using a database lookup table. **Table 4.1** shows the database lookup table that was used to associate each combination of FLUCCS code with a HSG for the purpose of computing runoff numbers (CN). An area weighted CN value was then computed for each subbasin using the polygons within the subbasin boundary.

4.2.4 Time-of-Concentration

Updated time-of-concentration estimates were developed for modified subbasins by adding the travel time for each appropriate flow path segment. Modifications to subbasin delineations are presented in **Figure 4-2**. The methods used for calculating travel times are based on that shown in the Hillsborough County Stormwater Technical Manual, and are summarized as follows:

Overland Flow:	Kinematic Wave Equation
Shallow Concentrated Paved:	NRCS equations relating velocity to watercourse slope
Shallow Concentrated UnPaved:	NRCS equations relating velocity to watercourse slope
Channel Flow:	Assumed velocity 2 ft/sec
Pipe Flow:	Assumed velocity 3 ft/sec

4.3 HYDRAULICS

The HCSWMM model, a modification of the U.S. EPA SWMM 4.31 model, was used to compute water surface elevations and discharges at conduits and junctions shown on the reach/junction connectivity diagram (see **Figures 3-2a, 3-2b and 3-2c**). The SWMM EXTRAN block is the basis for hydraulic routing. The most significant modifications of the HCSWMM software include directly integrating the NRCS unit hydrograph method to generate runoff hydrographs, and adding entrance and exit headloss coefficient fields, and a conduit stretch factor.

Other minor changes included the increase of dimensions of a number of key parameters, enhancements to the inputs and the outputs and error trapping. Input enhancements included a provision for specifying reach numbers for orifices and weirs and another for using elevations rather than depths above invert for starting water surface, stage-storage areas, and weir data. Several output enhancements have been provided including a provision for printing a summary file showing computed peak discharge values and computed peak water surface elevations.

Elliptical and arch pipes are included in the County's current version of HCSWMM. Natural channels are represented as conduits with irregular cross section data. The cross section data is input as ground shots (elevations, and stations across the channel) in a format similar to that of HEC-2 (U.S. Army Corps of Engineers) cross section data. EXTRAN uses the cross section data only to obtain the shape geometry. It uses invert elevations input on the conduit records to determine the channel slope. Therefore, a natural channel is treated as a prismatic conduit with an irregular shape.

TABLE 4.1 Runoff Curve Number (CN) Lookup Table

FLUCSID	A	B	C	D	B/D	W	Description
1100	50	68	79	84	81.5	100	Residential, low density
1200	57	72	81	86	83.5	100	Residential, medium density
1300	77	85	90	92	91	100	Residential, high density
1400	89	92	94	95	94.5	100	Commercial and services
1500	81	88	91	93	92	100	Industrial
1600	77	86	91	94	92.5	100	Extractive
1700	69	81	87	90	88.5	100	Institutional
1800	49	69	79	84	81.5	100	Recreational
1900	39	61	74	80	77	100	Open land (Urban)
2100	49	69	79	84	81.5	100	Cropland and pastureland
2140	49	69	79	84	81.5	100	Cropland and pastureland
2200	44	65	77	82	79.5	100	Tree crops
2300	73	83	89	92	90.5	100	Feeding operations
2400	57	73	82	86	84	100	Nurseries and vineyards
2500	59	74	82	86	84	100	Specialty farms
2550	59	74	82	86	84	100	Aquaculture
2600	30	58	71	78	74.5	100	Other open land (Rural)
3100	63	71	81	89	85	100	Rangeland
3200	35	56	70	77	73.5	100	Shrub and brushland
3300	49	69	79	84	81.5	100	Mixed rangeland
4100	45	66	77	83	80	100	Upland coniferous forests
4110	57	73	82	86	84	100	Upland coniferous forests
4120	43	65	76	82	79	100	Upland coniferous forests
4200	36	60	73	79	76	100	Upland hardwood forests
4340	36	60	73	79	76	100	Mixed coniferous/hardwood
4400	36	60	73	79	76	100	Tree plantations
5100	100	100	100	100	100	100	Streams and waterways
5200	100	100	100	100	100	100	Lakes
5300	100	100	100	100	100	100	Reservoirs
5400	100	100	100	100	100	100	Bays and estuaries
6100	98	98	98	98	98	98	Wetland hardwood forests
6110	98	98	98	98	98	98	Bay swamps
6120	98	98	98	98	98	98	Mangrove swamps
6150	98	98	98	98	98	98	Stream and lake swamps
6200	98	98	98	98	98	98	Wetland coniferous forests
6210	98	98	98	98	98	98	Cypress
6300	98	98	98	98	98	98	Wetland forestedmixed
6400	98	98	98	98	98	98	Vegetated non-forested wetlands
6410	98	98	98	98	98	98	Freshwater marshes
6420	98	98	98	98	98	98	Saltwater marshes
6430	98	98	98	98	98	98	Saltwater marshes
6440	98	98	98	98	98	98	Emergent aquatic vegetation
6500	98	98	98	98	98	98	Non-vegetated
6510	98	98	98	98	98	98	Tidal flats
6520	98	98	98	98	98	98	Tidal flats
6530	98	98	98	98	98	98	Intermittent ponds
7100	77	86	91	94	92.5	100	Beaches
7400	77	86	91	94	92.5	100	Disturbed land
8100	81	88	91	93	92	100	Transportation
8200	81	88	91	93	92	100	Communications
8300	81	88	91	93	92	100	Utilities

4.4 BOUNDARY CONDITIONS

Tailwater information for the portion of the DPW that discharges to Cypress Creek was taken from the *Cypress Creek Stormwater Management Master Plan (December 2000)*, which was used for the previous modeling effort. Tailwater information for the Duck Pond system's outfall at Fowler Avenue was obtained by appending the City of Tampa SWMM model to the County model and routing the system to its ultimate discharge at the Hillsborough River Dam. The City of Tampa portion encompasses approximately 610 acres (0.95 square miles) of the City directly south of the DPW.

4.5 INITIAL CONDITIONS

Initial conditions defined in the 2001 models were generally left unaltered, with the exception of adjusting for the revised vertical datum. Where new structures were being added to the model, or where the defined initial conditions were noted to be incompatible with starting elevations at adjacent nodes or boundary conditions, adjustments have been made. The following general methods appear to be consistently applied for initial junction elevations for both the 2001 and 2006 design event models.

Natural Lakes, Wetlands and Stormwater Management Storage Areas – Initial stages generally correspond to defined seasonal high water table elevations (or estimates thereof) using ERP data, NRCS Soil Survey documents or vegetative indicators. Where control structures (weirs) are present, the starting elevation begins at the weir crest elevation. Water quality orifices or notched weirs are ignored, as the water quality volume is assumed to be filled at design event onset.

Piped Systems – Initial stages mimic dry pipe conditions and are set using the lowest connecting pipe elevation. Noted exceptions are (1) pipe systems directly connected to boundary conditions with initial stages above the pipe invert, and (2) pipe systems directly connected to surface waters whose initial stages are above the pipe invert. In these cases, the controlling water surface elevation is defined as the initial junction stage for all upstream junctions, up to the first junction whose low pipe invert is above the controlling water surface.

4.6 OVERFLOW WEIRS

At most roadway crossings, weirs were used to simulate the overtopping of the road. Broad crested weirs were also used to simulate overland flow connections. In some cases, overland flow weirs were used to convey overbank flow. Modeling of the overbank flow was performed as a flow re-entering the channel at a downstream junction point. Overtopping elevations have been evaluated and adjusted where necessary using the latest available topographic data as part of the watershed model update. Weir coefficients for roadway overtopping have generally been assigned a value of

2.0, and overland/inter-subbasin exchange weirs have generally been assigned a value of 1.0. Structural weirs (stormwater management control structures) have been assigned weir coefficients consistent with their specific design configuration.

4.7 ROUGHNESS COEFFICIENTS

Manning coefficients for channel sections were taken from several sources in the previous model and were not modified during the update. Higher roughness values sometimes result in smaller computed discharge values in downstream locations and larger computed water surface elevations in upstream locations. Pipe lengths and roughness values were adjusted to achieve numerical stability. This procedure is explained in the SWMM User's Manual Version 4; Extran Addendum, February 1989.

An additional enhancement of the County modified SWMM model is the inclusion of a stretch factor. This factor provides a method of determining equivalent pipes using the following formula:

$$n_e = n_p L_p^{1/2} \ / \ L_e^{1/2}$$

where;

n_e	=	Manning roughness of equivalent pipe
L_e	=	Computed equivalent length
n_p	=	Actual Manning roughness of the pipe
L_p	=	Actual length of the pipe

Additional storage was added at some junctions. This was done to achieve numerical stability at these junctions.

4.8 NUMERICAL INSTABILITY

The EXTRAN model is based on an explicit solution algorithm used to solve the St. Venant equations that describe unsteady flow in channels. Explicit solution algorithms are subject to numerical instability caused by accumulated round-off error. It is difficult to predict the conditions that cause numerical instability; however, short conduit lengths (less than 100 feet), steep bottom slopes for conduits, and low storage at nodes are frequently associated with numerical instability. Achieving numerical stability requires numerous adjustments to the model input data. Such adjustments include the use of equivalent pipes with longer lengths and lower roughness than the actual pipe dimensions, and the addition of storage at the junctions.

4.9 DATA SOURCES

4.9.1 2001 Model

Request for field surveys were thoroughly reviewed by the County Project Manager and locations were finalized for the USF Area Phase I Study. Hillsborough County supplied the field survey information.

Many old design plans, miscellaneous drawings and permit information were obtained from Hillsborough County and SWFWMD.

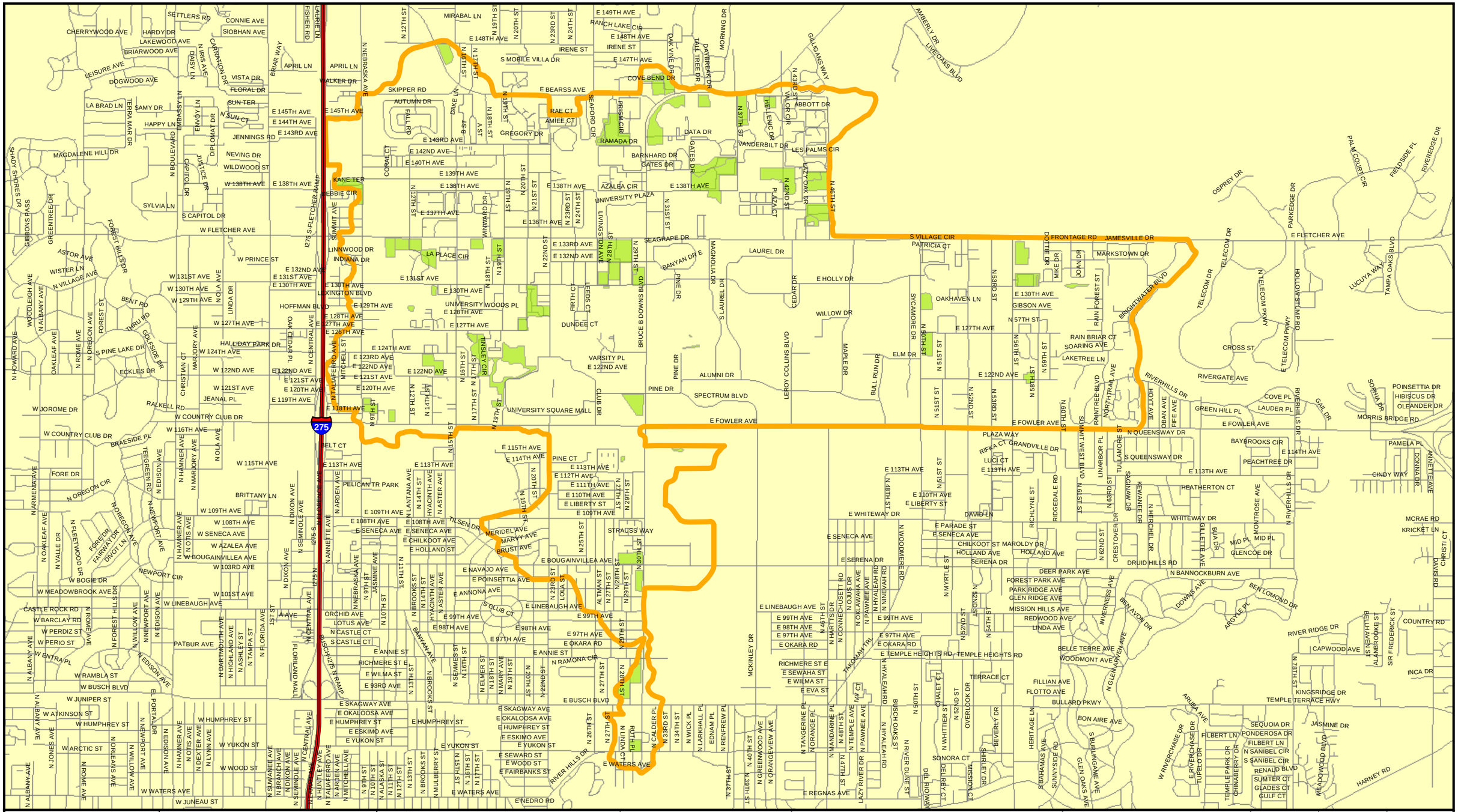
Many elevations were taken from SWFWMD aerial topographic maps. The SWFWMD aerials are of 1"=200' scale and show one foot interval contours. Elevations taken from the maps include, but are not limited to, the top of roads, stage/area data for ponds or lakes, wetlands and other storage areas, inverts of channels, control elevations for overland flow evaluation and site and road elevations for level-of-service determinations.

4.9.2 2006 Model Update

All model input files underwent vertical datum conversion from NGVD 1929 to NAVD 1988; and the formerly independent Duck Pond, City of Tampa Duck Pond, USF North, USF East, Raintree North and Raintree South model sets were combined into a single watershed model using the final model input files from the 2001 studies. Watershed-wide renumbering of subbasins, nodes and reaches was performed to prevent duplication of IDs and to conform to current Hillsborough County watershed numbering systems.

Hillsborough County supplied 2002 topographic data (1-foot digital contours) throughout the study area and digital aerial images from 2004. Land use data in the form of SWFWMD FLUCCS (1999) were also obtained. The FLUCCS codes were revised using aerial interpretation where justified, to better define the associated CN. These sources were used to verify and refine subbasin delineations, curve numbers and times-of-concentration in hydrologic input files, concentrating on the outer subbasins where the primary basin boundaries have been reconciled with adjacent watersheds. Additionally, significant storage areas were updated using the latest contour data and roadway or subbasin overtopping elevations were adjusted, as needed.

Design plans, County survey data, miscellaneous drawings and permit information were obtained from Hillsborough County and SWFWMD through October 2005. Most were local in nature and did not signify model revisions. Although ERPs, topography and aerials affected changes to subbasin hydrology, no hydraulic system revisions were necessitated.



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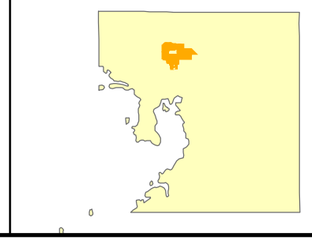


Legend

- Duck Pond Area
- Land Use Updated Areas

Notes:

This area is used for general map note information such as map accuracy/standards, source information, elevation information, etc.

Figure 4-1: Amended Land Use for 2006 Update

Project: 61-0100.04

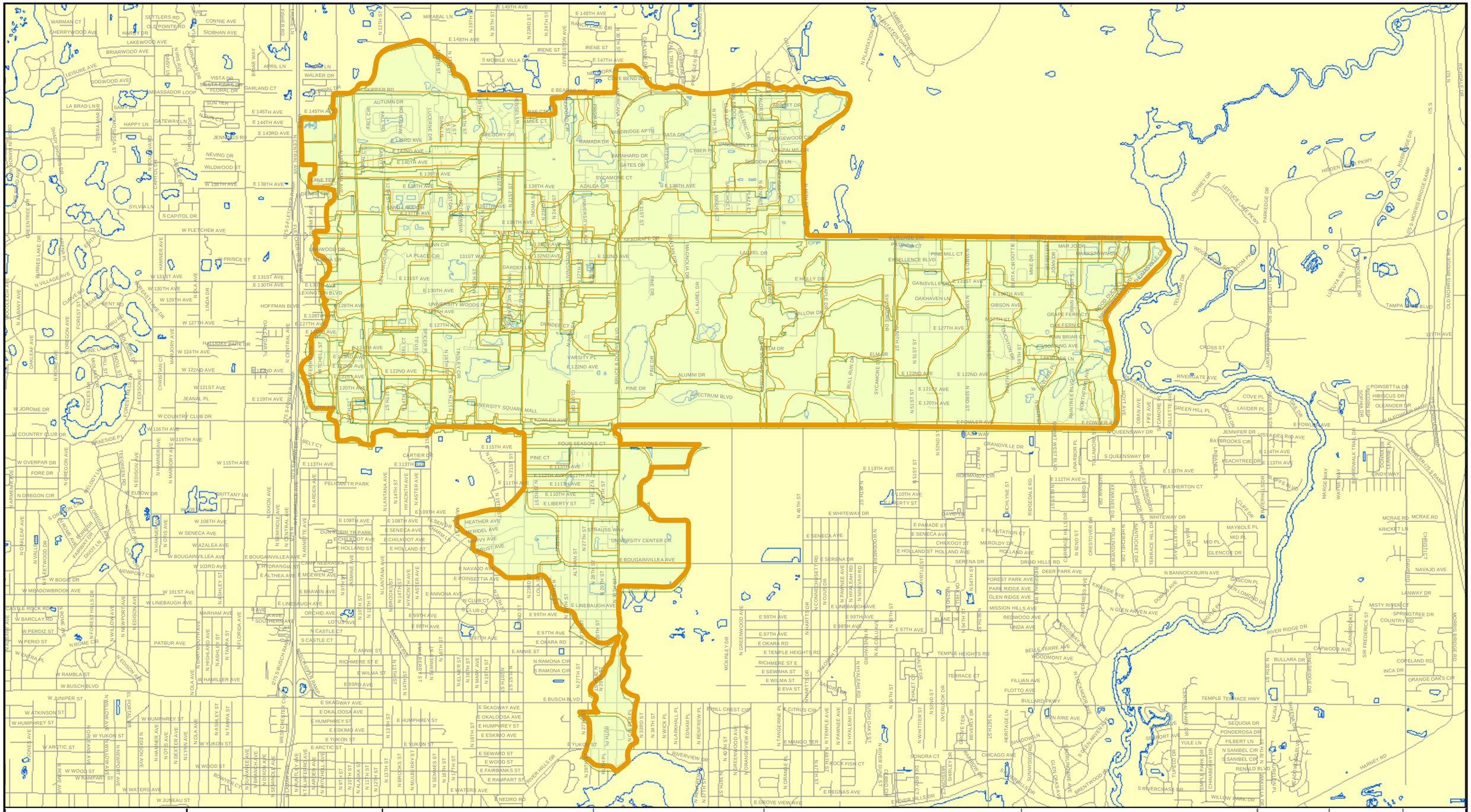
Watershed: Duck Pond Area

Hillsborough County:
WMP Update Program

Filename:	Map Date:	Map Prepared By:
Figure 4-1.mxd	Mar. 31, 2006	Ayres Associates

Date of Photography:

N/A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SETTLERS RD
OLD POINTE RD
CONNIE AVE
SIOBHAN AVE
HARDY DR
LAKEWOOD AVE
BRIARWOOD AVE
LEISURE AVE
DOGWOOD AVE
AMBASSADOR LOOP
VISTA DR
SIESTA PINES DR
FLORAL DR
GARLAND CT
LA BRAD LN DR
SUN TER
SUN CT
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HAPPY LN
GATEWAY LN DR
JENNINGS RD
NEVING DR
WILDWOOD ST
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CHAPTER 5 CALIBRATION AND VERIFICATION

This watershed model update did not include formal re-calibration or verification of the model although flood complaints for the Hurricane Frances event of 2004 were compared to simulated flood problem areas for the 25-year, 24-hour design event. Correlation between reported flooding during Hurricane Frances and simulated flooding for the 25-year, 24-hour design storm event was very good. Reported flooding along 15th Street North, between 122nd Avenue and Fowler Avenue; and flooding at Fowler Avenue at the University Square Mall entrance was also simulated for the 25-year, 24-hour event. Reported flooding on 15th Street North near 127th Avenue was shown to be minor for the 25-year, 24-hour design event. Additionally, reported flooding on 22nd Avenue north of the University Square Mall was confirmed in the 25-year, 24-hour design event. Reported site flooding in subbasin 629960 is simulated for the 25-year, 24-hour design event. Reported flooding on 56th Street North could not be confirmed by the design simulation, as complaint locations were located north of the modeled conveyances and may have been due to exceedance of roadside swale capacity. The remaining flood complaint locations are either interior stormwater systems not included in the model or in areas without formal drainage.

The last calibration and verification results performed for the watershed are presented in the following sections. The calibration process includes simulating a measured event by first adjusting the hydrologic input parameters according to the measured rainfall depth and distribution and then comparing computed water surface elevations and flows to the measured values. The hydrodynamic model is then adjusted so that computed and measured values more closely match.

The model is considered well calibrated when the results of stage, flow, and volume are in reasonable agreement with the recorded data at the established gauge stations. The model is then adjusted with specific parameters and verified with another storm event's data.

5.1 BOUNDARY CONDITIONS

As described in Chapter 3, the Duck Pond Watershed project area is comprised of five major conveyance systems, each with their own outfalls. The Duck Pond system flows southwards through the City of Tampa to Lake Poinsettia before being pumped to a trunk line that discharges to the Hillsborough River just upstream of the Tampa Dam. As this system was modeled in combination with an existing SWMM model from the City of Tampa, that model's free-fall outfall boundary condition was used. The boundary conditions used for the Bruce B. Downs system were obtained from the results of the Cypress Creek Stormwater Management Plan previously prepared for Hillsborough County. The USF North, USF East, Raintree North, and Raintree South models' boundary conditions were taken from preliminary reports for each of these areas, respectively.

5.2 DATA COLLECTION

There is no historical rainfall, stage, or flow data available within the overall Duck Pond Watershed. At the onset of this project, a stage recorder was placed in Duck Pond East in an attempt to capture this system's response to a significant rainfall event. While the Bruce B. Downs system is considered calibrated based on the Cypress Creek Stormwater Master Plan, the other conveyance systems mentioned above have no calibration data.

Only one storm event of a magnitude acceptable for use in calibrating the Duck Pond system has occurred since the stage recorder's deployment. This relatively small rainfall event occurred over September 16-17, 2000 during a tropical storm. Rainfall records were collected from three gauges in or near the Duck Pond Watershed for this event. Two of the gauges are owned and operated by SWFWMD, which maintains an extensive network throughout the region. The third gauge was a garden type rainfall gauge that simply catches rainfall but does not permanently record depths. The SWFWMD White Trout Lake gauge was used to establish the distribution of the rainfall during this event. The calibration event rainfall depth of 3.5 in. was determined from the gauge within the watershed and the SWFWMD gauge at Busch Gardens. A graphical representation of the cumulative rainfall distribution for the September 16-17, 2000 event is shown in **Figure 5-1**.

5.3 EXISTING CONDITIONS MODEL CALIBRATION

In the HCSWMM model, most of the required input data simply describes the geometry and size of the hydraulic and hydrologic units of the subdivided study area. This data, such as the subbasin areas, channel widths, lengths and cross drain dimensions, are known quantities and are subject to very little interpretation. A few of the input requirements, however, are not derived from measurable qualities of the subattachments. These data are referred to as calibration parameters and include:

- The maximum and minimum infiltration rates for pervious areas
- The pervious and impervious depression storage volumes
- The channel and overland flow roughness coefficients

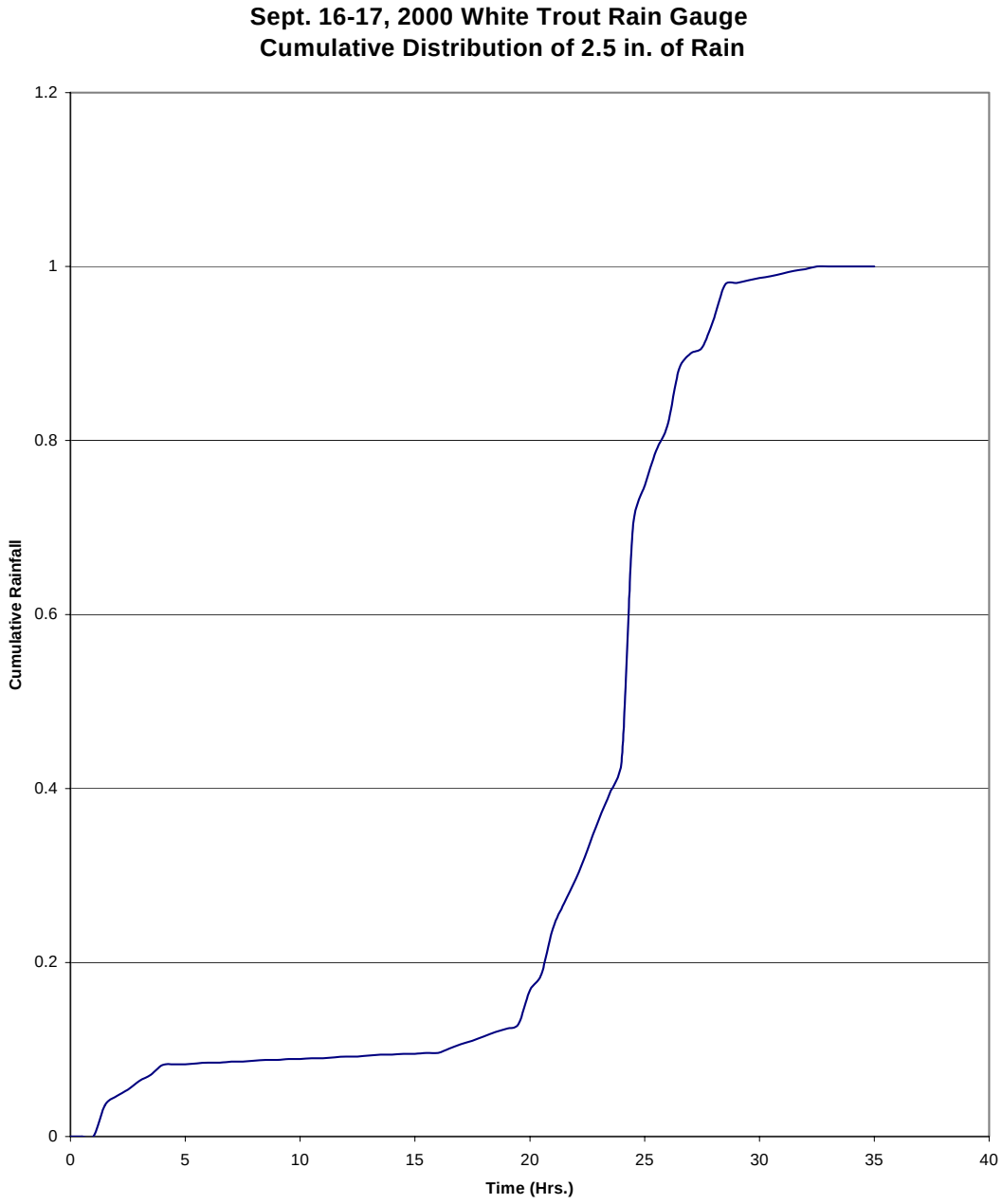
These parameters are first approximated with values derived from local data (e.g., aerial topographic photographs and soil surveys), but their final values are ultimately determined through model calibration.

After a fundamental hydrologic and hydraulic check, a calibration process is conducted to evaluate the general reliability of the model for producing reasonable results.

Initial water surface elevations in the Duck Pond system were obtained from gauge data for the

model calibration. The initial model junction elevations in the other conveyance systems were determined based on junction inverts, the relatively dry conditions preceding the storm event and normal pool elevations where available.

Figure 5-1



The objectives of the calibration are to better match stage and discharge, of the calculated hydrographs with the recorded data. Based on a given set of calibration parameters, the model is adequately calibrated when the observed and calculated stage history of Duck Pond East agree within tolerances for the calibration storm.

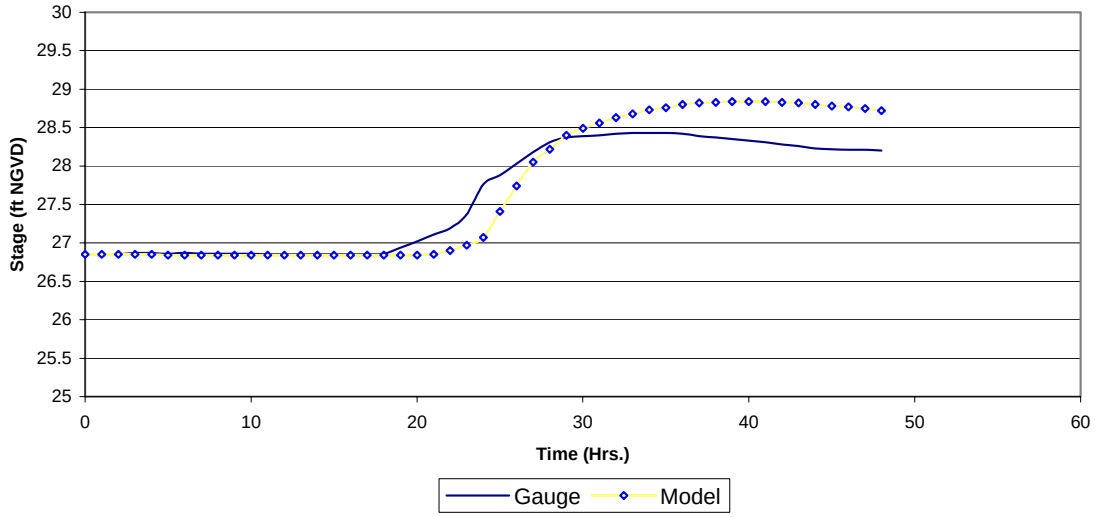
The maximum computed water surface elevation at Duck Pond East (28.84 ft., NGVD) from the calibration model was found to be slightly higher than the maximum surface elevation obtained from measured gauge data (28.43 ft., NGVD) for the September 16-17, 2000 events. **Figure 5-2** contains a graphical representation of this comparison.

5.4 Existing Conditions Model Verification

Modeling methodology requires further verification of the model using different storm events. Model verification is an important step, which ensures that adjustments made to the model during calibration are appropriate and that the model will produce reliable results. Due to the lack of historical data and rainfall events during this project, the verification process for the Duck Pond watershed is not possible at this time. The only additional means of establishing the reliability of a model is checking design output elevations for reasonableness and agreement with historical flooding. Design storm elevations in ponds, for which plans are available, can also be used as indicators of model accuracy. However the extent of development, which occurred after the plan set, that may contribute additional flow to these ponds must be considered.

Rainfalls in antecedent periods of 5 to 30 or more days prior to a storm are commonly used as indices of watershed wetness. This period of record prior to the calibration event was somewhat dry. However, adjustment of the model's curve numbers to AMC I conditions under predicted the stage in Duck Pond East. The use of AMC II condition curve numbers in the existing model provided the best calibration results and are considered reasonable.

Figure 5-2
Sept. 16-17 2000 Storm Event gauge data vs. 2001 HCSWMM Model Calibration Output in Duck Pond East



5.5 CONCLUSIONS

Comparison of computed stages at Duck Pond East, indicate the existing model slightly over predicts stage at this location. This is reasonable given that the hydraulic model is constructed from survey and design plans, which represent the conduit data as new and in good condition. This approach, while conservative in design storm evaluations, does not take into account the age of the system and possible restrictions due to blockage or other factors. The affects of these factors can not be adequately predicted using only one calibration point within the watershed.

The computed peak stage in Duck Pond East during the calibration event was higher by 0.41 feet than the actual peak stage, but within an acceptable tolerance. The model has also been observed to produce reliable results with respect to historical flooding locations. In general, this model is considered calibrated and capable of simulating design storm events in the Duck Pond Watershed.

Future rainfall events of significant depth could be used to further verify the Duck Pond system when used in conjunction with the stage gauge at Duck Pond East. The County should also consider deploying additional gauges in the watershed to more accurately predict the overall watershed's response to rainfall events.

CHAPTER 6 EXISTING CONDITIONS - LEVEL OF SERVICE

6.1 EXISTING CONDITIONS AND STANDARD DESIGN STORM EVENTS

Based on the Hillsborough County Stormwater Drainage Manual and Southwest Florida Water Management District (SWFWMD) Environmental Resource Permitting (ERP) Manual, a standard design storm is defined by duration, rainfall depth, and distribution for a specific return period.

There were six standard design storms used to analyze the flooding impacts in the Duck Pond Watershed. The standard design storms used in this study were the 100-year, 50-year, 25-year, 10-year, 5-year and 2.33-year (mean annual). The duration and distribution used in this study were set by SWFWMD criteria and are the 24-hour duration, and the SCS-type II Florida Modified distribution. Antecedent moisture condition II was also set by the same SWFWMD criteria.

The total amount of rainfall for a particular frequency was determined based on SWFWMD rainfall maps. The total rainfall used for each design storm event was provided in Chapter 4, Section 4.2.

6.2 LEVEL OF SERVICE METHODOLOGY

The Hillsborough County Comprehensive Plan, Stormwater Element contains definitions for the level of service flood protection designations. These definitions specify that a storm return period, storm duration and a letter designation are required to define a level of flood protection. The flood level of service designations contained in the Comprehensive Plan are A, B, C, and D. A is the highest service level and D is the lowest. However, these criteria are somewhat subjective in what is termed as "significant" flooding. Therefore, for the purposes of this study, an interpretation of this definition is assigned to the LOS categories. The following contains the interpretation of the Comprehensive Plan definitions used in the LOS analysis.

Hillsborough County has recently updated the LOS definitions to be used throughout the project area as interpreted in **Table 6.1** below. These definitions are for the 25-year, 24-hour storm event. The desired LOS for Hillsborough County is Level B.

TABLE 6 .1

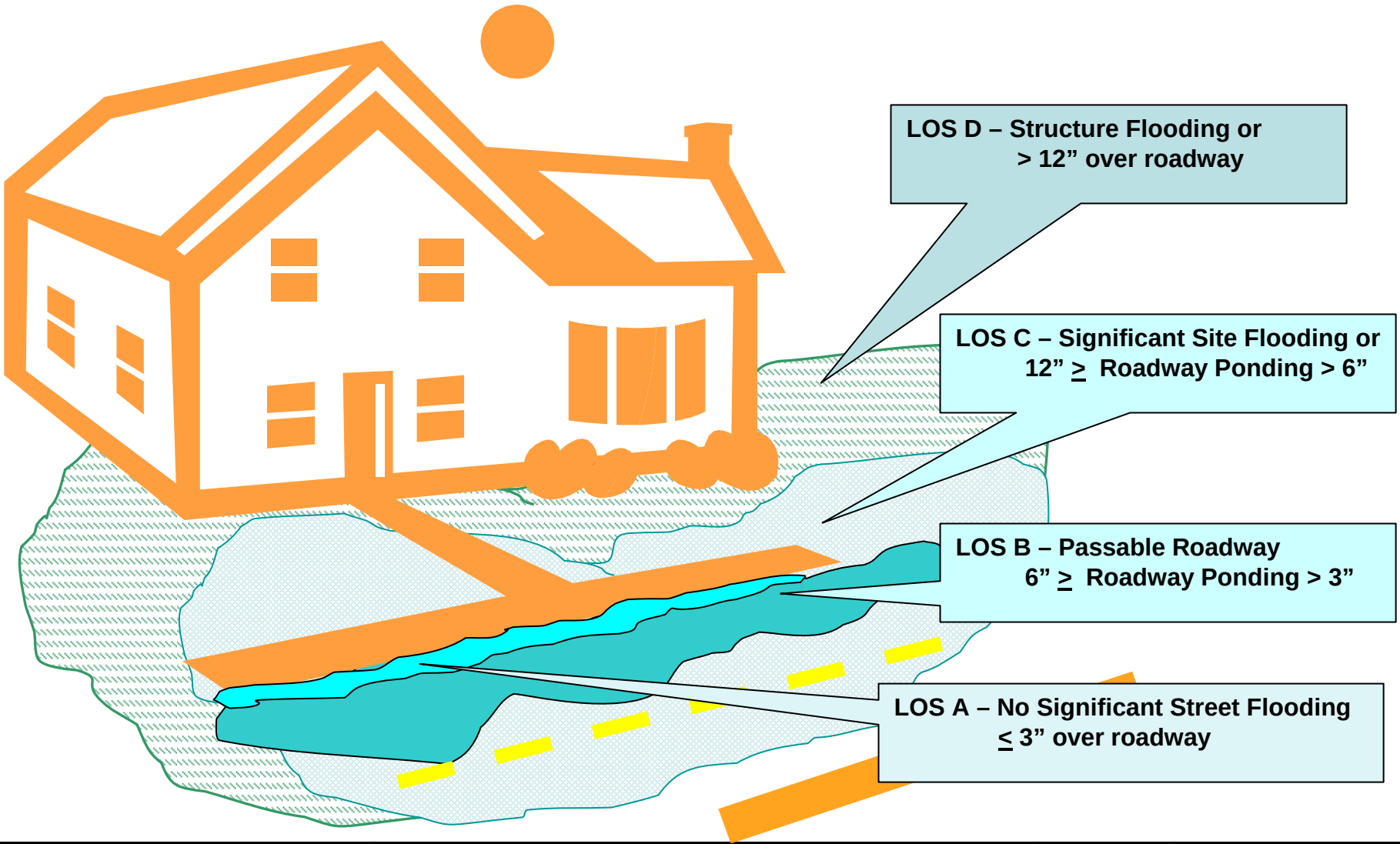
LEVEL OF SERVICE DEFINITION INTERPRETATIONS

Level	Hillsborough County Comprehensive Plan Definition	Master Plan Definition
A	No significant street flooding. All lanes are drivable.	No flooding.
B	Minor street flooding. At least one lane drivable.	Street Flooding is more than 3" and 6" or less above crown of road.
C	Street flooding. Flooding depth above the crown of the road is less than one foot.	Street Flooding is more than 6" and 12" or less above crown of road. Site flooding.
D	No limitation on flooding.	Street Flooding is more than 12" above crown of road. Structure flooding.

It was decided that drivable refers to less than or equal to three (3) inches of water above the crown of the road. It was also decided that one (1) lane passable means one (1) lane in each direction for a four (4) lane road or larger, or one (1) lane along the center of the road for a two (2) lane road.

The LOS designations in the Comprehensive Plan assumed that the sites (ground level surrounding adjacent property) are higher than the roads and that the houses are higher than the roads and the sites. This is not always the case. A Level of Service diagram map is shown in **Figure 6-1**.

The Comprehensive Plan contains estimated Adopted (existing conditions) and Ultimate (proposed) LOS designations for several watersheds in Hillsborough County. The current Hillsborough County target LOS for this area is Level B for the 25-year, 24-hour design storm event.



Level of Service Diagram Map

Figure 6-1

AYRES ASSOCIATES

6.2.1 Establishment of Landmark Elevations

In order to evaluate the LOS for a study area, landmark elevations must first be determined. These elevations refer to landmarks contained in the LOS definitions, including roads, sites and structures. Landmark elevations are established for every subbasin in the study area. These landmarks then serve as a tool for determining the level of service for the subbasin, and on a broader scale, the system and the study area. The landmark elevations established for LOS analysis are the critical or lowest landmark elevations in a subbasin. The critical landmark elevations are reflective of the worst case flooding that could occur in a subbasin. These are obtained from survey data and from topographic analysis. Every subbasin in the study area is examined for the critical structure, site and road elevation. **Table 6.2** contains landmark elevations determined for each DPW subbasin. These landmark elevations reflect the flood depth tolerances contained in **Table 6.1**.

6.2.2 Comparison of Computed Results and Landmark Elevations

Using flood protection LOS designation criteria contained in **Table 6.1**, the landmark elevations for each subbasin are compared to the computed results of the updated hydraulic model. In general, the computed result for the most downstream junction was used for comparison with landmark elevations. **Table 6.2** contains the difference between established landmark elevations and computed water surface elevations for the 2.33-, 5-, 10-, 25-, 50- and 100-year, 24-hour storm events.

6.3 EXISTING CONDITIONS MODEL SIMULATION RESULTS AND LEVEL OF SERVICE DESIGNATIONS

The DPW stormwater management model results for the 2.33-, 5-, 10-, 25-, 50-, and 100-year design storm events are listed in **Table 6.2**. This table presents peak flood elevations in each drainage system network in the watershed.

Each subbasin hydrograph is generated by the hydrologic model and routes (for Connectivity Map see Appendix B) through the hydrodynamic model, to calculate stages and discharges. The results of the 25-yr LOS evaluation from **Table 6.2** can be seen graphically as **Figure 6-3**. The following sections discuss the individual flooding problem areas predicted by the HCSWMM model. All referenced subbasin and junction IDs refer to the updated numbering system.

The DPW is divided into six main drainage systems, which are listed below:

- Duck Pond
  - Nebraska Avenue
  - Robbins Lumber
  - 131st Avenue
  - Mall West/East
  - USF Campus West
- Bruce B. Downs
- USF North
- USF East
- Raintree
  - North
  - South
- USF Campus East

LOS designations were determined for all systems except for the USF Campus West and East systems because they are within unincorporated Hillsborough County.

The objective of this section is to present both the areas and major structures where the computer model indicated that insufficient drainage capacity exists and flooding occurs in the DPW. Locations of past flooding complaints to Hillsborough County can be seen in **Figure 6-2.**

LOS designations are assigned in three levels of detail: subbasin, system and study area.

The subbasins were aggregated into nine areas according to general drainage patterns. For each return period storm event, the LOS designation is first determined for the subbasin. The LOS is then determined for the individual drainage systems. Finally, the LOS designation is determined for the overall study area. The LOS of the Duck Pond Watershed study area is reflective of the worst case system and the LOS of the system is reflective of the worst case subbasin.

It is important to be aware of the limits of the methodology used in the LOS analysis. Most landmark elevation information was taken from SWFWMD topographic maps, some of which are approximately 20 years old, although roadway elevations were checked against 2002 County contour data. In addition, the LOS analysis does not identify flood protection deficiencies for secondary systems contained in a subbasin since only the major systems are contained in the hydraulic model. Conversely, since only the critical landmark elevations were identified in each subbasin, areas within a subbasin may contain a higher LOS than that assigned.

Table 6.3 presents a comparison of peak flood stages for the 25-yr, 24-hr and 100-yr, 24-hr storm events for the 2001 model and the 2006 update. Most variances are minor and reflect the fresh calculation of curve numbers and times-of-concentration that were performed as part of this update. Any significant variances are discussed in the table's comment field.

Generally, most of the notable changes are due to one of the following:

- Recent land cover changes or hydrology updates from new development
- Delineation adjustments based upon updated topology
- New or corrected roadway/subbasin overtopping connections

TABLE 6.2 Existing Conditions Level of Service

Duck Pond Watershed (Existing Conditions) Level of Service Analysis										Flood Level Designations						
Basin	Landmark Elev's			Peak Water Surface Elev's (Ft. NAVD)												25-year storm
Junction ID	Site	Struct	Road	2.33yr	5yr	10yr	25yr	50yr	100yr	2.33yr	5yr	10yr	25yr	50yr	100yr	Predicted Flood Locations (road / site / structure)
DUCK POND - BRUCE B. DOWNS																LOS 25-yr/ 24 Hr - D
620200	42.86	46.16	46.59	37.88	38.34	38.95	39.28	39.96	40.22	A	A	A	A	A	A	
620250	45.00	46.00	45.00	38.09	38.38	39.07	39.36	40.34	40.67	A	A	A	A	A	A	
620260	44.26	45.26	43.86	41.11	41.58	42.15	42.50	43.23	43.49	A	A	A	A	A	A	
620300	37.16	38.16	40.96	35.04	35.86	36.86	37.43	38.66	39.10	A	A	A	A	A	A	Site flooding for 25-yr/24 Hr
620400	43.46	44.46	46.59	38.38	39.25	40.58	40.99	41.55	41.81	A	A	A	A	A	A	
620450	42.26	43.26	40.16	40.33	40.85	41.39	41.65	42.21	42.42	A	C	D	D	D	D	143rd Ave. and 22nd St.
620460	43.96	44.96	43.46	40.33	40.85	41.39	41.66	42.21	42.43	A	A	A	A	A	A	
620600	44.16	45.16	47.00	41.37	41.72	42.17	42.59	43.84	44.43	A	A	A	A	A	A	
620650	44.16	45.16	46.00	40.38	41.21	42.32	42.99	44.47	44.91	A	A	A	A	A	A	
DUCK POND - 131ST AVENUE																LOS 25-yr/ 24 Hr - D
623140	33.16	34.16	32.66	31.43	32.30	33.16	33.65	34.74	35.07	A	A	B	C	D	D	19th St. & site flooding
623150	35.66	36.66	35.16	31.45	32.42	33.46	34.02	35.08	35.32	A	A	A	A	A	A	
623160	35.76	36.76	34.56	31.49	32.56	33.72	34.39	35.49	35.66	A	A	A	A	C	D	131st Ave.
623170	37.16	38.16	41.36	31.56	32.77	34.29	35.12	36.57	36.88	A	A	A	A	A	A	
623190	40.76	41.66	41.36	34.78	35.26	35.86	36.17	37.32	38.04	A	A	A	A	A	A	
623200	43.06	44.16	39.06	36.27	36.82	37.55	37.98	38.80	39.11	A	A	A	A	A	A	
623210	42.56	43.66	41.86	37.09	37.66	38.40	38.89	39.74	40.06	A	A	A	A	A	A	
623215	40.66	41.66	39.46	37.75	38.19	38.57	38.75	39.33	39.51	A	A	A	A	A	A	
623220	43.06	44.16	41.86	38.10	38.44	38.86	39.04	40.39	41.00	A	A	A	A	A	A	
623230	41.96	43.16	41.66	39.25	39.72	40.38	40.73	41.89	42.23	A	A	A	A	A	C	
623240	41.96	43.16	41.86	39.73	40.36	41.15	41.58	42.67	42.86	A	A	A	A	C	C	
623243	43.76	45.76	45.66	42.79	43.46	44.03	44.31	44.85	45.04	A	A	A	A	A	A	CSX RR -Site flooding at 10-yr/24 Hr
623245	49.16	51.16	48.66	44.11	45.18	45.41	45.47	45.58	45.65	A	A	A	A	A	A	
623248	48.16	50.16	50.16	45.54	46.08	46.97	47.47	48.15	48.25	A	A	A	A	A	A	
623250	43.66	45.66	44.16	39.94	40.63	41.46	41.96	43.09	43.42	A	A	A	A	A	A	143rd Ave.
623270	44.86	46.16	45.36	40.04	40.76	41.66	42.19	43.39	43.81	A	A	A	A	A	A	
623300	40.16	42.16	41.36	34.45	34.93	35.48	35.84	37.10	37.55	A	A	A	A	A	A	
623310	39.66	40.66	39.86	36.05	36.67	37.30	37.65	38.36	38.60	A	A	A	A	A	A	

TABLE 6.2 Existing Conditions Level of Service

Duck Pond Watershed (Existing Conditions) Level of Service Analysis										Flood Level Designations						
Basin	Landmark Elev's			Peak Water Surface Elev's (Ft. NAVD)												
Junction ID	Site	Struct	Road	2.33yr	5yr	10yr	25yr	50yr	100yr	2.33yr	5yr	10yr	25yr	50yr	100yr	25-year storm Predicted Flood Locations (road / site / structure)
DUCK POND - 131ST AVENUE CONTINUED																LOS 25-yr/ 24 Hr - D
623320	40.00	41.50	41.00	36.41	37.06	37.76	38.18	39.12	39.25	A	A	A	A	A	A	19th St.
623330	39.96	40.96	39.46	39.71	40.19	40.53	40.58	41.37	41.75	A	C	D	D	D	D	19th St. & site flooding
623340	40.16	41.16	39.86	39.74	40.20	40.54	40.59	41.37	41.76	A	B	C	C	D	D	19th St. & site flooding
623360	40.66	41.66	40.16	38.52	38.93	39.48	40.01	41.37	41.76	A	A	A	A	D	D	
623370	42.66	43.66	42.46	40.82	41.23	41.74	41.98	42.31	42.41	A	A	A	A	A	A	
623380	41.66	42.66	41.66	40.82	41.23	41.74	41.98	42.32	42.42	A	A	A	B	C	C	19th St. & site flooding
623390	42.16	43.16	42.36	40.83	41.25	41.76	42.00	42.35	42.44	A	A	A	A	A	A	
623400	40.46	41.66	41.36	36.72	37.36	38.01	38.33	38.95	39.16	A	A	A	A	A	A	
623430	39.16	40.16	38.66	36.95	37.63	38.29	38.60	39.17	39.36	A	A	A	A	C	C	
623450	38.66	40.66	41.36	37.14	37.76	38.43	38.77	39.39	39.60	A	A	A	A	A	A	Site flooding for 25-yr/24 Hr
623500	40.46	42.66	41.56	37.76	38.40	39.08	39.42	40.05	40.25	A	A	A	A	A	A	
623510	41.16	42.16	40.16	38.39	38.89	39.49	39.79	40.36	40.57	A	A	A	A	A	B	
623550	42.16	43.16	40.16	38.09	38.73	39.42	39.78	40.44	40.65	A	A	A	A	B	B	
623600	42.16	43.16	41.36	38.74	39.28	39.90	40.25	40.90	41.11	A	A	A	A	A	A	
623650	42.16	43.16	41.36	38.76	39.27	39.87	40.21	40.81	41.01	A	A	A	A	A	A	
623700	41.16	42.16	40.76	38.77	39.21	39.61	39.82	40.31	40.53	A	A	A	A	A	A	
623725	40.16	41.16	39.66	38.71	39.06	39.49	39.75	40.33	40.55	A	A	A	A	C	C	22nd St.
623750	43.16	44.16	42.16	39.25	39.77	40.37	40.72	41.43	41.64	A	A	A	A	A	A	
623800	44.66	45.66	43.16	40.03	40.19	40.47	40.92	41.77	41.99	A	A	A	A	A	A	
623850	45.16	46.16	45.16	40.83	40.97	41.19	41.38	42.31	42.56	A	A	A	A	A	A	
623900	45.16	46.16	45.16	42.13	42.41	42.95	43.47	44.99	45.63	A	A	A	A	A	B	
DUCK POND - ROBBINS LUMBER																LOS 25-yr/ 24 Hr - C
622400	34.86	35.86	33.66	32.99	33.19	33.45	33.62	34.29	34.59	A	A	A	A	C	C	
622500	35.16	36.16	36.45	34.80	34.93	35.05	35.13	35.30	35.35	A	A	A	A	A	A	
622600	35.96	36.96	36.96	35.15	35.35	35.58	35.77	36.14	36.25	A	A	A	A	A	A	
622700	36.76	37.76	37.16	35.43	35.69	35.99	36.25	36.77	36.89	A	A	A	A	A	A	
622800	37.66	38.66	37.86	36.11	36.44	36.77	36.93	37.27	37.38	A	A	A	A	A	A	
622850	39.66	40.66	40.00	39.22	39.32	39.46	39.52	39.65	39.69	A	A	A	A	A	A	

TABLE 6.2 Existing Conditions Level of Service

Duck Pond Watershed (Existing Conditions) Level of Service Analysis										Flood Level Designations						
Basin	Landmark Elev's			Peak Water Surface Elev's (Ft. NAVD)												25-year storm
Junction ID	Site	Struct	Road	2.33yr	5yr	10yr	25yr	50yr	100yr	2.33yr	5yr	10yr	25yr	50yr	100yr	Predicted Flood Locations (road / site / structure)
DUCK POND - ROBBINS LUMBER CONTINUED																LOS 25-yr/ 24 Hr - C
622900	37.16	38.16	36.96	35.57	36.09	36.53	36.69	36.89	36.95	A	A	A	A	A	A	
622925	36.56	37.56	36.26	36.38	36.55	36.74	36.85	37.00	37.01	A	B	B	C	C	C	127th Ave. & site flooding
622950	37.46	38.46	36.56	36.42	36.54	36.58	36.60	36.77	36.89	A	A	A	A	A	B	127th Ave.
DUCK POND - MALL EAST/WEST																LOS 25-yr/ 24 Hr - D
624010	30.16	32.66	30.66	30.02	30.67	31.04	31.20	31.58	31.78	A	A	B	C	C	D	Fowler Ave. Eastbound & site
624030	34.16	35.66	31.66	30.32	31.02	31.49	31.74	32.28	32.46	A	A	A	A	C	C	Fowler Ave. Westbound
624040	36.16	37.16	32.21	30.52	31.24	31.78	32.04	32.55	32.71	A	A	A	A	B	B	
624050	39.16	40.16	34.16	30.72	31.46	32.07	32.36	32.85	33.00	A	A	A	A	A	A	
624080	34.16	35.16	33.66	31.23	32.00	32.74	33.16	33.93	34.18	A	A	A	A	B	C	
624090	34.16	35.16	36.66	31.23	32.00	32.74	33.16	33.93	34.18	A	A	A	A	A	A	
624100	37.66	38.16	35.96	35.07	35.46	36.12	36.45	37.01	37.22	A	A	A	B	D	D	
624190	32.66	36.16	32.16	31.39	32.14	32.93	33.38	34.29	34.59	A	A	C	D	D	D	127th Ave. and 15th St. & site
624200	33.16	34.16	32.76	31.39	32.13	32.93	33.38	34.29	34.59	A	A	A	C	D	D	20th St. & site flooding
624210	34.16	35.66	32.76	32.12	32.58	32.96	33.38	34.29	34.59	A	A	A	C	D	D	20th St.
624230	38.16	39.16	33.66	26.62	31.76	32.93	33.38	34.29	34.59	A	A	A	A	C	C	
624250	38.16	39.16	35.96	34.35	34.50	34.74	34.89	35.28	35.43	A	A	A	A	A	A	
624260	33.16	34.16	30.66	31.40	32.13	32.93	33.38	34.29	34.59	C	D	D	D	D	D	22nd St. & site flooding
624290	39.16	40.16	38.16	35.08	35.16	35.25	35.30	35.40	35.44	A	A	A	A	A	A	
624310	39.16	40.16	38.16	33.97	34.03	34.11	34.16	34.29	34.59	A	A	A	A	A	A	
624320	35.16	37.16	30.66	31.40	32.13	32.93	33.38	34.29	34.59	C	D	D	D	D	D	22nd St.
624325	32.66	33.66	30.66	26.15	32.12	32.93	33.38	34.29	34.59	A	D	D	D	D	D	22nd St. & site flooding
624330	32.66	33.66	31.66	31.82	32.12	32.93	33.38	34.29	34.59	A	B	D	D	D	D	22nd St. & site flooding
624340	36.16	38.16	37.76	36.56	36.91	37.20	37.23	37.38	37.45	A	A	A	A	A	A	131st Ave. & site flooding
624350	33.66	36.66	33.66	33.41	33.51	33.67	33.77	34.29	34.59	A	A	A	A	C	C	20th St. & site flooding
624360	35.66	36.66	35.66	34.33	34.72	34.81	34.92	35.27	35.38	A	A	A	A	A	A	
624370	36.16	37.16	35.66	36.10	36.20	36.34	36.43	36.63	36.70	B	C	C	C	C	D	131st Ave. and 20th St. & site
624380	36.16	37.16	35.66	36.14	36.24	36.40	36.49	36.71	36.78	B	C	C	C	D	D	131st Ave. and 20th St. & site
624390	36.16	37.16	35.16	36.15	36.26	36.43	36.53	36.76	36.83	C	D	D	D	D	D	20th St. & site flooding

TABLE 6.2 Existing Conditions Level of Service

Duck Pond Watershed (Existing Conditions) Level of Service Analysis										Flood Level Designations						
Basin	Landmark Elev's			Peak Water Surface Elev's (Ft. NAVD)												25-year storm
Junction ID	Site	Struct	Road	2.33yr	5yr	10yr	25yr	50yr	100yr	2.33yr	5yr	10yr	25yr	50yr	100yr	Predicted Flood Locations (road / site / structure)
DUCK POND - MALL EAST/WEST CONTINUED																LOS 25-yr/ 24 Hr - D
624400	38.16	39.16	37.36	36.29	36.51	36.80	36.97	37.14	37.19	A	A	A	A	A	A	
624410	39.16	40.16	37.36	37.37	37.38	37.44	37.47	37.56	37.59	A	A	A	A	A	A	20th St.
624420	37.66	38.66	41.66	37.68	37.71	37.76	37.80	37.87	37.90	A	A	A	A	A	A	Site flooding for 25-yr/ 24 Hr
624430	39.16	40.16	37.06	37.31	37.35	37.42	37.45	37.54	37.57	A	B	B	B	B	C	132nd Ave.
624440	37.16	39.16	37.36	37.15	37.19	37.25	37.29	37.39	37.42	A	A	A	A	A	A	Site flooding for 25-yr/ 24 Hr
624450	37.16	38.16	35.96	36.03	36.20	36.44	36.56	37.09	37.31	A	A	B	C	D	D	131st Ave.
624470	41.16	42.16	40.16	36.60	37.50	38.76	39.14	39.39	39.58	A	A	A	A	A	A	
624490	31.86	32.86	32.16	29.08	31.04	32.93	33.38	34.29	34.59	A	A	C	D	D	D	19th St. & site/struct. flood
624520	34.16	35.16	32.16	31.39	32.14	32.93	33.38	34.29	34.59	A	A	C	D	D	D	Sports Authority
624530	32.16	33.16	31.57	31.39	32.14	32.93	33.38	34.29	34.59							Fowler Ave., site/struct. flood
624540	34.16	35.16	31.56	31.40	32.14	32.93	33.38	34.29	34.59							Fowler Ave.
624550	34.16	35.16	34.26	31.39	32.14	32.93	33.38	34.29	34.59							
624560	34.16	35.16	35.06	31.40	32.14	32.93	33.38	34.29	34.59							
624570	33.16	34.16	32.16	33.66	33.71	33.78	33.82	34.29	34.59	D	D	D	D	D	D	15th St. & site flooding
DUCK POND - NEBRASKA AVENUE																LOS 25-yr/ 24 Hr - D
621075	33.06	34.06	32.16	31.39	32.09	32.92	33.38	34.31	34.62	A	A	C	D	D	D	17th St. & site flooding
621100	32.96	33.96	32.36	32.01	32.08	32.92	33.38	34.31	34.62	A	A	C	D	D	D	122nd Ave. & site flooding
621125	29.16	30.16	31.66	29.39	32.02	32.92	33.37	34.31	34.62	A	B	D	D	D	D	15th St. and 17th St. & site/struct. flood
621200	32.16	34.16	32.00	31.90	32.07	32.92	33.38	34.31	34.62	A	A	C	D	D	D	122nd Ave. & site flooding
621225	33.16	34.16	31.66	32.01	32.07	32.92	33.38	34.31	34.62	B	B	D	D	D	D	15th St. & site flooding
621275	36.16	37.16	38.16	31.40	32.35	34.14	34.72	35.69	36.07	A	A	A	A	A	A	
621300	34.16	35.16	35.46	34.40	34.67	35.01	35.20	35.49	35.53	A	A	A	A	A	A	Site flooding for 25-yr/ 24 Hr
621325	33.56	34.66	33.56	34.24	34.38	34.55	34.65	34.85	34.92	C	C	C	D	D	D	122nd Ave. & site flooding
621350	34.16	35.16	37.66	31.68	32.43	34.19	34.78	35.77	36.15	A	A	A	A	A	A	Site flooding nr CSX RR
621375	34.06	35.16	33.76	31.50	32.54	34.24	34.81	35.78	36.17	A	A	B	D	D	D	120th Ave. & site flooding
621390	36.36	37.16	38.16	36.38	36.42	36.47	36.50	36.55	36.57	A	A	A	A	A	A	Site flooding for 25-yr/ 24 Hr
621395	33.82	36.16	41.96	31.40	32.49	34.25	34.82	35.84	36.22	A	A	A	A	A	A	Site flooding nr CSX RR

TABLE 6.2 Existing Conditions Level of Service

Duck Pond Watershed (Existing Conditions) Level of Service Analysis										Flood Level Designations						
Basin	Landmark Elev's			Peak Water Surface Elev's (Ft. NAVD)												
Junction ID	Site	Struct	Road	2.33yr	5yr	10yr	25yr	50yr	100yr	2.33yr	5yr	10yr	25yr	50yr	100yr	25-year storm Predicted Flood Locations (road / site / structure)
DUCK POND - NEBRASKA AVENUE CONTINUED																LOS 25-yr/ 24 Hr - D
621425	35.16	36.16	41.96	32.25	32.69	34.26	34.83	35.86	36.24	A	A	A	A	A	A	
621450	35.96	39.16	37.96	31.40	32.58	34.34	34.91	35.95	36.32	A	A	A	A	A	A	
621500	35.41	38.16	37.96	31.55	32.68	34.35	34.92	35.88	36.19	A	A	A	A	A	A	
621550	34.16	35.16	34.66	31.81	32.89	34.37	34.93	35.89	36.19	A	A	A	B	D	D	120th Ave. & site flooding
621600	33.96	35.16	37.96	32.47	34.10	34.53	34.92	35.88	36.20	A	A	A	A	A	A	Site flooding for 25-yr/ 24 Hr
621625	35.79	37.16	38.56	31.92	33.24	35.06	35.91	36.58	36.75	A	A	A	A	A	A	Site flooding for 25-yr/ 24 Hr
621630	36.66	37.66	37.16	35.22	35.29	35.49	35.98	36.64	36.79	A	A	A	A	A	A	
621650	37.16	38.16	37.16	32.58	34.02	36.18	36.57	37.00	37.14	A	A	A	A	A	A	
621675	36.86	37.66	37.36	33.19	34.81	37.04	37.32	37.73	37.87	A	A	A	A	B	C	Site flooding for 25-yr/ 24 Hr
621700	36.66	37.66	37.06	35.28	35.69	36.26	36.53	37.01	37.15	A	A	A	A	A	A	
621715	38.66	39.66	40.96	38.85	38.91	39.02	39.09	39.26	39.32	A	A	A	A	A	A	Site flooding for 25-yr/ 24 Hr
621725	41.16	42.16	40.96	39.15	39.47	39.91	40.25	40.93	41.25	A	A	A	A	A	B	
621750	44.56	45.16	44.56	44.27	44.57	44.59	44.63	44.74	44.76	A	A	A	A	A	A	Site flooding for 25-yr/ 24 Hr
621775	37.16	38.16	39.16	34.16	35.73	38.18	38.47	38.91	39.04	A	A	A	A	A	A	Site/struct. flood for 25-yr/ 24 Hr
621800	40.16	41.16	40.66	34.38	36.02	38.20	38.50	38.96	39.09	A	A	A	A	A	A	
621825	40.16	41.16	42.16	34.51	36.10	38.20	38.51	38.97	39.10	A	A	A	A	A	A	
621875	42.66	43.66	44.16	38.64	39.00	40.59	41.97	44.78	44.93	A	A	A	A	C	C	
621900	35.16	36.16	34.66	33.63	34.06	34.59	34.93	35.89	36.20	A	A	A	B	D	D	Talifero Ave.
621950	45.16	46.16	45.16	44.07	44.34	44.64	44.73	44.83	44.95	A	A	A	A	A	A	
RAINTREE - NORTH																LOS 25-yr/ 24 Hr - A
628650	28.16	30.16	29.16	26.28	26.43	26.67	26.84	27.24	27.95	A	A	A	A	A	A	
628670	28.16	30.16	29.16	27.34	27.51	27.77	27.96	28.52	29.10	A	A	A	A	A	A	Thomasville Circle
628680	28.16	30.16	29.16	26.34	26.48	26.71	26.91	27.47	27.95	A	A	A	A	A	A	
628685	30.16	31.16	34.16	28.24	28.56	28.85	29.01	29.54	29.75	A	A	A	A	A	A	
628690	33.16	34.16	34.16	31.02	31.25	31.55	31.71	32.38	32.71	A	A	A	A	A	A	
628700	31.66	32.66	33.16	27.88	28.21	28.72	29.10	30.16	30.62	A	A	A	A	A	A	
628710	31.16	32.16	32.16	29.29	29.44	29.56	29.61	30.17	30.63							
628720	31.16	32.16	30.16	29.55	29.64	29.74	29.80	30.18	30.63							

TABLE 6.2 Existing Conditions Level of Service

Duck Pond Watershed (Existing Conditions) Level of Service Analysis										Flood Level Designations						
Basin	Landmark Elev's			Peak Water Surface Elev's (Ft. NAVD)												25-year storm
Junction ID	Site	Struct	Road	2.33yr	5yr	10yr	25yr	50yr	100yr	2.33yr	5yr	10yr	25yr	50yr	100yr	Predicted Flood Locations (road / site / structure)
RAINTREE - NORTH CONTINUED																LOS 25-yr/ 24 Hr - A
628730	34.16	35.16	35.16	31.43	31.64	31.96	32.17	32.64	32.83	A	A	A	A	A	A	
628760	33.16	34.16	33.16	28.85	29.17	29.99	31.74	34.21	34.94							
628800	33.16	34.16	34.16	29.02	29.49	30.65	31.76	34.21	34.86							
628810	33.16	34.16	34.16	28.92	29.39	30.31	30.81	32.31	32.98							
628820	35.16	36.16	33.16	30.07	30.58	31.21	31.83	33.44	33.87	A	A	A	A	B	C	
628830	32.16	33.16	33.16	30.01	30.51	31.15	31.79	33.70	34.15	A	A	A	A	C	C	
628840	36.16	37.16	40.16	29.60	30.92	32.78	33.59	34.48	34.96	A	A	A	A	A	A	
628850	34.16	35.16	32.96	30.42	30.72	31.16	31.78	34.26	34.92	A	A	A	A	D	D	
628860	30.16	31.16	33.66	27.06	29.49	30.65	31.76	34.21	34.86							Soaring Ave. site/struct.
RAINTREE - SOUTH																LOS 25-yr/ 24 Hr - B
628160	30.16	31.16	29.66	25.25	25.48	25.77	26.27	27.01	27.61							
628200	34.16	35.16	29.16	25.26	25.67	26.29	26.77	27.74	28.04							
628250	33.16	34.16	32.66	25.26	25.67	26.29	26.77	27.78	28.12							
628270	32.16	33.16	32.96	27.59	29.12	31.12	32.27	33.88	34.14							Fowler Ave. adjacent site flood for 25-yr/24 Hr
628310	35.16	36.16	31.50	26.95	27.29	28.50	28.85	29.57	29.88	A	A	A	A	A	A	
628350	30.16	31.16	29.16	27.04	28.12	28.98	29.47	30.58	30.71							Sky Lake
628400	36.16	37.16	32.16	27.04	28.12	29.01	29.86	30.95	31.12	A	A	A	A	A	A	
628420	33.16	34.16	32.16	32.20	32.24	32.38	32.50	32.72	32.79	A	A	A	B	C	C	58th St.
628450	34.16	35.16	35.16	30.39	31.03	31.99	32.59	34.21	34.60	A	A	A	A	A	A	
USF NORTH																LOS 25-yr/ 24 Hr - C
629721	36.16	37.16	33.26	28.06	28.46	28.96	29.76	29.96	30.16							
629740	34.50	37.00	34.00	28.42	28.89	29.58	30.43	32.38	33.23	A	A	A	A	A	A	
629760	38.86	41.16	40.16	28.82	29.40	30.35	31.39	34.96	35.76	A	A	A	A	A	A	
629780	42.56	42.16	41.16	29.70	29.91	30.62	31.66	37.13	38.22	A	A	A	A	A	A	
629800	38.36	42.16	38.26	36.31	36.90	37.52	37.68	38.06	38.35	A	A	A	A	A	A	
629820	38.16	42.16	38.26	36.33	36.92	37.54	37.70	38.08	38.37	A	A	A	A	A	A	

TABLE 6.2 Existing Conditions Level of Service

Duck Pond Watershed (Existing Conditions) Level of Service Analysis										Flood Level Designations						
Basin	Landmark Elev's			Peak Water Surface Elev's (Ft. NAVD)												
Junction ID	Site	Struct	Road	2.33yr	5yr	10yr	25yr	50yr	100yr	2.33yr	5yr	10yr	25yr	50yr	100yr	25-year storm Predicted Flood Locations (road / site / structure)
USF NORTH CONTINUED																LOS 25-yr/ 24 Hr - C
629840	41.96	43.16	40.16	38.29	38.41	38.48	38.53	38.75	38.88	A	A	A	A	A	A	
629860	41.46	42.66	40.16	38.86	39.32	40.02	40.47	41.51	41.73	A	A	A	B	D	D	42nd St.
629880	40.16	40.16	38.66	37.30	37.89	38.40	38.65	39.13	39.29	A	A	A	A	B	C	
629900	41.66	40.16	39.16	36.91	37.86	38.40	38.54	38.80	38.89	A	A	A	A	A	A	
629920	37.76	35.66	40.16	29.17	30.47	32.93	33.76	35.81	36.56	A	A	A	A	A	A	
629940	38.86	40.16	39.16	32.92	33.48	37.73	38.14	38.75	38.88	A	A	A	A	A	A	
629960	39.16	40.16	38.66	38.88	39.05	39.27	39.33	39.43	39.48	A	B	C	C	C	C	46th St. & site flooding
USF EAST																LOS 25-yr/ 24 Hr - D
629100	29.16	34.66	34.16	27.72	28.75	29.55	30.36	31.34	31.61	A	A	A	A	A	A	Site flooding for 25-yr/ 24 Hr
629200	34.16	45.16	35.16	31.02	31.37	31.94	32.32	33.11	33.41	A	A	A	A	A	A	
629300	35.16	40.16	38.66	29.85	30.69	30.82	30.82	30.94	31.28	A	A	A	A	A	A	
629400	35.66	36.66	33.86	33.87	34.72	35.85	36.42	37.55	37.98	A	C	D	D	D	D	127th Ave. & site flooding
629500	33.16	36.16	34.16	28.91	29.85	30.42	30.85	31.70	32.01	A	A	A	A	A	A	
629600	36.16	40.16	36.16	33.16	33.46	34.00	35.21	36.01	36.23	A	A	A	A	A	A	
629700	56.16	57.16	54.86	49.76	53.01	53.81	53.92	54.27	54.39	A	A	A	A	A	A	

NOTE :

A - NEGLIGIBLE RD FLOODING (0 TO 3 INCH)
B - MODERATE RD FLOODING - PASSABLE (3+ TO 6 INCH)
C - SUBSTANTIAL RD FLOODING (6+ TO 12 INCH)
D - SEVERE RD FLOODING (> 12 INCH)
- NOT IN COUNTY JURISDICTION

TABLE 6.3 Comparison of Updated Duck Pond Watershed Model Results to Previous Model

Basin Junction ID	Peak Water Surface Elev's (Ft. NAVD) 2001 25-yr	2006 25-yr	% change	2001 100-yr	2006 100-yr	% change	Comments
DUCK POND - BRUCE B. DOWNS							
620200	38.38	39.28	2.3%	39.20	40.22	2.6%	Tc updated from 60 min to 23 min
620250	38.48	39.36	2.3%	39.28	40.67	3.5%	Land Use/Hydrology Update per ERP
620260	41.58	42.50	2.2%	42.54	43.49	2.2%	Tc updated from 30 min to 9 min
620300	36.58	37.43	2.3%	38.31	39.10	2.1%	ERP Update for New Development
620400	40.92	40.99	0.2%	42.01	41.81	-0.5%	
620450	41.43	41.65	0.5%	42.25	42.42	0.4%	
620460	41.43	41.66	0.6%	42.26	42.43	0.4%	
620600	41.89	42.59	1.7%	42.90	44.43	3.6%	Tc updated from108 min to 34 min
620650	39.64	42.99	8.5%	41.05	44.91	9.4%	Significant basin delineation change; area added
DUCK POND - 131ST AVENUE							
623140	33.71	33.65	-0.2%	35.18	35.07	-0.3%	
623150	34.01	34.02	0.0%	35.62	35.32	-0.8%	
623160	34.31	34.39	0.2%	36.09	35.66	-1.2%	
623170	34.87	35.12	0.7%	36.95	36.88	-0.2%	
623190	35.78	36.17	1.1%	37.75	38.04	0.8%	
623200	37.62	37.98	1.0%	38.53	39.11	1.5%	
623210	38.50	38.89	1.0%	39.55	40.06	1.3%	
623215	38.62	38.75	0.3%	39.35	39.51	0.4%	
623220	38.93	39.04	0.3%	40.29	41.00	1.8%	
623230	40.53	40.73	0.5%	41.92	42.23	0.7%	
623240	41.34	41.58	0.6%	42.72	42.86	0.3%	
623243	44.14	44.31	0.4%	44.91	45.04	0.3%	
623245	45.27	45.47	0.4%	45.56	45.65	0.2%	
623248	46.82	47.47	1.4%	48.00	48.25	0.5%	
623250	41.90	41.96	0.1%	43.45	43.42	-0.1%	
623270	42.19	42.19	0.0%	43.88	43.81	-0.2%	
623300	35.39	35.84	1.3%	37.43	37.55	0.3%	
623310	37.00	37.65	1.8%	38.03	38.60	1.5%	
623330	40.55	40.58	0.1%	41.54	41.75	0.5%	
623340	40.56	40.59	0.1%	41.54	41.76	0.5%	
623360	39.79	40.01	0.6%	41.54	41.76	0.5%	

TABLE 6.3 Comparison of Updated Duck Pond Watershed Model Results to Previous Model

Basin Junction ID	Peak Water Surface Elev's (Ft. NAVD) 2001 25-yr	2006 25-yr	% change	2001 100-yr	2006 100-yr	% change	Comments
DUCK POND - 131ST AVENUE CONTINUED							
623370	41.87	41.98	0.3%	42.33	42.41	0.2%	
623380	41.87	41.98	0.3%	42.35	42.42	0.2%	
623390	41.85	42.00	0.4%	42.32	42.44	0.3%	
623400	37.66	38.33	1.8%	38.60	39.16	1.5%	
623430	37.91	38.60	1.8%	38.88	39.36	1.2%	
623450	38.12	38.77	1.7%	39.08	39.60	1.3%	
623500	38.76	39.42	1.7%	39.72	40.25	1.3%	
623510	39.46	39.79	0.8%	40.43	40.57	0.3%	
623550	39.09	39.78	1.8%	40.12	40.65	1.3%	
623600	39.53	40.25	1.8%	40.53	41.11	1.4%	
623650	39.48	40.21	1.8%	40.41	41.01	1.5%	
623700	39.54	39.82	0.7%	40.50	40.53	0.1%	
623725	39.75	39.75	0.0%	40.61	40.55	-0.1%	
623750	40.11	40.72	1.5%	41.27	41.64	0.9%	
623800	40.46	40.92	1.1%	41.56	41.99	1.0%	
623850	41.33	41.38	0.1%	42.24	42.56	0.8%	
623900	43.30	43.47	0.4%	45.25	45.63	0.8%	
DUCK POND - ROBBINS LUMBER							
622400	33.51	33.62	0.3%	34.83	34.59	-0.7%	
622500	35.14	35.13	0.0%	35.35	35.35	0.0%	
622600	35.83	35.77	-0.2%	36.31	36.25	-0.2%	
622700	36.36	36.25	-0.3%	37.10	36.89	-0.6%	
622800	36.99	36.93	-0.2%	37.54	37.38	-0.4%	
622850	39.07	39.52	1.2%	39.31	39.69	1.0%	
622900	36.63	36.69	0.2%	36.95	36.95	0.0%	
622925	36.82	36.85	0.1%	37.01	37.01	0.0%	
622950	36.57	36.60	0.1%	37.10	36.89	-0.6%	

TABLE 6.3 Comparison of Updated Duck Pond Watershed Model Results to Previous Model

Basin Junction ID	Peak Water Surface Elev's (Ft. NAVD) 2001 25-yr	2006 25-yr	% change	2001 100-yr	2006 100-yr	% change	Comments
DUCK POND - MALL EAST/WEST							
624010	31.17	31.20	0.1%	32.16	31.78	-1.2%	
624030	31.34	31.74	1.3%	32.27	32.46	0.6%	
624040	32.08	32.04	-0.1%	32.81	32.71	-0.3%	
624050	32.41	32.36	-0.2%	33.31	33.00	-0.9%	
624080	33.10	33.16	0.2%	34.36	34.18	-0.5%	
624090	33.10	33.16	0.2%	34.36	34.18	-0.5%	
624100	36.02	36.45	1.2%	36.82	37.22	1.1%	
624190	33.46	33.38	-0.2%	34.83	34.59	-0.7%	
624200	33.46	33.38	-0.2%	34.83	34.59	-0.7%	
624210	33.46	33.38	-0.2%	34.83	34.59	-0.7%	
624230	33.46	33.38	-0.2%	34.83	34.59	-0.7%	
624250	34.69	34.89	0.6%	35.10	35.43	0.9%	
624260	33.46	33.38	-0.2%	34.83	34.59	-0.7%	
624290	34.94	35.30	1.0%	35.20	35.44	0.7%	
624310	33.98	34.16	0.5%	34.83	34.59	-0.7%	
624320	33.46	33.38	-0.2%	34.83	34.59	-0.7%	
624325	33.46	33.38	-0.2%	34.83	34.59	-0.7%	
624330	33.46	33.38	-0.2%	34.83	34.59	-0.7%	
624340	36.52	37.23	1.9%	37.22	37.45	0.6%	
624350	33.80	33.77	-0.1%	34.83	34.59	-0.7%	
624360	32.54	34.92	7.3%	33.78	35.38	4.7%	Tc updated from 20 min to 9 min; LOS A for all storms
624370	36.46	36.43	-0.1%	36.73	36.70	-0.1%	
624380	36.53	36.49	-0.1%	36.83	36.78	-0.1%	
624390	36.56	36.53	-0.1%	36.88	36.83	-0.1%	
624400	36.91	36.97	0.2%	37.14	37.19	0.1%	
624410	37.41	37.47	0.2%	37.56	37.59	0.1%	
624420	37.69	37.80	0.3%	37.78	37.90	0.3%	
624430	37.39	37.45	0.2%	37.52	37.57	0.1%	
624440	37.30	37.29	0.0%	37.42	37.42	0.0%	
624450	36.42	36.56	0.4%	36.85	37.31	1.2%	

TABLE 6.3 Comparison of Updated Duck Pond Watershed Model Results to Previous Model

Basin Junction ID	Peak Water Surface Elev's (Ft. NAVD) 2001 25-yr	2006 25-yr	% change	2001 100-yr	2006 100-yr	% change	Comments
DUCK POND - MALL EAST/WEST CONTINUED							
624470	35.00	39.14	11.8%	36.65	39.58	8.0%	Hydrology updated from Walmart ERP
624490	33.46	33.38	-0.2%	34.83	34.59	-0.7%	
624520	33.46	33.38	-0.2%	34.83	34.59	-0.7%	
624570	33.86	33.82	-0.1%	34.82	34.59	-0.7%	
DUCK POND - NEBRASKA AVENUE							
621075	33.46	33.38	-0.2%	34.83	34.62	-0.6%	
621100	33.46	33.38	-0.2%	34.83	34.62	-0.6%	
621125	33.46	33.37	-0.3%	34.83	34.62	-0.6%	
621200	33.46	33.38	-0.2%	34.83	34.62	-0.6%	
621225	33.46	33.38	-0.2%	34.83	34.62	-0.6%	
621275	34.33	34.72	1.1%	35.95	36.07	0.3%	
621300	35.08	35.20	0.3%	35.40	35.53	0.4%	
621325	33.73	34.65	2.7%	34.83	34.92	0.3%	Roadway overtopping weir length shortened by County
621350	34.37	34.78	1.2%	36.00	36.15	0.4%	
621375	34.41	34.81	1.2%	36.01	36.17	0.4%	
621390	36.37	36.50	0.4%	36.40	36.57	0.5%	
621395	34.42	34.82	1.2%	36.02	36.22	0.6%	
621425	34.43	34.83	1.2%	36.03	36.24	0.6%	
621450	34.49	34.91	1.2%	36.10	36.32	0.6%	
621500	34.54	34.92	1.1%	36.10	36.19	0.2%	
621550	34.66	34.93	0.8%	36.11	36.19	0.2%	
621600	34.54	34.92	1.1%	36.10	36.20	0.3%	
621625	34.85	35.91	3.0%	36.36	36.75	1.1%	Subbasin overtopping weir lengths shortened by County
621630	35.53	35.98	1.3%	36.44	36.79	1.0%	
621650	35.85	36.57	2.0%	36.76	37.14	1.0%	Tc updated from 22 min to 8 min; subb. weir L reduced
621675	36.85	37.32	1.3%	37.32	37.87	1.5%	
621700	36.23	36.53	0.8%	36.78	37.15	1.0%	
621715	38.96	39.09	0.3%	39.14	39.32	0.5%	
621725	40.06	40.25	0.5%	41.03	41.25	0.5%	
621750	44.57	44.63	0.1%	44.63	44.76	0.3%	

TABLE 6.3 Comparison of Updated Duck Pond Watershed Model Results to Previous Model

Basin Junction ID	Peak Water Surface Elev's (Ft. NAVD) 2001 25-yr	2006 25-yr	% change	2001 100-yr	2006 100-yr	% change	Comments
DUCK POND - NEBRASKA AVENUE CONTINUED							
621775	38.08	38.47	1.0%	38.41	39.04	1.6%	
621800	38.10	38.50	1.0%	38.43	39.09	1.7%	
621825	38.10	38.51	1.1%	38.44	39.10	1.7%	
621875	40.33	41.97	4.1%	44.78	44.93	0.3%	No apparent cause for 25-yr change. 25-yr LOS still "A"
621900	34.66	34.93	0.8%	36.11	36.20	0.2%	
621950	44.82	44.73	-0.2%	45.09	44.95	-0.3%	
RAINTREE - NORTH							
628650	26.84	26.84	0.0%	27.95	27.95	0.0%	
628670	28.17	27.96	-0.7%	29.36	29.10	-0.9%	
628680	27.05	26.91	-0.5%	28.12	27.95	-0.6%	
628685	29.11	29.01	-0.3%	29.90	29.75	-0.5%	
628690	31.62	31.71	0.3%	32.63	32.71	0.2%	
628700	28.93	29.10	0.6%	30.41	30.62	0.7%	
628730	32.02	32.17	0.5%	32.60	32.83	0.7%	
628820	31.49	31.83	1.1%	33.56	33.87	0.9%	
628830	31.31	31.79	1.5%	33.72	34.15	1.3%	
628840	31.10	33.59	8.0%	34.22	34.96	2.2%	New Development in subbasin and reduced Tc; LOS "A"
628850	31.79	31.78	0.0%	33.85	34.92	3.2%	No apparent cause for 100-yr change
RAINTREE - SOUTH							
628310	28.83	28.85	0.1%	29.84	29.88	0.1%	
628400	29.87	29.86	0.0%	31.11	31.12	0.0%	
628420	32.44	32.50	0.2%	32.73	32.79	0.2%	
628450	33.02	32.59	-1.3%	34.65	34.60	-0.1%	
USF NORTH							
629760	31.07	31.39	1.0%	35.77	35.76	0.0%	
629780	31.54	31.66	0.4%	38.33	38.22	-0.3%	
629800	37.67	37.68	0.0%	38.44	38.35	-0.2%	
629820	37.69	37.70	0.0%	38.47	38.37	-0.3%	
629840	38.50	38.53	0.1%	38.89	38.88	0.0%	
629860	41.00	40.47	-1.3%	42.02	41.73	-0.7%	

TABLE 6.3 Comparison of Updated Duck Pond Watershed Model Results to Previous Model

Basin Junction ID	Peak Water Surface Elev's (Ft. NAVD) 2001 25-yr	2006 25-yr	% change	2001 100-yr	2006 100-yr	% change	Comments
USF NORTH CONTINUED							
629880	38.53	38.65	0.3%	39.18	39.29	0.3%	
629900	38.57	38.54	-0.1%	38.91	38.89	-0.1%	
629920	33.52	33.76	0.7%	36.26	36.56	0.8%	
629940	37.83	38.14	0.8%	38.89	38.88	0.0%	
629960	39.34	39.33	0.0%	39.51	39.48	-0.1%	
USF EAST							
629100	29.85	30.36	1.7%	31.31	31.61	1.0%	Updated drainage area and CN somewhat higher
629200	32.33	32.32	0.0%	33.53	33.41	-0.4%	
629300	30.86	30.82	-0.1%	31.33	31.28	-0.2%	
629400	36.23	36.42	0.5%	37.72	37.98	0.7%	
629500	30.49	30.85	1.2%	31.69	32.01	1.0%	
629600	33.92	35.21	3.8%	35.76	36.23	1.3%	Tc updated from 44 min to 16 min; LOS "A" all events
629700	53.88	53.92	0.1%	54.25	54.39	0.3%	

6.3.1 Duck Pond System

The Duck Pond System (referring to the Duck Pond primary conveyance area) includes the Nebraska Avenue, Robbins Lumber, 131st Avenue, Mall West/East and the USF Campus West systems. LOS designations were not determined for the USF Campus West system because it is within unincorporated Hillsborough County.

6.3.1.1 Nebraska System

The following is a list of existing flooding areas in the Nebraska System:

- The area east of the CSX Rail Road Tracks along Fowler Avenue and 122nd Avenue up to Duck Pond West begins to experience flooding along 15th Street and 122nd Avenue, during the 2.33-year storm event. Flooding along 14th Street does not occur until the 50-year storm event. Flooding along 17th Street first occurs during the 10-year storm event. Flooding along these roadways and adjacent properties is a result of no or inadequate storm sewer systems along these roadways. The only storm sewer in this area draining to Duck Pond West is along 122nd Avenue. The main trunk line of this storm sewer consists of a 54-inch diameter pipe with no inlets on the north side of 122nd Avenue extending from the Hillsborough County Pond adjacent to the CSX Rail Road to Duck Pond West. This storm sewer consists of one lateral 15-inch diameter C.M.P with four ditch bottom inlets from 15th Street to 17th Street. The area drains to a low blind area on private properties between these roadways. Water stages up and floods these properties as well as the adjacent roadways. The lack of conveyance systems along 12th, 14th, 15th, and 17th streets and lack of inlets on the 54-inch diameter main trunk line contributes to the flooding.

- The area west of the CSX Rail Road Tracks along 120th Avenue up to and including Taliaferro Avenue begins to experience flooding during the 2.33 year storm event. The pond at Taliaferro and 122nd Avenue and storm sewers along Taliaferro and 120th Avenue are undersized. The lateral pipes draining to the 6' x 7' box culvert along 120th Avenue from Nebraska Avenue to the Hillsborough County Pond do not adequately drain 120th Avenue and adjacent properties. The portion of Fowler Avenue draining to the F.D.O.T. wet detention pond adjacent to the CSX Rail Road does not flood until the 100-year storm event.

- Flooding along the south end of Nebraska Avenue from Fowler Avenue to Fletcher Avenue begins at the 25-year storm event. No flooding occurs along Nebraska Avenue up to the 100-year event from Fletcher Avenue to Skipper Road.

- Flooding also occurs within some private properties adjacent to the CSX rail road because no storm sewers exist to convey water to the Nebraska Avenue storm sewer. Additionally, a cross drain under the CSX rail road conveying storm water from Subbasin 621700 to the Robbins Lumber system was removed some time ago.

The LOS designations for the subbasins in the Nebraska Avenue System are displayed in **Table 6.2**.

The existing conditions level of service for the 25-year, 24-hour storm event for the Nebraska Avenue System is LOS D.

6.3.1.2 Robbins Lumber System

The following is a list of existing flooding areas in the Robbins Lumber System:

- The drainage ditch system east of the CSX Rail Road Tracks along 127th Avenue experiences roadway flooding during the 5-year storm event.

- The storm sewer travels through a parking lot of a private apartment complex located at the southwest quadrant of 15th Street and 127th Avenue. Then the storm sewer discharges to an open channel on the east side of 15th Street between 122nd and 127th Avenues. This storm sewer system experiences site and roadway flooding during the 10-year storm event.

- The next downstream system consists of a ditch that continues east until it reaches Duck Pond West. It experiences site flooding during the 2.33-year storm event and is a result of tailwater flooding conditions in Duck Pond West.

The LOS designations for the subbasins in the Robbins Lumber System are displayed in **Table 6.2**. The existing conditions level of service for the 25-year, 24-hour storm event for the Robbins Lumber System is LOS C.

6.3.1.3 131st Avenue System

The following is a list of existing flooding areas in the 131st Avenue System:

- The area along 19th Street from Duck Pond West to the 131st Avenue Pond begins to experience site and roadway flooding during the 10-year storm event. The worst flooding is at the south end of this segment of 19th Street near Duck Pond West. This appears to be a result of tail water conditions from Duck Pond West.

- The area along 15th Street from 143rd Avenue to 140th Avenue in Subbasins 623230 and 623240 experiences site and roadway flooding during the 50-year storm event. Upgraded lateral along 15th Street can not adequately function during the 50-year storm.

- Flooding occurs during the 25-year storm along 143rd Avenue south of the Four Seasons Sub-division in Subbasin 623250. This appears to be a result of an inadequate storm sewer lateral draining to the upgraded storm sewer along 15th Street.

- Flooding occurs along 19th Street from 138th Avenue to 143rd Avenue starting at the 2.33-year storm event. The worst flooding is at the south end in Subbasin 623330 and progressively improves northward up to Subbasin 623380. This appears to be a result of an

inadequate storm sewer along 19th Street discharging to the primary trunk line serving Fletcher Avenue.

- Flooding occurs during the 50-year storm along 20th Street from Fletcher Avenue to 143rd Avenue in Subbasins 623380 and 623430.

- Flooding occurs along 22nd Street from Fletcher Avenue to 143rd Avenue in Subbasins 623510 to 623725 starting at the 5-year storm.

- Flooding occurs on 136th Avenue east of 22nd Street in Subbasins 623750 and 623725 starting at the 5-year storm. Hillsborough County has installed new storm sewer along 136th Avenue in 1999 (see Hillsborough County Project Number 40960). This new storm sewer system was included in the existing condition model.

The LOS designations for the subbasins in the 131st System are displayed in **Table 6.2**. The existing conditions level of service for the 25-year, 24-hour storm event for the 131st Avenue System is LOS D.

6.3.1.4 Mall West/East System

The following is a list of existing flooding areas in the Mall West/East System:

- Fowler Avenue at the east side of the University Mall entrance in Subbasin 624010 begins to flood at the 10-year storm event. The storm sewer in these subbasins collects discharge from Duck Pond East through two 48-inch concrete pipes which connect to a 4-foot by 4-foot CBC culvert with a short 48-inch diameter concrete pipe segment at the down stream end under Fowler Avenue. This storm sewer discharges to an open channel in the City of Tampa System south of Fowler Avenue. Flooding is a result of the tailwater condition in this open channel. Additionally, the 4-foot by 4-foot CBC under Fowler has less capacity than the two 48-inch pipes connected to it upstream. The tailwater condition and inadequate storm sewer create site flooding in the parking area at the south end of the Mall along Fowler Avenue during the 25-year storm.

- Duck Pond East overtops its bank at elevation 34-feet during the 50-year storm and floods residential roads and yards in the south west portion of a residential sub-division east of Duck Pond East in subbasin 624080.

- Duck Pond West in Subbasin 624190 floods 19th Street and 127th Avenue during the 10-year storm event. The tailwater effect from Duck Pond West creates roadway and site flooding in the subbasins immediately upstream of Duck Pond West during the 2.33-year storm. The roadways include 20th and 22nd Streets. Site flooding occurs in Subbasins 624200, 624210, 624230, 624250, 624260, 624320, 624325 and 624330 during the 5-year storm. Some structural flooding occurs in the Forest Place Apartment Complex immediately east of Duck

Pond West in subbasin 624490.

- Flooding occurs along 131st Avenue and on 20th and 22nd Street up to Fletcher Avenue during the 2.33 year storm. Site flooding occurs in subbasins 624370,624380 and 624390 during the 25-year storm event.

- Flooding occurs on 132nd Avenue and Leisure Wood Place just north of 131st Avenue during the 2.33-year storm. There are no existing storm sewer systems along these roadways to collect runoff. Stormwater collects in low spots and is trapped along 131st Avenue and 132nd Avenue. The existing condition model stored runoff in these low spots and conveyed it to the VA Hospital Pond with subbasin overtopping weirs. The LOS can be improved with new storm sewer systems along these roadways.

- Flooding occurs on Fowler Avenue at the west side of the University Mall in front of the Sports Authority during the 5-year storm. Areas east of this on Fowler Avenue do not flood until the 50-year storm.

- Flooding occurs on 15th Street in Subbasin 624570 during the 2.33-year storm because no storm sewer system collects runoff in this subbasin.

The LOS designations for the subbasins in the Mall West/East System are displayed in **Table 6.2**. The existing conditions level of service for the 25-year, 24-hour storm event for the Mall West/East System is LOS D.

The existing flood control level of service for the Duck Pond Watershed is LOS D because the worse case scenario is LOS D for more than one of the Duck Pond systems as described above.

Hillsborough County and the City of Tampa are working together to solve the flooding problems in this area.

6.3.2 Bruce B. Downs System

The following is a list of existing flooding areas in the Bruce B. Downs System:

- Site flooding occurred during the 50-year storm east of Bruce B. Downs Boulevard and west of 30th Street.
- Roadway flooding occurred along 143rd Avenue and 22nd Street during the 2.33-year storm. Flood depths are severe at the 10-year storm and beyond.

The LOS designations for the subbasins in the Bruce B. Downs System are displayed in **Table 6.2**. The existing conditions level of service for the 25-year, 24-hour storm event for the Bruce B. Downs System is LOS D.

6.3.3 USF North System

The following is a list of existing flooding areas in the USF North System:

- For the 25-year event, flooding occurs along 42nd Street beginning at a low point approximately 600 feet north of Fletcher Avenue and continues up to where a gravity storm sewer begins. The gravity storm sewer on 42nd Street begins approximately 1,600 feet south of Skipper Road.
- For the 50-year event flooding occurs 350 feet north of where the gravity storm sewer begins on 42nd Street and at the intersection of Abbot Drive and 46th Street. Abbot Drive is located approximately 400 feet south of the intersection of Skipper Road and 46th Street.

The LOS designations for the subbasins in the USF North System are displayed in **Table 6.2**. The existing conditions level of service for the 25-year, 24-hour storm event for the USF North System is LOS C.

6.3.4 USF East System

The following is a list of existing flooding areas in the USF East System:

- Flooding occurs along 127th Avenue between 50th and 52nd Streets beginning at the 5-year storm event. Flooding was limited to minor roadway and site flooding up to the 10-year storm event and increased to some finish floor elevations beginning at the 25-year storm event. The existing pump station capacity appears to be inadequate for storms greater than the 5-year storm event.
- 52nd Street near Fowler Avenue floods during the 25-year storm and site flooding occurs to adjacent properties in subbasin 629100 during the 50-year storm.
- Flooding occurs along 51st Street and adjacent properties in the closed Subbasin identified as 629700 at the south end of the USF - East Subbasin. The only storm water management system in this subbasin is a closed retention pond collecting storm water from a shopping center on the corner of 50th and Fowler Avenue. This retention pond does not overtop up to and including the 100-year event. The rest of Subbasin 629700 drains to 51st Street where there are no conveyance systems draining to this retention pond or to outfalls outside the subbasin.

The LOS designations for the subbasins in the USF East System are displayed in **Table 6.2**. The existing conditions level of service for the 25-year, 24-hour storm event for the USF East System is LOS D.

6.3.5 Raintree System

The Raintree area includes the Raintree North and Raintree South Systems. Subbasin LOS evaluation in incorporated areas (City of Temple Terrace) are not discussed.

6.3.5.1 Raintree North System

The following is a list of existing flooding areas in the Raintree South System:

- Site flooding in the vicinity of Thomasville Circle during the 50-year storm in subbasin 628670.
- Roadway and site flooding on Jenny Drive during the 50-year storm in Subbasins 628830.
- Site flooding along Joan Drive during the 100-year storm in subbasin 628820.
- Roadway flooding during the 50-year storm on Gibson Avenue in Subbasin 628850.

The LOS designations for the subbasins in the Raintree North System are displayed in **Table 6.2**. The existing conditions level of service for the 25-year, 24-hour storm event for the Raintree North System is LOS A.

6.3.5.2 Raintree South System

The following is a list of existing flooding areas in the Raintree South System:

- Roadway flooding on 58th Street during the 5-year storm.

The LOS designations for the subbasins in the Raintree South System are displayed in **Table 6.2**. The existing conditions level of service for the 25-year, 24-hour storm event for the Raintree South System is LOS B.

6.4 100-YEAR FLOODPLAIN

The 100-yr flood stages are generally used to regulate development with respect to placement of and compensation for fill within the floodplain; protection of buildings through sufficient elevation of the first floor; and federal flood insurance. Two 100-year flood events have been modeled for assessment of flood stages:

- The SCS Type II Florida Modified 24-hour Distribution (total precipitation of 11.0 inches)
- The SWFWMD 5-Day Rainfall Distribution (total precipitation 17.8 inches)

The rainfall distributions vary substantially with regard to both timing and intensity of rainfall, as well as the total volume of precipitation. The 24-hour design event is generally the more severe for rate-sensitive watersheds, while the 5-day design event will simulate higher flood stages for volume-sensitive watersheds. It must be noted, however, that the use of the 5-day event, coupled with typical stormwater modeling tools, may be overly conservative for watersheds with a high proportion of closed subbasins or with severely limited discharge (as is the case for Duck Pond) that results in substantial surface flooding. Most stormwater models, including ICPR and various SWMM-based models, will not simulate infiltration over pervious surfaces beyond that which occurs during computation of runoff excess. Additionally, large lakes and wetlands will typically percolate

significant volumes of water on a daily basis, with higher driving heads increasing the percolation rate even further. For these reasons, the 100-year, 24-hour design event is considered the more realistic gage of 100-year flooding for regulatory purposes. The simulation accuracy of the 5-day design event would be improved by coupling with a 2-D groundwater-surface water model.

Table 6.4 compares the peak simulated flood stage and timing between the 100-year, 24-hour and the 100-year, 5-day design storm events. The average peak stage difference between the two storm events is approximately 0.43 feet and ranges between -2.15 feet and 2.07 feet. It is noted that larger peak stage differences (Z120-Z24>1.0 foot) occur in volume-sensitive subbasins such as small ponds, lakes, and closed or outflow-limited basins. As expected, peak stages occur much later in the simulation for the 100-year, 5-day event.

The County's proposed 100-yr floodplain map for the entire watershed is shown on **Figure 6-4.** Model updates do not result in significant changes to previously modeled flood stages (based upon the 24-hour design event) except for the following subbasins:

- Subbasin 620650 near East 143rd avenue and 19th Street north experienced a simulated increase in 100-yr flood stage of four (4) feet, however flood stages remain within the banks of the water feature which is consistent with current County flood mapping
- Subbasin 624470 (Walmart) experienced a simulated increase in 100-yr flood stage of three (3) feet which just crests the banks of the water management system which is consistent with current County flood mapping

TABLE 6.4 Comparison of Peak WSEL for the 100-yr, 1-day and 100-yr, 5-day Events

JUNCTION	100 YR/1 DAY PEAK WSEL (ft-NAVD)	100 YR/1 DAY TIME TO PEAK (HR)	100 YR/5 DAY PEAK WSEL (ft-NAVD)	100 YR/5 DAY TIME TO PEAK (HR)	Z5D - Z1D (FT)	NOTES
620115	37.94	14.00	37.90	65.37	-0.04	
620120	38.38	14.08	38.48	65.35	0.10	
620200	40.22	13.93	41.06	65.18	0.84	
620250	40.67	13.30	41.08	65.20	0.41	
620260	43.49	12.92	41.94	61.17	-1.55	
620300	39.10	26.20	41.17	98.97	2.07	SMSA
620400	41.81	16.23	42.86	63.58	1.05	SMSA
620410	41.84	16.50	42.90	63.77	1.06	connected channel
620450	42.42	19.70	43.34	65.85	0.92	
620460	42.43	19.52	43.38	65.57	0.95	
620470	42.57	16.00	43.71	64.27	1.14	manhole
620480	42.95	14.92	44.12	63.73	1.17	manhole
620600	44.43	14.25	45.37	63.27	0.94	
620650	44.91	25.03	45.56	63.60	0.65	
621050	34.62	40.65	36.06	100.93	1.44	Duck Pond W. controls
621075	34.62	41.13	36.06	101.75	1.44	Duck Pond W. controls
621100	34.62	41.18	36.06	100.98	1.44	Duck Pond W. controls
621125	34.62	41.17	36.06	100.98	1.44	Duck Pond W. controls
621150	34.62	41.17	36.06	101.78	1.44	Duck Pond W. controls
621200	34.62	41.33	36.06	101.78	1.44	Duck Pond W. controls
621225	34.62	41.33	36.06	102.20	1.44	Duck Pond W. controls
621250	36.02	18.15	36.47	66.48	0.45	
621275	36.07	17.92	36.50	66.13	0.43	
621300	35.53	20.82	36.06	102.87	0.53	
621325	34.92	14.15	36.06	101.80	1.14	closed basin
621350	36.15	17.70	36.64	65.97	0.49	
621375	36.17	17.50	36.66	65.72	0.49	
621390	36.57	12.73	36.70	65.63	0.13	
621395	36.22	13.63	36.70	65.55	0.48	
621425	36.24	13.63	36.71	65.50	0.47	
621450	36.32	14.78	36.86	65.12	0.54	
621500	36.19	19.00	36.67	67.17	0.48	
621550	36.19	22.20	36.57	70.73	0.38	
621600	36.20	19.00	36.67	67.17	0.47	
621625	36.75	13.92	36.96	64.72	0.21	
621630	36.79	13.93	36.97	64.80	0.18	
621650	37.14	13.52	37.09	64.37	-0.05	
621675	37.87	12.85	37.49	61.22	-0.38	
621700	37.15	13.55	37.09	64.37	-0.06	
621715	39.32	13.03	39.50	64.03	0.18	
621725	41.25	14.82	41.44	63.58	0.19	
621750	44.76	12.82	44.70	61.00	-0.06	
621775	39.04	12.55	38.58	61.02	-0.46	
621800	39.09	12.55	38.62	61.02	-0.47	
621825	39.10	12.55	38.64	61.02	-0.46	
621850	44.94	13.95	44.99	62.82	0.05	
621875	44.93	14.00	44.99	62.90	0.06	
621900	36.20	22.20	36.57	70.82	0.37	
621950	44.95	14.85	45.08	62.93	0.13	
622400	34.59	39.30	36.05	99.52	1.46	Duck Pond W. controls
622500	35.35	15.55	36.05	99.20	0.70	
622600	36.25	15.77	36.37	64.17	0.12	
622700	36.89	15.53	36.90	64.52	0.01	
622800	37.38	13.98	37.23	63.07	-0.15	

TABLE 6.4 Comparison of Peak WSEL for the 100-yr, 1-day and 100-yr, 5-day Events

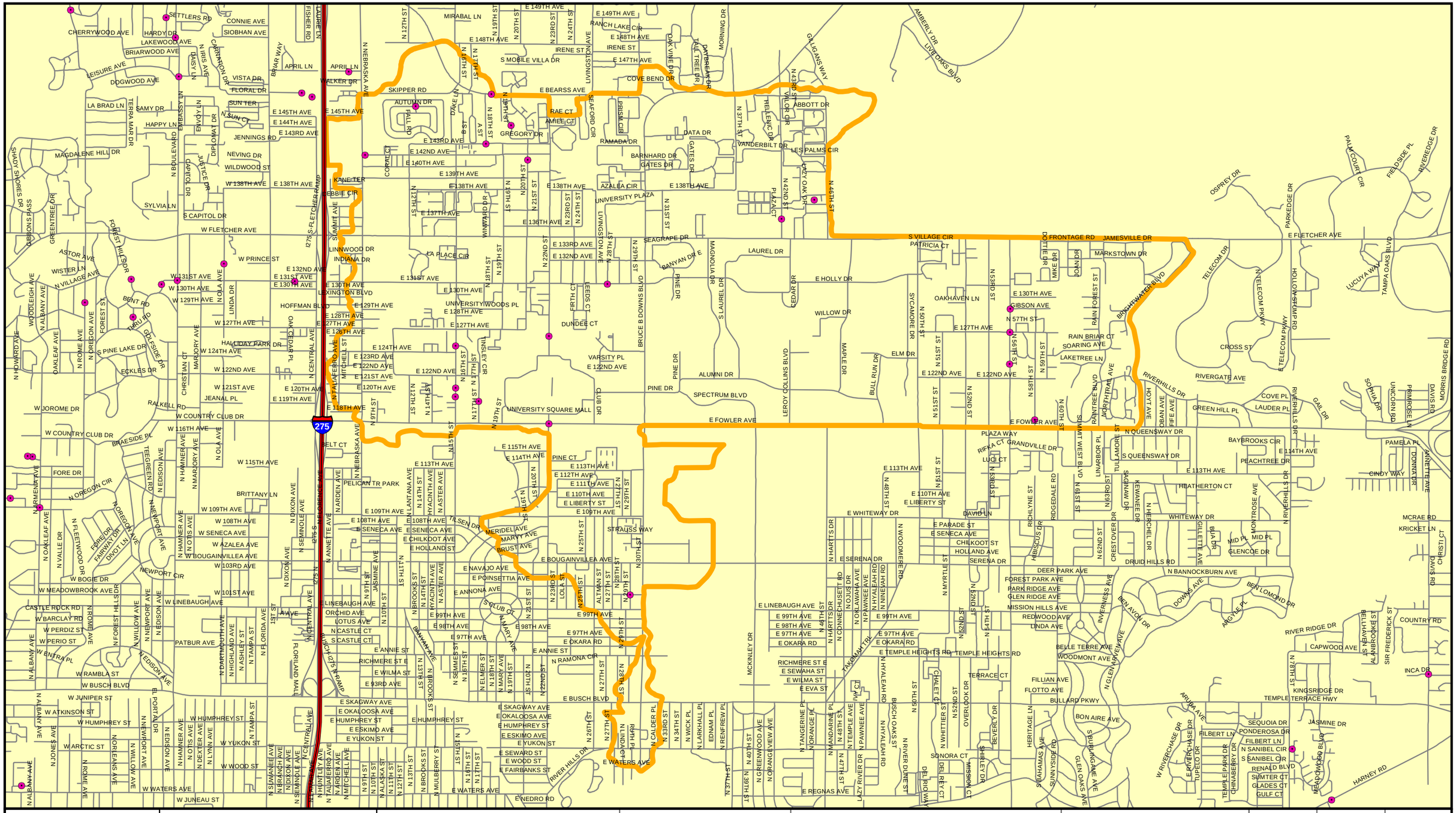
JUNCTION	100 YR/1 DAY PEAK WSEL (ft-NAVD)	100 YR/1 DAY TIME TO PEAK (HR)	100 YR/5 DAY PEAK WSEL (ft-NAVD)	100 YR/5 DAY TIME TO PEAK (HR)	Z5D - Z1D (FT)	NOTES
622850	39.69	13.13	39.59	66.93	-0.10	
622900	36.95	14.37	36.94	63.20	-0.01	
622925	37.01	17.23	37.12	62.30	0.11	
622950	36.89	15.58	36.90	64.57	0.01	
623140	35.07	28.82	36.22	82.52	1.15	Duck Pond W. controls
623150	35.32	27.27	36.31	82.38	0.99	
623160	35.66	25.62	36.41	80.67	0.75	
623170	36.88	21.90	37.52	67.92	0.64	
623190	38.04	21.75	38.71	67.70	0.67	
623200	39.11	13.87	39.58	66.93	0.47	
623210	40.06	14.35	40.59	65.93	0.53	
623215	39.51	16.05	39.71	61.78	0.20	
623220	41.00	15.42	41.56	65.42	0.56	
623225	41.50	15.53	41.86	65.42	0.36	
623230	42.23	15.47	42.30	64.90	0.07	
623240	42.86	15.35	42.86	64.40	0.00	
623243	45.04	13.75	44.52	62.80	-0.52	
623244	45.67	13.28	45.53	62.12	-0.14	
623245	45.65	13.27	45.51	62.10	-0.14	
623247	48.09	13.35	48.06	62.20	-0.03	
623248	48.25	13.33	48.22	62.18	-0.03	
623250	43.42	15.85	43.47	64.82	0.05	
623270	43.81	14.95	43.65	64.17	-0.16	
623300	37.55	21.92	38.37	66.18	0.82	
623305	37.27	21.92	38.01	66.25	0.74	
623307	37.07	21.90	37.76	66.42	0.69	
623310	38.60	13.28	39.08	65.12	0.48	
623320	39.25	12.78	39.29	65.17	0.04	
623330	41.75	24.55	42.16	68.92	0.41	
623340	41.76	24.55	42.17	68.92	0.41	
623350	41.76	24.55	42.17	68.92	0.41	
623360	41.76	24.55	42.17	68.92	0.41	
623370	42.41	13.63	42.41	62.52	0.00	
623380	42.42	13.67	42.43	62.57	0.01	
623390	42.44	15.40	42.54	63.12	0.10	
623400	39.16	13.43	39.41	64.93	0.25	
623430	39.36	13.88	39.45	64.38	0.09	
623450	39.60	13.37	39.69	64.07	0.09	
623500	40.25	13.22	40.12	63.07	-0.13	
623510	40.57	14.02	40.49	63.90	-0.08	
623550	40.65	12.83	40.34	63.08	-0.31	
623600	41.11	13.07	40.82	66.08	-0.29	
623650	41.01	13.03	40.83	66.30	-0.18	
623700	40.53	16.63	40.84	67.12	0.31	
623725	40.55	17.08	40.85	67.28	0.30	
623750	41.64	13.40	41.43	64.25	-0.21	
623800	41.99	13.22	42.06	64.07	0.07	
623850	42.56	13.23	43.45	64.03	0.89	
623900	45.63	15.07	46.63	62.65	1.00	limited discharge
624010	31.78	59.60	33.59	156.83	1.81	limited discharge
624030	32.46	55.30	33.78	154.10	1.32	limited discharge
624040	32.71	55.13	33.92	139.13	1.21	limited discharge
624050	33.00	55.12	34.08	137.70	1.08	limited discharge

TABLE 6.4 Comparison of Peak WSEL for the 100-yr, 1-day and 100-yr, 5-day Events

JUNCTION	100 YR/1 DAY PEAK WSEL (ft-NAVD)	100 YR/1 DAY TIME TO PEAK (HR)	100 YR/5 DAY PEAK WSEL (ft-NAVD)	100 YR/5 DAY TIME TO PEAK (HR)	Z5D - Z1D (FT)	NOTES
624060	33.53	55.10	34.87	105.07	1.34	limited discharge
624070	34.07	53.98	35.42	104.42	1.35	limited discharge
624080	34.18	47.77	35.55	99.87	1.37	Duck Pond East
624090	34.18	47.77	35.55	99.87	1.37	lake-controlled
624100	37.22	13.40	37.26	61.90	0.04	
624190	34.59	39.38	36.05	99.67	1.46	Duck Pond West
624200	34.59	39.58	36.05	99.58	1.46	Duck Pond W. controls
624210	34.59	39.75	36.05	99.67	1.46	Duck Pond W. controls
624220	34.59	39.58	36.05	99.65	1.46	Duck Pond W. controls
624230	34.59	39.58	36.05	99.65	1.46	Duck Pond W. controls
624250	35.43	24.95	36.41	121.23	0.98	
624260	34.59	39.53	36.05	99.52	1.46	Duck Pond W. controls
624270	34.59	39.78	36.05	99.52	1.46	Duck Pond W. controls
624280	34.59	39.67	36.05	99.50	1.46	Duck Pond W. controls
624290	35.44	12.70	36.05	99.50	0.61	
624300	34.59	39.60	36.05	99.50	1.46	Duck Pond W. controls
624310	34.59	39.60	36.05	99.50	1.46	Duck Pond W. controls
624320	34.59	39.53	36.05	99.52	1.46	Duck Pond W. controls
624325	34.59	39.90	36.05	99.58	1.46	Duck Pond W. controls
624330	34.59	39.90	36.05	99.58	1.46	Duck Pond W. controls
624340	37.45	13.28	37.52	61.20	0.07	
624350	34.59	39.97	36.05	99.67	1.46	Duck Pond W. controls
624360	35.38	12.98	36.05	100.65	0.67	
624370	36.70	13.53	36.53	62.30	-0.17	
624380	36.78	13.32	36.61	62.18	-0.17	
624390	36.83	13.25	36.65	62.15	-0.18	
624400	37.19	12.72	37.04	61.30	-0.15	
624410	37.59	12.58	37.49	61.00	-0.10	
624420	37.90	12.80	37.83	61.13	-0.07	
624430	37.57	12.60	37.55	61.13	-0.02	
624440	37.42	12.83	37.33	61.80	-0.09	
624450	37.31	13.35	37.33	61.78	0.02	
624460	37.32	13.35	37.36	61.75	0.04	
624470	39.58	13.45	39.97	61.15	0.39	
624480	34.59	39.15	36.05	100.32	1.46	Duck Pond W. controls
624490	34.59	39.17	36.05	100.65	1.46	Duck Pond W. controls
624520	34.59	40.92	36.05	100.98	1.46	Duck Pond W. controls
624530	34.59	40.92	36.05	100.98	1.46	Duck Pond W. controls
624540	34.59	41.08	36.05	100.32	1.46	Duck Pond W. controls
624550	34.59	40.17	36.05	100.33	1.46	Duck Pond W. controls
624560	34.59	40.05	36.05	99.73	1.46	Duck Pond W. controls
624570	34.59	40.05	36.05	99.73	1.46	Duck Pond W. controls
625300	35.86	26.00	36.54	66.83	0.68	
626000	38.87	15.48	39.27	65.75	0.40	
628310	29.88	24.67	30.64	71.38	0.76	
628400	31.12	19.25	31.77	62.53	0.65	
628420	32.79	13.02	32.67	61.20	-0.12	
628450	34.60	15.87	35.15	65.48	0.55	
628650	27.95	12.42	27.85	12.22	-0.10	
628669	29.07	14.18	28.68	63.48	-0.39	
628670	29.10	14.18	28.70	63.47	-0.40	
628679	27.92	15.58	27.87	66.22	-0.05	
628680	27.95	15.70	27.89	66.15	-0.06	

TABLE 6.4 Comparison of Peak WSEL for the 100-yr, 1-day and 100-yr, 5-day Events

JUNCTION	100 YR/1 DAY PEAK WSEL (ft-NAVD)	100 YR/1 DAY TIME TO PEAK (HR)	100 YR/5 DAY PEAK WSEL (ft-NAVD)	100 YR/5 DAY TIME TO PEAK (HR)	Z5D - Z1D (FT)	NOTES
628684	29.67	13.10	28.92	61.15	-0.75	
628685	29.75	13.10	29.10	61.15	-0.65	
628689	32.66	12.73	30.51	61.08	-2.15	
628690	32.71	12.73	31.43	61.05	-1.28	
628699	30.58	25.55	31.30	73.17	0.72	
628700	30.62	25.55	31.33	74.45	0.71	
628729	32.62	13.17	31.83	61.92	-0.79	
628730	32.83	13.15	32.47	61.42	-0.36	
628760	34.94	14.08	35.80	62.13	0.86	
628820	33.87	16.85	34.71	66.12	0.84	
628830	34.15	15.58	35.11	64.43	0.96	
628840	34.96	14.60	35.52	63.75	0.56	
628850	34.92	14.22	35.49	62.82	0.57	
629100	31.61	13.17	32.01	62.48	0.40	
629200	33.41	13.62	33.42	62.80	0.01	
629300	31.28	14.02	32.06	62.53	0.78	
629400	37.98	25.52	38.78	66.68	0.80	
629500	32.01	13.18	32.14	62.38	0.13	
629600	36.23	12.67	35.49	61.00	-0.74	
629700	54.39	13.40	54.42	61.50	0.03	
629720	30.16	24.00	30.16	24.00	0.00	
629721	30.16	24.00	30.16	24.00	0.00	
629735	31.61	39.53	30.68	62.05	-0.93	
629740	33.23	13.53	33.91	62.17	0.68	
629760	35.76	13.63	35.97	62.05	0.21	
629780	38.22	14.05	38.33	62.87	0.11	
629800	38.35	14.05	38.44	62.87	0.09	
629820	38.37	14.07	38.46	62.88	0.09	
629825	38.38	14.07	38.48	62.88	0.10	
629840	38.88	13.12	38.80	62.08	-0.08	
629841	38.71	13.62	38.66	62.55	-0.05	
629842	38.80	13.63	38.71	62.57	-0.09	
629860	41.73	13.72	41.31	62.57	-0.42	
629880	39.29	24.97	39.95	97.47	0.66	
629900	38.89	15.53	38.92	65.03	0.03	
629920	36.56	12.83	35.03	61.17	-1.53	
629925	37.68	12.97	36.86	61.33	-0.82	
629940	38.88	13.13	38.81	62.10	-0.07	
629960	39.48	14.50	39.69	62.18	0.21	



AYRES ASSOCIATES

8875 Hidden River Pkwy,
Suite 200
Tampa, FL 33637

Legend

- Hurricane Frances Complaint Locations
- Duck Pond Area

Notes:

This area is used for general map note information such as map accuracy/standards, source information, elevation information, etc.

Figure 6-2: Flooding Complaints (Hurricane Frances September 2004)

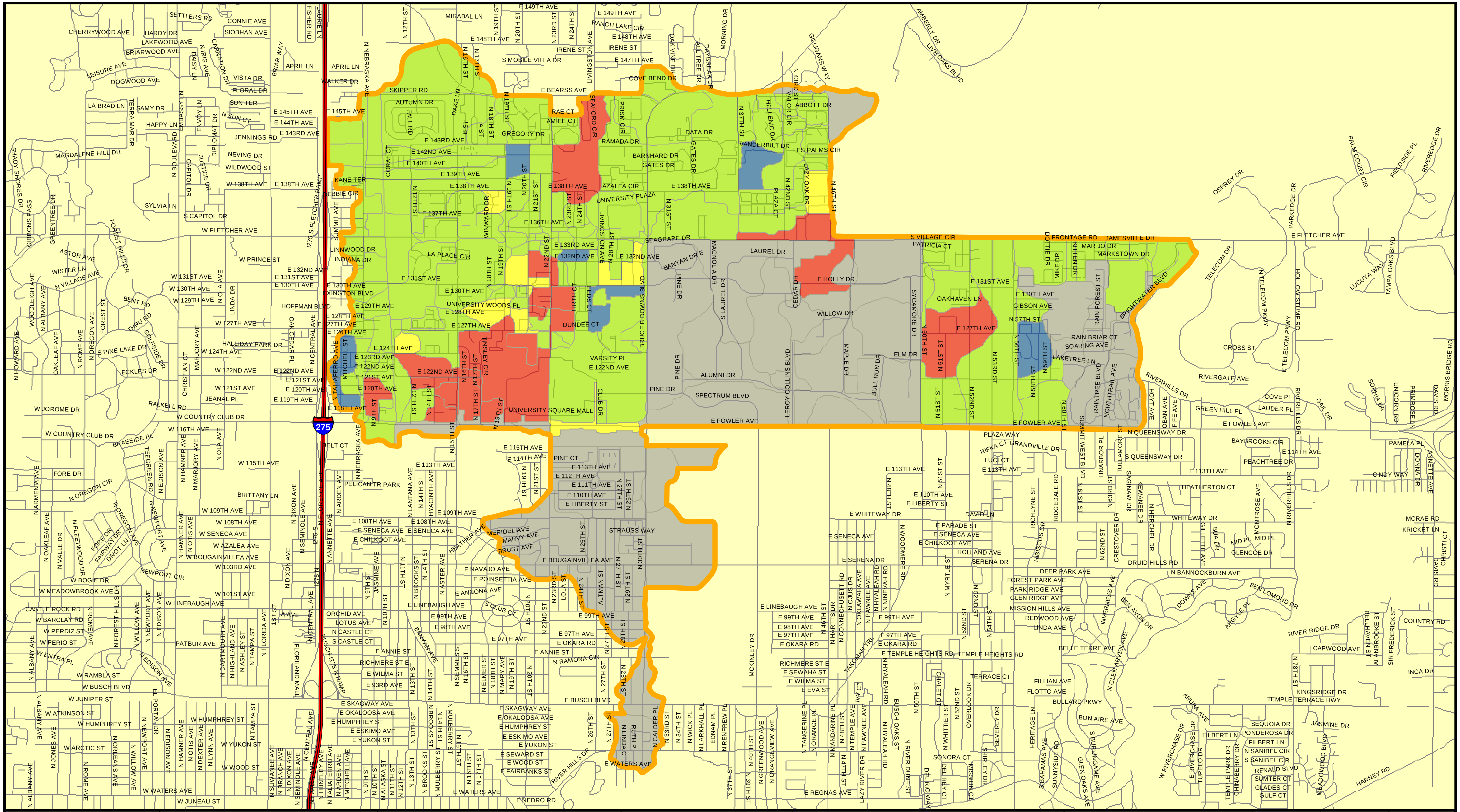
Filename:	Map Date:	Map Prepared By:
Figure 6-2.mxd	Mar. 31, 2006	Ayres Associates

Project: 61-0100.04

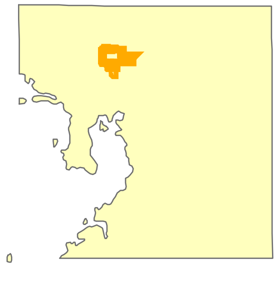
Watershed: Duck Pond Area

Hillsborough County:
WMP Update Program

Date of Photography:
N/A



8875 Hidden River Pkwy,
Suite 200
Tampa, FL 33637



Legend

🟩 A

🟦 B

🟨 C

🟥 D

▨ Not in County Jurisdiction

Notes:

This area is used for general map note information such as map accuracy/standards, source information, elevation information, etc.

Figure 6-3: Existing Conditions 25-yr Flood Control Level of Serivce

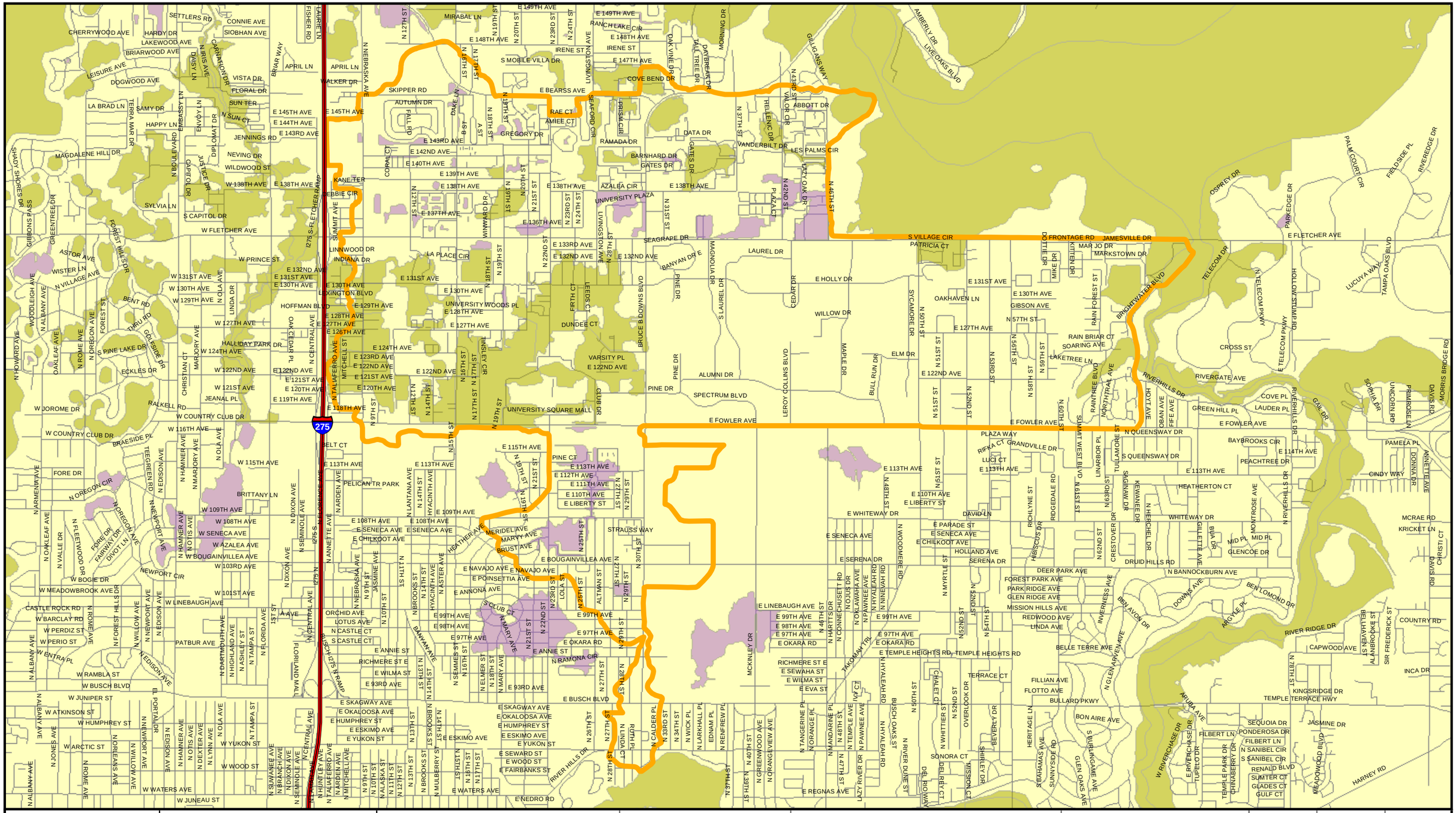
Project: 61-0100.04

Watershed: Duck Pond Area

Hillsborough County:
WMP Update Program

Filename:	Map Date:	Map Prepared By:
Figure 6-3.mxd	Mar. 31, 2006	Ayres Associates

Date of Photography:
N/A


SETTLERS RD
CONNIE AVE
SIOBHAN AVE
CHERRYWOOD AVE
HARDY DR
LAKEWOOD AVE
BRIARWOOD AVE
LAURIE LN
FISHER RD
N 12TH ST
MIRABAL LN
E 149TH AVE
E 148TH AVE
N 19TH ST
N 20TH ST
N 23RD ST
N 24TH ST
RANCH LAKE CIR
IRENE ST
E 147TH AVE
S MOBILE VILLA DR
LIVINGSTON AVE
OAK VINE DR
DAYBREAK DR
MORNING DR
GILLIGANS WAY
AMBERLY DR
LIVE OAKS BLVD
LEISURE AVE
DOGWOOD AVE
DAISY LN
IRIS AVE
CARNATION DR
VISTA DR
FLORAL DR
SUN TER
N SUN CT
BRIAR WAY
APRIL LN
N NEBRASKA AVE
WALKER DR
SKIPPER RD
AUTUMN DR
FALL RD
DAKE LN
N 16TH ST
N 17TH ST
N 18TH ST
N 19TH ST
COVE BEND DR
E BEARSS AVE
SEAFORD CIR
PRISM CIR
RAE CT
AMIEE CT
GREGORY DR
N 43RD ST
VALOR CIR
ABBOTT DR
FRELENIC DR
N 37TH ST
DATA DR
RAMADA DR
VANDERBILT DR
LES PALMS CIR
BARNHARD DR
GATES DR
GATES DR
LA BRAD LN
TERRA MAR DR
SAMY DR
HAPPY LN
EMBASSY LN
ENVOY LN
DIPLOMAT DR
N BOULEVARD
JUSTICE DR
COPPOLO DR
MAGDALENE HILL DR
SHADY SHORES DR
GIBBONS PASS
GREENTREE DR
SYLVIA LN
S CAPITOL DR
W FLETCHER AVE
E 145TH AVE
E 144TH AVE
E 143RD AVE
JENNINGS RD
NEVING DR
WILDWOOD ST
W 138TH AVE
E 138TH AVE
E 143RD AVE
E 142ND AVE
E 140TH AVE
E 139TH AVE
E 138TH AVE
E 137TH AVE
E 136TH AVE
CORAL CT
KANE TER
DEBBIE CIR
I-275 S FLETCHER AVE EXIT
SUMMIT AVE
N 12TH ST
N 17TH ST
N 19TH ST
N 20TH ST
N 21ST ST
N 23RD ST
N 24TH ST
WINWARD DR
AZALEA CIR
UNIVERSITY PLAZA
PLAZA CT
N 42ND ST
N 46TH ST
DOZY OAK DR
E 138TH AVE
N 31ST ST
LIVINGSTON AVE
N 32ND ST
SEAGRAPE DR
E 133RD AVE
E 132ND AVE
N 22ND ST
N 18TH ST
N 19TH ST
LA PLACE CIR
LINNWOOD DR
INDIANA DR
W PRINCE ST
E 132ND AVE
E 131ST AVE
E 130TH AVE
LEXINGTON BLVD
W 131ST AVE
W 130TH AVE
W 129TH AVE
N OLA AVE
LINDA DR
HOFFMAN BLVD
E 129TH AVE
E 128TH AVE
E 127TH AVE
E 126TH AVE
W 127TH AVE
BENT RD
THRU RD
GOLFSIDE DR
S PINE LAKE DR
HALLIDAY PARK DR
W 124TH AVE
W 122ND AVE
ECKLES DR
W 121ST AVE
E 124TH AVE
E 123RD AVE
E 122ND AVE
E 121ST AVE
E 120TH AVE
E 119TH AVE
E 118TH AVE
E 122ND AVE
E 127TH AVE
E 131ST AVE
E 130TH AVE
E 128TH AVE
UNIVERSITY WOODS PL
DUNDEE CT
FIRTH CT
LEEDS CT
BRUCE B DOWNS BLVD
LAUREL DR
BANYAN DR E
MAGNOLIA DR
PINE DR
S LAUREL DR
CEDAR DR
E HOLLY DR
WILLOW DR
VARSITY PL
E 122ND AVE
ALUMNI DR
PINE DR
SPECTRUM BLVD
UNIVERSITY SQUARE MALL
CLUB DR
LEROY COLLINS BLVD
BULL RUN DR
MAPLE DR
ELM DR
E FOWLER AVE
PINE CT
E 115TH AVE
E 113TH AVE
E 112TH AVE
E 111TH AVE
E 110TH AVE
E LIBERTY ST
E WHITEWAY DR
E SENECA AVE
E CHILKOOT AVE
E PARADE ST
HOLLAND AVE
SERENA DR
E SERENA DR
DEER PARK AVE
FOREST PARK AVE
PARK RIDGE AVE
GLEN RIDGE AVE
MISSION HILLS AVE
REDWOOD AVE
LINDA AVE
E 99TH AVE
E 98TH AVE
E 97TH AVE
E OKARA RD
E TEMPLE HEIGHTS RD
TEMPLE HEIGHTS RD
BELLE TERRE AVE
TERRACE CT
FILLIAN AVE
FLOTTO AVE
BULLARD PKWY
BON AIRE AVE
KINGSRIDGE DR
TEMPLE TERRACE HWY
E LINEBAUGH AVE
N 46TH ST
N 47TH ST
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N 61ST ST
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N 63RD ST
N MYRTLE ST
N WOODMERE RD
N OKLAWAHA AVE
N PAWNEE AVE
N NINEVAH RD
N HYALEAH RD
N HARTSDALE RD
N CONNECTICUT RD
N OKLAHOMA RD
N PAWNEE AVE
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N TEMPLE AVE
N PAWNEE AVE
N ORANGEVIEW AVE
N GREENWOOD AVE
N ORANGE PL
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N MANDARINE PL
N LARKHALL PL
N WICK PL
N 33RD ST
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MAR JO DR
MARKSTOWN DR
KITTEN DR
MIKE DR
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GIBSON AVE
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N 60TH ST
E 122ND AVE
RAIN FOREST ST
RAIN BRIAR CT
SOARING AVE
LAKETREE LN
RAINTREE BLVD
NORTHTRAIL AVE
HOXTAVE
DBAN AVE
FIFE AVE
RIVERHILLS DR
RIVERGATE AVE
BRIGHTWATER BLVD
TELECOM DR
N TELECOM PKWY
E TELECOM PKWY
CROSS ST
COVE PL
LAUDER PL
GREEN HILL PL
E FOWLER AVE
N QUEENSWAY DR
S QUEENSWAY DR
PLAZA WAY
RIFKA CT
GRANDVILLE DR
LUCI CT
E 113TH AVE
E 114TH AVE
BAYBROOKS CIR
PEACHTREE DR
HEATHERTON CT
WHITEWAY DR
DAVID LN
DRUID HILLS RD
N BANNOCKBURN AVE
DOWNS AVE
BEN LOMOND DR
BEN AVON DR
INVERNESS AVE
ARGYLE PL
RIVER RIDGE DR
CAPWOOD AVE
COUNTRY RD
INCA DR
SIR FREDERICK ST
ALANBROOKE ST
N 78TH ST
OSPREY DR
PARKEDGE DR
E FLETCHER AVE
PALM COURT CIR
FIELDSIDE PL
RIVEREDGE DR
HOLLOW STUMP RD
LUCUYA WAY
TAMPA OAKS BLVD
MORRIS BRIDGE RD
CINDY WAY
MCRAE RD
KRICKET LN
CHRISTI CT
DAVIS RD
PAMELA PL
DONNA DR
ANNETTE AVE
GAIL DR
SOPHIA DR
UNICORN RD
PRIMROSE LN
DAVAS RD
HARNEY RD
JASMINE DR
SEQUOIA DR
PONDEROSA DR
FILBERT LN
FILBERT LN
N SANIBEL CIR
S SANIBEL CIR
RENALD BLVD
SUMTER CT
GLADES CT
GULF CT
MEADOWOOD BLVD
ARUBA AVE
W RIVERCHASE DR
E RIVERCHASE DR
TUPELO DR
TEMPLE PARK DR
CHINABERRY DR
HERITAGE LN
BEVERLY DR
SHIRLEY DR
MISSION CT
SONORA CT
DEL RIO WAY
DEL REY CT
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SUNNYSIDE RD
GLEN OAKS AVE
S BURLINGAME AVE
RIDGEDALE RD
RICHLYNE ST
HIBISCUS DR
CRESTOVER DR
N HERSCHEL DR
KENWANEE DR
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APPENDIX A

EXISTING CONDITIONS HYDRAULIC MODEL UPDATE

TECHNICAL DATA

APPENDIX B

MODEL INPUT AND

OUTPUT SUMMARIES

APPENDIX A

EXISTING CONDITIONS HYDRAULIC MODEL UPDATE

TECHNICAL DATA

5.0 Datum Adjustment for East Lake, Curiosity Creek, and Duck Pond Watersheds

As required by the scope of work, the datum adjustment from NGVD 1929 to NAVD 1988 has been conducted for all the three watersheds following the steps below:

(1) NGS VERTCON was applied to find out the conversion factor (CF) for each non-dummy junction within a particular watershed:

(a) East Lake has 484 non-dummy junctions, the CF ranges from –0.847 to –0.876 (in feet);
(b) Curiosity Creek has 113 non-dummy junctions, the CF ranges from –0.833 to –0.840 (in feet);
(c) Duck Pond has 272 non-dummy junctions, the CF ranges from –0.833 to –0.843 (in feet);
(d) For all the dummy junctions, the CF is set as zero.

(2) A VBA macro has been developed to apply datum adjustment for .s4d files of the existing model:

(a) Since the CF is junction-based, the information will be automatically updated whenever a junction-related elevation appears, as follows:

C1 Card: ZP (N,1), ZP (N,2) (invert of conduit N at two connected junctions, respectively);
D1 Card: Z (J) (invert elevation of junction J), Y0 (J) (initial water elevation of junction J);
E2 Card: QCURVE (N,I,J) (elevation of point J corresponding to surface area of storage junction).

(b) For elevation of cross-section in C4 Card, average CF of the two connected junctions of the reach was calculated and applied as the CF of the cross-sections corresponding to the reach.

(c) For the elevation of weir crest in G1 Card, the same method as above has been applied to conduct the datum adjustment.

(d) Some elevations (usually set as a large number such as 99), are remained the same in the .s4d files, including:

Ground elevation in D1 Card
Junction crown elevation in E1 Card
Elevation of weir opening in G1 Card

(e) Datum adjustment for the Orifice Invert ZP (I) in the F1 Card.

(3) QA/QC with the updated .s4d file, including:

Rerun the existing model while keeping all the other condition the same;
Storage verification based on the 1-foot contour (in NAVD 1988) and most recent aerials.

Attached please find sample datum adjustment for USF East portion within Duck Pond Area.

Duck Pond Watershed Update
Time of Concentration

BASIN_NAM	LENGTH	TYPE	BEG_GRADE	END_GRADE	GRSLOPE	EQUATION	ROUGHNESS	RAININT	HYDRAD	XCOEFF	TIME_	VELOCITY	TC_SECTION
625000	2697.38	SHCF	63.00	27.00	0.0133	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	1148.59	2.35	19.14
625000	200.00	SHF	64.00	63.00	0.0050	SHEET FLOW	0.011	5.00	0.00	0.00	0.05	0.00	2.94
620100	1896.33	SHCF	48.89	26.39	0.0119	SHALLOW CONCENTRATED	0.000	0.00	0.00	16.13	1079.17	1.76	17.99
620100	200.00	SHF	51.00	48.89	0.0106	SHEET FLOW	0.150	5.00	0.00	0.00	0.29	0.00	17.61
620200	1148.02	SHCF	50.35	38.00	0.0108	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	544.42	2.11	9.07
620200	150.00	SHF	52.00	50.35	0.0110	SHEET FLOW	0.150	5.00	0.00	0.00	0.23	0.00	13.78
620201	997.21	SHCF	35.86	33.00	0.0029	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	915.85	1.09	15.26
620201	200.00	SHF	38.11	35.86	0.0112	SHEET FLOW	0.400	5.00	0.00	0.00	0.63	0.00	37.67
620250	527.43	SHCF	44.84	37.00	0.0149	SHALLOW CONCENTRATED	0.000	0.00	0.00	16.13	268.20	1.97	4.47
620250	150.00	SHF	45.94	44.84	0.0074	SHEET FLOW	0.150	5.00	0.00	0.00	0.27	0.00	16.17
620260	923.88	SHCF	49.32	40.30	0.0098	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	460.01	2.01	7.67
620260	150.00	SHF	51.00	49.32	0.0112	SHEET FLOW	0.011	5.00	0.00	0.00	0.03	0.00	1.69
620300	3669.77	SHCF	48.44	34.15	0.0039	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	2892.69	1.27	48.21
620300	250.00	SHF	49.00	48.44	0.0022	SHEET FLOW	0.011	5.00	0.00	0.00	0.08	0.00	4.85
620300_2	753.32	SHCF	45.05	39.00	0.0080	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	413.44	1.82	6.89
620300_2	150.00	SHF	47.10	45.05	0.0136	SHEET FLOW	0.011	5.00	0.00	0.00	0.03	0.00	1.56
620400	675.43	SHCF	48.11	40.00	0.0120	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	303.16	2.23	5.05
620400	101.55	SHF	49.00	48.11	0.0087	SHEET FLOW	0.011	5.00	0.00	0.00	0.02	0.00	1.37
620400_2	3303.82	SHCF	48.87	39.00	0.0030	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	2973.81	1.11	49.56
620400_2	150.00	SHF	49.00	48.87	0.0009	SHEET FLOW	0.011	5.00	0.00	0.00	0.08	0.00	4.68
620450	1355.34	SHCF	45.00	39.00	0.0044	SHALLOW CONCENTRATED	0.000	0.00	0.00	16.13	1262.52	1.07	21.04
620450	150.00	SHF	45.40	45.00	0.0027	SHEET FLOW	0.150	5.00	0.00	0.00	0.40	0.00	24.18
620460	1014.06	SHCF	46.00	42.00	0.0039	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	794.27	1.28	13.24
620460	150.00	SHF	47.00	46.00	0.0067	SHEET FLOW	0.011	5.00	0.00	0.00	0.03	0.00	2.08
620500	1158.88	SHCF	45.76	34.00	0.0101	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	565.94	2.05	9.43
620500	150.00	SHF	47.00	45.76	0.0083	SHEET FLOW	0.400	5.00	0.00	0.00	0.56	0.00	33.83
620600	1881.59	SHCF	47.77	43.44	0.0023	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	1929.71	0.98	32.16
620600	100.00	SHF	48.00	47.77	0.0023	SHEET FLOW	0.170	5.00	0.00	0.00	0.34	0.00	20.41
620600_2	746.27	SHCF	40.97	39.00	0.0026	SHALLOW CONCENTRATED	0.000	0.00	0.00	16.13	899.11	0.83	14.99
620600_2	200.00	SHF	44.14	40.97	0.0158	SHEET FLOW	0.400	5.00	0.00	0.00	0.55	0.00	32.86
620650	812.45	SHCF	46.00	41.68	0.0053	SHALLOW CONCENTRATED	0.000	0.00	0.00	16.13	690.58	1.18	11.51
620650	100.00	SHF	48.55	46.00	0.0255	SHEET FLOW	0.011	5.00	0.00	0.00	0.01	0.00	0.88
620700	672.72	SHCF	41.83	36.95	0.0073	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	388.49	1.73	6.48
620700	100.00	SHF	42.00	41.83	0.0017	SHEET FLOW	0.060	5.00	0.00	0.00	0.17	0.00	10.05
620800	1329.21	SHCF	45.00	41.50	0.0026	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	1273.62	1.04	21.23
620800	150.00	SHF	48.00	45.00	0.0200	SHEET FLOW	0.170	5.00	0.00	0.00	0.20	0.00	11.98
620850	743.58	SHCF	46.21	44.72	0.0020	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	817.80	0.91	13.63
620850	100.00	SHF	49.11	46.21	0.0289	SHEET FLOW	0.150	5.00	0.00	0.00	0.11	0.00	6.76
621000	1356.61	SHCF	44.17	37.14	0.0052	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	927.07	1.46	15.45
621000	150.00	SHF	45.20	44.17	0.0068	SHEET FLOW	0.011	5.00	0.00	0.00	0.03	0.00	2.06
621075	355.54	SHCF	34.00	32.32	0.0047	SHALLOW CONCENTRATED	0.000	0.00	0.00	16.13	320.34	1.11	5.34
621075	100.00	SHF	35.00	34.00	0.0100	SHEET FLOW	0.150	5.00	0.00	0.00	0.17	0.00	10.34
621100	809.07	SHCF	34.18	32.00	0.0027	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	766.32	1.06	12.77
621100	150.00	SHF	37.00	34.18	0.0188	SHEET FLOW	0.011	5.00	0.00	0.00	0.02	0.00	1.38
621100_2	1457.59	SHCF	38.80	33.85	0.0034	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	1230.44	1.18	20.51
621100_2	150.00	SHF	42.00	38.80	0.0213	SHEET FLOW	0.011	5.00	0.00	0.00	0.02	0.00	1.31
621125	683.08	SHCF	33.00	27.00	0.0088	SHALLOW CONCENTRATED	0.000	0.00	0.00	16.13	451.73	1.51	7.53
621125	150.00	SHF	33.46	33.00	0.0031	SHEET FLOW	0.011	5.00	0.00	0.00	0.05	0.00	2.83
621200	1078.60	SHCF	39.57	33.00	0.0061	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	680.10	1.59	11.34
621200	150.00	SHF	40.00	39.57	0.0029	SHEET FLOW	0.060	5.00	0.00	0.00	0.19	0.00	11.28
621200_2	1318.44	SHCF	48.00	41.16	0.0052	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	900.55	1.46	15.01
621200_2	150.00	SHF	50.71	48.00	0.0181	SHEET FLOW	0.170	5.00	0.00	0.00	0.21	0.00	12.48
621225	979.24	SHCF	33.00	31.02	0.0020	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	1071.06	0.91	17.85

Duck Pond Watershed Update
Time of Concentration

BASIN_NAM	LENGTH	TYPE	BEG_GRADE	END_GRADE	GRSLOPE	EQUATION	ROUGHNESS	RAININT	HYDRAD	XCOEFF	TIME_	VELOCITY	TC_SECTION
621225	150.00	SHF	34.11	33.00	0.0074	SHEET FLOW	0.011	5.00	0.00	0.00	0.03	0.00	2.00
621275	258.82	SHCF	30.97	28.00	0.0115	SHALLOW CONCENTRATED	0.000	0.00	0.00	16.13	149.81	1.73	2.50
621275	100.00	SHF	37.60	30.97	0.0663	SHEET FLOW	0.150	5.00	0.00	0.00	0.08	0.00	4.85
621300	450.41	SHCF	38.94	33.00	0.0132	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	193.01	2.33	3.22
621300	200.00	SHF	40.00	38.94	0.0053	SHEET FLOW	0.400	5.00	0.00	0.00	0.85	0.00	50.79
621300_2	997.73	SHCF	39.53	38.47	0.0011	SHALLOW CONCENTRATED	0.000	0.00	0.00	16.13	1892.55	0.53	31.54
621300_2	100.00	SHF	41.05	39.53	0.0152	SHEET FLOW	0.400	5.00	0.00	0.00	0.32	0.00	19.20
621325	1374.65	SHCF	36.28	33.68	0.0019	SHALLOW CONCENTRATED	0.000	0.00	0.00	16.13	1958.16	0.70	32.64
621325	150.00	SHF	37.47	36.28	0.0079	SHEET FLOW	0.060	5.00	0.00	0.00	0.13	0.00	7.55
621350	510.98	SHCF	37.86	36.00	0.0036	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	417.18	1.22	6.95
621350	100.00	SHF	38.00	37.86	0.0014	SHEET FLOW	0.011	5.00	0.00	0.00	0.05	0.00	2.77
621375	1102.98	SHCF	41.00	34.00	0.0063	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	681.08	1.62	11.35
621375	150.00	SHF	44.00	41.00	0.0200	SHEET FLOW	0.060	5.00	0.00	0.00	0.09	0.00	5.21
621390	506.28	SHCF	38.07	36.00	0.0041	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	389.79	1.30	6.50
621390	150.00	SHF	39.00	38.07	0.0062	SHEET FLOW	0.400	5.00	0.00	0.00	0.63	0.00	37.91
621395	1147.39	SHCF	36.67	34.92	0.0015	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	1447.84	0.79	24.13
621395	150.00	SHF	37.00	36.67	0.0022	SHEET FLOW	0.011	5.00	0.00	0.00	0.05	0.00	3.23
621400	1409.15	SHCF	39.76	33.00	0.0048	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	1000.48	1.41	16.68
621400	150.00	SHF	40.91	39.76	0.0076	SHEET FLOW	0.011	5.00	0.00	0.00	0.03	0.00	1.97
621425	1211.81	SHCF	45.00	31.00	0.0116	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	554.61	2.18	9.24
621425	150.00	SHF	47.03	45.00	0.0136	SHEET FLOW	0.011	5.00	0.00	0.00	0.03	0.00	1.57
621450	1317.11	SHCF	36.00	35.50	0.0004	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	3325.44	0.40	55.42
621450	150.00	SHF	37.69	36.00	0.0112	SHEET FLOW	0.011	5.00	0.00	0.00	0.03	0.00	1.69
621500	648.10	SHCF	42.00	36.00	0.0093	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	331.35	1.96	5.52
621500	150.00	SHF	44.01	42.00	0.0134	SHEET FLOW	0.011	5.00	0.00	0.00	0.03	0.00	1.57
621550	679.67	SHCF	34.52	31.46	0.0045	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	498.44	1.36	8.31
621550	184.79	SHF	35.00	34.52	0.0026	SHEET FLOW	0.400	5.00	0.00	0.00	1.06	0.00	63.40
621600	508.30	SHCF	36.22	35.00	0.0024	SHALLOW CONCENTRATED	0.000	0.00	0.00	16.13	641.97	0.79	10.70
621600	100.00	SHF	40.42	36.22	0.0419	SHEET FLOW	0.400	5.00	0.00	0.00	0.21	0.00	12.78
621625	691.37	SHCF	37.00	36.83	0.0002	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	2192.93	0.32	36.55
621625	150.00	SHF	40.00	37.00	0.0200	SHEET FLOW	0.400	5.00	0.00	0.00	0.40	0.00	23.76
621630	581.78	SHCF	37.95	36.44	0.0026	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	561.64	1.04	9.36
621630	100.00	SHF	38.00	37.95	0.0005	SHEET FLOW	0.400	5.00	0.00	0.00	1.25	0.00	75.13
621650	276.64	SHCF	40.00	36.05	0.0143	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	113.82	2.43	1.90
621650	120.00	SHF	41.00	40.00	0.0083	SHEET FLOW	0.060	5.00	0.00	0.00	0.10	0.00	6.18
621675	1017.48	SHCF	38.95	36.17	0.0027	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	957.21	1.06	15.95
621675	150.00	SHF	39.25	38.95	0.0020	SHEET FLOW	0.011	5.00	0.00	0.00	0.06	0.00	3.38
621700	1123.49	SHCF	38.67	37.00	0.0015	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	1433.38	0.78	23.89
621700	200.00	SHF	39.00	38.67	0.0016	SHEET FLOW	0.011	5.00	0.00	0.00	0.08	0.00	4.59
621715	704.55	SHCF	40.43	39.00	0.0020	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	770.18	0.91	12.84
621715	100.00	SHF	41.00	40.43	0.0057	SHEET FLOW	0.011	5.00	0.00	0.00	0.03	0.00	1.60
621725	1268.41	SHCF	45.35	37.00	0.0066	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	769.22	1.65	12.82
621725	100.00	SHF	46.00	45.35	0.0065	SHEET FLOW	0.060	5.00	0.00	0.00	0.10	0.00	5.89
621750	724.44	SHCF	45.80	43.10	0.0037	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	583.99	1.24	9.73
621750	150.00	SHF	46.00	45.80	0.0013	SHEET FLOW	0.011	5.00	0.00	0.00	0.07	0.00	3.96
621775	800.00	SHCF	40.00	35.00	0.0062	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	497.80	1.61	8.30
621775	100.00	SHF	41.00	40.00	0.0100	SHEET FLOW	0.011	5.00	0.00	0.00	0.02	0.00	1.28
621800	665.54	SHCF	41.70	39.00	0.0041	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	514.02	1.29	8.57
621800	150.00	SHF	42.00	41.70	0.0020	SHEET FLOW	0.011	5.00	0.00	0.00	0.06	0.00	3.37
621825	504.29	SHCF	41.51	39.12	0.0047	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	360.49	1.40	6.01
621825	100.00	SHF	42.00	41.51	0.0049	SHEET FLOW	0.011	5.00	0.00	0.00	0.03	0.00	1.71
621875	2845.27	SHCF	52.26	35.00	0.0061	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	1796.86	1.58	29.95
621875	100.00	SHF	54.95	52.26	0.0269	SHEET FLOW	0.011	5.00	0.00	0.00	0.01	0.00	0.86

Duck Pond Watershed Update
Time of Concentration

BASIN_NAM	LENGTH	TYPE	BEG_GRADE	END_GRADE	GRSLOPE	EQUATION	ROUGHNESS	RAININT	HYDRAD	XCOEFF	TIME_	VELOCITY	TC_SECTION
621900	968.88	SHCF	37.49	31.87	0.0058	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	626.09	1.55	10.44
621900	150.00	SHF	38.00	37.49	0.0034	SHEET FLOW	0.060	5.00	0.00	0.00	0.18	0.00	10.56
621950	958.68	SHCF	47.64	40.00	0.0080	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	528.28	1.81	8.81
621950	100.00	SHF	48.00	47.64	0.0036	SHEET FLOW	0.400	5.00	0.00	0.00	0.57	0.00	34.11
622400	1831.68	SHCF	37.00	33.00	0.0022	SHALLOW CONCENTRATED	0.000	0.00	0.00	16.13	2429.34	0.75	40.49
622400	231.63	SHF	38.01	37.00	0.0044	SHEET FLOW	0.400	5.00	0.00	0.00	1.03	0.00	61.85
622500	291.54	SHCF	34.53	33.00	0.0053	SHALLOW CONCENTRATED	0.000	0.00	0.00	16.13	249.05	1.17	4.15
622500	100.00	SHF	36.00	34.53	0.0147	SHEET FLOW	0.400	5.00	0.00	0.00	0.32	0.00	19.46
622600	494.09	OCHF	36.26	34.00	0.0000	OPEN CHANNEL FLOW	0.035	0.00	2.33	0.00	247.04	2.00	4.12
622700	255.23	OCHF	34.35	34.00	0.0000	OPEN CHANNEL FLOW	0.035	0.00	2.33	0.00	127.62	2.00	2.13
622700	140.00	SHCF	36.80	34.35	0.0175	SHALLOW CONCENTRATED	0.000	0.00	0.00	16.13	65.62	2.13	1.09
622700	100.00	SHF	37.00	36.80	0.0020	SHEET FLOW	0.011	5.00	0.00	0.00	0.04	0.00	2.44
622800	1885.10	SHCF	42.00	35.00	0.0037	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	1521.78	1.24	25.36
622800	150.00	SHF	45.00	42.00	0.0200	SHEET FLOW	0.060	5.00	0.00	0.00	0.09	0.00	5.21
622850	2016.71	SHCF	44.00	36.00	0.0040	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	1575.15	1.28	26.25
622850	150.00	SHF	44.58	44.00	0.0039	SHEET FLOW	0.011	5.00	0.00	0.00	0.04	0.00	2.59
622900	363.49	SHCF	37.64	35.00	0.0073	SHALLOW CONCENTRATED	0.000	0.00	0.00	16.13	264.13	1.38	4.40
622900	100.00	SHF	38.00	37.64	0.0036	SHEET FLOW	0.400	5.00	0.00	0.00	0.57	0.00	34.28
622925	717.01	SHCF	36.00	35.00	0.0014	SHALLOW CONCENTRATED	0.000	0.00	0.00	16.13	1189.97	0.60	19.83
622925	150.00	SHF	38.00	36.00	0.0133	SHEET FLOW	0.060	5.00	0.00	0.00	0.10	0.00	6.13
622950	362.22	SHCF	36.75	34.00	0.0076	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	204.50	1.77	3.41
622950	150.00	SHF	37.00	36.75	0.0017	SHEET FLOW	0.060	5.00	0.00	0.00	0.23	0.00	14.07
623140	1151.22	SHCF	36.80	33.00	0.0033	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	985.71	1.17	16.43
623140	200.00	SHF	37.00	36.80	0.0010	SHEET FLOW	0.060	5.00	0.00	0.00	0.36	0.00	21.73
623150	300.22	SHCF	36.47	33.00	0.0116	SHALLOW CONCENTRATED	0.000	0.00	0.00	16.13	173.02	1.74	2.88
623150	100.00	SHF	37.00	36.47	0.0053	SHEET FLOW	0.060	5.00	0.00	0.00	0.11	0.00	6.42
623160	121.75	SHCF	35.20	34.92	0.0024	SHALLOW CONCENTRATED	0.000	0.00	0.00	16.13	155.46	0.78	2.59
623160	100.00	SHF	36.00	35.20	0.0080	SHEET FLOW	0.011	5.00	0.00	0.00	0.02	0.00	1.40
623160_2	927.24	SHCF	32.95	25.00	0.0086	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	492.57	1.88	8.21
623160_2	100.00	SHF	33.95	32.95	0.0099	SHEET FLOW	0.400	5.00	0.00	0.00	0.38	0.00	22.72
623170	1493.37	SHCF	39.55	30.46	0.0061	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	941.78	1.59	15.70
623170	150.00	SHF	40.17	39.55	0.0041	SHEET FLOW	0.400	5.00	0.00	0.00	0.74	0.00	44.68
623190	1029.50	SHCF	42.09	41.00	0.0011	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	1557.56	0.66	25.96
623190	100.00	SHF	43.00	42.09	0.0091	SHEET FLOW	0.011	5.00	0.00	0.00	0.02	0.00	1.33
623200	762.84	SHCF	42.00	39.00	0.0039	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	598.40	1.27	9.97
623200	150.00	SHF	43.00	42.00	0.0067	SHEET FLOW	0.011	5.00	0.00	0.00	0.03	0.00	2.08
623200_2	1667.41	SHCF	39.32	28.38	0.0066	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	1012.39	1.65	16.87
623200_2	150.00	SHF	39.89	39.32	0.0037	SHEET FLOW	0.170	5.00	0.00	0.00	0.39	0.00	23.42
623210	1374.65	SHCF	42.17	41.00	0.0009	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	2317.91	0.59	38.63
623210	150.00	SHF	43.65	42.17	0.0099	SHEET FLOW	0.011	5.00	0.00	0.00	0.03	0.00	1.78
623215	1240.38	SHCF	44.00	37.00	0.0056	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	812.24	1.53	13.54
623215	150.00	SHF	45.00	44.00	0.0067	SHEET FLOW	0.011	5.00	0.00	0.00	0.03	0.00	2.08
623220	1847.89	SHCF	43.18	43.00	0.0001	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	9112.26	0.20	151.87
623220	150.00	SHF	44.65	43.18	0.0098	SHEET FLOW	0.060	5.00	0.00	0.00	0.12	0.00	6.93
623230	1846.74	SHCF	44.65	41.43	0.0017	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	2177.10	0.85	36.29
623230	150.00	SHF	44.86	44.65	0.0014	SHEET FLOW	0.011	5.00	0.00	0.00	0.06	0.00	3.88
623240	2007.05	SHCF	43.46	42.00	0.0007	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	3655.06	0.55	60.92
623240	200.00	SHF	44.00	43.46	0.0027	SHEET FLOW	0.060	5.00	0.00	0.00	0.24	0.00	14.66
623243	1751.94	SHCF	50.68	42.00	0.0050	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	1224.62	1.43	20.41
623243	150.00	SHF	54.00	50.68	0.0222	SHEET FLOW	0.060	5.00	0.00	0.00	0.08	0.00	5.00
623245	1119.60	SHCF	50.21	49.00	0.0011	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	1675.62	0.67	27.93
623245	150.00	SHF	52.77	50.21	0.0171	SHEET FLOW	0.011	5.00	0.00	0.00	0.02	0.00	1.43
623248	940.28	SHCF	54.00	44.60	0.0100	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	462.67	2.03	7.71

Duck Pond Watershed Update
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BASIN_NAM	LENGTH	TYPE	BEG_GRADE	END_GRADE	GRSLOPE	EQUATION	ROUGHNESS	RAININT	HYDRAD	XCOEFF	TIME_	VELOCITY	TC_SECTION
623248	150.00	SHF	61.00	54.00	0.0467	SHEET FLOW	0.150	5.00	0.00	0.00	0.13	0.00	7.73
623250	3385.80	OCHF	52.68	44.00	0.0000	OPEN CHANNEL FLOW	0.035	0.00	2.33	0.00	1692.90	2.00	28.22
623250_2	1705.71	SHCF	38.78	25.10	0.0080	SHALLOW CONCENTRATED	0.000	0.00	0.00	16.13	1180.59	1.44	19.68
623250_2	150.00	SHF	39.51	38.78	0.0049	SHEET FLOW	0.400	5.00	0.00	0.00	0.70	0.00	41.83
623270	1960.76	SHCF	54.00	41.00	0.0066	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	1184.59	1.66	19.74
623270	150.00	SHF	54.93	54.00	0.0062	SHEET FLOW	0.400	5.00	0.00	0.00	0.63	0.00	37.91
623270_2	4817.23	SHCF	77.11	35.00	0.0087	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	2534.62	1.90	42.24
623270_2	300.00	SHF	78.33	77.11	0.0041	SHEET FLOW	0.011	5.00	0.00	0.00	0.07	0.00	4.41
623300	1725.82	SHCF	43.52	37.00	0.0038	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	1381.34	1.25	23.02
623300	100.00	SHF	44.00	43.52	0.0048	SHEET FLOW	0.011	5.00	0.00	0.00	0.03	0.00	1.71
623310	598.52	SHCF	40.70	39.00	0.0028	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	551.67	1.08	9.19
623310	100.00	SHF	42.00	40.70	0.0130	SHEET FLOW	0.400	5.00	0.00	0.00	0.34	0.00	20.41
623310_2	1216.05	SHCF	38.63	29.00	0.0079	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	672.34	1.81	11.21
623310_2	150.00	SHF	42.00	38.63	0.0225	SHEET FLOW	0.060	5.00	0.00	0.00	0.08	0.00	4.97
623320	558.68	SHCF	40.86	39.00	0.0033	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	475.73	1.17	7.93
623320	100.00	SHF	41.53	40.86	0.0067	SHEET FLOW	0.011	5.00	0.00	0.00	0.03	0.00	1.51
623340	492.83	SHCF	43.90	37.00	0.0140	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	204.89	2.41	3.42
623340	100.00	SHF	44.00	43.90	0.0010	SHEET FLOW	0.011	5.00	0.00	0.00	0.05	0.00	3.21
623350	629.64	SHCF	33.59	29.00	0.0073	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	362.92	1.73	6.05
623350	100.00	SHF	35.00	33.59	0.0141	SHEET FLOW	0.060	5.00	0.00	0.00	0.07	0.00	4.33
623360	722.21	SHCF	42.41	37.00	0.0075	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	410.49	1.76	6.84
623360	100.00	SHF	62.62	42.41	0.2021	SHEET FLOW	0.060	5.00	0.00	0.00	0.02	0.00	1.49
623370	1058.91	SHCF	42.00	39.05	0.0028	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	987.66	1.07	16.46
623370	150.00	SHF	42.45	42.00	0.0030	SHEET FLOW	0.060	5.00	0.00	0.00	0.18	0.00	11.08
623380	844.00	SHCF	45.36	41.00	0.0052	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	577.69	1.46	9.63
623380	150.00	SHF	47.59	45.36	0.0148	SHEET FLOW	0.060	5.00	0.00	0.00	0.10	0.00	5.87
623390	646.59	SHCF	45.00	39.00	0.0093	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	330.19	1.96	5.50
623390	100.00	SHF	45.52	45.00	0.0052	SHEET FLOW	0.011	5.00	0.00	0.00	0.03	0.00	1.66
623400	78.82	SHCF	40.90	40.49	0.0051	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	54.04	1.46	0.90
623400	100.00	SHF	41.00	40.90	0.0010	SHEET FLOW	0.011	5.00	0.00	0.00	0.05	0.00	3.21
623400_2	1066.72	SHCF	35.71	33.00	0.0025	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	1041.02	1.02	17.35
623400_2	150.00	SHF	36.39	35.71	0.0045	SHEET FLOW	0.060	5.00	0.00	0.00	0.16	0.00	9.45
623420	1051.16	SHCF	38.02	32.92	0.0049	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	742.40	1.42	12.37
623420	150.00	SHF	39.58	38.02	0.0104	SHEET FLOW	0.011	5.00	0.00	0.00	0.03	0.00	1.74
623430	1573.69	SHCF	42.00	38.00	0.0025	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	1535.51	1.02	25.59
623430	150.00	SHF	44.72	42.00	0.0182	SHEET FLOW	0.060	5.00	0.00	0.00	0.09	0.00	5.41
623450	364.71	SHCF	40.80	40.00	0.0022	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	383.06	0.95	6.38
623450	100.00	SHF	41.00	40.80	0.0020	SHEET FLOW	0.011	5.00	0.00	0.00	0.04	0.00	2.44
623450_2	2923.65	SHCF	52.88	32.00	0.0071	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	1701.95	1.72	28.37
623450_2	157.26	SHF	54.00	52.88	0.0071	SHEET FLOW	0.011	5.00	0.00	0.00	0.04	0.00	2.10
623500	439.09	SHCF	41.30	39.93	0.0031	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	388.05	1.13	6.47
623500	100.00	SHF	43.00	41.30	0.0170	SHEET FLOW	0.011	5.00	0.00	0.00	0.02	0.00	1.03
623510	1095.91	SHCF	45.16	35.00	0.0093	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	560.04	1.96	9.33
623510	150.00	SHF	45.91	45.16	0.0050	SHEET FLOW	0.060	5.00	0.00	0.00	0.15	0.00	9.04
623550	571.45	SHCF	41.68	41.00	0.0012	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	812.59	0.70	13.54
623550	99.22	SHF	43.00	41.68	0.0133	SHEET FLOW	0.011	5.00	0.00	0.00	0.02	0.00	1.14
623600	384.67	SHCF	43.00	41.84	0.0030	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	344.14	1.12	5.74
623600	100.00	SHF	45.00	43.00	0.0200	SHEET FLOW	0.011	5.00	0.00	0.00	0.02	0.00	0.97
623650	462.96	SHCF	44.54	40.62	0.0085	SHALLOW CONCENTRATED	0.000	0.00	0.00	16.13	312.06	1.48	5.20
623650	100.00	SHF	45.00	44.54	0.0046	SHEET FLOW	0.011	5.00	0.00	0.00	0.03	0.00	1.74
623650_2	295.76	SHCF	30.40	30.00	0.0014	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	394.64	0.75	6.58
623650_2	150.00	SHF	30.87	30.40	0.0031	SHEET FLOW	0.011	5.00	0.00	0.00	0.05	0.00	2.81
623670	248.35	SHCF	28.88	26.00	0.0116	SHALLOW CONCENTRATED	0.000	0.00	0.00	16.13	142.90	1.74	2.38

Duck Pond Watershed Update
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BASIN_NAM	LENGTH	TYPE	BEG_GRADE	END_GRADE	GRSLOPE	EQUATION	ROUGHNESS	RAININT	HYDRAD	XCOEFF	TIME_	VELOCITY	TC_SECTION
623670	100.00	SHF	29.64	28.88	0.0076	SHEET FLOW	0.400	5.00	0.00	0.00	0.42	0.00	25.33
623680	333.79	SHCF	28.27	25.00	0.0098	SHALLOW CONCENTRATED	0.000	0.00	0.00	16.13	208.94	1.60	3.48
623680	100.00	SHF	29.29	28.27	0.0102	SHEET FLOW	0.011	5.00	0.00	0.00	0.02	0.00	1.27
623685	115.17	SHCF	32.68	28.24	0.0386	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	28.83	3.99	0.48
623685	100.00	SHF	34.08	32.68	0.0140	SHEET FLOW	0.011	5.00	0.00	0.00	0.02	0.00	1.12
623690	646.50	SHCF	39.47	30.00	0.0146	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	262.79	2.46	4.38
623690	150.00	SHF	36.74	35.47	0.0084	SHEET FLOW	0.011	5.00	0.00	0.00	0.03	0.00	1.89
623700	726.53	SHCF	43.00	35.74	0.0100	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	357.55	2.03	5.96
623700	150.00	SHF	44.00	43.00	0.0067	SHEET FLOW	0.011	5.00	0.00	0.00	0.03	0.00	2.08
623700_2	234.25	SHCF	29.53	26.17	0.0143	SHALLOW CONCENTRATED	0.000	0.00	0.00	16.13	121.26	1.93	2.02
623700_2	100.00	SHF	29.98	29.53	0.0045	SHEET FLOW	0.400	5.00	0.00	0.00	0.52	0.00	31.25
623710	441.36	SHCF	32.90	31.59	0.0030	SHALLOW CONCENTRATED	0.000	0.00	0.00	16.13	502.18	0.88	8.37
623710	100.00	SHF	32.95	32.90	0.0005	SHEET FLOW	0.170	5.00	0.00	0.00	0.63	0.00	37.56
623720	740.93	SHCF	32.01	30.25	0.0024	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	746.82	0.99	12.45
623720	100.00	SHF	33.00	32.01	0.0099	SHEET FLOW	0.060	5.00	0.00	0.00	0.08	0.00	4.99
623725	597.73	SHCF	39.80	34.72	0.0085	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	318.81	1.87	5.31
623725	100.00	SHF	40.00	39.80	0.0020	SHEET FLOW	0.011	5.00	0.00	0.00	0.04	0.00	2.44
623730	514.74	SHCF	33.86	31.85	0.0039	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	405.32	1.27	6.76
623730	100.00	SHF	34.00	33.86	0.0014	SHEET FLOW	0.011	5.00	0.00	0.00	0.05	0.00	2.81
623750	794.43	SHCF	44.00	39.00	0.0063	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	492.60	1.61	8.21
623750	150.00	SHF	45.00	44.00	0.0067	SHEET FLOW	0.011	5.00	0.00	0.00	0.03	0.00	2.08
623760	931.16	SHCF	35.00	31.98	0.0032	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	804.47	1.16	13.41
623760	150.00	SHF	35.13	35.00	0.0008	SHEET FLOW	0.011	5.00	0.00	0.00	0.08	0.00	4.75
623800	358.61	SHCF	44.57	44.21	0.0010	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	562.19	0.64	9.37
623800	100.00	SHF	45.00	44.57	0.0043	SHEET FLOW	0.011	5.00	0.00	0.00	0.03	0.00	1.79
623800_2	1519.60	SHCF	44.59	29.86	0.0097	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	759.48	2.00	12.66
623800_2	150.00	SHF	46.95	44.59	0.0157	SHEET FLOW	0.011	5.00	0.00	0.00	0.02	0.00	1.48
623810	322.72	SHCF	34.44	30.16	0.0133	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	137.84	2.34	2.30
623810	100.00	SHF	37.56	34.44	0.0311	SHEET FLOW	0.060	5.00	0.00	0.00	0.05	0.00	3.15
623820	1536.13	SHCF	43.52	33.00	0.0068	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	913.16	1.68	15.22
623820	150.00	SHF	46.00	43.52	0.0165	SHEET FLOW	0.011	5.00	0.00	0.00	0.02	0.00	1.45
623830	929.48	SHCF	43.55	33.00	0.0114	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	429.18	2.17	7.15
623830	150.00	SHF	49.62	43.55	0.0405	SHEET FLOW	0.011	5.00	0.00	0.00	0.02	0.00	1.01
623840	1872.64	SHCF	54.98	33.00	0.0117	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	850.35	2.20	14.17
623840	150.00	SHF	54.00	52.98	0.0068	SHEET FLOW	0.011	5.00	0.00	0.00	0.03	0.00	2.06
623850	590.27	SHCF	48.94	46.00	0.0050	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	411.24	1.44	6.85
623850	100.00	SHF	49.00	48.94	0.0006	SHEET FLOW	0.011	5.00	0.00	0.00	0.07	0.00	4.01
623850_2	820.16	SHCF	44.22	33.81	0.0127	SHALLOW CONCENTRATED	0.000	0.00	0.00	16.13	451.15	1.82	7.52
623850_2	150.00	SHF	56.00	44.22	0.0785	SHEET FLOW	0.400	5.00	0.00	0.00	0.23	0.00	13.75
623860	290.33	SHCF	34.86	30.59	0.0147	SHALLOW CONCENTRATED	0.000	0.00	0.00	16.13	148.36	1.96	2.47
623860	100.00	SHF	35.00	34.86	0.0014	SHEET FLOW	0.400	5.00	0.00	0.00	0.82	0.00	49.38
623900	1128.70	SHCF	45.28	38.00	0.0065	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	691.33	1.63	11.52
623900	150.00	SHF	47.00	45.28	0.0115	SHEET FLOW	0.011	5.00	0.00	0.00	0.03	0.00	1.68
624010	1450.54	SHCF	43.33	30.67	0.0087	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	763.71	1.90	12.73
624010	150.00	SHF	45.91	43.33	0.0172	SHEET FLOW	0.011	5.00	0.00	0.00	0.02	0.00	1.43
624020	1384.92	SHCF	44.58	31.20	0.0097	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	693.10	2.00	11.55
624020	200.00	SHF	46.00	44.58	0.0071	SHEET FLOW	0.011	5.00	0.00	0.00	0.04	0.00	2.55
624040	432.34	SHCF	35.13	33.94	0.0027	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	405.62	1.07	6.76
624040	100.00	SHF	36.60	35.13	0.0147	SHEET FLOW	0.011	5.00	0.00	0.00	0.02	0.00	1.10
624050	358.88	SHCF	35.40	33.04	0.0066	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	218.04	1.65	3.63
624050	100.00	SHF	37.00	35.40	0.0160	SHEET FLOW	0.060	5.00	0.00	0.00	0.07	0.00	4.12
624080	1729.06	SHCF	43.00	28.36	0.0085	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	924.42	1.87	15.41
624080	200.00	SHF	44.30	43.00	0.0065	SHEET FLOW	0.011	5.00	0.00	0.00	0.04	0.00	2.64

Duck Pond Watershed Update
Time of Concentration

BASIN_NAM	LENGTH	TYPE	BEG_GRADE	END_GRADE	GRSLOPE	EQUATION	ROUGHNESS	RAININT	HYDRAD	XCOEFF	TIME_	VELOCITY	TC_SECTION
624090	1432.79	SHCF	48.89	28.49	0.0142	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	590.61	2.43	9.84
624090	100.00	SHF	54.00	48.89	0.0511	SHEET FLOW	0.011	5.00	0.00	0.00	0.01	0.00	0.67
624100	1199.31	SHCF	32.00	26.36	0.0047	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	860.28	1.39	14.34
624100	150.00	SHF	33.00	32.00	0.0067	SHEET FLOW	0.060	5.00	0.00	0.00	0.13	0.00	8.08
624100_2	1312.29	SHCF	50.08	34.00	0.0123	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	583.19	2.25	9.72
624100_2	200.00	SHF	55.00	50.08	0.0246	SHEET FLOW	0.011	5.00	0.00	0.00	0.03	0.00	1.55
624190	722.05	OCHF	32.41	27.27	0.0000	OPEN CHANNEL FLOW	0.035	0.00	2.33	0.00	361.03	2.00	6.02
624190	1220.00	SHCF	38.25	32.41	0.0048	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	867.04	1.41	14.45
624190	200.00	SHF	39.00	38.25	0.0037	SHEET FLOW	0.011	5.00	0.00	0.00	0.06	0.00	3.30
624200	1307.38	SHCF	49.16	33.00	0.0124	SHALLOW CONCENTRATED	0.000	0.00	0.00	16.13	728.91	1.79	12.15
624200	150.00	SHF	50.01	49.16	0.0057	SHEET FLOW	0.060	5.00	0.00	0.00	0.14	0.00	8.59
624200_2	1518.30	SHCF	35.84	28.50	0.0048	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	1074.10	1.41	17.90
624200_2	100.00	SHF	37.00	35.84	0.0116	SHEET FLOW	0.015	5.00	0.00	0.00	0.03	0.00	1.55
624210	354.92	SHCF	34.56	31.92	0.0074	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	202.38	1.75	3.37
624210	100.00	SHF	36.00	34.56	0.0144	SHEET FLOW	0.400	5.00	0.00	0.00	0.33	0.00	19.61
624230	221.29	SHCF	33.00	29.00	0.0181	SHALLOW CONCENTRATED	0.000	0.00	0.00	16.13	102.02	2.17	1.70
624230	100.00	SHF	34.00	33.00	0.0100	SHEET FLOW	0.011	5.00	0.00	0.00	0.02	0.00	1.28
624250	533.26	SHCF	33.86	31.00	0.0054	SHALLOW CONCENTRATED	0.000	0.00	0.00	16.13	451.30	1.18	7.52
624250	100.00	SHF	34.00	33.86	0.0014	SHEET FLOW	0.400	5.00	0.00	0.00	0.83	0.00	49.77
624260	1109.15	SHCF	35.00	29.12	0.0053	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	749.51	1.48	12.49
624260	200.00	SHF	36.00	35.00	0.0050	SHEET FLOW	0.011	5.00	0.00	0.00	0.05	0.00	2.94
624290	728.21	SHCF	39.86	35.12	0.0065	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	444.19	1.64	7.40
624290	100.00	SHF	40.00	39.86	0.0014	SHEET FLOW	0.060	5.00	0.00	0.00	0.18	0.00	10.91
624300	703.31	SHCF	43.62	31.00	0.0179	SHALLOW CONCENTRATED	0.000	0.00	0.00	16.13	325.39	2.16	5.42
624300	150.00	SHF	52.00	43.62	0.0559	SHEET FLOW	0.400	5.00	0.00	0.00	0.26	0.00	15.76
624310	454.60	SHCF	38.00	33.00	0.0110	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	213.24	2.13	3.55
624310	100.00	SHF	40.00	38.00	0.0200	SHEET FLOW	0.060	5.00	0.00	0.00	0.06	0.00	3.77
624320	1022.32	SHCF	38.00	34.00	0.0039	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	804.00	1.27	13.40
624320	100.00	SHF	38.46	38.00	0.0046	SHEET FLOW	0.011	5.00	0.00	0.00	0.03	0.00	1.74
624325	129.33	SHCF	32.00	31.00	0.0077	SHALLOW CONCENTRATED	0.000	0.00	0.00	16.13	91.16	1.42	1.52
624325	100.00	SHF	33.74	32.00	0.0174	SHEET FLOW	0.150	5.00	0.00	0.00	0.14	0.00	8.28
624330	1448.71	SHCF	41.00	31.00	0.0069	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	857.77	1.69	14.30
624330	100.00	SHF	43.00	41.00	0.0200	SHEET FLOW	0.400	5.00	0.00	0.00	0.29	0.00	17.18
624340	580.16	SHCF	37.40	35.45	0.0034	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	491.11	1.18	8.19
624340	100.00	SHF	38.00	37.40	0.0060	SHEET FLOW	0.011	5.00	0.00	0.00	0.03	0.00	1.57
624350	559.55	SHCF	36.80	33.00	0.0068	SHALLOW CONCENTRATED	0.000	0.00	0.00	16.13	420.83	1.33	7.01
624350	100.00	SHF	37.00	36.80	0.0020	SHEET FLOW	0.011	5.00	0.00	0.00	0.04	0.00	2.44
624360	165.15	SHCF	35.29	35.24	0.0003	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	460.97	0.36	7.68
624360	100.00	SHF	37.00	35.28	0.0172	SHEET FLOW	0.011	5.00	0.00	0.00	0.02	0.00	1.03
624370	1446.68	SHCF	40.27	36.36	0.0027	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	1368.68	1.06	22.81
624370	150.00	SHF	41.00	40.27	0.0049	SHEET FLOW	0.400	5.00	0.00	0.00	0.70	0.00	41.81
624380	645.94	SHCF	37.01	35.55	0.0023	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	668.11	0.97	11.14
624380	150.00	SHF	38.00	37.01	0.0066	SHEET FLOW	0.060	5.00	0.00	0.00	0.14	0.00	8.10
624390	727.56	SHCF	38.00	36.00	0.0027	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	682.64	1.07	11.38
624390	100.00	SHF	38.20	38.00	0.0020	SHEET FLOW	0.011	5.00	0.00	0.00	0.04	0.00	2.42
624400	403.59	SHCF	38.46	38.00	0.0011	SHALLOW CONCENTRATED	0.000	0.00	0.00	16.13	739.09	0.55	12.32
624400	100.00	SHF	41.00	38.46	0.0254	SHEET FLOW	0.400	5.00	0.00	0.00	0.26	0.00	15.62
624400_2	1937.78	SHCF	41.00	31.26	0.0050	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	1344.35	1.44	22.41
624400_2	200.00	SHF	44.21	41.00	0.0161	SHEET FLOW	0.400	5.00	0.00	0.00	0.54	0.00	32.66
624410	334.76	SHCF	41.28	36.00	0.0158	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	131.18	2.55	2.19
624410	100.00	SHF	42.00	41.28	0.0072	SHEET FLOW	0.060	5.00	0.00	0.00	0.09	0.00	5.65
624420	40.25	SHCF	40.78	33.00	0.1932	SHALLOW CONCENTRATED	0.000	0.00	0.00	16.13	5.67	7.09	0.10
624420	100.00	SHF	41.00	40.78	0.0022	SHEET FLOW	0.060	5.00	0.00	0.00	0.15	0.00	9.04

Duck Pond Watershed Update
Time of Concentration

BASIN_NAM	LENGTH	TYPE	BEG_GRADE	END_GRADE	GRSLOPE	EQUATION	ROUGHNESS	RAININT	HYDRAD	XCOEFF	TIME_	VELOCITY	TC_SECTION
624430	606.91	SHCF	42.00	37.00	0.0082	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	328.93	1.85	5.48
624430	150.00	SHF	44.00	42.00	0.0133	SHEET FLOW	0.060	5.00	0.00	0.00	0.10	0.00	6.13
624440	851.49	SHCF	40.60	37.00	0.0042	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	644.31	1.32	10.74
624440	200.00	SHF	44.00	40.60	0.0170	SHEET FLOW	0.060	5.00	0.00	0.00	0.12	0.00	7.00
624450	1001.60	SHCF	38.00	35.00	0.0030	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	900.29	1.11	15.01
624450	150.00	SHF	39.00	38.00	0.0067	SHEET FLOW	0.060	5.00	0.00	0.00	0.13	0.00	8.08
624470	945.74	SHCF	43.78	35.76	0.0085	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	505.34	1.87	8.42
624470	100.00	SHF	44.77	43.78	0.0099	SHEET FLOW	0.011	5.00	0.00	0.00	0.02	0.00	1.28
624490	685.67	SHCF	33.00	31.52	0.0022	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	726.68	0.94	12.11
624490	100.00	SHF	36.19	33.00	0.0319	SHEET FLOW	0.060	5.00	0.00	0.00	0.05	0.00	3.12
624500	882.50	SHCF	44.22	31.92	0.0139	SHALLOW CONCENTRATED	0.000	0.00	0.00	16.13	463.31	1.90	7.72
624500	150.00	SHF	48.03	44.22	0.0254	SHEET FLOW	0.400	5.00	0.00	0.00	0.36	0.00	21.58
624520	753.98	SHCF	36.18	33.92	0.0030	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	677.32	1.11	11.29
624520	100.00	SHF	37.00	36.18	0.0082	SHEET FLOW	0.060	5.00	0.00	0.00	0.09	0.00	5.38
624530	609.52	SHCF	33.92	31.00	0.0048	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	433.39	1.41	7.22
624530	150.00	SHF	34.28	33.92	0.0024	SHEET FLOW	0.011	5.00	0.00	0.00	0.05	0.00	3.13
624540	721.96	SHCF	38.77	31.25	0.0104	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	347.87	2.08	5.80
624540	100.00	SHF	40.91	38.77	0.0213	SHEET FLOW	0.011	5.00	0.00	0.00	0.02	0.00	0.95
624550	512.68	SHCF	35.89	34.00	0.0037	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	415.06	1.24	6.92
624550	100.00	SHF	36.69	35.89	0.0079	SHEET FLOW	0.011	5.00	0.00	0.00	0.02	0.00	1.40
624560	1657.39	SHCF	39.45	31.00	0.0051	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	1141.95	1.45	19.03
624560	200.00	SHF	39.48	39.45	0.0002	SHEET FLOW	0.060	5.00	0.00	0.00	0.73	0.00	43.54
624570	774.38	SHCF	36.30	30.00	0.0081	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	422.21	1.83	7.04
624570	100.00	SHF	37.00	36.30	0.0070	SHEET FLOW	0.400	5.00	0.00	0.00	0.44	0.00	26.21
624600	898.78	SHCF	49.63	39.08	0.0117	SHALLOW CONCENTRATED	0.000	0.00	0.00	16.13	514.23	1.75	8.57
624600	150.00	SHF	50.83	49.63	0.0080	SHEET FLOW	0.060	5.00	0.00	0.00	0.13	0.00	7.51
624700	1566.51	SHCF	65.25	53.00	0.0078	SHALLOW CONCENTRATED	0.000	0.00	0.00	16.13	1098.06	1.43	18.30
624700	200.00	SHF	69.00	65.25	0.0188	SHEET FLOW	0.011	5.00	0.00	0.00	0.03	0.00	1.73
625200	3182.55	SHCF	40.00	29.00	0.0035	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	2662.98	1.20	44.38
625200	300.00	SHF	46.00	40.00	0.0200	SHEET FLOW	0.060	5.00	0.00	0.00	0.15	0.00	9.07
625300	2464.81	SHCF	49.12	32.00	0.0069	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	1454.84	1.69	24.25
625300	250.00	SHF	50.00	49.12	0.0035	SHEET FLOW	0.011	5.00	0.00	0.00	0.07	0.00	4.04
625400	345.13	SHCF	56.17	52.79	0.0098	SHALLOW CONCENTRATED	0.000	0.00	0.00	16.13	216.08	1.60	3.60
625400	100.00	SHF	57.00	56.17	0.0083	SHEET FLOW	0.060	5.00	0.00	0.00	0.09	0.00	5.35
625500	3713.80	SHCF	56.00	30.00	0.0070	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	2183.44	1.70	36.39
625500	300.00	SHF	64.25	56.00	0.0275	SHEET FLOW	0.011	5.00	0.00	0.00	0.03	0.00	2.06
625800	2931.79	SHCF	48.00	32.00	0.0055	SHALLOW CONCENTRATED	0.000	0.00	0.00	16.13	2459.71	1.19	41.00
625800	300.00	SHF	50.00	48.00	0.0067	SHEET FLOW	0.060	5.00	0.00	0.00	0.23	0.00	14.07
625900	3927.31	SHCF	43.47	30.00	0.0034	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	3299.29	1.19	54.99
625900	300.00	SHF	52.85	43.47	0.0313	SHEET FLOW	0.011	5.00	0.00	0.00	0.03	0.00	1.95
626000	2056.49	SHCF	47.00	33.00	0.0068	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	1226.10	1.68	20.44
626000	150.00	SHF	48.00	47.00	0.0067	SHEET FLOW	0.011	5.00	0.00	0.00	0.03	0.00	2.08
626300	1731.13	SHCF	45.42	31.04	0.0083	SHALLOW CONCENTRATED	0.000	0.00	0.00	16.13	1177.38	1.47	19.62
626300	200.00	SHF	51.62	45.42	0.0310	SHEET FLOW	0.060	5.00	0.00	0.00	0.09	0.00	5.50
626400	1129.29	SHCF	62.74	44.00	0.0166	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	431.25	2.62	7.19
626400	100.00	SHF	63.00	62.74	0.0026	SHEET FLOW	0.011	5.00	0.00	0.00	0.04	0.00	2.19
626500	2498.19	SHCF	67.00	43.00	0.0096	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	1253.82	1.99	20.90
626500	200.00	SHF	67.27	67.00	0.0014	SHEET FLOW	0.011	5.00	0.00	0.00	0.08	0.00	4.94
626600	793.62	SHCF	70.47	65.00	0.0069	SHALLOW CONCENTRATED	0.000	0.00	0.00	16.13	592.23	1.34	9.87
626600	100.00	SHF	76.68	70.47	0.0620	SHEET FLOW	0.011	5.00	0.00	0.00	0.01	0.00	0.62
626700	894.42	SHCF	65.72	50.00	0.0176	SHALLOW CONCENTRATED	0.000	0.00	0.00	16.13	418.19	2.14	6.97
626700	100.00	SHF	71.00	65.72	0.0528	SHEET FLOW	0.011	5.00	0.00	0.00	0.01	0.00	0.66
626900	1534.81	SHCF	56.79	30.00	0.0175	SHALLOW CONCENTRATED	0.000	0.00	0.00	16.13	720.07	2.13	12.00

Duck Pond Watershed Update
Time of Concentration

BASIN_NAM	LENGTH	TYPE	BEG_GRADE	END_GRADE	GRSLOPE	EQUATION	ROUGHNESS	RAININT	HYDRAD	XCOEFF	TIME_	VELOCITY	TC_SECTION
626900	200.00	SHF	57.00	56.79	0.0011	SHEET FLOW	0.011	5.00	0.00	0.00	0.09	0.00	5.44
627000	388.89	SHCF	49.10	34.00	0.0388	SHALLOW CONCENTRATED	0.000	0.00	0.00	16.13	122.33	3.18	2.04
627000	100.00	SHF	51.68	49.10	0.0258	SHEET FLOW	0.011	5.00	0.00	0.00	0.01	0.00	0.88
627100	1392.69	SHCF	60.38	34.00	0.0189	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	497.76	2.80	8.30
627100	200.00	SHF	63.92	60.38	0.0177	SHEET FLOW	0.060	5.00	0.00	0.00	0.11	0.00	6.89
627200	1099.77	SHCF	49.00	33.00	0.0145	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	448.53	2.45	7.48
627200	150.00	SHF	52.00	49.00	0.0200	SHEET FLOW	0.011	5.00	0.00	0.00	0.02	0.00	1.34
627300	1666.20	SHCF	62.62	39.00	0.0142	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	688.46	2.42	11.47
627300	150.00	SHF	64.00	62.62	0.0092	SHEET FLOW	0.011	5.00	0.00	0.00	0.03	0.00	1.83
627400	2668.91	SHCF	66.85	51.00	0.0059	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	1703.83	1.57	28.40
627400	180.58	SHF	70.00	66.85	0.0175	SHEET FLOW	0.060	5.00	0.00	0.00	0.11	0.00	6.38
627500	563.59	SHCF	57.67	53.00	0.0083	SHALLOW CONCENTRATED	0.000	0.00	0.00	16.13	383.76	1.47	6.40
627500	100.00	SHF	61.14	57.67	0.0347	SHEET FLOW	0.400	5.00	0.00	0.00	0.23	0.00	13.78
627600	2067.80	SHCF	55.00	39.00	0.0077	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	1156.39	1.79	19.27
627600	200.00	SHF	56.00	55.00	0.0050	SHEET FLOW	0.011	5.00	0.00	0.00	0.05	0.00	2.94
627700	978.06	SHCF	58.91	38.00	0.0214	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	329.09	2.97	5.49
627700	100.00	SHF	60.00	58.91	0.0109	SHEET FLOW	0.400	5.00	0.00	0.00	0.36	0.00	21.86
645079	1036.01	SHCF	49.21	29.00	0.0195	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	364.91	2.84	6.08
645079	150.00	SHF	54.00	49.21	0.0319	SHEET FLOW	0.400	5.00	0.00	0.00	0.33	0.00	19.70
645099	2180.12	SHCF	48.00	32.00	0.0073	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	1251.88	1.74	20.87
645099	200.00	SHF	70.00	48.00	0.1100	SHEET FLOW	0.400	5.00	0.00	0.00	0.25	0.00	15.12
646029	1728.02	SHCF	45.93	32.00	0.0081	SHALLOW CONCENTRATED	0.000	0.00	0.00	16.13	1192.98	1.45	19.88
646029	150.00	SHF	54.00	45.93	0.0538	SHEET FLOW	0.011	5.00	0.00	0.00	0.02	0.00	0.90
646039	2764.53	SHCF	42.63	32.23	0.0038	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	2218.02	1.25	36.97
646039	250.00	SHF	48.00	47.63	0.0015	SHEET FLOW	0.011	5.00	0.00	0.00	0.09	0.00	5.70
646500	1654.72	SHCF	41.00	19.00	0.0133	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	705.96	2.34	11.77
646500	150.00	SHF	45.31	41.00	0.0288	SHEET FLOW	0.011	5.00	0.00	0.00	0.02	0.00	1.16
646905	1182.74	SHCF	37.15	24.47	0.0107	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	561.93	2.10	9.37
646905	100.00	SHF	38.00	37.15	0.0085	SHEET FLOW	0.011	5.00	0.00	0.00	0.02	0.00	1.37
646960	1967.55	SHCF	34.34	28.31	0.0031	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	1747.27	1.13	29.12
646960	250.00	SHF	36.00	34.34	0.0066	SHEET FLOW	0.011	5.00	0.00	0.00	0.05	0.00	3.14
647000	2660.57	SHCF	36.00	20.00	0.0060	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	1687.73	1.58	28.13
647000	200.00	SHF	37.00	36.00	0.0050	SHEET FLOW	0.170	5.00	0.00	0.00	0.44	0.00	26.26
647400	2469.76	SHCF	39.00	26.00	0.0053	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	1674.61	1.47	27.91
647400	250.00	SHF	40.00	39.00	0.0040	SHEET FLOW	0.011	5.00	0.00	0.00	0.06	0.00	3.84
647500	1882.05	SHCF	39.45	21.00	0.0098	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	935.11	2.01	15.59
647500	200.00	SHF	44.00	39.45	0.0228	SHEET FLOW	0.060	5.00	0.00	0.00	0.10	0.00	6.23
647800	1618.30	SHCF	34.00	23.00	0.0068	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	965.59	1.68	16.09
647800	150.00	SHF	35.00	34.00	0.0067	SHEET FLOW	0.060	5.00	0.00	0.00	0.13	0.00	8.08
647805	1115.99	SHCF	31.29	22.00	0.0083	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	601.81	1.85	10.03
647805	100.00	SHF	32.00	31.29	0.0071	SHEET FLOW	0.060	5.00	0.00	0.00	0.09	0.00	5.69
647810	1271.90	SHCF	43.55	23.00	0.0162	SHALLOW CONCENTRATED	0.000	0.00	0.00	16.13	620.18	2.05	10.34
647810	150.00	SHF	44.08	43.55	0.0035	SHEET FLOW	0.011	5.00	0.00	0.00	0.04	0.00	2.68
648000	2165.62	SHCF	43.46	29.00	0.0067	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	1303.66	1.66	21.73
648000	200.00	SHF	45.00	43.46	0.0077	SHEET FLOW	0.011	5.00	0.00	0.00	0.04	0.00	2.47
648200	1207.37	SHCF	47.00	29.00	0.0149	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	486.44	2.48	8.11
648200	104.36	SHF	48.00	47.00	0.0096	SHEET FLOW	0.011	5.00	0.00	0.00	0.02	0.00	1.35
648900	2287.23	SHCF	40.67	26.00	0.0064	SHALLOW CONCENTRATED	0.000	0.00	0.00	20.33	1405.13	1.63	23.42
648900	200.00	SHF	43.00	40.67	0.0117	SHEET FLOW	0.011	5.00	0.00	0.00	0.03	0.00	2.09

Duck Pond Watershed Update
Land Use Changes

FLUCCS CODE	FLUCSDESC	SOURCETHM	ACRES	AREA	COMMENTS
1200	RESIDENTIAL MED DENSITY 2->5 DWELLING UNIT	Tarpo_selu99_pol	2.790	121532.701	changed from 1900 open land with aerials
1800	RECREATIONAL	Tarpo_selu99_pol	0.662	28838.055	changed from 5300 reservoirs with aerials
1200	RESIDENTIAL MED DENSITY 2->5 DWELLING UNIT	Tarpo_selu99_pol	1058.769	46119996.551	changed from 1300 residential high density with aerials
1700	INSTITUTIONAL	Tarpo_selu99_pol	4.083	177866.828	changed from 1900 open land with aerials
1100	RESIDENTIAL LOW DENSITY < 2 DWELLING UNITS	Tarpo_selu99_pol	1058.769	46119996.551	changed from 1300 residential high density with aerials
1100	RESIDENTIAL LOW DENSITY < 2 DWELLING UNITS	Tarpo_selu99_pol	2.473	107732.932	changed from 1900 open land with aerials
1400	COMMERCIAL AND SERVICES	Tarpo_selu99_pol	5.069	220817.436	changed from 1900 open land with aerials
1700	INSTITUTIONAL	Tarpo_selu99_pol	0.271	11826.445	changed from 5300 reservoirs with aerials using equivalent
5300	RESERVOIRS	Tarpo_selu99_pol	0.482	20989.710	boundary not correct with aeirals; not changed because the area equivalent
1400	COMMERCIAL AND SERVICES	Tarpo_selu99_pol	5.554	241934.722	changed from 1900 open land with aerials
1900	OPEN LAND	Tarpo_selu99_pol	1663.835	72476668.046	changed from 8100 transportation with aerials
4340	HARDWOOD CONIFER MIXED	Tarpo_selu99_pol	4.955	215854.449	changed from 1900 open land with aerials
4340	HARDWOOD CONIFER MIXED	Tarpo_selu99_pol	0.495	21545.631	changed from 6350 intermittent ponds with aerials
6300	WETLAND FORESTED MIXED	Tarpo_selu99_pol	14.342	624755.033	changed from 1900 open land with aerials
4340	HARDWOOD CONIFER MIXED	Tarpo_selu99_pol	0.062	2721.752	changed from 6410 freshwater marshes with aerials
4340	HARDWOOD CONIFER MIXED	Tarpo_selu99_pol	4.210	183378.173	changed from 4340 hardwood conifer mixed with aerials and ERP#016805004
1700	INSTITUTIONAL	Tarpo_selu99_pol	2.104	91666.942	changed from 1400 commercial and services
1200	RESIDENTIAL MED DENSITY 2->5 DWELLING UNIT	Tarpo_selu99_pol	10.836	472014.226	changed from 6150 stream and lake swamps (bottomland) with aerials
1700	INSTITUTIONAL	Tarpo_selu99_pol	0.169	7352.846	changed from 5300 reservoirs with aerials
1900	OPEN LAND	Tarpo_selu99_pol	9.175	399679.866	changed from 1100 residental low density < 2 dwelling units with aerials
6210	CYPRESS	Tarpo_selu99_pol	1.128	49144.665	changed from 6300 wetland forest mixed
1400	COMMERCIAL AND SERVICES	Tarpo_selu99_pol	0.396	17259.649	changed from 5300 reserviors with aerials and ERP#024763000
1800	RECREATIONAL	Tarpo_selu99_pol	0.414	18052.326	changed from 5300 reservoirs with aerials
1400	COMMERCIAL AND SERVICES	Tarpo_selu99_pol	1.744	75966.109	changed from 1900 open land with aerials
1300	RESIDENTIAL HIGH DENSITY	Tarpo_selu99_pol	6.412	279321.207	chnaged from 4340 hardwood conifer mixed with aerials and ERP#020468001
1100	RESIDENTIAL LOW DENSITY < 2 DWELLING UNITS	Tarpo_selu99_pol	14.748	642414.427	changed from 1300 residential high density with aerials
1200	RESIDENTIAL MED DENSITY 2->5 DWELLING UNIT	Tarpo_selu99_pol	10.687	465516.995	changed from 4340 hardwood conifer mixed with aerials and ERP#025051000
1900	OPEN LAND	Tarpo_selu99_pol	1663.835	72476668.046	changed from 8100 transportation with aerials
6410	FRESHWATER MARSHES	Tarpo_selu99_pol	0.432	18837.115	changed from 5300 reservoirs with aerials
1100	RESIDENTIAL LOW DENSITY < 2 DWELLING UNITS	Tarpo_selu99_pol	13.047	568316.120	changed from 1400 commercial and services with aerials
8100	TRANSPORTATION	Tarpo_selu99_pol	6.354	276761.887	changed from 1200 residential med density 2->5 dwelling unit with aerials
1700	INSTITUTIONAL	Tarpo_selu99_pol	23.135	1007759.810	changed from 1300 residential high density
1700	INSTITUTIONAL	Tarpo_selu99_pol	10.701	466151.754	changed from 4340 hardwood conifer mixed with aerials and ERP#019858000, 021520000, and 021939000
1700	INSTITUTIONAL	Tarpo_selu99_pol	2.550	111075.470	changed from 1900 open land with aerials
4340	HARDWOOD CONIFER MIXED	Tarpo_selu99_pol	0.297	12918.258	changed from 5300 reservoirs with aerials
8100	TRANSPORTATION	Tarpo_selu99_pol	4.243	184845.296	changed from 1400 commercial and services with aerials
1200	RESIDENTIAL MED DENSITY 2->5 DWELLING UNIT	Tarpo_selu99_pol	4.607	200702.205	changed from 1100 residential low density < 2 dwelling units with aerials
4340	HARDWOOD CONIFER MIXED	Tarpo_selu99_pol	476.967	20776693.434	changed from 1200 residential med density 2->5 dwelling units with aerials
1400	COMMERCIAL AND SERVICES	Tarpo_selu99_pol	7.616	331742.138	changed from 1900 open land with aerials
1400	COMMERCIAL AND SERVICES	Tarpo_selu99_pol	7.616	331742.138	changed from 1900 open land with aerials
5300	RESERVOIRS	Tarpo_selu99_pol	17.212	749757.124	changed from 4340 hardwood conifer mixed with aerials
1700	INSTITUTIONAL	Tarpo_selu99_pol	17.212	749757.124	changed from 4340 hardwood conifer mixed with aerials
1400	COMMERCIAL AND SERVICES	Tarpo_selu99_pol	4.799	209065.303	changed from 4340 hardwood conifer mixed with aerials
1200	RESIDENTIAL MED DENSITY 2->5 DWELLING UNIT	Tarpo_selu99_pol	7.881	343314.516	changed from 4340 hardwood conifer mixed with aerials
1400	COMMERCIAL AND SERVICES	Tarpo_selu99_pol	10.282	447888.815	changed from 1900 open land with aerials and ERP#024763000
1400	COMMERCIAL AND SERVICES	Tarpo_selu99_pol	5.722	249256.105	changed from open land with aerials and ERP#002374003
1400	COMMERCIAL AND SERVICES	Tarpo_selu99_pol	8.718	379736.948	changed from 1900 open land with aerials and ERP#022490001
1400	COMMERCIAL AND SERVICES	Tarpo_selu99_pol	24.151	1052000.531	changed from 4340 hardwood conifer mixed with aerials and ERP#018651001

Duck Pond Watershed Update
Land Use Changes

FLUCCS CODE	FLUCSDESC	SOURCETHM	ACRES	AREA	COMMENTS
1400	COMMERCIAL AND SERVICES	Tarpo_selu99_pol	24.151	1052000.531	changed from 4340 hardwood conifer mixed with aerilas
5300	RESERVOIRS	Tarpo_selu99_pol	24.151	1052000.531	changed from 4340 hardwood conifer mixed with aerilas
1400	COMMERCIAL AND SERVICES	Tarpo_selu99_pol	24.151	1052000.531	changed from 4340 hardwood conifer mixed with aerilas
1400	COMMERCIAL AND SERVICES	Tarpo_selu99_pol	4.209	183354.623	changed from 4340 hardwood conifer mixed with aerials and ERP#024497000
1900	OPEN LAND	Tarpo_selu99_pol	4.209	183354.623	changed from 4340 hardwood conifer mixed with aerilas
1400	COMMERCIAL AND SERVICES	Tarpo_selu99_pol	12.932	563298.846	changed from 1900 open land with site visit, Toyota of Tampa Bay
1700	INSTITUTIONAL	Tarpo_selu99_pol	12.932	563298.846	changed from 1900 open land with aerials and ERP#022549000
1400	COMMERCIAL AND SERVICES	Tarpo_selu99_pol	16.681	726619.876	changed from 1900 open land with site visit, Toyota of Tampa Bay
4340	HARDWOOD CONIFER MIXED	Tarpo_selu99_pol	7.742	337227.202	changed from 1400 commercial and services with aerials
1700	INSTITUTIONAL	Tarpo_selu99_pol	7.742	337227.202	changed from 1400 commercial and services with aerials
1300	RESIDENTIAL HIGH DENSITY	Tarpo_selu99_pol	23.721	1033284.978	changed from 4120 longleaf pine - xeric oak with aerials and ERP#000660004
1300	RESIDENTIAL HIGH DENSITY	Tarpo_selu99_pol	9.126	397536.471	changed from 1900 open land with aerials and ERP#000660004
1300	RESIDENTIAL HIGH DENSITY	Tarpo_selu99_pol	12.812	558106.174	changed from 1900 open land with aerials and ERP#018429001
5300	RESERVOIRS	Tarpo_selu99_pol	12.812	558106.174	changed from 1900 open land with aerials
4340	HARDWOOD CONIFER MIXED	Tarpo_selu99_pol	12.812	558106.174	changed from 1900 open land with aerials
1400	COMMERCIAL AND SERVICES	Tarpo_selu99_pol	4.168	181573.260	changed from 4340 hardwood conifer mixed with aerials and ERP#019839000
1400	COMMERCIAL AND SERVICES	Tarpo_selu99_pol	6.865	299023.676	changed from 4340 hardwood conifer mixed with aerials and ERP#023646000
1900	OPEN LAND	Tarpo_selu99_pol	6.865	299023.676	changed from 4340 hardwood conifer mixed with aerials
1400	COMMERCIAL AND SERVICES	Tarpo_selu99_pol	24.431	1064222.187	changed from 4340 hardwood conifer mixed with aerials and ERP#022851001
5300	RESERVOIRS	Tarpo_selu99_pol	24.431	1064222.187	changed from 4340 hardwood conifer mixed with aerials and ERP#022851001
1400	COMMERCIAL AND SERVICES	Tarpo_selu99_pol	5.854	254981.104	changed from 4340 hardwood conifer mixed with aerials
1100	RESIDENTIAL LOW DENSITY < 2 DWELLING UNITS	Tarpo_selu99_pol	5.932	258410.822	changed from 1400 commercial and services with aerials
1100	RESIDENTIAL LOW DENSITY < 2 DWELLING UNITS	Tarpo_selu99_pol	22.344	973294.000	changed from 1400 commercial and services with aerials
1100	RESIDENTIAL LOW DENSITY < 2 DWELLING UNITS	Tarpo_selu99_pol	8.731	380324.763	changed from 1300 residential high density with aerials
1700	INSTITUTIONAL	Tarpo_selu99_pol	4.014	174857.100	changed from 1400 commercial and services with aerials

APPENDIX B

MODEL INPUT AND

OUTPUT SUMMARIES

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* ========================================================================
*                  DUCK POND - 25-YR DESIGN EVENT
* ========================================================================
*
ID                 DUCK POND - FULL WATERSHED
ID       Hillsborough County BOCC--Dept of Public Works
*                UPDATED BY AYRES ASSOCIATES JUNE 2006
*
*   This is a standard HEC-1 file.  RDHEC copies the ID, *, IT, IO, JR,
*      PG, IN, PC, and PR records from this file.  It ignores other records.
*
*  NMIN    DATE   ITIME      NQ
IT   10   16SEP00     0     601
*
*NOLIST
*   IPRT    IPLT
*   0,1,2         All
*       3         Input Data and Intermediate and Master Summaries
*       4         Input Data and Master Summary
*       5         Job specification and Master Summary Only
*
*           0,1  No Printer Plots--Can be overriden on KO record
*             2  Plot All
*
IO     4       0
*
* ========================================================================
JR  PREC     8.0
* ========================================================================
*    SCS 24-HR, TYPE II FLORIDA-MODIFIED DISTRIBUTION (30-MIN INCREMENTS)
*
* GAGE     UDEPTH
PGSCSFLM    1.0
*
*  TSTEP IDATE      ITIME
IN  30   990101       0
PC  .000    .006    .012    .019    .025    .032    .039    .047    .054    .062
PC  .071    .080    .089    .099    .110    .122    .134    .148    .164    .181
PC  .201    .226    .258    .308    .607    .719    .757    .785    .807    .826
PC  .842    .857    .870    .882    .893    .904    .913    .923    .931    .940
PC  .948    .955    .962    .969    .976    .983    .989    .995   1.000   1.000
*
* ========================================================================
*  THE FOLLOWING RECORD (PR) DETERMINES WHICH OF THE ABOVE DISTRIBUTIONS
*  WILL BE USED FOR THE CURRENT RUN.
*
*    SCS 24-HR, TYPE II FLORIDA-MODIFIED DISTRIBUTION
PRSCSFLM
*
* ========================================================================
*       MALL EAST AND MALL WEST area subbasins
* ========================================================================
*       SUBBASIN         NJUNC  TC      ACRE    CN      IACOEF  K       KPRINT
*       USF Campus drains to Lake Behnke
*WP     624010  624010  20      8.81    88.2    0.2     256     0
*WP     624020  624020  20      7.73    85.6    0.2     256     0
* AYRES 2006 UPDATE COMBINES FORMER SUBBASINS 624010 AND 624020
WP      624010  624010  14      16.27   87      0.2     256     0
WP      624040  624040  8       2.57    88      0.2     256     0
WP      624050  624050  8       1.83    90      0.2     256     0
*       DUCK POND EAST
WP      624080  624080  78      148.24  89      0.2     256     0
*
WP      624090  624090  11      36.38   78      0.2     256     0
WP      624100  624100  11      20.47   77      0.2     256     0
*       DUCK POND WEST  Added 22.52 Ac from 592200, reduced CN from 90.1,
*       & increased TC from 20 min.
WP      624190  624190  64      111.38  92      0.2     256     0
WP      624200  624200  19      2.85    82      0.2     256     0
WP      624210  624210  23      6.75    83      0.2     256     0
WP      624230  624230  6       5.37    94      0.2     256     0
WP      624250  624250  8       4.07    91      0.2     256     0
WP      624260  624260  15      10.29   90      0.2     256     0
WP      624290  624290  18      3       85      0.2     256     0
WP      624310  624310  7       3.6     87      0.2     256     0
WP      624320  624320  15      10.14   90      0.2     256     0
WP      624325  624325  10      3.8     77      0.2     256     0
WP      624330  624330  31      12.89   85      0.2     256     0
WP      624340  624340  10      3.94    90      0.2     256     0
WP      624350  624350  9       4.67    80      0.2     256     0
WP      624360  624360  9       2.11    90      0.2     256     0
WP      624370  624370  65      12.34   90      0.2     256     0
WP      624380  624380  19      3.89    89      0.2     256     0
WP      624390  624390  14      9.96    91      0.2     256     0
WP      624400  624400  8       2.14    85      0.2     256     0
WP      624410  624410  8       3.01    87      0.2     256     0
WP      624420  624420  9       1.67    92      0.2     256     0
WP      624430  624430  12      6.47    90      0.2     256     0
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WP     624440  624440  18      16.37   89      0.2     256     0
WP     624450  624450  23      19.32   74      0.2     256     0
WP     624470  624470  10      18.76   92      0.2     256     0
WP     624490  624490  15      11.71   92      0.2     256     0
WP     624520  624520  17      8.27    93      0.2     256     0
WP     624530  624530  10      5.32    86      0.2     256     0
WP     624540  624540  7       6.7     88      0.2     256     0
WP     624550  624550  8       4.73    89      0.2     256     0
WP     624560  624560  63      17.02   89      0.2     256     0
WP     624570  624570  33      10.78   86      0.2     256     0
*
* ========================================================================
*       ROBBINS LUMBER area subbasins
* ========================================================================
*       SUBBASIN        NJUNC   TC      ACRE    CN      IACOEF  K       KPRINT
WP     622400  622400  62      35.07   89      0.2     256     0
WP     622500  622500  6       0.61    90      0.2     256     0
WP     622600  622600  6       0.76    90      0.2     256     0
WP     622700  622700  6       2.16    90      0.2     256     0
WP     622800  622800  31      58.03   89      0.2     256     0
WP     622850  622850  29      32.14   92      0.2     256     0
WP     622900  622900  39      8.92    89      0.2     256     0
WP     622925  622925  26      9.01    90      0.2     256     0
WP     622950  622950  17      4.13    91      0.2     256     0
*
* ========================================================================
*       NEBRASKA AVE. area subbasins
* ========================================================================
*       SUBBASIN        NJUNC   TC      ACRE    CN      IACOEF  K       KPRINT
*
WP     621075  621075  6       1.28    78      0.2     256     0
WP     621100  621100  14      4.21    90      0.2     256     0
WP     621125  621125  10      15.73   87      0.2     256     0
WP     621200  621200  23      8.13    85      0.2     256     0
WP     621225  621225  20      8.92    90      0.2     256     0
WP     621275  621275  7       14.2    94      0.2     256     0
WP     621300  621300  54      14.62   79      0.2     256     0
WP     621325  621325  40      19.71   85      0.2     256     0
* AYRES COMBINED WITH ADJACENT SUBBASINS 2006
*WP    621350  621350  20      7.71    90.8    0.2     256     0
WP     621375  621375  17      13.63   87      0.2     256     0
WP     621390  621390  11      3.82    90      0.2     256     0
WP     621395  621395  27      16.79   89      0.2     256     0
WP     621425  621425  11      15.63   86      0.2     256     0
WP     621450  621450  57      10.5    92      0.2     256     0
WP     621500  621500  7       3.78    89      0.2     256     0
WP     621550  621550  27      9.95    91      0.2     256     0
WP     621600  621600  23      6.84    91      0.2     256     0
WP     621625  621625  31      9.33    92      0.2     256     0
WP     621630  621630  34      12.9    94      0.2     256     0
WP     621650  621650  8       2.57    92      0.2     256     0
WP     621675  621675  19      11.3    91      0.2     256     0
WP     621700  621700  28      10.83   93      0.2     256     0
WP     621715  621715  14      7.33    93      0.2     256     0
WP     621725  621725  19      13.77   93      0.2     256     0
WP     621750  621750  14      4.31    91      0.2     256     0
WP     621775  621775  10      14.83   93      0.2     256     0
WP     621800  621800  12      11.32   92      0.2     256     0
WP     621825  621825  8       5.45    91      0.2     256     0
WP     621875  621875  31      20.48   90      0.2     256     0
WP     621900  621900  21      15.82   90      0.2     256     0
WP     621950  621950  43      9.06    88      0.2     256     0
*
* ========================================================================
*       131st AVE. area subbasins
* ========================================================================
*       SUBBASIN        NJUNC   TC      ACRE    CN      IACOEF  K       KPRINT
*
WP     623140  623140  38      18.11   89      0.2     256     0
WP     623150  623150  9       4.78    90      0.2     256     0
WP     623160  623160  6       1.24    90      0.2     256     0
WP     623170  623170  60      73.02   89      0.2     256     0
WP     623190  623190  27      16.95   91      0.2     256     0
WP     623200  623200  12      30.06   88      0.2     256     0
WP     623210  623210  40      27.02   88      0.2     256     0
WP     623215  623215  16      17.11   92      0.2     256     0
WP     623220  623220  29      15.23   90      0.2     256     0
WP     623230  623230  40      21.17   90      0.2     256     0
WP     623240  623240  76      26.02   90      0.2     256     0
WP     623243  623243  25      18.96   92      0.2     256     0
WP     623245  623245  29      15.21   93      0.2     256     0
WP     623248  623248  15      15.35   79      0.2     256     0
WP     623250  623250  28      102.46  91      0.2     256     0
WP     623270  623270  58      69.85   86      0.2     256     0
WP     623300  623300  25      17.07   91      0.2     256     0
WP     623310  623310  30      5.71    85      0.2     256     0
WP     623320  623320  9       4.42    92      0.2     256     0
WP     623340  623340  7       8.37    90      0.2     256     0
```

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WP      623360  623360  8       14.55   85      0.2     256     0
WP      623370  623370  28      19.07   90      0.2     256     0
WP      623380  623380  15      14.48   90      0.2     256     0
WP      623390  623390  7       12.23   91      0.2     256     0
WP      623400  623400  6       0.97    91      0.2     256     0
WP      623430  623430  31      20.92   91      0.2     256     0
WP      623450  623450  9       2.11    93      0.2     256     0
WP      623500  623500  8       4.63    93      0.2     256     0
WP      623510  623510  18      13.41   91      0.2     256     0
WP      623550  623550  15      4.6     93      0.2     256     0
WP      623600  623600  7       5.99    89      0.2     256     0
WP      623650  623650  7       5.34    92      0.2     256     0
WP      623700  623700  8       9.54    90      0.2     256     0
WP      623725  623725  8       10.44   90      0.2     256     0
WP      623750  623750  10      8.31    89      0.2     256     0
WP      623800  623800  11      2.22    87      0.2     256     0
WP      623850  623850  11      2.76    84      0.2     256     0
WP      623900  623900  13      31.69   91      0.2     256     0
*
* ---------------------------------------------------------------------
*       CYPRESS CREEK BASINS
* ---------------------------------------------------------------------
WP      620200  620200  23      44.14   91      0.2     256     0
WP      620250  620250  21      17.87   84      0.2     256     0
WP      620260  620260  9       24.91   91      0.2     256     0
WP      620300  620300  53      143.64  83      0.2     256     0
WP      620400  620400  54      65.48   90      0.2     256     0
WP      620450  620450  45      69.99   90      0.2     256     0
WP      620460  620460  15      14.55   90      0.2     256     0
WP      620600  620600  34      42.96   91      0.2     256     0
WP      620650  620650  12      18.59   91      0.2     256     0
*
* =====================================================================
*       USF EAST AND WEST area subbasins
* =====================================================================
*       USF subbasin Ayres added 2006 - not routed
WP      625000  625000  32      97.02   73      0.2     256     0
*       Lake Behnke
WP      625200  625200  53      147.27  76      0.2     256     0
WP      625300  625300  28      12.83   82      0.2     256     0
WP      625400  625400  9       6.35    69      0.2     256     0
*       Combination of Basins 204C & 204E
WP      625500  625500  38      86.72   69      0.2     256     0
*       Combination of Basins 204A & 204F
WP      625800  625800  55      69.52   69      0.2     256     0
*       Combination of Basins 204B & 201 & 202 & 203
WP      625900  625900  57      96.07   70      0.2     256     0
WP      626000  626000  23      59.42   78      0.2     256     0
WP      626300  626300  25      63.02   83      0.2     256     0
WP      626400  626400  9       11.32   69      0.2     256     0
WP      626500  626500  26      63.25   69      0.2     256     0
WP      626600  626600  10      3.44    73      0.2     256     0
WP      626700  626700  8       28.12   72      0.2     256     0
*       Combination of Basins 109 & 106
WP      626900  626900  17      65.06   80      0.2     256     0
WP      627000  627000  6       10.96   69      0.2     256     0
WP      627100  627100  15      25.44   76      0.2     256     0
WP      627200  627200  9       23.22   69      0.2     256     0
WP      627300  627300  13      54.74   69      0.2     256     0
WP      627400  627400  35      81.35   69      0.2     256     0
WP      627500  627500  12      4.41    69      0.2     256     0
WP      627600  627600  22      37.2    72      0.2     256     0
WP      627700  627700  27      22.23   71      0.2     256     0
*
*       City of Tampa
WP      648900  648900  26      26.84   92      0.2     256     0
WP      648200  648200  9       18.68   90      0.2     256     0
WP      648000  648000  24      32.34   89      0.2     256     0
WP      647800  647800  24      20.46   90      0.2     256     0
WP      647805  647805  16      17.91   90      0.2     256     0
WP      647810  647810  13      13.11   88      0.2     256     0
WP      647500  647500  22      28.09   82      0.2     256     0
WP      647000  647000  54      102.53  78      0.2     256     0
WP      647400  647400  32      42.2    81      0.2     256     0
WP      646900  646900  32      34.43   86      0.2     256     0
WP      646905  646905  11      17.01   87      0.2     256     0
WP      646500  646500  43      85.54   79      0.2     256     0
*  SUBBASINS EAST OF 30TH ST. AND S. TO HILLS RIVER 2/01/01
WP      645079  645079  26      42.46   63      0.2     256     0
WP      645099  645099  36      37.36   69      0.2     256     0
WP      646029  646029  21      28.39   91      0.2     256     0
WP      646039  646039  43      62.92   92      0.2     256     0
*=====================================================================
* USF NORTH AREA,BETWEEN 37TH & 46TH STREETS, & FLETCHER AVE & SKIPPER  RD
*=====================================================================
* SUBBASIN      NJUNC   TC      ACRE    CN      IACOEF  K       KPRINT
*  For drainage areas which appear to have existing stormwater management systems
*  the discharge rate is lagged with an IACOEF (Initial coefficient) of 0.3
```

```
*
* Line  D       Mainline        System
*
* USF   Golf    Course  &       Skipper Road    (not routed hydraulically - boundary condition)
WP      629720  629720  36      37.38   83      0.2     256     0
* Vieux Carre
WP      629740  629740  33      14.12   88      0.2     256     0
* Breckenridge
WP      629760  629760  8       10.98   80      0.3     256     0
* UA    I
WP      629780  629780  20      5.27    71.3    0.2     256     0
* Bavarian      Villagepan
WP      629820  629820  18      6.89    82      0.2     256     0
*       The     Oaks    (west)
WP      629840  629840  17      26.58   74      0.2     256     0
*       Springwood      Village,        Fontana Hall,   &       Church
WP      629900  629900  22      22.78   84      0.2     256     0
*       University      Pines
WP      629880  629880  18      33.56   77      0.2     256     0
*               Willow Brook includes 22.37 acres from 629800 CN=89 and 14.56 acres from 629850 CN=76
WP              629800  629800          43      36.96           84              0.2             256             0
*       University/Cambridge    Woods
WP      629860  629860  33      24.29   77      0.2     256     0
*
*       46TH    Street  Lateral
*       Fairway Oaks
WP      629920  629920  27      14.18   78      0.2     256     0
*       The     Oaks    (east)
WP      629940  629940  15      8.17    89      0.2     256     0
*
*       Area    at      46th    Street  and     Fletcher        Avenue
*
WP      629960  629960  19      20.18   76      0.2     256     0
*
*       ================================================================================
*       USF/East        50th    Street  West    56th    Street
*       ================================================================================
* SUBBASIN      NJUNC   TC      ACRE    CN      IACOEF  K       KPRINT
WP      629100  629100  22      27.88   88      0.2     256     0
WP      629200  629200  21      8.28    63      0.2     256     0
WP      629300  629300  21      32.3    58      0.2     256     0
WP      629400  629400  55      74.02   57      0.2     256     0
WP      629500  629500  29      18      71      0.2     256     0
WP      629600  629600  16      16.05   60      0.2     256     0
WP      629700  629700  20      38.15   67      0.2     256     0
*---------------------------*
*       RAINTREE        NORTH   BASIN
*---------------------------*
* SUBBASIN      NJUNC   TC      ACRE    CN      IACOEF  K       KPRINT
WP      628840  628840  16      38.96   77      0.2     256     0
WP      628830  628830  8       7.4     85      0.2     256     0
WP      628820  628820  17      15.51   76      0.2     256     0
WP      628810  628810  6       10.67   80      0.2     256     0
WP      628730  628730  10      9.02    92      0.2     256     0
WP      628690  628690  6       6.16    92      0.2     256     0
WP      628685  628685  6       3.75    91      0.2     256     0
WP      628680  628680  6       13.41   95      0.2     256     0
WP      628670  628670  28      14.85   93      0.2     256     0
WP      628660  628660  9       2.69    90      0.2     256     0
WP      628700  628700  33      34.56   94      0.2     256     0
WP      628800  628800  41      56.59   76      0.2     256     0
WP      628720  628720  17      6.26    83      0.2     256     0
WP      628760  628760  18      11.72   66      0.2     256     0
WP      628710  628710  16      3.57    79      0.2     256     0
WP      628860  628860  22      11.15   65      0.2     256     0
WP      628850  628850  21      14.62   71      0.2     256     0
*---------------------------*
*       RAINTREE        SOUTH   BASIN
*---------------------------*
* SUBBASIN      NJUNC   TC      ACRE    CN      IACOEF  K       KPRINT
WP      628160  628160  31      17.28   84      0.2     256     0
WP      628200  628200  40      35.88   83      0.2     256     0
WP      628250  628250  62      68.11   80      0.2     256     0
*   SW1, SW2, SE1, SE2, SE3, SE4, SE5, SE6, SE7 Combined in 628270
*WP      628270  628270  47      17.95   83      0.2     256     0  (Fowler Ave ROW only)
* 232 acres contribute in COT and COTT basins from south of Fowler
WP      628270  628270  52      249.95  64      0.2     256     0
WP      628310  628310  16      33.77   76      0.2     256     0
WP      628350  628350  10      10.69   80      0.2     256     0
WP      628400  628400  27      15.76   66      0.2     256     0
WP      628420  628420  14      30.88   80      0.2     256     0
WP      628450  628450  71      117.85  62      0.2     256     0
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*    2006 DUCK POND WATERSHED MANAGEMENT PLAN UPDATE
*    BY AYRES ASSOCIATES INC
*    The original four (4) submodels have been merged into one model
************************************************************
*    NGVD datum adjusted to NAVD 1988 using (-0.84')
*  last run 9/19/06
************************************************************
*    DUCK POND AREA, USF AND RAINTREE (W/CITY OF TAMPA AREA AS DYNAMIC BOUNDARY)
*    HILLSBOROUGH RIVER BASIN
*   NBLOCKS   INBLK1  OUTBLK1   INBLK2  OUTBLK
SW    2         8         12      12      0
* NITCH NSCRATCH(1)NSCRATCH(2)NSCRATCH(3)NSCRATCH(4)NSCRATCH(5)NSCRATCH(NTH)
MM    6   10   11   13   14   15   16
* ========================================================================
@     8   'DPA025EU.WPX'
@    11   'DPA025EU.HOT'
@    12   'DPA025EU.INT'
@    15   'DPA025EU.SMX'
@    16   'DPA025EU.PLT'
$COMBINE
A1  11
B1  '  GENERATE HYDROGRAPH FROM INTERNAL SCS METHOD'
B1  '  MAKE SWMM INTERFACE FILE'
* ========================================================================
$EXTRAN
A1 '  Existing Conditions - Design Storm Run '
A1 '    25-yr Design Event'
*       EVENT RAINFALL STARTS AT 10:00 AM
B0          2        0        1
BB          1        0
*   ---------------------------------------------------------------------------------------------------------------------
*   TIME STEP, CONVENTION AND PLOTTING CARDS
*   ---------------------------------------------------------------------------------------------------------------------
*  48 Hour Simulation
*B1  172800     1.0      0.0      0     36000      36000      0
*  50 Hour Simulation
B1  360000     0.5      0.0      0     72000      72000      0
B2        0        0     0.0        100        0.05
*     H-prnt     Q-prnt H-plot  Q-plot
B3     0         0        284    443     0     0    0
*
*B4
*B5
* 247 COUNTY NODES
B6 620115  620120  620200  620250  620260  620300  620400  620410  620450  620460
   620470  620480  620600  620650  621050  621075  621100  621125  621150  621200
   621225  621250  621275  621300  621325  621350  621375  621390  621395  621425
   621450  621500  621550  621600  621625  621630  621650  621675  621700  621715
   621725  621750  621775  621800  621825  621850  621875  621900  621950  622400
   622500  622600  622700  622800  622850  622900  622925  622950  623140  623150
   623160  623170  623190  623200  623210  623215  623220  623225  623230  623240
   623243  623244  623245  623247  623248  623250  623270  623300  623305  623307
   623310  623320  623330  623340  623350  623360  623370  623380  623390  623400
   623430  623450  623500  623510  623550  623600  623650  623700  623725  623750
   623800  623850  623900  624010  624030  624040  624050  624060  624070  624080
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624090 624100 624190 624200 624210 624220 624230 624250 624260 624270
624280 624290 624300 624310 624320 624325 624330 624340 624350 624360
624370 624380 624390 624400 624410 624420 624430 624440 624450 624460
624470 624480 624490 624520 624530 624540 624550 624560 624570 625150
625200 625300 625400 625500 625600 625650 625700 625800 625900 626000
626200 626300 626350 626400 626500 626600 626700 626900 626950 627000
627100 627200 627300 627400 627450 627500 627600 627700 628000 628100
628110 628150 628160 628200 628250 628270 628300 628310 628350 628400
628420 628450 628500 628550 628600 628650 628660 628669 628670 628679
628680 628684 628685 628689 628690 628699 628700 628710 628720 628729
628730 628750 628760 628800 628810 628820 628830 628840 628850 628860
629000 629100 629200 629300 629400 629500 629600 629700 629720 629721
629735 629740 629760 629780 629800 629820 629825 629840 629841 629842
629860 629880 629900 629920 629925 629940 629960
* 37 COT NODES
645000 645079 645099 646000 646029 646039 646490 646500 646502 646504
646506 646508 646900 646905 647000 647400 647402 647404 647406 647500
647800 647805 647810 647900 647902 647904 647906 647950 647990 648000
648200 648700 648730 648750 648870 648900 648950
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*
* 391 COUNTY REACHES
B7 1620120 1620200 1620250 1620260 1620400 1620460 1620470 1620480 1620600 1621050
1621075 1621150 1621200 1621250 1621350 1621375 1621395 1621450 1621500 1621550
1621600 1621625 1621650 1621675 1621700 1621725 1621775 1621800 1621825 1621850
1621900 1622400 1622500 1622600 1622700 1622800 1622900 1623140 1623150 1623160
1623170 1623190 1623200 1623210 1623215 1623220 1623225 1623230 1623240 1623243
1623244 1623247 1623250 1623270 1623300 1623305 1623307 1623310 1623320 1623330
1623340 1623350 1623360 1623370 1623380 1623390 1623400 1623430 1623450 1623500
1623510 1623550 1623600 1623650 1623700 1623725 1623750 1623800 1623850 1623900
1624010 1624030 1624040 1624050 1624060 1624070 1624090 1624190 1624200 1624210
1624220 1624260 1624270 1624280 1624300 1624320 1624330 1624370 1624380 1624390
1624400 1624460 1624480 1624530 1624540 1624550 1624560 1625150 1625300 1625500
1625600 1625650 1625700 1625800 1626000 1626300 1626350 1626950 1627200 1627300
1627400 1627450 1627700 1628100 1628110 1628150 1628160 1628200 1628250 1628270
1628350 1628400 1628450 1628600 1628669 1628679 1628684 1628689 1628699 1628729
1628750 1628760 1628800 1628810 1628820 1628830 1628840 1628850 1629100 1629200
1629500 1629600 1629735 1629740 1629760 1629780 1629800 1629820 1629825 1629840
1629841 2629841 1629842 1629860 1629920 1629925 1629940 2620200 2620400 2620460
2620470 2620480 2620600 2621375 2624040 2624050 2624060 2624070 2625300 2625650
2628150 2628250 3628150 3628250 4628250 5628250 6620460 6620470 6620480 6621050
6621075 6621100 6621125 6621225 6621275 6621375 6621390 6621600 6621625 6621630
6621650 6621675 6621700 6621715 6621725 6621750 6621775 6621800 6621825 6621875
6621950 6622500 6622800 6622850 6622900 6622925 6622950 6623170 6623340 6623750
6623751 6623800 6623850 6623900 6624010 6624030 6624040 6624050 6624060 6624070
6624090 6624100 6624230 6624250 6624270 6624290 6624310 6624320 6624325 6624330
6624350 6624360 6624370 6624380 6624390 6624400 6624410 6624420 6624530 6624540
6624550 6624560 6624570 6625300 6625400 6628310 6628420 6628650 6628670 6628700
6629200 6629300 6629500 6629600 6629700 6629740 6629760 6629780 6629800 6629820
6629825 6629840 6629841 6629842 6629860 6629900 6629920 6629940 6629960 7620200
7620260 7620400 7620600 7620650 7621150 7621200 7621300 7621325 7621900 7622600
7622700 7623190 7623200 7623215 7623220 7623230 7623240 7623243 7623245 7623248
7623250 7623270 7623320 7623340 7623350 7623360 7623370 7623380 7623390 7623430
7624210 7624340 7624410 7624430 7624440 7624450 7624451 7624490 7625200 7626400
7626500 7626600 7626700 7627000 7628160 7628200 7628250 7628270 7628350 7628400

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   7628420 7628450 7629735 8621275 8621276 8621425 8621427 8621630 8621875 8621876
   8623245 8623248 8624080 8624081 8624100 8624101 8624230 8624250 8624290 8624310
   8624360 8624470 8624490 8624520 8624521 8625200 8625900 8626400 8626900 8627100
   8627500 8627600 8628150 8628600 86286701 86286702 86286801 86286802 86286851 86286852
   86286901 86286902 86287001 86287002 86287301 86287302 8628800 8628860 9620410 9620450
   9628300 9628310 9628550 9628650 9628660 9628710 9628720 6620300 6626900 6627700
   6628450
*  52 COT REACHES
   1645079 1645099 1646000 1646029 1646039 1646490 1646502 1646504 1646506 1646508
   1646900 1647000 1647400 1647402 1647404 1647406 1647500 1647800 1647900 1647902
   1647904 1647906 1647950 1647990 1648000 1648200 1648700 1648750 1648900 6646000
   6646029 6646038 6646039 6646900 6646901 6646905 6647400 6647810 6647900 7647800
   7647805 7647950 7647990 7648000 7648200 7648700 7648750 7648900 9647400 9648730
   9648870 9648950
*
*   ---------------------------------------------------------------------------------------------------------------
*   CONDUIT DATA - CYPRESS CREEK
*   ---------------------------------------------------------------------------------------------------------------
*       NCOND   NJUNC(1)        NJUNC(2)        Q0      NK      AF      DEEP    WIDE    LEN     ZP1     ZP2     ROU     SS1     SS2     Kent
Kext    KMIS    STRCH
*   ---------------------------------------------------------------------------------------------------------------
* NAVD-CONVERTED BY AYRES (-0.84 FT) ZPus , ZPds
*
C1      1620120 620120  620115  0       2       0       3       10      100     35.16   35.06   0.012   0       0       0.5     1       0
1
*   (S-23 to S-22, In Hillsborough County B.B. Downs Plans)
C1      1620200 620200  620120  0       1       0       3       3       50      36.76   35.16   0.012   0       0       0.5     1       0
2
C1      2620200 620200  620120  0       1       0       3       3       50      36.76   35.16   0.012   0       0       0.5     1       0
2
*   (S-18 from Hillsborough County B.B. Downs Plans)
C1      1620250 620250  620200  0       3       10.2    2.83    4.42    174     36.21   36.01   0.012   0       0       0.5     1       0
1
*   (S-17 from Hillsborough County B.B. Downs Plans)
C1      1620260 620260  620200  0       3       7.4     2.42    3.75    105     38.26   38.16   0.012   0       0       0.5     1       0
1
*   (S-13 from Hillsborough County B.B. Downs Plans)
C1      1620400 620400  620200  0       3       10.2    2.83    4.42    130     39.86   39.66   0.012   0       0       0.5     1       0
1
C1      2620400 620400  620200  0       3       10.2    2.83    4.42    130     39.86   39.66   0.012   0       0       0.5     1       0
1
*   (Avg. of sections 3A & 4A from the USF Project Survey)
C1      9620410 620410  620400  0       6       0       20      12      1400    38.86   33.56   0.1     2.5     2.5     0.5     1       0
1
*   (Avg. of sections 2 & 3A from the USF Project Survey)
C1      9620450 620450  620410  0       6       0       20      12.5    550     40.66   38.86   0.1     2.5     2.5     0.5     1       0
1
*   (1B from the USF Project Survey)
C1      1620460 620460  620450  0       3       12.9    3.17    5       11      38.06   37.94   0.012   0       0       0.5     1       0
10
C1      2620460 620460  620450  0       3       12.9    3.17    5       11      38.06   37.94   0.012   0       0       0.5     1       0
10
*   (1D from the USF Project Survey)
C1      1620470 620470  620460  0       1       0       3       3       310     38.86   38.06   0.012   0       0       0.5     1       0
1
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C1      2620470 620470  620460  0       1       0       3       3       310     38.86   38.06   0.012   0       0       0.5     1       0
1
*   (1A from the USF Project Survey)
C1      1620480 620480  620470  0       1       0       3       3       333     40.06   38.86   0.012   0       0       0.5     1       0
1
C1      2620480 620480  620470  0       1       0       3       3       333     40.06   38.86   0.012   0       0       0.5     1       0
1
*
C1      1620600 620600  620480  0       1       0       2       2       40      41.29   40.01   0.012   0       0       0.5     1       0
2.5
C1      2620600 620600  620480  0       1       0       2       2       40      41.29   40.01   0.012   0       0       0.5     1       0
2.5
*
*   ---------------------------------------------------------------------------------------------------------------
*   DUMMY CONDUITS FOR CYPRESS CREEK
*   ---------------------------------------------------------------------------------------------------------------
*       NCOND   U/SJCN  D/SJCN  Q0      NK      AF      DEEP    WIDE    LEN     ZP1     ZP2     ROU     SS1     SS2     KENT    KEXI    KMIS
STRCH
*       ---------------------------------------------------------------------------------------------------------------
*
C1      5620200   555555  620200  0       2       0       10      0.2     100     80.00   33.16   0.012   0       0       0.5     1       0
1
C1      5620600   555555  620600  0       2       0       10      0.2     100     80.00   35.16   0.012   0       0       0.5     1       0
1
C1      5620650   555555  620650  0       2       0       10      0.2     100     80.00   35.16   0.012   0       0       0.5     1       0
1
C1      5620300   555555  620300  0       2       0       10      0.2     100     80.00   29.16   0.012   0       0       0.5     1       0
1
* AYRES 2006 ADDED TO ELIMINATE BOUNDARY HYDRAD ERROR
C1      5620115   201151  620115  0       2       0       10      10      100     34.16   35.06   0.012   0       0       0.5     1       0
1
*
* ========================================================================
* Conduits at NEBRASKA AVE.
* ========================================================================
*   ---------------------------------------------------------------------------------------------------------------
*       NCOND   NJUNC(1)        NJUNC(2)        Q0      NK      AF      DEEP    WIDE    LEN     ZP1     ZP2     ROU     SS1     SS2     KENT
KEXI    KMIS    STRCH
*       ---------------------------------------------------------------------------------------------------------------
*        54-inch Dia. R.C.P. from Manhole F in Hillsborough County Survey to Duck Pond
C1      1621050 621050  624190  0       1       0       4.5     4.5     280     22.22   22.20   0.012   0       0       0.5     1       0
1
*
*       temp changed following three pipes to 2.0 ft dia from 1.5, 1.25, and 1.25
*       18-inch Dia. C.M.P. from Inlet 3D to Manhole F in Hillsborough County Survey
C1      1621075 621075  621050  0       1       0       2       2       80      26.50   26.30   0.023   0       0       0.5     1       0
1.2
*       15-inch Dia. C.M.P. from Inlet 3C to Inlet 3D in Hillsborough County Survey
C1      1621150 621150  621075  0       1       0       2       2       340     28.22   26.55   0.023   0       0       0.5     1       0
1
*       15-inch Dia. C.M.P. from Inlet 3A to Inlet 3C in Hillsborough County Survey
C1      1621200 621200  621150  0       1       0       2       2       295     29.62   28.16   0.023   0       0       0.5     1       0
1
*
*
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*       54-inch Dia. R.C.P from Inlet 2A (Pond Str.) to Manhole F in Hillsborough County Survey
C1      1621250 621250  621050  0       1       0       4.5     4.5     2030    23.76   22.17   0.012   0       0       0.5     1       0
1
*       60-inch Dia. R.C.P from Inlet 1L to Headwall 1F (Pond) in Hillsborough County Survey
C1      1621350 621350  621275  0       1       0       5       5       130     24.04   23.94   0.012   0       0       0.5     1       0
1
*       60-inch Dia. R.C.P from Manhole 1E to Headwall 1F (Pond) in Hillsborough County Survey
C1      1621375 621375  621275  0       1       0       5       5       130     24.13   23.94   0.012   0       0       0.5     1       0
1
*        60-inch Dia. R.C.P from Manhole 1E to Inlet 1L in Hillsborough County Survey
C1      2621375 621375  621350  0       1       0       5       5       130     24.13   24.04   0.012   0       0       0.5     1       0
1
*       42-inch Dia. R.C.P from Inlet 1N to Manhole 1E in Hillsborough County Survey
C1      1621395 621395  621375  0       1       0       3.5     3.5     175     25.63   24.13   0.012   0       0       0.5     1       0
1
*       42-inch Dia. R.C.P from Inlet 1M to Inlet 1N in Hillsborough County Survey
*C1     1621400 621400  621395  0       1       0       3.5     3.5     124     25.95   25.63   0.012   0       0       0.5     1       0
1
*       6-foot x 7-foot R.B.C from Manhole 1C to Manhole 1E in Hillsborough County Survey
C1      1621450 621450  621375  0       2       0       6       7       975     24.37   24.13   0.012   0       0       0.5     1       0
1
*       42-inch Dia. R.C.P from Manhole 1B to Manhole 1C in Hillsborough County Survey
C1      1621500 621500  621450  0       1       0       3.5     3.5     110     25.82   25.65   0.012   0       0       0.5     1       0
1
*       36-inch Dia. R.C.P from Inlet 1A to Manhole 1B in Hillsborough County Survey
C1      1621550 621550  621500  0       1       0       3       3       110     26.37   25.73   0.012   0       0       0.5     1       0
1
*       18-inch Dia. R.C.P from Inlet 1G to Manhole 1B in Hillsborough County Survey
C1      1621600 621600  621500  0       1       0       1.5     1.5     120     29.66   29.13   0.012   0       0       0.5     1       0
1
*    66"R.C.P from Inlet S-35 on Plans for Nebraska Ave. to Manhole 1C in Hillsborough County Survey
C1      1621625 621625  621450  0       1       0       5.5     5.5     1532    26.66   25.06   0.012   0       0       0.5     1       0
1
*       60-inch Dia. R.C.P from Inlet S-52 to Inlet S-35 on Plans for Nebraska Ave.
C1      1621650 621650  621625  0       1       0       5       5       672     27.46   26.66   0.012   0       0       0.5     1       0
1
*       54-inch Dia. R.C.P from Inlet S-65 to Inlet S-52 on Plans for Nebraska Ave.
C1      1621675 621675  621650  0       1       0       4.5     4.5     360     28.46   27.96   0.012   0       0       0.5     1       0
1
*       18-inch Dia. R.C.P from Inlet S-59 to Inlet S-52 on Plans for Nebraska Ave.
C1      1621700 621700  621650  0       1       0       1.5     1.5     123     31.36   30.46   0.012   0       0       0.5     1       0
1
*       18-inch Dia. C.M.P from adjacent Railroad Tracks (West Side) on Plans for Nebraska Ave.
C1      1621725 621725  621715  0       1       0       1.5     1.5     100     36.59   36.46   0.012   0       0       0.5     1       0
1
*       48-inch Dia. R.C.P from Inlet S-80 to Inlet S-65 on Plans for Nebraska Ave.
C1      1621775 621775  621675  0       1       0       4       4       498     29.76   28.96   0.012   0       0       0.5     1       0
1
*       42-inch Dia. R.C.P from Inlet S-87 to Inlet S-80 on Plans for Nebraska Ave.
C1      1621800 621800  621775  0       1       0       3.5     3.5     326     30.96   30.26   0.012   0       0       0.5     1       0
1
*       36-inch Dia. R.C.P from Inlet S-91 to Inlet S-87 on Plans for Nebraska Ave.
C1      1621825 621825  621800  0       1       0       3       3       672     32.96   31.46   0.012   0       0       0.5     1       0
1
*       30-inch Dia. R.C.P from FDOT Pond # 1 to Inlet S-91 on Plans for Nebraska Ave.
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C1      1621850 621850  621825  0       1       0       2.5     2.5     1833    34.16   33.46   0.012   0       0       0.5     1       0
1
*       15-inch Dia. C.M.P. from Taliaferro Pond to Inlet 1A on Plans in Hillsborough County Survey
C1      1621900 621900  621550  0       1       0       2       2       564     31.36   30.22   0.012   0       0       0.5     1       0
1
*
* ====================================================================
* Dummy Conduits at NEBRASKA AVE.
* ====================================================================
*   ------------------------------------------------------------------------------------------------------------------------
*       NCOND   NJUNC(1)        NJUNC(2)        Q0      NK      AF      DEEP    WIDE    LEN     ZP1     ZP2     ROU     SS1     SS2     KENT
KEXI    KMIS    STRCH
*       ------------------------------------------------------------------------------------------------------------------------
*
*
C1      5621125   555554  621125  0       2       0       10      0.2     100     80.00   22.56   0.012   0       0       0.5     1       0
1
C1      5621225   555554  621225  0       2       0       10      0.2     100     80.00   30.46   0.012   0       0       0.5     1       0
1
C1      5621250   555554  621250  0       2       0       10      0.2     100     80.00   23.16   0.012   0       0       0.5     1       0
1
C1      5621275   555554  621275  0       2       0       10      0.2     100     80.00   23.16   0.012   0       0       0.5     1       0
1
C1      5621300   555554  621300  0       2       0       10      0.2     100     80.00   32.36   0.012   0       0       0.5     1       0
1
C1      5621325   555554  621325  0       2       0       10      0.2     100     80.00   32.46   0.012   0       0       0.5     1       0
1
C1      5621350   555554  621350  0       2       0       10      0.2     100     80.00   23.16   0.012   0       0       0.5     1       0
1
C1      5621375   555554  621375  0       2       0       10      0.2     100     80.00   23.16   0.012   0       0       0.5     1       0
1
C1      5621390   555554  621390  0       2       0       10      0.2     100     80.00   35.56   0.012   0       0       0.5     1       0
1
C1      5621395   555554  621395  0       2       0       10      0.2     100     80.00   25.16   0.012   0       0       0.5     1       0
1
*
*C1     21400   555553  621400  0       2       0       10      0.2     100     80.00   24.16   0.012   0       0       0.5     1       0
1
C1      5621425   555553  621425  0       2       0       10      0.2     100     80.00   29.16   0.012   0       0       0.5     1       0
1
C1      5621450   555553  621450  0       2       0       10      0.2     100     80.00   23.16   0.012   0       0       0.5     1       0
1
C1      5621550   555553  621550  0       2       0       10      0.2     100     80.00   26.37   0.012   0       0       0.5     1       0
1
C1      5621625   555553  621625  0       2       0       10      0.2     100     80.00   25.16   0.012   0       0       0.5     1       0
1
C1      5621630   555553  621630  0       2       0       10      0.2     100     80.00   33.16   0.012   0       0       0.5     1       0
1
C1      5621650   555553  621650  0       2       0       10      0.2     100     80.00   27.16   0.012   0       0       0.5     1       0
1
*
C1      5621715   555552  621715  0       2       0       10      0.2     100     80.00   36.46   0.012   0       0       0.5     1       0
1
C1      5621875   555552  621875  0       2       0       10      0.2     100     80.00   34.16   0.012   0       0       0.5     1       0
1
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C1      5621900   555552  621900  0       2       0       10      0.2     100     80.00   31.36   0.012   0       0       0.5     1       0
1
*
C1      5621750   555552  621750  0       2       0       10      0.2     100     80.00   42.56   0.012   0       0       0.5     1       0
1
C1      5621950   555552  621950  0       2       0       10      0.2     100     80.00   41.46   0.012   0       0       0.5     1       0
1
C1      5621100   555552  621100  0       2       0       10      0.2     100     80.00   31.16   0.012   0       0       0.5     1       0
1
*
* ============================================================================
*   Conduits at ROBBINS LUMBER
* ============================================================================
*   ------------------------------------------------------------------------------------------------------------
*       NCOND   NJUNC(1)        NJUNC(2)        Q0      NK      AF      DEEP    WIDE    LEN     ZP1     ZP2     ROU     SS1     SS2     KENT
KEXI    KMIS    STRCH
*   ------------------------------------------------------------------------------------------------------------
* Survey Project#  47288, Field Book# 584, Survey Pt# 10G, & 10H
*
C1      1622400 622400  624190  0       1       0       4.5     4.5     100     30.17   29.24   0.012   0       0       0.5     1       0
1
* Survey Project#  47288, Field Book# 584, Survey Pt# 10G, & 10H
*C1     1622402 622400  624190  0       1       0       3       3       100     30.17   29.78   0.012   0       0       0.5     1       0
1
************************
* Survey Project# 47288, Field Book# 584, Survey Pt# 10A, 10B, 10C, 10D, 10E, 10F, & 10G
C1      1622500 622500  622400  0       1       0       3       3       660     31.27   30.17   0.012   0       0       0.5     1       0
1
*
* Survey Project#  47288, Field Book# 584, Survey Pt# 6, & 9
C1      1622600 622600  622500  0       1       0       4       4       60      31.16   30.12   0.023   0       0       0.5     1       0
1.7
*
* Survey Project#  47288, Field Book# 584, Survey Pt# 7, & 8
C1      1622700 622700  622600  0       1       0       4       4       60      32.66   31.36   0.023   0       0       0.5     1       0
1.7
*
* Survey Project# 47288, Field Book# 584, Survey Pt# 4B, 4C, 4OUT & 5
C1      1622800 622800  622700  0       3       8       3       3.3     20      31.31   31.26   0.012   0       0       0.5     1       0
5
*
* Survey Project#  47288, Field Book# 584, Survey Pt# 8 & 6
C1      1622900 622900  622600  0       1       0       1       1       140     31.69   31.46   0.012   0       0       0.5     1       0
1
*
* ============================================================================
* Dummy Conduits at Robins Lumber
* ============================================================================
C1      5622850   555559  622850  0       2       0       10      0.2     100     80.00   31.31   0.012   0       0       0.5     1       0
1
C1      5622925   555559  622925  0       2       0       10      0.2     100     80.00   34.36   0.012   0       0       0.5     1       0
1
C1      5622950   555559  622950  0       2       0       10      0.2     100     80.00   34.16   0.012   0       0       0.5     1       0
1
*
```

```
* ========================================================================
* Conduits at 131st Ave. area
* ========================================================================
*   ------------------------------------------------------------------------------------------------------------------
*       NCOND   NJUNC(1)        NJUNC(2)        Q0      NK      AF      DEEP    WIDE    LEN     ZP1     ZP2     ROU     SS1     SS2     KENT
KEXI    KMIS    STRCH
*   ------------------------------------------------------------------------------------------------------------------
*
*   PHASE I 6X8 CBC UP TO GRADE CHANGE, FROM H/C PLANS FOR PHASE I
C1      1623140 623140  624190  0       2       0       6       8       770     24.91   24.53   0.012   0       0       0.5     1       0
1
*
*   PHASE I 6X8 CBC UP TO GRADE CHANGE, FROM H/C PLANS FOR PHASE I
C1      1623150 623150  623140  0       2       0       6       8       370     26.46   24.91   0.012   0       0       0.5     1       0
1
*
*   PHASE I 6X8 CBC UP TO GRADE CHANGE, FROM H/C PLANS FOR PHASE I
C1      1623160 623160  623150  0       2       0       6       8       305     26.56   26.46   0.012   0       0       0.5     1       0
1
*
*   PHASE I 5X8 CBC UP TO 131ST AVENUE POND, FROM H/C PLANS FOR PHASE I
C1      1623170 623170  623160  0       2       0       5       8       480     27.56   26.56   0.012   0       0       0.5     1       0
1
*
*   6X6 CBC FROM 131ST AVE POND UP TO FLETCHER AVE, FROM H/C PLANS FOR PHASE II
C1      1623190 623190  623170  0       2       0       6       6       848     32.04   29.37   0.012   0       0       0.5     1       0
1
*
*   6X6 CBC UP TO 137TH ST, FROM H/C PLANS FOR PHASE II
C1      1623200 623200  623190  0       2       0       6       6       475     32.49   32.04   0.012   0       0       0.5     1       0
1
*   15" CMP under 12th Street
C1      1623215 623215  623200  0       1       0       1.25    1.25    88      37.86   37.26   0.023   0       0       0.5     1       0
1.2
*
*   6X6 CBC UP TO 138TH ST, FROM H/C PLANS FOR PHASE II
C1      1623210 623210  623200  0       2       0       6       6       800     33.29   32.49   0.012   0       0       0.5     1       0
1
*
*   5X6 CBC UP TO 139TH ST (BOX SIZE CHANGE) , FROM H/C PLANS FOR PHASE II
C1      1623220 623220  623210  0       2       0       5       6       352     34.64   34.29   0.012   0       0       0.5     1       0
1
*
*   D/S OF BOX SIZE CHANGE, FROM H/C PLANS FOR PHASE II
C1      1623225 623225  623220  0       2       0       5       6       248     34.89   34.64   0.012   0       0       0.5     1       0
1
*
*   5X6 CBC UP 140TH ST (BOX SIZE CHANGE) , FROM H/C PLANS FOR PHASE II
C1      1623230 623230  623225  0       2       0       5       5       224     34.99   34.89   0.012   0       0       0.5     1       0
1
*
*   5X5 CBC UP TO 142ND ST, FROM H/C PLANS FOR PHASE II
C1      1623240 623240  623230  0       2       0       5       5       335     35.33   35.00   0.012   0       0       0.5     1       0
1
*
```

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*   5X5 CBC UP TO 143RD ST, FROM H/C PLANS FOR PHASE II
C1      1623250 623250  623240  0       2       0       5       5       311     35.66   35.33   0.012   1.5     1.5     0.5     1       0
1
*
*   ELIPTICAL PIPE UNDER SKIPPER ROAD FROM POND TO DITCH
*
C1      1623270 623270  623250  0       3       20.5    4       6       100     34.66   34.03   0.012   0       0       0.5     1       0
1
*
*    FIRST 66" RCP LEG FROM 131ST AVE POND TO DROP MH
C1      1623307 623307  623170  0       1       0       5.5     5.5     252     27.74   27.56   0.012   0       0       0.5     1       0
1
*
*    SECOND 66" RCP LEG FROM 131ST AVE POND TOWARD FLETCHER
C1      1623305 623305  623307  0       1       0       5.5     5.5     268     28.55   27.74   0.012   0       0       0.5     1       0
1
*
*    NEXT 60" RCP U/S TO INFLOW MH AT FLETCHER
C1      1623300 623300  623305  0       1       0       5       5       200     28.60   28.55   0.012   0       0       0.5     1       0
1
*
*    60" RCP GOING WEST ALONG FLETCHER TO 19TH STREET
C1      1623310 623310  623300  0       1       0       5       5       1055    30.71   28.60   0.012   0       0       0.5     1       0
1
*
C1      1623320 623320  623310  0       1       0       2.5     2.5     240     33.30   31.48   0.012   0       0       0.5     1       0
1
C1      1623330 623330  623320  0       1       0       2       2       560     36.66   33.47   0.024   0       0       0.5     1       0
1
C1      1623340 623340  623330  0       1       0       1       1       120     36.79   36.66   0.012   0       0       0.5     1       0
1
C1      1623350 623350  623330  0       1       0       2       2       440     36.96   36.66   0.024   0       0       0.5     1       0
1
C1      1623360 623360  623350  0       1       0       1.25    1.25    120     38.15   38.10   0.024   0       0       0.5     1       0
1
C1      1623370 623370  623340  0       1       0       2       2       570     37.45   36.79   0.024   0       0       0.5     1       0
1
C1      1623380 623380  623370  0       1       0       3       3       100     37.74   37.33   0.024   0       0       0.5     1       0
1
C1      1623390 623390  623380  0       1       0       1.5     1.5     100     39.27   39.19   0.024   0       0       0.5     1       0
1
*    60" RCP TO 20TH STREET
C1      1623400 623400  623310  0       1       0       5       5       580     31.87   30.71   0.012   0       0       0.5     1       0
1
C1      1623430 623430  623400  0       1       0       3.5     3.5     122     29.34   29.26   0.012   0       0       0.5     1       0
1
*    NEXT 54" RCP U/S
C1      1623450 623450  623400  0       1       0       4.5     4.5     380     32.65   31.87   0.012   0       0       0.5     1       0
1
*    48" RCP TO 22ND STR
C1      1623500 623500  623450  0       1       0       4       4       305     32.95   32.65   0.012   0       0       0.5     1       0
1
C1      1623510 623510  623500  0       1       0       2       2       300     34.66   33.00   0.012   0       0       0.5     1       0
1
*    last leg of 48" RCP
```

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C1      1623550 623550  623500  0       1       0       4       4       235     33.22   32.95   0.012   0       0       0.5     1       0
1
*    42" RCP TO 23rd STR
C1      1623600 623600  623550  0       1       0       3.5     3.5     425     34.19   33.22   0.012   0       0       0.5     1       0
1
*   22nd STREET STORM SEWER IMPROVEMENTS
*
C1      1623650 623650  623600  0       1       0       2.5     2.5     120     34.19   34.16   0.012   0       0       0.5     1       0
1
C1      1623700 623700  623650  0       1       0       2.5     2.5     236     34.69   34.19   0.012   0       0       0.5     1       0
1
C1      1623725 623725  623700  0       1       0       2.5     2.5     414     35.86   34.69   0.012   0       0       0.5     1       0
1
*   Fletcher
C1      1623750 623750  623600  0       1       0       3.5     3.5     700     37.62   35.03   0.012   0       0       0.5     1       0
1
C1      1623800 623800  623750  0       1       0       3       3       310     39.08   37.62   0.012   0       0       0.5     1       0
1
C1      1623850 623850  623800  0       1       0       2.5     2.5     310     40.01   39.08   0.012   0       0       0.5     1       0
1
*   Target Shopping Center
C1      1623900 623900  623850  0       1       0       1.5     1.5     173     41.77   40.51   0.012   0       0       0.5     1       0
1
*   Malibu Grand Prix
C1      1623247 623247  623244  0       1       0       1.5     1.5     450     43.16   42.36   0.012   0       0       0.5     1       0
1
*   Underground Valult at Scottys
C1      1623244 623244  623243  0       1       0       1.5     1.5     520     40.66   38.96   0.012   0       0       0.5     1       0
1
*   Pipe under CSX Railroad
C1      1623243 623243  623240  0       1       0       2       2       41      38.96   38.84   0.012   0       0       0.5     1       0
2.5
*
* ========================================================================
* Dummy Conduits at 131st Ave. area
* ========================================================================
*   ------------------------------------------------------------------------------------------------------------------------
*       NCOND   NJUNC(1)        NJUNC(2)        Q0      NK      AF      DEEP    WIDE    LEN     ZP1     ZP2     ROU     SS1     SS2     KENT
KEXI    KMIS    STRCH
*   ------------------------------------------------------------------------------------------------------------------------
*
*
C1      5623170   577777  623170  0       2       0       10      0.2     100     80.00   24.16   0.012   0       0       0.5     1       0
1
C1      5623190   577777  623190  0       2       0       10      0.2     100     80.00   29.16   0.012   0       0       0.5     1       0
1
C1      5623215   577777  623215  0       2       0       10      0.2     100     80.00   32.49   0.013   0       0       0.5     1       0
1
C1      5623254   577777  623244  0       2       0       10      0.2     100     80.00   40.66   0.012   0       0       0.5     1       0
1
C1      5623250   577777  623250  0       2       0       10      0.2     100     80.00   29.16   0.012   0       0       0.5     1       0
1
C1      5623270   577777  623270  0       2       0       10      0.2     100     80.00   34.16   0.012   0       0       0.5     1       0
1
C1      5623360   577777  623360  0       2       0       10      0.2     100     80.00   34.16   0.012   0       0       0.5     1       0
```

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1
C1      5623390   577777  623390  0       2       0       10      0.2     100     80.00   36.66   0.012   0       0       0.5     1       0
1
C1      5623900   577777  623900  0       2       0       10      0.2     100     80.00   39.16   0.012   0       0       0.5     1       0
1
*
C1      5623248   577777  623248  0       2       0       10      0.2     100     80.00   43.16   0.012   0       0       0.5     1       0
1
C1      5623245   577777  623245  0       2       0       10      0.2     100     80.00   37.16   0.012   0       0       0.5     1       0
1
* ========================================================================
*   Conduits at MALL EAST and MALL WEST
* ========================================================================
*   ------------------------------------------------------------------------------------------------------------------------
*       NCOND   NJUNC(1)        NJUNC(2)        Q0      NK      AF      DEEP    WIDE    LEN     ZP1     ZP2     ROU     SS1     SS2     KENT
KEXI    KMIS    STRCH
*   ------------------------------------------------------------------------------------------------------------------------
*
*   Hillsborough County Survey (Sec 8, TWP 28 S, RNG 19 E) and Fowler Ave. As-Builts Project N0. 10290-3526
*   System 3 from Structure 3G to 3A
*   54 - Inch R.C.P. and 4' x 4' R.B.C. Under Fowler Avenue
*
C1      1624010 624010  648950  0       1       0       4.5     4.5     14.5    22.16   22.41   0.012   0       0       0.5     1       0
1
*C1     1624020 624020  624010  0       2       0       4       4       150     22.09   21.86   0.012   0       0       0.5     1       0
1
C1      1624030 624030  624010  0       2       0       4       4       143     23.27   22.46   0.012   0       0       0.5     1       0
1
*   Double 48 - Inch R.C.P. from Duck Pond East to Fowler Avenue
C1      1624040 624040  624030  0       1       0       4       4       428     23.78   23.52   0.012   0       0       0.5     1       0
1
C1      2624040 624040  624030  0       1       0       4       4       428     23.69   23.44   0.012   0       0       0.5     1       0
1
C1      1624050 624050  624040  0       1       0       4       4       441     23.95   23.78   0.012   0       0       0.5     1       0
1
C1      2624050 624050  624040  0       1       0       4       4       441     23.92   23.78   0.012   0       0       0.5     1       0
1
C1      1624060 624060  624050  0       1       0       4       4       430     24.30   24.03   0.012   0       0       0.5     1       0
1
C1      2624060 624060  624050  0       1       0       4       4       430     24.29   24.03   0.012   0       0       0.5     1       0
1
C1      1624070 624070  624060  0       1       0       4       4       440     24.70   24.36   0.012   0       0       0.5     1       0
1
C1      2624070 624070  624060  0       1       0       4       4       440     24.61   24.47   0.012   0       0       0.5     1       0
1
*
*   Hillsborough County Survey (Sec 8, TWP 28 S, RNG 19 E)
*   System 12 from Structure 12A to 12I
*   72 - Inch R.C.P. Connecting Duck Pond West and Duck Pond East
C1      1624190 624190  624080  0       1       0       6       6       1480    22.56   22.46   0.012   0       0       0.5     1       0
1
*   No Survey or As-Built Data (Assumption)
*   Culvert Draining Ditch South of VA Hospital
C1      1624090 624090  624080  0       1       0       6       6       100     25.16   25.06   0.012   0       0       0.5     1       0
1
```

```
*   Culverts Behind Forest Place Apartments
********************
**      COMBINED INTO ONE EQUIV PIPE-NJM
C1      1624200 624200  624190  0       1       0       6       6       620     25.96   25.65   0.012   0       0       0.5     1       0
1
*C1     1624200  0624200  0624190   0.0   1   0.00 4.00  4.00   620     26.80  26.49  0.012     0.0    0.0  0.5   1.0   0.0  1.0
*C1     2624200  0624200  0624190   0.0   1   0.00 4.00  4.00   620     26.80  26.49  0.012     0.0    0.0  0.5   1.0   0.0  1.0
********************
********************
**      COMBINED INTO ONE EQUIV PIPE-NJM
*   Culverts at Intersection of 20th Street and 127th Aveuue
C1      1624210 624210  624200  0       1       0       2.5     5.5     55      29.67   29.06   0.023   0       0       0.5     1       0
1.9
*
*       C1  1624210  0624210  0624200   0.0   1   0.00 1.50  1.50    55     30.81  29.90  0.023     0.0    0.0  0.5   1.0   0.0  1.9
*       C1  2624210  0624210  0624200   0.0   1   0.00 1.50  1.50    55     30.51  29.96  0.023     0.0    0.0  0.5   1.0   0.0  1.9
********************
*   Pipe in Outfall Structure From Conservation Area Behind Forest Place Apartments
C1      1624220 624220  624200  0       3       7.4     2.42    3.75    80      27.66   26.66   0.012   0       0       0.5     1       0
1.2
************
*       TEMP COMBINED INTO ONE EQUIV PIPE-NJM
C1      1624260 624260  624200  0       1       0       6       6       460     26.41   26.36   0.012   0       0       0.5     1       0
1
*
*       C1  1624260  0624260  0624200   0.0   1   0.00 4.00  4.00   460     27.25  27.20  0.012     0.0    0.0  0.5   1.0   0.0  1.0
*       C1  2624260  0624260  0624200   0.0   1   0.00 4.00  4.00   460     27.25  27.20  0.012     0.0    0.0  0.5   1.0   0.0  1.0
*   Pipe From UVRC
C1      1624270 624270  624260  0       3       20.5    4       6.33    63      26.46   26.41   0.012   0       0       0.5     1       0
1.6
*   Pipe From Outfall Structure in Detention Pond In UVRC
C1      1624280 624280  624270  0       3       5.1     2       3.17    105     31.31   30.96   0.012   0       0       0.5     1       0
1
*   Pipe From Outfall Structure in Detention Pond In UVRC
C1      1624300 624300  624270  0       3       7.4     2.42    3.75    246     30.41   29.96   0.012   0       0       0.5     1       0
1
*   Storm Sewer Along 22nd Street from 131st Avenue to 127th Avenue
C1      1624320 624320  624260  0       1       0       2       2       410     26.56   26.46   0.012   0       0       0.5     1       0
1
C1      1624330 624330  624320  0       1       0       1.5     1.5     470     27.56   26.56   0.012   0       0       0.5     1       0
1
*   Pipe From Outfall Structure in Detention Pond at Hawkins Quad Apartments on 20th Street Adjacent 131st Avenue
*   Storm Sewer Along 20th Street from Folwer Avenue to 131st Avenue
C1      1624370 624370  624350  0       1       0       1.5     1.5     70      32.74   32.59   0.023   0       0       0.5     1       0
1.5
C1      1624380 624380  624370  0       1       0       2       2       60      31.61   32.74   0.012   0       0       0.5     1       0
1.7
C1      1624390 624390  624380  0       3       3.3     1.58    3.17    170     32.74   31.61   0.012   0       0       0.5     1       0
1
*
C1      1624400 624400  624390  0       1       0       1.5     1.5     735     34.91   33.16   0.012   0       0       0.5     1       0
1
*   Pipe From Outfall Structure in Detention Pond at Wal-Mart
*
C1      1624460 624460  624450  0       1       0       2       2       30      32.66   31.66   0.012   0       0       0.5     1       0
```

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3.4
*   Pipe From Outfall Structure in Detention Pond at Forest Place Apartments
C1      1624480 624480  624190  0       1       0       2       2       50      25.16   25.01   0.012   0       0       0.5     1       0
2
*   Storm Sewer Pipe For Folwer Avenue From Nebraska to 22nd Street Draining to Detention Pond Behind Sports Authority
*
C1      1624530 624530  624520  0       1       0       5       5       682     22.46   20.96   0.012   0       0       0.5     1       0
1
C1      1624540 624540  624530  0       1       0       4       4       550     23.66   22.46   0.012   0       0       0.5     1       0
1
C1      1624550 624550  624530  0       1       0       3.5     3.5     650     24.76   23.86   0.012   0       0       0.5     1       0
1
C1      1624560 624560  624550  0       1       0       3.5     3.5     600     25.46   24.76   0.012   0       0       0.5     1       0
1
* ========================================================================
* Dummy Conduits at MALL EAST AND MALL WEST
* ========================================================================
*
C1      5624100   566666  624100  0       2       0       10      0.2     100     80.00   33.16   0.013   0       0       0.5     0.8     0
1
C1      5624250   566666  624250  0       2       0       10      0.2     100     80.00   33.76   0.013   0       0       0.5     0.8     0
1
C1      5624290   566666  624290  0       2       0       10      0.2     100     80.00   33.16   0.013   0       0       0.5     0.8     0
1
C1      5624310   566666  624310  0       2       0       10      0.2     100     80.00   32.16   0.013   0       0       0.5     0.8     0
1
C1      5624325   566666  624325  0       2       0       10      0.2     100     80.00   22.06   0.013   0       0       0.5     0.8     0
1
C1      5624410   566666  624410  0       2       0       10      0.2     100     80.00   35.66   0.013   0       0       0.5     0.8     0
1
C1      5624420   566666  624420  0       2       0       10      0.2     100     80.00   36.76   0.013   0       0       0.5     0.8     0
1
C1      5624430   566666  624430  0       2       0       10      0.2     100     80.00   35.66   0.013   0       0       0.5     0.8     0
1
C1      5624440   566666  624440  0       2       0       10      0.2     100     80.00   36.66   0.013   0       0       0.5     0.8     0
1
C1      5624470   566666  624470  0       2       0       10      0.2     100     80.00   32.66   0.013   0       0       0.5     0.8     0
1
*
C1      5624080   566665  624080  0       2       0       10      0.2     100     80.00   21.16   0.013   0       0       0.5     0.8     0
1
C1      5624490   566665  624490  0       2       0       10      0.2     100     80.00   26.76   0.013   0       0       0.5     0.8     0
1
C1      5624360   566665  624360  0       2       0       10      0.2     100     80.00   30.66   0.013   0       0       0.5     0.8     0
1
C1      5624570   566665  624570  0       2       0       10      0.2     100     80.00   31.86   0.013   0       0       0.5     0.8     0
1
C1      5624340   566665  624340  0       2       0       10      0.2     100     80.00   32.66   0.013   0       0       0.5     0.8     0
1
C1      5624230   566665  624230  0       2       0       10      0.2     100     80.00   25.16   0.013   0       0       0.5     0.8     0
1
*
* ========================================================================
* USF EAST AND WEST AREAS
* ========================================================================
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* FOLLOWING THREE PIPES ARE PART OF LAKE BEHNKE OUTFALL UNDER 30TH ST
* DS NODE CHANGED FROM 625100 TO 624080 WHEN MODELS WERE COMBINED- NJM
*
*       EQUIV PIPE REPLACES TRIPLE
C1      1625150 625150  624080  0       2       5.1     1.17    4.62    141     28.60   27.70   0.013   0       0       0.5     0.8     0
1
*
*C1     1625150 625150  624080  0       3       1.8     1.167   1.917   141     28.60   27.70   0.013   0       0       0.5     0.8     0
1
*C1     2625150 625150  624080  0       3       1.8     1.167   1.917   141     28.60   27.70   0.013   0       0       0.5     0.8     0
1
*C1     3625150 625150  624080  0       3       1.8     1.167   1.917   141     28.60   27.70   0.013   0       0       0.5     0.8     0
1
*
C1      1625300 625300  625200  0       3       5.1     2       3.17    145     29.27   29.05   0.013   0       0       0.5     0.8     0
1
C1      2625300 625300  625200  0       3       5.1     2       3.17    145     29.27   29.05   0.013   0       0       0.5     0.8     0
1
C1      1625500 625500  625200  0       2       0       5       9       100     23.36   23.26   0.013   0       0       0.5     0.8     0
1
C1      1625600 625600  625500  0       2       0       4       8       450     25.66   24.56   0.013   0       0       0.5     0.8     0
1
C1      1625650 625650  625600  0       1       0       3.5     3.5     50      27.96   27.86   0.013   0       0       0.5     0.8     0
2
C1      2625650 625650  625600  0       1       0       3.5     3.5     50      27.96   27.86   0.013   0       0       0.5     0.8     0
2
C1      1625700 625700  625600  0       2       0       4       6       352     27.06   25.66   0.013   0       0       0.5     0.8     0
1
C1      1625800 625800  625700  0       1       0       3.5     3.5     765     31.66   28.66   0.013   0       0       0.5     0.8     0
1
C1      1626000 626000  625900  0       1       0       2       2       110     35.15   34.86   0.013   0       0       0.5     0.8     0
1
C1      1626300 626300  626200  0       1       0       3.5     3.5     128     26.26   26.16   0.013   0       0       0.5     0.8     0
1
C1      1626350 626350  626300  0       1       0       1.5     1.5     75      40.96   40.86   0.013   0       0       0.5     0.8     0
1.4
C1      1626950 626950  626900  0       3       12.9    3.17    5       160     27.86   27.76   0.013   0       0       0.5     0.8     0
1
C1      1627200 627200  626300  0       2       0       7       8       100     26.76   26.56   0.013   0       0       0.5     0.8     0
1
C1      1627300 627300  627200  0       2       0       6       7       950     28.66   26.76   0.013   0       0       0.5     0.8     0
1
C1      1627400 627400  627300  0       2       0       5       6       950     32.06   28.66   0.013   0       0       0.5     0.8     0
1
C1      1627450 627450  627400  0       1       0       3       3       290     32.16   31.66   0.013   0       0       0.5     0.8     0
1
C1      1627700 627700  627600  0       1       0       3       3       65      32.16   32.06   0.013   0       0       0.5     0.8     0
1.6
*   ------------------------------------------------------------------------------------------------------------------
*   DUMMY CONDUITS FOR USF EAST AND WEST
*   ------------------------------------------------------------------------------------------------------------------
*       NCOND   NJUNC(1)        NJUNC(2)        Q0      NK      AF      DEEP    WIDE    LEN     ZP1     ZP2     ROU     SS1     SS2     KENT
KEXI    KMIS    STRCH
*       ------------------------------------------------------------------------------------------------------------------
C1      5625400   544444  625400  0       2       0       10      0.2     100     80.00   53.36   0.013   0       0       0.5     0.8     0
```

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1
C1      5625900   544444  625900  0       2       0       10      0.2     100     80.00   28.16   0.013   0       0       0.5     0.8     0
1
C1      5626300   544444  626300  0       2       0       16      0.2     100     80.00   25.66   0.013   0       0       0.5     0.8     0
1
C1      5626400   544444  626400  0       2       0       10      0.2     100     80.00   43.16   0.013   0       0       0.5     0.8     0
1
C1      5626500   544444  626500  0       2       0       10      0.2     100     80.00   44.16   0.013   0       0       0.5     0.8     0
1
C1      5626600   544444  626600  0       2       0       10      0.2     100     80.00   65.66   0.013   0       0       0.5     0.8     0
1
C1      5626700   544444  626700  0       2       0       10      0.2     100     80.00   44.16   0.013   0       0       0.5     0.8     0
1
C1      5627000   544444  627000  0       2       0       10      0.2     100     80.00   33.36   0.013   0       0       0.5     0.8     0
1
C1      5627100   533333  627100  0       2       0       10      0.2     100     80.00   32.36   0.013   0       0       0.5     0.8     0
1
C1      5627500   533333  627500  0       2       0       10      0.2     100     80.00   51.66   0.013   0       0       0.5     0.8     0
1
C1      5627600   533333  627600  0       2       0       10      0.2     100     80.00   30.16   0.013   0       0       0.5     0.8     0
1
C1      5627700   533333  627700  0       2       0       10      0.2     100     80.00   30.16   0.013   0       0       0.5     0.8     0
1
**============================================================*
* USF NORTH
*    NCOND    NJUNC1    NJUNC2  Q0  TYPE AFUL DEEP  WIDE    LEN    ZU/S  ZD/S   MANNn  STHE   SPHI   Kent   Kexit  Other Stretch
*     (#)      (#)       (#)   (cfs) #)(s.f.)(ft.) (ft.)   (ft.)   (ft.) (ft.)  (#)    (#:1)   (#:1) (#)     (#)     (#)   (#)
*============================================================*
* 5'x10' CBC DRAINING VIEUX CARRE AND TENNIS SCHOOL UNDER 46TH STREET
C1      1629735 629735  629720  0       2       0       5       10      48      22.79   22.49   0.012   0       0       0.5     1       0
3
*
*  60" RCP IN ABBOT DR. FROM 1-G TO 1-H
C1      1629740 629740  629735  0       1       0       5       0       322     24.02   22.79   0.012   0       0       0.5     1       0
1
*
*  60" RCP DRAINING BRECKINRIDGE EAST THROUGH VIEUX CARRE TO 46TH STREET FROM 1-F TO 1-G
C1      1629760 629760  629740  0       1       0       5       0       500     25.08   24.02   0.012   0       0       0.5     1       0
1
*
*  60" RCP DRAINING EAST FROM 42ND ST THROUGH BRECKINRIDGE FROM 1-C TO 1-F
C1      1629780 629780  629760  0       1       0       5       0       412     26.82   26.04   0.012   0       0       0.5     1       0
1
*
*  30" RCP DRAINING NORTH ALONG 42ND ST FROM INLET 1-O TO 1-C
C1      1629800 629800  629780  0       1       0       2.5     0       318     28.82   26.80   0.012   0       0       0.5     1       0
1
*
*  30" RCP DRAINING NORTH ALONG 42ND ST FROM INLET 1-N TO 1-O
C1      1629820 629820  629800  0       1       0       2.5     0       437     31.59   28.82   0.012   0       0       0.5     1       0
1
*
*  30" RCP DRAINING NORTH ALONG 42ND ST FROM UNLABELED MH TO 1-N
C1      1629825 629825  629820  0       1       0       2.5     0       204     32.88   31.59   0.0174  0       0       0.5     1       0
1
```

```
*
*  30" RCP DRAINING NORTH ALONG 42ND ST FROM MH 1-A TO UNLABLELED MH
C1      1629840 629840  629825  0       1       0       2.5     0       264     34.55   32.88   0.012   0       0       0.5     1       0
1
*
*  30" RCP DRAINING EAST ACROSS 42ND ST FROM MH 1-B TO 1-A - 35.42
C1      1629841 629841  629840  0       1       0       2.5     0       25      34.69   34.68   0.035   0       0       0.5     1       0
4
*
*  24" RCP DRAINING NORTH ALONG 42ND ST FROM MH 1-B TO UNLABLED MH
*  NO PLAN INFORMATION FOR D/S INVERT ELEVATION.  D/S INVERT RAISED TO
*  ELIMATE EXCESSIVE VELOCITIES
C1      2629841 629841  629825  0       1       0       2       0       230     34.86   33.06   0.012   0       0       0.5     1       0
1
*
*  36" RCP (29" x 45" ERCP) DRAINING EAST ALONG VANDERBILT DR
C1      1629842 629842  629841  0       1       0       3       0       300     35.48   35.05   0.012   0       0       0.5     1       0
1
*
*  30" RCP DRAINING EAST ALONG VANDERBILT DR
C1      1629860 629860  629842  0       1       0       2.5     0       326     37.19   35.40   0.012   0       0       0.5     1       0
1
*
*
*  46TH STREET LATERAL
*
*  36" RCP DRAINING NORTH ALONG 46TH ST FROM MH 2-F TO I-H CBC
*  NO SURVEY INFORMATION FOR D/S INVERT.  D/S INVERT RAISED TO ELIMINATE
*  EXCESSIVE VELOCITIES
*C1     1621200 621200  620200  0       1       0       3       0       505     27.02   22.79   0.012   0       0       0.5     1       0
1
C1      1629920 629920  629735  0       1       0       3       0       505     27.02   25.51   0.012   0       0       0.5     1       0
1
*
*  30" RCP DRAINING NORTH ALONG 46TH ST FROM MH 2-E TO 2-F
C1      1629925 629925  629920  0       1       0       2.5     0       388     29.73   27.43   0.012   0       0       0.5     1       0
1
*
*  36" RCP DRAINING NORTH ALONG 46TH ST FROM MH 2-D TO I-F
C1      1629940 629940  629925  0       1       0       2.5     0       375     31.43   29.70   0.012   0       0       0.5     1       0
1
*
* dummy pipes for crown offsets at storage nodes and pond Init. WLs
C1      5629880   629880  555557  0       2       0       5       0.5     100     32.16   80.00   0.012   0       0       0.5     1       0
1
C1      5629900   629900  555557  0       2       0       5       0.5     100     22.16   80.00   0.012   0       0       0.5     1       0
1
*
*============================*
* Conduit Input USF EAST
*============================*
* 48-inch Dia. R.C.P. outfall Culvert Under Fletcher                                                  Kent  Kexit Other
Stretch
C1      1629100 629100  629000  0       1       0       4       4       118     21.66   21.46   0.012   0       0       0.5     1       0
1
```

```
* 18-inch CMP side-drain adjacent 50th Street and Village Square Apartments
C1      1629200 629200  629100  0       1       0       1.5     1.5     65      29.96   29.68   0.023   0       0       0.5     1       0
1
* 24-inch R.C.P. Discharging from Type "C" FDOT Inlet on the east side of 52nd Street adjacent Fletcher
C1      1629500 629500  629100  0       1       0       2       2       135     25.49   24.76   0.012   0       0       0.5     1       0
1
* 24-inch R.C.P. Discharging from Type "C" FDOT Inlet on the east side of 53rd Street adjacent Fletcher
C1      1629600 629600  629500  0       1       0       2       2       84      32.37   30.56   0.012   0       0       0.5     1       0
1
* dummy pipes for crown offsets at storage nodes and pond Init. WLs
C1      5629500   629500  555557  0       2       0       5       0.5     100     26.16   80.00   0.012   0       0       0.5     1       0
1
C1      5629100   629100  555557  0       2       0       5       0.5     100     24.76   80.00   0.012   0       0       0.5     1       0
1
*------------------------------*
*   USF RAINTREE NORTH CONDUIT DATA
*------------------------------*
*   NCOND    NJ1      NJ2      Q0  NKLASS AFULL DEEP     WIDE    LEN     ZP1    ZP1     ROUGH    STHETA SPHI KENT  KEXIT KMIN STRE
*
*   Reach R5, from Node N5 to Node BNDRY1
*   Note: Trib to Hillsborough River
C1      9628550 628550  628500  0       6       0       50      10      375     23.78   21.16   0.035   3       3       0.1     0       0
1
*
*   Reach R10, from Node N10 to Node N5
*   Note: Half of 54" CMP (as B.C.) @ Brightwa
C1      1628600 628600  628550  0       1       0       4.5     4.5     24      24.36   23.78   0.024   0       0       0.5     1       0
1
*
*   Reach R30, from Node N30 to Node N10
*   Note: Conservation # 2 to Brightwater Str
C1      9628650 628650  628600  0       6       0       50      10      300     24.96   24.36   0.035   3       3       0.1     0       0
1
*
*   Reach R100, from Node N100 to Node N30
C1      1628699 628699  628650  0       1       0       2.5     2.5     260     25.39   25.16   0.013   0       0       0.5     1       0
1
*
*   Reach R150, from Node N150 to Node N100
*   Note: Rainforest St. to Carlton BigLake
C1      1628750 628750  628700  0       1       0       3       3       150     26.66   26.46   0.012   0       0       0.5     1       0
1
*
*   Reach R1100, from Node N1100 to Node N150
*   Note: Rainforest St. to Node 150
C1      1628800 628800  628750  0       1       0       3       3       150     24.31   25.24   0.012   0       0       0.5     1       0
1
*
*   Reach R1200, from Node N1200 to Node N150
*   Note: Proposed 36" RCP at end of Gibson
C1      1628760 628760  628750  0       1       0       2.5     2.5     366     27.80   25.35   0.012   0       0       0.5     1       0
1
*
C1      1628850 628850  628800  0       1       0       3       3       200     29.16   28.16   0.012   0       0       0.5     1       0
1
```

```
*
*   Reach R1000, from Node N1000 to Node N1100
*   Note: Jenny/Mike Dr to Wetland
C1      1628840 628840  628800  0       1       0       3       3       172     25.46   25.16   0.012   0       0       0.5     1       0
1
*
*   Reach R900, from Node N900 to Node N1100
*   Note: Jenny/Kitten to Wetland
C1      1628830 628830  628800  0       1       0       1.5     1.5     170     25.46   25.16   0.012   0       0       0.5     1       0
1
*
*   Reach R800, from Node N800 to Node N1100
*   Note: Jenny/Joan Dr to Wetland
C1      1628820 628820  628800  0       1       0       1.5     1.5     110     25.36   25.16   0.012   0       0       0.5     1       0
1
*
*   Reach R700, from Node N700 to Node N1100
*   Note: Cul-de-sacof Rainforest Pond to Wetland
C1      1628810 628810  628800  0       1       0       1.25    1.25    40      26.66   26.16   0.012   0       0       0.5     1       0
1
*
*   Reach R600, from Node N600 to Node N100
C1      1628729 628729  628700  0       1       0       2       2       305     29.16   28.24   0.013   0       0       0.5     1       0
1
*
*   Reach R1600, from Node N1600 to Node N100
*   Note: Open Ditch From Woodduck to Calpond
C1      9628720 628720  628700  0       6       0       50      4       50      29.16   26.66   0.035   2       2       0.1     0       0
2
*
*   Reach R1500, from Node N1500 to Node N100
*   Note: Tanager place to Big Carlton Lake
C1      9628710 628710  628700  0       6       0       50      4       50      29.16   26.66   0.035   2       2       0.1     0       0
2
*
*   Reach R300, from Node N300 to Node N30
C1      1628669 628669  628650  0       1       0       2       2       270     25.49   25.16   0.013   0       0       0.5     1       0
1
*
*   Reach R200, from Node N200 to Node N30
C1      1628679 628679  628650  0       1       0       2       2       35      25.30   25.16   0.013   0       0       0.5     1       0
1
*
*   Reach R400, from Node N400 to Node N200
C1      1628684 628684  628680  0       1       0       2       2       30      25.96   25.81   0.013   0       0       0.5     1       0
1
*
*   Reach R500, from Node N500 to Node N400
C1      1628689 628689  628685  0       1       0       2       2       255     26.66   25.64   0.013   0       0       0.5     1       0
1
*
C1      9628660 628660  628650  0       6       0       50      10      500     25.30   24.96   0.035   2       2       0.1     0       0
1
*
*   Dummy Conduits for Raintree North
```

```
C1      5628860   555557  628860  0       2       0       5       0.5     100     80.00   23.16   0.012   0       0       0       0       0
1
C1      5628670   555557  628670  0       2       0       5       0.5     100     80.00   24.16   0.012   0       0       0       0       0
1
C1      5628760   555557  628760  0       2       0       5       0.5     100     80.00   24.16   0.012   0       0       0       0       0
1
C1      5628730   555557  628730  0       2       0       5       0.5     100     80.00   29.16   0.012   0       0       0       0       0
1
C1      5628710   555557  628710  0       2       0       5       0.5     100     80.00   24.16   0.012   0       0       0       0       0
1
C1      5628690   555557  628690  0       2       0       5       0.5     100     80.00   29.16   0.012   0       0       0       0       0
1
C1      5628685   555557  628685  0       2       0       5       0.5     100     80.00   24.16   0.012   0       0       0       0       0
1
C1      5628680   555557  628680  0       2       0       5       0.5     100     80.00   25.16   0.012   0       0       0       0       0
1
C1      5628720   555557  628720  0       2       0       5.6     0.5     100     80.00   23.66   0.012   0       0       0       0       0
1
*       Add'l Dummy Conduits by Ayres 2006
C1      5629300   555556  629300  0       1       0       2       2       100     80.00   27.16   0.012   0       0       0       0       0
1
C1      5629960   555556  629960  0       1       0       2       2       100     80.00   37.86   0.012   0       0       0       0       0
1
C1      5629400   555556  629400  0       1       0       2       2       100     80.00   24.16   0.012   0       0       0       0       0
1
C1      5629700   555556  629700  0       1       0       2       2       100     80.00   39.16   0.012   0       0       0       0       0
1
C1      5628800   555556  628800  0       1       0       2       2       100     80.00   23.16   0.012   0       0       0       0       0
1
*
*==============================*                                                  Kent  Kexit Other Stretch
*   USF RAINTREE SOUTH CONDUIT DATA
*------------------------------*
*   NCOND    NJ1      NJ2      Q0  NKLASS AFULL DEEP   WIDE      LEN     ZP1     ZP1    ROUGH    STHETA SPHI KENT  KEXIT KMIN STRE
*   Outfall Conduit
*
*   from Node 999 to Outfall 0628000
C1      1628100 628100  628000  0       2       0       4.5     20      100     21.83   20.66   0.012   0       0       0.5     1       0
1
*   Reach 16, from Node 112 to 999
C1      1628110 628110  628100  0       1       0       2       2       96      22.03   21.83   0.012   0       0       0.5     1       0
1
*   Reach 18, from Node 111 to Node 999
C1      1628150 628150  628100  0       1       0       4.5     4.5     250     22.96   22.16   0.012   0       0       0.5     1       0
1
C1      2628150 628150  628100  0       1       0       4.5     4.5     250     22.96   22.16   0.012   0       0       0.5     1       0
1
*   Reach 4, from Node 102 to Node 111
C1      1628200 628200  628150  0       1       0       1.5     1.5     16      24.66   24.61   0.012   0       0       0.5     1       0
6.25
*   Reach 3, from Node 103 to Node 102
C1      1628250 628250  628200  0       1       0       2.5     2.5     120     18.93   18.75   0.012   0       0       0.5     1       0
1
C1      2628250 628250  628200  0       1       0       2.5     2.5     120     18.93   18.75   0.012   0       0       0.5     1       0
1
```

```
C1      3628250 628250  628200  0       1       0       2.5     2.5     120     18.93   18.75   0.012   0       0       0.5     1       0
1
*
*   Reach 20, from Node 103 to Node 102
C1      4628250 628250  628200  0       1       0       4.5     4.5     126     21.26   21.16   0.012   0       0       0.5     1       0
1
C1      5628250 628250  628200  0       1       0       4.5     4.5     126     21.26   21.16   0.012   0       0       0.5     1       0
1
*   Reach 22, from Node 206 to Node 103
C1      9628300 628300  628250  0       6       0       50      3.5     310     27.66   26.16   0.04    1.3     1.35    0       0       0
1
*   Reach 19, from Node 105 to Node 206
C1      1628350 628350  628300  0       1       0       3       3       200     27.66   26.96   0.012   0       0       0.5     1       0
1
*   Reach, 2 from Node 106 to Node 206
C1      9628310 628310  628300  0       6       0       50      0       40      28.06   27.66   0.04    2       1.1     0       0       0
2.5
*   Reach 8, from Node 110 to Node 105
C1      1628400 628400  628350  0       1       0       4.5     4.5     442     23.61   22.91   0.012   0       0       0.5     1       0
1
*   Reach 7, from Node 305 to Node 110
C1      1628450 628450  628400  0       1       0       4       4       1148    28.46   25.71   0.012   0       0       0.5     1       0
1
*
*   Reach 11, from Node 101 to Node 111
C1      1628160 628160  628150  0       1       0       2.5     2.5     28.3    23.86   23.36   0.012   0       0       0.5     1       0
3.5
*   Reach 12, from Node 111 to Node 112
C1      3628150 628150  628110  0       1       0       3       3       65      23.13   22.03   0.012   0       0       0.5     1       0
1.5
*
**      INFLOW FROM SUBBASINS SOUTH OF FOWLER
*   Reach 9, from Node 200 to Node 103
C1      1628270 628270  628250  0       1       0       4.5     4.5     160     23.78   23.26   0.012   0       0       0.5     1       0
1
* dummy pipes for crown offsets and pond Init. WLs
C1      5628350   555555  628350  0       2       0       5       0.5     100     80.00   24.16   0.012   0       0       0.5     1       0
1
C1      5628310   555555  628310  0       2       0       5       0.5     100     80.00   24.26   0.012   0       0       0.5     1       0
1
C1      5628420   555555  628420  0       2       0       5       0.5     100     80.00   26.16   0.012   0       0       0.5     1       0
1
*===============================================================================================
* CITY OF TAMPA CONDUIT DATA
* ===============================================================================================
*************************************************************************
* Eastern Branch along RR     *
*************************************************************************
* Commercial Parcel Pond System Discharge to FDOT Pond #9
C1      1648200 648200  648000  0       1       0       3       3       150     28.16   27.16   0.013   0       0       0.5     1       0
1       * Estimated equalizer pipe
* Equivalent Boxes for FDOT pond weirs (unstable)
C1      1648000 648000  647990  0       2       30      7.5     4       100     30.76   30.66   0.013   0       0       0.5     1       0
1       * equivalent for weir
* FDOT Pond #9 to 30th Street S-78
```

```
C1      1647990 647990  647950  0       1       0       2.5     2.5     240     29.46   29.38   0.013   0       0       0.5     1       0
1       * 30th street drainage - 3 sheet 43
* 30th Street crossing to west of S-77
C1      1647950 647950  647900  0       1       0       3.5     3.5     125     29.01   28.56   0.013   0       0       0.5     1       0
1       *  3 sheet 22 & 43
* Pipe conveyance to 113th Ave ditch (by apartment complex)
* this system is updated based on new survey dated on 12/10/2004 by J. Su
C1      1647900 647900  647902  0       1       0       3       3       400     28.00   26.39   0.013   0       0       0.5     1       0
1       * 3 sheet 22
C1      1647902 647902  647904  0       1       0       4.5     4.5     328     26.31   25.16   0.024   0       0       0.5     1       0
1
C1      1647904 647904  647906  0       1       0       4.5     4.5     333     25.16   23.94   0.024   0       0       0.5     1       0
1
C1      1647906 647906  647800  0       1       0       4.5     4.5     498     23.99   21.69   0.024   0       0       0.5     1       0
1
*******************************************************************************
* Primary Drainage System     *
*******************************************************************************
* natural channel from Fowler to Rail Road
C1      9648950 648950  648900  0       8       0       0       0       415     24.77   23.85   0.035   9648950 0.0001  0       0       0
1
* Railroad Crossing
C1      1648900 648900  648870  0       1       7.07    3       3       50      22.98   22.88   0.013   0       0       0.1     1       0
2       * 4
* natural channel from Rail Road to Apartment
C1      9648870 648870  648750  0       8       0       0       0       406     21.89   22.33   0.035   9648870 0.0001  0       0       0
1
* Apartment Drive crossing
C1      1648750 648750  648730  0       1       7.07    3       3       50      19.95   20.67   0.013   0       0       0.1     1       0
4       *
* natural channel from Apartment to maintenance road
C1      9648730 648730  648700  0       8       0       0       0       488     18.28   21.44   0.035   9648730 0.0001  0       0       0
1
* Maintenance Road crossing to ditch north of 113th Ave
*C1      1648700 648700  647820  0       1       0       4       4       32      21.26   21.14   0.013   0       0       0.1     1       0
4       *
*   2006 short channel modeled as storage for stability
C1      1648700 648700  647800  0       1       0       4       4       32      21.26   21.14   0.013   0       0       0.1     1       0
4       *
* natural channel maintenance road to 113th Ave (2006 modeled as storage)
*C1      9647820 647820  647800  0       8       0       0       0       110     21.68   21.18   0.035   9647820 0.0001  0       0       0
1
* 113th Ave crossing to Donut Pond
C1      1647800 647800  647500  0       1       0       4       4       162     20.99   20.53   0.013   0       0       0.1     1       0
1       *  4,5,  2
* 26th Street storm pipe from Donut Pond to 110th Ave manhole
C1      1647500 647500  647400  0       1       0       5       5       322     18.84   18.36   0.013   0       0       0.4     4       0
1       *   1,4  3 interm. junctions
* 26th Street storm pipe from 110th Ave to Bacon Lake drain confluence
C1      1647400 647400  647402  0       1       0       5       5       275     18.36   16.91   0.013   0       0       0.5     1       0
1       *       1,4
C1      1647402 647402  647404  0       1       0       5       5       372     16.91   18.68   0.013   0       0       0.5     1       0
1       *       1,4
C1      1647404 647404  647406  0       1       0       5       5       701     18.68   18.35   0.013   0       0       0.5     1       0
1       *       1,4
```

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C1      1647406 647406  646900  0       1       0       5       5       158     18.35   19.02   0.013   0       0       0.5     1       0
1       *       1,4
* Bacon Lake outfall to 26th Street
C1      1647000 647000  646900  0       1       0       4       4       365     18.15   19.02   0.013   0       0       0.3     3       0
1       *  Bacon Lake Retention Basin Outfall 2 interim junc.
* 26th Street storm pipe to Poinsettia Lake
C1      1646900 646900  646502  0       1       0       5       5       420     19.02   18.92   0.013   0       0       0.1     1       0
1       *       1,4
C1      1646502 646502  646504  0       1       0       5       5       256     18.92   18.84   0.013   0       0       0.1     1       0
1       *       1,4
C1      1646504 646504  646506  0       1       0       5       5       336     18.84   18.36   0.013   0       0       0.1     1       0
1       *       1,4
C1      1646506 646506  646508  0       1       0       5       5       306     18.36   18.48   0.013   0       0       0.1     1       0
1       *       1,4
C1      1646508 646508  646500  0       1       0       5       5       294     18.48   18.26   0.013   0       0       0.1     1       0
1       *       1,4
* Poinsettia Lake Pump outfall to 30th Street
C1      1646490 646490  646000  0       1       0       4       4       350     21.96   22.66   0.013   0       0       0.1     1       0
1       * 29th Street & Poinsettia Pump Station/30th Street Plan
* 26th Street STREETFLOW PATH
C1      9647400 647400  647500  0       6       0       10      2       380     27.16   26.46   0.012   10      10      0       0       0
1       * North Streetflow  26th Street
* Dummy pipes
C1      5648000   648000  555558  0       2       0       9       0.1     100     25.16   80.00   0.01    0       0       0.1     1       0
1       *
C1      5648900   648900  555558  0       2       0       9       0.1     100     21.16   80.00   0.01    0       0       0.1     1       0
1       *
C1      5648750   648750  555558  0       2       0       6       0.1     100     20.76   80.00   0.01    0       0       0.1     1       0
1       *
C1      5647500   647500  555558  0       2       0       10      0.1     100     17.16   80.00   0.01    0       0       0.1     1       0
1       *
C1      5647400   647400  555558  0       2       0       10      0.1     100     18.16   80.00   0.01    0       0       0.1     1       0
1       *
C1      5647000   647000  555558  0       2       0       6       0.1     100     14.16   80.00   0.01    0       0       0.1     1       0
1       *
C1      5646500   646500  555558  0       2       0       6       0.1     100     16.16   80.00   0.01    0       0       0.1     1       0
1       *
C1      5646900   646900  555558  0       2       0       8       0.1     100     22.16   80.00   0.01    0       0       0.1     1       0
1       *
C1      5647805   555555  647805  0       2       0       5       0.1     100     79.16   26.16   0.01    0       0       0.1     1       0
1       *
C1      5647810   555555  647810  0       2       0       5       0.1     100     79.16   25.26   0.01    0       0       0.1     1       0
1       *
C1      5646905   555555  646905  0       2       0       5       0.1     100     79.16   25.16   0.01    0       0       0.1     1       0
1       *
*====================
* 30th Street System
*====================
*  30th @ River Forest Cir
C1      1645079 645079  645000  0       1       0       6       6       1570    19.66   17.76   0.012   0       0       0.5     1       0
1
*  30th @ Busch Blvd
C1      1645099 645099  645079  0       1       0       6       6       410     20.16   19.66   0.012   0       0       0.5     1       0
1
*  30th @ Poinsettia
```

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C1      1646000 646000  645099  0       1       0       6       6       3000    22.06   20.16   0.012   0       0       0.5     1       0
1
*  30th @  Navajo
C1      1646029 646029  646000  0       1       0       6       6       550     23.00   22.06   0.012   0       0       0.5     1       0
1
*  30th @ Bougainvillea
C1      1646039 646039  646029  0       1       0       5       5       610     23.88   23.55   0.012   0       0       0.5     1       0
1
************************************************************
** NAVD-CONVERTED BY AYRES (-0.84 FT)
* Natural Channel. Base on survey 9/29/2004---J.su
* from Fowler to Rail Road
C2      0.05    0.05    0.035
C3      9648950 13      7       63      0       0       415     0       0
C4      31.00   0
        31.46   7
        30.41   14
        25.18   31
        25.84   34
C4      24.15   37
        23.19   41
        24.36   45
        25.70   47
        29.15   59
C4      25.11   63
        28.65   64
        34.16   65
* From Rail Road to Apartment
C2      0.05    0.05    0.035
C3      9648870 14      1       55      0       0       406     0       0
C4      29.90   0
        29.63   1
        25.99   5
        23.53   10
        22.92   17
C4      23.54   22
        26.64   25
        28.95   30
        29.85   38
        28.58   45
C4      28.12   48
        28.11   55
        27.72   66
        34.16   67
*From Apartment to Maintenance
C2      0.05    0.05    0.035
C3      9648730 12      8       58      0       0       488     0       0
C4      30.75   0
        30.04   8
        24.37   17
        24.27   27
        23.00   31
C4      20.60   38
        22.50   42
        29.00   45
```

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        29.26   58
        29.36   65
C4      34.16   66
* AYRES EXTENDED -FULL CHANNEL WARNING
        36.16   66.01
*From Maintenance to the inlet to Donut Pond
*C2      0.05    0.05    0.035
*C3      9647820 12      5       56      0       0       110     0       0
*C4      26.98   0
*        26.93   5
*        25.86   18
*        22.26   33
*        21.68   39
*C4      22.58   40
*        23.83   44
*        25.00   48
*        27.16   53
*        27.83   56
*C4      27.96   58
*        34.16   59
*
* ============================================================================
*   JUNCTION DATA FOR CYPRESS CREEK
* ============================================================================
* NAVD-CONVERTED BY AYRES (-0.84 FT)  Z and Yo ONLY  - NOT GRELEV
*----------------------------------------------------------------------------
*       JUNC-ID GRELEV  Z       QINST   YO
*----------------------------------------------------------------------------
*
D1      620115  99.0    35.06   0       35.16
D1      620120  99.0    35.16   0       35.16
D1      620200  99.0    33.16   0       35.16
D1      620250  99.0    36.21   0       36.21
D1      620260  99.0    38.26   0       38.26
D1      620300  99.0    29.16   0       29.26
D1      620400  99.0    33.56   0       33.56
D1      620410  99.0    38.86   0       38.86
D1      620450  99.0    37.94   0       37.94
D1      620460  99.0    38.06   0       38.06
D1      620470  99.0    38.86   0       38.86
D1      620480  99.0    40.01   0       40.01
D1      620600  99.0    35.16   0       35.16
D1      620650  99.0    35.16   0       35.16
*
*
* ============================================================================
* JUNCTIONS at NEBRASKA AVE.
* ============================================================================
* START WS DUE TO DUCK POND WEST
D1      621050  99.0    22.17   0       25.76
D1      621075  99.0    26.50   0       26.50
D1      621100  99.0    31.16   0       31.16
D1      621125  99.0    22.56   0       22.56
D1      621150  99.0    28.16   0       28.16
D1      621200  99.0    29.62   0       29.66
```

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D1      621225  99.0    30.46   0       30.46
* START WS DUE TO DUCK POND WEST
D1      621250  99.0    23.16   0       25.81
D1      621275  99.0    23.16   0       25.81
D1      621300  99.0    32.36   0       32.36
D1      621325  99.0    32.46   0       32.46
D1      621350  99.0    23.16   0       25.76
D1      621375  99.0    23.16   0       25.76
D1      621390  99.0    35.56   0       35.56
D1      621395  99.0    25.16   0       25.16
*D1     621400  99.0    24.16   0       26.16
D1      621425  99.0    29.16   0       29.16
D1      621450  99.0    23.16   0       25.76
D1      621500  99.0    25.73   0       25.73
D1      621550  99.0    26.37   0       26.37
D1      621600  99.0    29.66   0       29.66
D1      621625  99.0    25.16   0       26.16
D1      621630  99.0    33.16   0       33.16
D1      621650  99.0    27.16   0       27.16
D1      621675  99.0    28.46   0       28.46
D1      621700  99.0    31.36   0       31.36
D1      621715  99.0    36.46   0       36.46
D1      621725  99.0    36.59   0       36.59
D1      621750  99.0    42.56   0       42.56
D1      621775  99.0    29.76   0       29.76
D1      621800  99.0    30.96   0       30.96
D1      621825  99.0    32.96   0       32.96
D1      621850  99.0    34.16   0       34.16
D1      621875  99.0    34.16   0       34.16
D1      621900  99.0    31.36   0       31.36
D1      621950  99.0    41.46   0       41.46
*
*
* ========================================================================
* JUNCTIONS at ROBBINS LUMBER
* ========================================================================
D1      622400  99.0    30.17   0       30.66
D1      622500  99.0    30.12   0       30.12
D1      622600  99.0    31.16   0       32.16
D1      622700  99.0    31.26   0       32.16
D1      622800  99.0    31.31   0       32.66
D1      622850  99.0    31.31   0       34.86
D1      622900  99.0    31.69   0       32.16
D1      622925  99.0    34.36   0       34.36
D1      622950  99.0    34.16   0       34.16
*
*
* ========================================================================
* JUNCTIONS at 131st Ave. Area
* ========================================================================
D1      623140  99.0    24.91   0       25.76
D1      623150  99.0    26.46   0       26.46
D1      623160  99.0    26.56   0       26.56
D1      623170  99.0    24.16   0       25.80
D1      623190  99.0    29.16   0       29.16
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D1      623200  99.0    32.49   0       32.49
D1      623210  99.0    33.29   0       33.29
D1      623215  99.0    32.49   0       32.49
D1      623220  99.0    34.64   0       34.64
D1      623225  99.0    34.89   0       34.89
D1      623230  99.0    34.99   0       34.99
D1      623240  99.0    35.33   0       35.33
D1      623243  99.0    38.96   0       38.96
D1      623244  99.0    40.66   0       40.66
D1      623245  99.0    37.16   0       40.66
D1      623247  99.0    43.16   0       43.16
D1      623248  99.0    43.16   0       43.16
*
D1      623250  99.0    29.16   0       35.33
D1      623270  99.0    34.16   0       35.33
D1      623300  99.0    28.60   0       30.71
D1      623305  99.0    28.55   0       30.71
D1      623307  99.0    27.74   0       30.71
D1      623310  99.0    30.71   0       30.71
D1      623320  99.0    33.30   0       33.30
D1      623330  99.0    36.66   0       36.66
D1      623340  99.0    36.79   0       36.79
D1      623350  99.0    36.96   0       36.96
D1      623360  99.0    34.16   0       36.96
D1      623370  99.0    37.33   0       37.33
D1      623380  99.0    37.74   0       37.74
D1      623390  99.0    36.66   0       37.74
D1      623400  99.0    29.26   0       30.71
D1      623430  99.0    29.34   0       30.71
D1      623450  99.0    32.65   0       32.65
D1      623500  99.0    32.95   0       32.95
D1      623510  99.0    34.66   0       34.66
D1      623550  99.0    33.22   0       33.22
D1      623600  99.0    34.16   0       34.19
D1      623650  99.0    34.19   0       34.19
D1      623700  99.0    34.69   0       34.69
D1      623725  99.0    35.86   0       35.86
D1      623750  99.0    37.62   0       37.62
D1      623800  99.0    39.08   0       39.08
D1      623850  99.0    40.01   0       40.01
D1      623900  99.0    39.16   0       39.16
*
*
* ============================================================================
* JUNCTIONS at MALL EAST AND MALL WEST
* ============================================================================
D1      624010  99.0    22.16   0       22.16
*D1     624020  99.0    22.09   0       22.86
D1      624030  99.0    23.27   0       23.27
D1      624040  99.0    23.69   0       23.69
D1      624050  99.0    23.92   0       23.92
D1      624060  99.0    24.29   0       24.29
D1      624070  99.0    24.61   0       24.61
D1      624080  99.0    21.16   0       25.80
D1      624090  99.0    25.16   0       25.80
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D1      624100  99.0    33.16   0       33.16
D1      624190  99.0    22.20   0       25.80
D1      624200  99.0    25.96   0       25.70
D1      624210  99.0    29.67   0       29.67
D1      624220  99.0    27.66   0       27.66
D1      624230  99.0    25.16   0       25.96
*D1     624240  99.0    32.91   0       32.91
D1      624250  99.0    33.76   0       33.76
D1      624260  99.0    26.41   0       26.41
D1      624270  99.0    26.46   0       26.46
D1      624280  99.0    31.31   0       31.31
D1      624290  99.0    33.16   0       33.16
D1      624300  99.0    30.41   0       30.41
D1      624310  99.0    32.16   0       32.16
D1      624320  99.0    26.56   0       26.56
D1      624325  99.0    22.06   0       22.06
D1      624330  99.0    27.56   0       27.56
D1      624340  99.0    32.66   0       32.66
D1      624350  99.0    32.59   0       32.59
D1      624360  99.0    30.66   0       30.66
D1      624370  99.0    32.74   0       32.74
D1      624380  99.0    31.61   0       31.61
D1      624390  99.0    32.74   0       32.74
D1      624400  99.0    34.91   0       34.91
D1      624410  99.0    35.66   0       35.66
D1      624420  99.0    36.76   0       36.76
D1      624430  99.0    35.66   0       35.66
D1      624440  99.0    36.66   0       36.66
D1      624450  99.0    31.66   0       31.66
D1      624460  99.0    32.66   0       32.66
D1      624470  99.0    32.66   0       32.66
D1      624480  99.0    25.16   0       25.66
D1      624490  99.0    26.76   0       26.76
D1      624520  99.0    20.96   0       20.96
D1      624530  99.0    22.46   0       22.46
D1      624540  99.0    23.66   0       23.66
D1      624550  99.0    24.76   0       24.76
D1      624560  99.0    25.46   0       25.46
D1      624570  99.0    31.86   0       32.86
*
* ============================================================================
* JUNCTIONS FOR USF EAST AND WEST
* ============================================================================
*
D1      625150  99.0    28.60   0       29.96
D1      625200  99.0    23.26   0       29.96
D1      625300  99.0    29.27   0       29.96
D1      625400  99.0    53.36   0       53.36
D1      625500  99.0    23.36   0       29.96
D1      625600  99.0    25.66   0       29.96
D1      625650  99.0    27.96   0       29.96
D1      625700  99.0    27.06   0       29.96
D1      625800  99.0    31.66   0       31.66
D1      625900  99.0    28.16   0       28.16
D1      626000  99.0    35.15   0       35.15
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D1      626200  99.0    26.16   0       26.16 * Ayres adj Yo for TW
D1      626300  99.0    25.66   0       26.26 * Ayres adj Yo for TW
D1      626350  99.0    40.96   0       40.96
D1      626400  99.0    43.16   0       43.16
D1      626500  99.0    44.16   0       44.16
D1      626600  99.0    65.66   0       65.66
D1      626700  99.0    44.16   0       44.16
D1      626900  99.0    27.76   0       28.16
D1      626950  99.0    27.86   0       28.16
D1      627000  99.0    33.36   0       33.36
D1      627100  99.0    32.36   0       32.36
D1      627200  99.0    26.76   0       28.66
D1      627300  99.0    28.66   0       28.66
D1      627400  99.0    31.66   0       31.66
D1      627450  99.0    32.16   0       32.16
D1      627500  99.0    51.66   0       51.66
D1      627600  99.0    30.16   0       32.06
D1      627700  99.0    30.16   0       32.16
*
*
* ========================================================================
*   DUMMY JUNCTIONS
* ========================================================================
* CYPRESS CREEK
D1      555555  99.0    80.00   0       80.00
D1      201151   99.0    34.16   0       34.16
* NEBRASKA AVE.
D1      555554  99.0    80.00   0       80.00
D1      555553  99.0    80.00   0       80.00
D1      555552  99.0    80.00   0       80.00
* ROBINSON LUMBER
D1      555559  99.0    80.00   0       80.00
* 131st AVE.
D1      577777  99.0    80.00   0       80.00
* MALL EAST AND WEST
D1      566666  99.0    80.00   0       80.00
D1      566665  99.0    80.00   0       80.00
* USF EAST AND WEST
D1      544444  99.0    80.00   0       80.00
D1      533333  99.0    80.00   0       80.00
*
*=============================================================*
*   JUNCTION DATA - USF NORTH
*=============================================================*
*     JUNC#    GRZ    FLZ    QIN     YO
* OUTFALL NODES
D1      629720  99.0    22.49   0       27.56  * Ayres adj Yo for TW
D1      629721  99.0    22.49   0       27.56  * Ayres adj Yo for TW
*
*  VIEUX CARRE U/S OF 5'x10'CBC AT INLET 1-H
* GRADE ELEV NGVD = 32.14
D1      629735  99.0    22.79   0       27.56  * Ayres adj Yo for TW
*
*   MH 1-G IN ABBOT DRIVE
* GRADE ELEV NGVD = 34.06
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D1      629740  99.0    24.02   0       27.56  * Ayres adj Yo for TW
*
*   MH 1-F AT EAST SIDE OF BRECKENRIDGE
* GRADE ELEV NGVD = 39.7
D1      629760  99.0    25.08   0       27.56  * Ayres adj Yo for TW
*
*   MH 1-C AT WEST SIDE OF BRECKENRIDGE
* GRADE ELEV NGVD = 43.38
D1      629780  99.0    26.80   0       27.56  * Ayres adj Yo for TW
* ******************************************************
*   JUNCTION AT INLET 1-O
* GRADE ELEV NGVD = 39.22
* Ayres 2006 revised Yo from 31.2 to 29.66 NGVD
D1      629800  99.0    28.82   0       28.82
*
*   JUNCTION INLET 1-N ON WEST SIDE OF BAVARIAN VILLAGE
* GRADE ELEV NGVD = 38.99
D1      629820  99.0    31.59   0       31.59
*
* GRADE ELEV NGVD = 39.5
D1      629825  99.0    32.88   0       32.88
*
*  JUNCTION INLET 1-A ON WEST SIDE OF THE OAKS
*  INCLUDES CONSTANT PUMP FLOWS FROM 0621001, 0620702 & 0620703 (14.5 cfs)
* GRADE ELEV NGVD = 39.0
D1      629840  99.0    34.55   14.5    34.55
*
*   JUNCTION INLET 1-B ON WEST SIDE OF UNIVERSITY WOODS
* GRADE ELEV NGVD = 42.61
D1      629841  99.0    34.69   0       35.16
*
*  JUNCTION INLET ON VANDERBILT DR. FROM PLANS SET
* GRADE ELEV NGVD = 42.3
D1      629842  99.0    35.48   0       35.48
*
*  JUNCTION INLET ON VANDERBILT DR. FROM PLANS SET
*  INCLUDES CONSTANT PUMP FLOW FROM 0620801
* GRADE ELEV NGVD = 42.3
D1      629860  99.0    37.19   0.05    37.19
*
*
*  JUNCTION ALONG 42ND STREET
* GRADE ELEV NGVD = 49.0
D1      629880  99.0    32.16   0       32.16
*
*   SPRINGWOOD VILLAGE, FONTANA HALL,AND CHURCH
* GRADE ELEV NGVD = 49.0
D1      629900  99.0    22.16   0       26.16
*
*   JUNCTION AT NE CORNER OF FAIRWAY OAKS APTS
* GRADE ELEV NGVD = 38.6
D1      629920  99.0    27.02   0       27.56  * Ayres adj Yo for TW
*
*   JUNCTION ON EAST SIDE OF FAIRWAY OAKS
* GRADE ELEV NGVD = 34.06
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D1      629925  99.0    29.73   0       29.73
*
*   JUNCTION AT NE CORNER OF THE OAKS VILLAGE
* GRADE ELEV NGVD = 39.70
D1      629940  99.0    31.43   0       31.43
*
D1      629960  99.0    37.86   0       37.86
*
*   DUMMY JUNCTIONS
D1      555557  99.0    80.00   0       80.00
D1      555556  99.0    80.00   0       80.00
*
*==============================*
* Junction Input USF EAST
*==============================*
* Downstream of 48-inch Dia. culvert crossing Fletcher
D1      629000  99.0    21.46   0       25.66 * Ayres adj Yo for TW
* Upstream of 48-inch Dia. culvert crossing Fletcher
D1      629100  99.0    21.66   0       25.66 * Ayres adj Yo for TW
* Upstream of 18-inch sided-drain adjacent 50th Street and Village Square Apartments
D1      629200  99.0    29.96   0       29.96
* Borrow Pit Pond
D1      629300  99.0    27.16   0       28.16
*  Pump Station
D1      629400  99.0    24.16   0       24.16
*  Ditch and wetland Adjacent Fletcher between 52nd and 53rd Streets
D1      629500  99.0    25.49   0       25.66 * Ayres adj Yo for TW
*  Ditch Adjacent Fletcher between 53rd and 56th Streets
D1      629600  99.0    32.37   0       32.37
*
D1      629700  99.0    39.16   0       39.16
*-----------------------*
* JUNCTIONS AT RAINTREE NORTH
*-----------------------*
*       JUN     GRELEV  Z        QINST   Y0
*       Outfall
D1      628500  99.0    21.16   0       22.66
*       N5
D1      628550  99.0    23.78   0       23.88
*       N10
D1      628600  99.0    24.36   0       25.36
*       N30
D1      628650  99.0    24.96   0       25.96
*
D1      628699  99.0    25.39   0       27.46
*       N100
D1      628700  99.0    26.46   0       27.46
*       N150
D1      628750  99.0    25.24   0       25.24
*       N1100
D1      628800  99.0    23.16   0       24.16
*       N1200
D1      628760  99.0    24.16   0       24.32
*       N1150
D1      628850  99.0    29.16   0       30.16
```

```
*       N1000
D1      628840  99.0    25.46   0       25.46
*       N900
D1      628830  99.0    25.46   0       25.46
*       N800
D1      628820  99.0    25.36   0       26.36
*       N700
D1      628810  99.0    26.66   0       27.66
*   Ayres 2006 revised Yo from 31.0 to 30.00  NGVD
D1      628729  99.0    29.16   0       29.16
*       N600
D1      628730  99.0    29.16   0       30.16
*       N1600
D1      628720  99.0    23.66   0       24.16
*       N1500
D1      628710  99.0    24.16   0       25.16
*
D1      628669  99.0    25.49   0       26.41
*       N300
D1      628670  99.0    24.16   0       26.41
* Ayres 2006 revised Yo from 27.14 to 26.8 NGVD
D1      628679  99.0    25.30   0       25.96
*       N200
* Ayres 2006 revised Yo from 27.65 to 26.8 NGVD weir crest
D1      628680  99.0    25.16   0       25.96
*
D1      628684  99.0    25.96   0       25.96
*       N400
D1      628685  99.0    24.16   0       25.66
*
D1      628689  99.0    26.66   0       26.74
*       N500
D1      628690  99.0    29.16   0       29.86
*       N1400
D1      628860  99.0    23.16   0       24.16
*       N110
D1      628660  99.0    25.30   0       26.30
*
*D1     623050  99.0    20.16   0       20.66
*
*======================*
*   WEIR JUNCTIONS FOR RAINTREE NORTH
*======================*
*D1     623551  99.0    24.36   0       25.36
*D1     623651  99.0    25.49   0       26.49
*
*D1     623681  99.0    25.96   0       27.41
*
*-----------------------*
* JUNCTIONS AT RAINTREE SOUTH
*-----------------------*
*       JUN     GRELEV  Z        QINST   Y0
*       Outfall
D1      628000  99.0    20.66   0       22.66
D1      628100  99.0    21.83   0       22.66
```

```
D1      628150  99.0    23.13   0       23.46
D1      628200  99.0    18.75   0       24.16
*       NE3, NE4, N1300
D1      628250  99.0    18.93   0       24.16
D1      628300  99.0    26.96   0       27.36
D1      628350  99.0    22.91   0       23.01
D1      628400  99.0    23.61   0       25.86
*       NW1 THRU NW5
D1      628450  99.0    28.46   0       28.56
*       SW1, SW2, SE1 THRU SE5
D1      628270  99.0    23.78   0       25.16
*       NE1, NE2, NE5, NE6&7, NE8, NE10, NE11, NE12
D1      628310  99.0    24.26   0       25.86
D1      628160  99.0    23.86   0       24.16
D1      628420  99.0    26.16   0       26.16
D1      628110  99.0    22.03   0       22.23
* ========================================================================================
*   CITY OF TAMPA JUNCTIONS
* ========================================================================================
*       JUN     GRELEV  Z       QINST   Y0              TOB
*               (GR+20)
D1      648950  99.0    22.41   0       22.41   *
D1      648900  51.5    21.16   0       21.16   *       31.5    NGVD
D1      648870  99.0    21.89   0       21.89   *
D1      648750  51.5    19.95   0       19.95   *       31      NGVD
D1      648730  99.0    18.28   0       18.28   *
D1      648700  50.1    21.26   0       21.26   *       30.1    NGVD
*D1      647820  99.0    21.14   0       21.14   *
D1      648200  64.8    28.16   0       28.16   *       44.8    NGVD
D1      648000  55.3    25.16   0       28.16   *       35.27   NGVD
D1      647990  55.3    29.46   0       29.46   *       35.27   NGVD
D1      647950  58.0    29.01   0       29.01   *       38      NGVD
D1      647900  62.4    28.00   0       28.00   *       42.4    NGVD
D1      647902  99.0    26.31   0       26.31   *
D1      647904  99.0    25.16   0       25.16   *
D1      647906  99.0    23.94   0       23.94   *
D1      647800  47.3    20.99   0       20.99   *       27.3    NGVD
D1      647805  53.0    26.16   0       26.16   *       33      NGVD
D1      647810  51.0    25.26   0       25.26   *       31      NGVD
D1      647500  47.0    17.16   0       20.66   *       27      NGVD
D1      647400  47.7    18.16   0       20.66   *       27.7    NGVD
D1      647402  99.0    16.91   0       20.66   *
D1      647404  99.0    18.68   0       20.66   *
D1      647406  99.0    18.35   0       20.66   *
D1      647000  50.0    14.16   0       20.66   *       30      NGVD
D1      646900  50.0    19.02   0       20.66   *       30      NGVD
D1      646905  53.4    25.16   0       25.16   *       33.4    NGVD
D1      646500  50.0    16.16   0       20.66   *       30      NGVD
D1      646502  99.0    18.92   0       20.66   *
D1      646504  99.0    18.84   0       20.66   *
D1      646506  99.0    18.36   0       20.66   *
D1      646508  99.0    18.48   0       20.66   *
D1      646490  52.0    21.96   0       21.96   *       32      NGVD
D1      555558  99.0    80.00   0       80.00
*====================
```

```
* 30th Street System
*====================
D1      645000  44.0    17.76   0       21.66   *  22.5 NGVD  Boundary@ Hillsb R.
D1      645079  53.0    19.66   0       21.66   *       33 NGVD
D1      645099  56.0    20.16   0       21.66   *       36 NGVD
D1      646000  54.2    22.66   0       22.66   *       34.2 NGVD
D1      646029  56.0    23.00   0       23.00   *       36 NGVD
D1      646039  54.0    23.88   0       23.88   *       34 NGVD
*
* NAVD-CONVERTED BY AYRES (-0.84 FT) - STAGE ONLY - NOT ZTOP
*       ------------------------------------------------------------------------------------------------------------------
*       LAKE    STAGE   DATA    FOR     149TH   STREET  OUTFALL TRIBUTARY
*       ------------------------------------------------------------------------------------------------------------------
*       ADDED   FOLLOWING       STORAGE WHEN    NEW     NODE    WAS     ADDED   TO      ELIMINATE
*       MULTIPLE        PIPES   AT      A       BOUNDARY        CONDITION
E1      620120  99      -1      2
E2      1.00    35.16
        1.00    98.16
*
*       LAKE    620200
E1      620200  99      -1      4
E2      1.50    33.16
        2.50    34.16
        10.60   39.66
        10.60   98.16
*
*       LAKE    620250  (FROM RUSS PRATT VIA THE USF PROJECT)
E1      620250  99      -1      9
E2      0.10    36.21
        0.40    39.16
        0.91    40.16
        2.00    41.16
        3.20    42.16
        4.70    43.16
        7.75    44.16
        11.00   48.16
        11.00   98.16
*
*       LAKE    620260  (FROM   RUSS    PRATT   VIA     THE     USF     PROJECT)
E1      620260  99      -1      7
E2      0.25    38.26
        0.75    41.16
        1.43    42.16
        2.21    43.16
        3.13    44.16
        4.80    45.16
        4.80    98.16
*       LAKE    620300  (LAKE)
E1      620300  99      -1      4
E2      0.50    29.16
        7.90    34.16
        27.60   39.16
        27.60   98.16
*       LAKE    0620400()
E1      620400  99      -1      5
```

```
E2      0.10    33.56
        7.00    39.16
        3.90    42.16
        18.50   44.16
        18.50   98.16
*
E1      620410  99      -1      3
E2      0.10    38.86
        0.10    44.16
        0.10    98.16
*
*       LAKE    0620450()
E1      620450  99      -1      4
E2      3.05    37.94
        10.00   39.16
        42.30   45.16
        42.30   98.16
*
*       LAKE    0620460()
E1      620460  99      -1      4
E2      0.10    38.06
        0.45    41.16
        0.95    44.16
        0.95    98.16
*
E1      620470  99      -1      2
E2      0.010   37.06
        0.010   98.16
*
E1      620480  99      -1      3
E2      0.10    40.01
        0.10    45.16
        0.10    98.16
*
*       LAKE    0620600()
E1      620600  99      -1      6
E2      0.40    35.16
        1.30    37.16
        3.00    39.16
        2.90    41.66
        3.68    46.59
        3.68    98.16
*
E1      620650  99      -1      7
E2      0.36    35.16
        1.40    39.16
        2.65    44.16
        4.21    45.16
        5.15    45.46
        8.60    46.16
        8.60    98.16
*=====================================================*
*       STAGE   /       AREAS   FOR     NEBRASKA        AVE.
*=====================================================*
*       Manhole at      17th    Street  Structure       2F
```

```
E1      621050  99      -1      6
E2      0.10    22.17
        1.50    31.62
        1.50    32.16
        5.62    33.16
        8.03    35.16
        8.03    98.16
*
E1      621075  99      -1      7
E2      0.10    26.50
        0.10    27.16
        0.20    29.16
        0.52    31.16
        0.77    33.16
        0.96    35.16
        0.96    98.16
*       Inlet   at       17th    Street  Structure       3D
E1      621100  99      -1      5
E2      0.50    31.16
        2.20    32.16
        5.63    33.16
        7.46    35.16
        7.46    98.16
*       West    of       17th    Street  and     east    of      15th    Street  see     SWFWMD  Aerial
E1      621125  99      -1      12
E2      0.010   22.56
        0.010   23.16
        0.06    24.16
        0.07    25.16
        0.25    26.16
        1.47    27.16
        2.79    29.16
        10.25   31.16
        13.00   32.16
        15.94   33.16
        20.70   35.16
        20.70   98.16
*       Inlet   west    of       17th    Street  and     east    of      15th    Structure       3C      in
E1      621150  99      -1      5
E2      0.010   28.16
        0.02    32.22
        2.58    33.16
        11.80   35.16
        11.80   98.16
*       Inlet   at       15th    Street  Structure       3A      in      Hillsborough    County  Survey
E1      621200  99      -1      6
E2      0.010   29.62
        0.02    32.16
        0.20    32.21
        3.33    33.16
        4.73    35.16
        4.73    98.16
*       West    of       15th    Street  and     east    of      14th    Street  see     SWFWMD  Aerial
E1      621225  99      -1      7
E2      0.010   30.46
```

```
        0.37    31.16
        1.20    31.86
        2.41    32.16
        7.89    33.16
        9.10    35.16
        9.10    98.16
*       Structure       in      pond    at      the     Corner  of      122nd   Street  and     the     CSX     RR      Structure       2A
E1      621250  99      -1      4
E2      0.10    23.16
        0.10    36.16
        0.10    44.16
        0.10    98.16
*       Pond    at      the     Corner  of      122nd   Street  and     the     CSX     RR
E1      621275  99      -1      10
E2      2.07    23.16
        2.58    25.16
        3.08    27.16
        3.60    29.16
        4.05    31.16
        4.47    33.16
        5.00    35.16
        7.00    36.16
        10.30   37.16
        10.30   98.16
*       West    of      14th    Street  and     east    of      12th    Street  see     SWFWMD  Aerial
E1      621300  99      -1      6
E2      0.05    32.36
        1.15    33.16
        2.35    34.16
        6.16    35.16
        8.20    35.66
        8.20    98.16
*       Natural depression      north   of      122nd   Street  see     SWFWMD  Aerial
E1      621325  99      -1      7
E2      0.010   32.46
        0.74    33.16
        1.54    33.66
        2.10    34.16
        10.90   35.16
        15.00   36.16
        15.00   98.16
*
*       Inlet   west    of      CSX     RR      Structure       1L      in      Hillsborough    County  Survey
E1      621350  99      -1      6
E2      0.010   23.16
        0.02    34.16
        0.75    35.16
        2.75    36.16
        7.71    37.16
        7.71    98.16
*
*       Manhole 1E      in      Hillsborough    County  Survey
E1      621375  99      -1      7
E2      0.010   23.16
        0.02    34.06
```

```
        3.10    34.16
        6.75    35.16
        8.50    36.16
        14.41   37.16
        14.41   98.16
*
*       West    of      CSX     RR      and     East    of      Nebraska        Ave.    see     SWFWMD  Aerial
E1      621390  99      -1      5
E2      0.10    35.56
        0.71    36.16
        2.30    36.56
        4.01    37.16
        4.01    98.16
*
*       Inlet   east    of      FDOT    Pond    #       2       west    of      CSX     RR      Structure       1N
E1      621395  99      -1      6
E2      0.010   25.16
        0.10    29.82
        1.00    35.16
        2.50    36.16
        15.86   37.16
        15.86   98.16
*
*       Outfall Structure       in      FDOT    Pond    #       2       Structure       1M
*E1     621400  99      -1      4
*E2     0.01    24.16
*       0.02    37.16
*       0.10    41.16
*       0.10    98.16
*
*       FDOT    Pond    #       2
E1      621425  99      -1      3
E2      0.64    29.16
        1.35    37.16
        1.35    98.16
*
*       Manhole In      Nebraska        Ave.    Structure       1C      in      Hillsborough    County  Survey
E1      621450  99      -1      4
E2      0.010   23.16
        0.02    35.96
        0.94    38.16
        0.94    98.16
*
*       Manhole In      Nebraska        Ave.    Structure       1B      in      Hillsborough    County  Survey
E1      621500  99      -1      4
E2      0.010   25.73
        2.00    35.41
        6.38    37.16
        6.38    98.16
*
*       Inlet   south   of      120th   Ave     and     west    of      Nebraska        Ave.    Structure       1A
E1      621550  99      -1      5
E2      0.010   26.37
        0.02    34.13
        3.50    34.46
```

```
        16.05   37.16
        16.05   98.16
*
*       Inlet   north   of      120th   Ave     and     west    of      Nebraska        Ave.    Structure       1G
E1      621600  99      -1      6
E2      0.010   29.66
        0.02    33.96
        1.50    34.66
        2.00    36.16
        5.78    37.16
        5.78    98.16
*
*       Inlet   south   of      126th   Ave.    Structure       S-35    in      Nebraska        Ave.    Plans
E1      621625  99      -1      5
E2      0.010   25.16
        0.02    35.79
        1.45    36.29
        9.40    37.16
        9.40    98.16
*
*       Pond    for     Calgar  Industrial      Complex west    of      CSX     RR      and     south   of      127th   Ave.
E1      621630  99      -1      4
E2      1.50    33.16
        2.80    36.66
        13.32   37.16
        8.50    98.16
*
*       Inlet   south   of      Hoffman Ave.    Structure       S-52    in      Nebraska        Ave.    Plans
E1      621650  99      -1      4
E2      0.010   27.16
        0.02    36.76
        1.85    37.36
        1.85    98.16
*
*       Inlet   south   of      Lexington       Ave.    Structure       S-65    in      Nebraska        Ave.    Plans
E1      621675  99      -1      5
E2      0.010   28.46
        0.02    36.86
        2.00    37.16
        7.00    39.16
        7.00    98.16
*
*       Inlet   south   of      Lexington       Ave.    Structure       S-65    in      Nebraska        Ave.    Plans
E1      621700  99      -1      6
E2      0.010   31.36
        0.02    34.16
        0.24    35.16
        3.30    36.16
        9.31    37.16
        9.31    98.16
*
*       Upstream        end     of      culvert crossing        Fletcher        Ave.    west    of      CSX     RR
E1      621715  99      -1      5
E2      0.10    36.46
        0.30    37.16
```

```
        1.75    38.16
        7.04    42.16
        7.04    98.16
*
*       Upstream        end     of      culvert crossing        Fletcher        Ave.    west    of      CSX     RR
E1      621725  99      -1      7
E2      0.10    36.59
        0.82    38.16
        1.91    39.16
        2.50    40.16
        6.20    41.16
        8.30    42.16
        8.30    98.16
*
*       Ditch   upstream        of      139th   Ave.    west    of      CSX     RR      see     SWFWMD  Aerials
E1      621750  99      -1      4
E2      0.51    42.56
        1.20    45.16
        2.00    46.16
        2.00    98.16
*
*       Inlet   south   of      131st   Ave.    Structure       S-80    in      Nebraska        Ave.    Plans
E1      621775  99      -1      5
E2      0.010   29.76
        0.02    37.86
        0.20    38.16
        0.62    39.16
        0.62    98.16
*
*       Inlet   north   of      131st   Ave.    Structure       S-87    in      Nebraska        Ave.    Plans
E1      621800  99      -1      4
E2      0.10    30.96
        0.20    38.76
        0.16    39.26
        0.16    98.16
*
*       Inlet   south   of      Fletcher        Ave.    Structure       S-91
E1      621825  99      -1      6
E2      0.10    32.96
        0.20    39.66
        0.30    40.14
        0.50    40.64
        0.68    40.74
        0.68    98.16
*
*       Outfall Structure       in      FDOT    Pond    #       1       north   of      Fletcher        Ave.
E1      621850  99      -1      2
E2      0.10    34.16
        0.10    98.16
*
*       FDOT    Pond    #       2
E1      621875  99      -1      4
E2      0.86    34.16
        1.54    44.66
        18.60   45.16
```

```
        18.60   98.16
*
*       Taliaferro      Pond    #       1       north   of      Fletcher        Ave.
E1      621900  99      -1      6
E2      0.53    31.36
        0.73    33.16
        2.40    34.66
        4.24    35.16
        18.50   37.16
        18.50   98.16
*
*       Salvation       Army
E1      621950  99      -1      6
E2      0.30    41.46
        0.50    42.16
        1.25    43.56
        2.50    44.16
        6.00    45.16
        6.00    98.16
*
*================================================*
*       STAGE   /       AREA    AT      USF     -       DUCK    POND    -       ROBBINS LUMBER
*================================================*
*
E1      622400  99      -1      4
E2      0.010   30.17
        0.09    32.33
        26.50   37.16
        26.50   98.16
*
E1      622500  99      -1      7
E2      0.010   30.12
        0.03    32.66
        0.25    34.16
        0.50    35.16
        1.10    36.16
        23.00   37.16
        23.00   98.16
*
E1      622600  99      -1      7
E2      0.010   31.16
        0.05    32.66
        0.46    34.16
        1.00    35.16
        2.50    36.16
        6.54    37.16
        6.54    98.16
*
E1      622700  99      -1      8
E2      0.10    31.26
        0.10    33.16
        0.18    34.16
        0.50    35.16
        1.40    36.16
        2.20    36.56
```

```
        15.10   37.16
        15.10   98.16
*
E1      622800  99      -1      7
E2      0.10    31.31
        0.10    34.16
        0.30    35.16
        4.30    36.16
        15.00   37.16
        48.00   39.16
        48.00   98.16
*
E1      622850  99      -1      7
E2      0.10    31.31
        0.24    35.16
        0.38    36.16
        0.78    37.16
        5.20    39.16
        6.50    40.16
        6.50    98.16
*
E1      622900  99      -1      5
E2      0.30    31.69
        0.73    36.16
        5.40    37.16
        9.63    38.16
        9.63    98.16
*
E1      622925  99      -1      5
E2      0.20    34.36
        0.48    35.16
        2.60    36.16
        8.80    37.16
        8.80    98.16
*
E1      622950  99      -1      5
E2      0.10    34.16
        0.30    35.16
        0.90    36.16
        6.19    37.16
        6.19    98.16
*
*=======================================*
*       STAGE   /       AREAS   FOR     131st   Ave.
*=======================================*
E1      623140  99      -1      6
E2      0.010   24.91
        0.010   32.66
        1.00    33.16
        7.20    34.16
        13.90   39.16
        13.90   98.16
*
E1      623150  99      -1      6
E2      0.010   26.46
```

```
        0.02    29.16
        0.30    31.16
        0.40    36.16
        1.50    39.16
        1.50    98.16
*
E1      623160  99      -1      6
E2      0.010   26.56
        0.20    27.16
        0.30    29.16
        0.40    32.16
        1.10    39.16
        1.10    98.16
*
*       131st   AVENUE  POND
E1      623170  38      -1      6
E2      10.20   24.16
        10.70   24.56
        13.60   29.16
        16.10   37.16
        35.00   39.16
        35.00   98.16
*
E1      623190  99      -1      5
E2      0.60    29.16
        3.40    32.16
        8.00    35.16
        10.00   39.16
        10.00   98.16
*
E1      623200  99      -1      4
E2      0.10    32.49
        0.70    34.16
        4.00    39.16
        4.00    98.16
*
E1      623210  99      -1      6
E2      0.50    33.29
        1.00    34.16
        2.50    37.16
        4.30    39.16
        5.00    42.16
        5.00    98.16
*
*       Pond    west    of      12th    Street
E1      623215  99      -1      8
E2      0.05    32.49
        0.11    33.16
        0.70    34.16
        0.90    35.16
        1.00    36.16
        4.20    39.16
        7.00    40.16
        7.00    98.16
*
```

```
E1      623220  99      -1      4
E2      0.10    34.64
        0.50    39.16
        2.30    44.16
        2.30    98.16
*
E1      623225  99      -1      4
E2      0.20    34.89
        0.50    37.16
        2.20    44.16
        2.20    98.16
*
E1      623230  99      -1      5
E2      0.10    34.99
        0.60    36.16
        1.80    39.16
        4.40    44.16
        4.40    98.16
*
E1      623240  99      -1      4
E2      0.04    35.33
        1.80    37.16
        6.50    49.16
        6.50    98.16
*
E1      623243  99      -1      6
E2      0.10    38.96
        0.10    42.26
        0.40    43.16
        2.10    44.16
        4.50    45.16
        4.50    98.16
*
E1      623244  99      -1      2
E2      0.10    40.66
        0.10    98.16
*       SCOTTY'S        VAULT   -       SCALED  FROM    PLANS
E1      623245  99      -1      4
E2      0.85    37.16
        0.85    45.16
        2.00    46.16
        2.00    98.16
*
E1      623247  99      -1      2
E2      0.10    43.16
        0.10    98.16
*       MALIBU  POND -  SCALED  FROM    PLANS
E1      623248  99      -1      4
E2      0.40    43.16
        1.20    47.16
        3.00    48.16
        3.00    98.16
*
*
E1      623250  99      -1      4
```

```
E2      1.00    29.16
        3.70    39.16
        21.00   44.16
        21.00   98.16
*
*       ponds   at  Skipper/Bearss  apex TOB 45.7 NGVD?
E1      623270  55    -1      5
E2      0.10    34.16
        0.80    39.16
        6.70    44.16
        18.00   49.16
        18.00   98.16
*
E1      623300  99     -1      7
E2      0.05    28.60
        0.05    33.16
        0.10    34.16
        0.70    39.16
        1.50    41.16
        2.50    42.16
        2.50    98.16
*
E1      623305  99     -1      4
E2      0.05    28.55
        0.05    35.16
        0.10    39.16
        0.10    98.16
*
E1      623307  99     -1      4
E2      0.05    27.74
        0.05    35.16
        0.10    39.16
        0.10    98.16
*
E1      623310  99     -1      6
E2      0.05    30.71
        0.05    36.16
        0.10    37.16
        1.00    39.16
        5.80    40.16
        5.80    98.16
*
E1      623320  99     -1      5
E2      0.10    33.30
        0.10    39.06
        2.80    39.66
        5.70    44.16
        5.70    98.16
*
E1      623330  99     -1      4
E2      0.10    36.66
        0.10    39.46
        1.00    44.16
        1.00    98.16
*
```

```
E1      623340  99      -1      4
E2      0.10    36.79
        0.10    39.46
        1.00    44.16
        1.00    98.16
*
E1      623350  99      -1      4
E2      0.10    36.96
        0.10    40.98
        1.00    44.16
        1.00    98.16
*       STORAGE AREA
E1      623360  99      -1      6
E2      1.60    34.16
        2.80    39.16
        5.00    40.16
        10.00   41.16
        15.03   42.16
        15.03   98.16
*
E1      623370  99      -1      8
E2      0.10    37.33
        0.20    38.16
        0.50    39.16
        1.90    40.16
        2.70    41.16
        4.00    42.16
        5.60    43.16
        5.60    98.16
*
E1      623380  99      -1      7
E2      0.10    37.74
        0.40    39.16
        1.00    40.16
        2.00    41.16
        3.60    42.16
        9.60    43.16
        9.60    98.16
*
*       STORAGE AREA
E1      623390  99      -1      9
E2      0.10    36.66
        0.30    37.16
        0.50    38.16
        0.90    39.16
        1.40    40.16
        2.60    41.16
        4.00    42.16
        5.70    43.16
        5.70    98.16
*
E1      623400  99      -1      4
E2      0.05    29.26
        0.05    40.16
        1.00    41.16
```

```
        1.00    98.16
*
E1      623430  99      -1      9
E2      0.10    29.34
        0.10    35.66
        0.20    36.16
        0.70    37.16
        2.30    38.16
        6.80    39.16
        13.00   40.16
        20.00   41.16
        20.00   98.16
*
E1      623450  99      -1      4
E2      0.010   32.65
        0.05    40.16
        1.00    41.16
        1.00    98.16
*
E1      623500  99      -1      4
E2      0.010   32.95
        0.05    40.16
        1.00    41.16
        1.00    98.16
*
E1      623510  99      -1      7
E2      0.10    34.66
        0.10    37.16
        1.10    38.16
        1.80    39.16
        3.40    40.16
        5.50    44.16
        5.50    98.16
*
E1      623550  99      -1      4
E2      0.010   33.22
        0.05    40.16
        1.00    41.16
        1.00    98.16
*
E1      623600  99      -1      4
E2      0.010   34.16
        0.05    40.16
        1.00    41.16
        1.00    98.16
*
E1      623650  99      -1      6
E2      0.10    34.19
        0.10    38.76
        0.20    39.16
        0.30    40.16
        1.50    44.16
        1.50    98.16
*
E1      623700  99      -1      6
```

```
E2      0.10    34.69
        0.10    38.16
        1.60    39.16
        4.60    40.16
        10.70   44.16
        10.70   98.16
*
E1      623725  99      -1      7
E2      0.010   35.86
        0.10    37.16
        1.50    38.16
        3.50    39.16
        4.00    41.16
        5.50    43.16
        5.50    98.16
*
E1      623750  99      -1      7
E2      0.10    37.62
        0.10    39.16
        1.00    40.16
        2.50    41.16
        2.75    42.16
        3.00    43.16
        3.00    98.16
*
E1      623800  99      -1      4
E2      0.10    39.08
        0.10    43.16
        3.00    44.16
        3.00    98.16
*
E1      623850  99      -1      4
E2      0.10    40.01
        0.10    42.16
        3.00    44.16
        3.00    98.16
*       STORAGE AREA
E1      623900  99      -1      4
E2      3.00    39.16
        3.00    45.16
        3.50    46.16
        3.50    98.16
*
*
*
*       ================================================================================
*       STAGE   /       AREA    FOR     MALL    EAST    AND     MALL    WEST
*       ================================================================================
*
*       Curb    Inlet   on      Fowler  Avenue
E1      624010  99      -1      4
E2      0.010   22.16
        0.010   30.16
        1.20    33.16
        1.20    98.16
```

```
*       Manhole on      Fowler  Avenue
*E1     624020  99      -1      6
*E2     0.01    22.09
*       0.01    30.16
*       0.82    31.16
*       1.20    33.16
*       2.56    35.16
*       2.56    98.16
*       Manhole University      Mall    Parking Lot     at      Fowler  Avenue
E1      624030  99      -1      5
E2      0.010   23.27
        0.010   31.16
        3.00    33.16
        3.07    35.16
        3.07    98.16
*
*       Manhole Along   Country Club    Road    Adjacent        University      Mall
E1      624040  99      -1      5
E2      0.010   23.69
        0.010   32.21
        0.50    33.16
        4.49    35.16
        4.49    98.16
*       Manhole Along   Country Club    Road    Adjacent        University      Mall
E1      624050  99      -1      4
E2      0.010   23.92
        0.010   34.16
        9.91    35.16
        9.91    98.16
*       Manhole Along   Country Club    Road    Adjacent        University      Mall
E1      624060  99      -1      4
E2      0.010   24.29
        0.010   34.53
        23.57   35.16
        23.57   98.16
*       Outfall Structure       at      Duck    Pond    East
E1      624070  99      -1      4
E2      0.10    24.61
        0.10    30.21
        11.44   35.16
        11.44   98.16
*       Duck    Pond    East
E1      624080  99      -1      8
E2      8.90    21.16
        8.90    25.16
        10.70   27.16
        12.20   29.16
        15.81   31.16
        31.74   33.16
        149.00  35.16
        149.00  98.16
*       Ditch   Draining        to      North   Side    of      Duck    Pond    East    Adjacent        VA      Hospital
E1      624090  99      -1      8
E2      0.010   25.16
        0.03    27.16
```

```
        0.07    29.16
        0.18    31.16
        2.10    33.16
        10.30   34.16
        11.00   35.16
        11.00   98.16
*       VA      Hospital        Dry     Detention       Ponds   A       and     B       (SWFWMD Permit)
E1      624100  99      -1      4
E2      2.49    33.16
        3.24    36.66
        5.10    37.16
        5.10    98.16
*       Duck    Pond    West
E1      624190  99      -1      8
E2      6.76    22.20
        13.50   26.16
        18.50   27.16
        25.33   29.16
        32.52   31.16
        110.28  33.16
        110.28  35.16
        110.28  98.16
*       Ditch   Between Forest  Place   Apartments      and     Conservation    Area
E1      624200  99      -1      7
E2      0.15    25.96
        0.20    27.16
        0.21    28.16
        0.23    29.16
        1.37    33.16
        2.78    35.16
        2.78    98.16
*       Ditch   Along   20th    Street  From    131st   Avenue  to      127th   Avenue
E1      624210  99      -1      5
E2      0.10    29.67
        0.38    32.16
        3.40    33.16
        4.00    35.16
        4.00    98.16
*       Outfall Structure       in      Conservation    Area
E1      624220  99      -1      4
E2      0.10    27.66
        0.10    31.66
        0.10    32.16
        0.10    98.16
*       Conservation    Area
E1      624230  99      -1      7
E2      2.28    25.16
        2.95    27.66
        3.95    31.16
        4.25    32.16
        5.61    33.16
        7.05    35.16
        7.05    98.16
*       Outfall Structure       in      Detention       Pond    at      Adult   Congregate      Living  Facility
*E1     624240  99      -1      4
```

```
*E2     0.1     32.91
*       0.10    33.16
*       0.10    35.16
*       0.10    98.16
*       Detention       Pond    at      Adult   Congregate      Living  Facility
E1      624250  99      -1      3
E2      1.98    33.16
        2.20    35.16
        2.20    98.16
*       Drainage        Structure       on      22nd    Street  Adjacent        UVRC
E1      624260  99      -1      9
E2      0.010   26.41
        0.010   28.16
        0.50    29.16
        1.00    30.16
        1.20    31.16
        2.50    32.16
        8.30    33.16
        15.94   35.16
        15.94   98.16
*       Manhole at      UVRC
*       TEMP    ADDED   ADDITIONAL      STORAGE
E1      624270  99      -1      5
E2      0.010   26.46
        0.010   31.16
        0.10    31.66
        0.57    35.16
        0.57    98.16
*       Outfall Structure       in      Detention       Pond    at      UVRC
E1      624280  99      -1      3
E2      0.10    31.31
        0.10    34.84
        0.10    98.16
*       Detention       Pond    at      UVRC
E1      624290  99      -1      5
E2      0.10    33.16
        0.15    34.16
        0.18    35.16
        0.25    36.16
        0.25    98.16
*       Outfall Structure       in      Detention       Pond    at      UVRC
E1      624300  99      -1      4
E2      0.10    30.41
        0.10    33.66
        0.10    35.16
        0.10    98.16
*       Detention       Pond    at      UVRC
E1      624310  99      -1      7
E2      0.10    32.16
        0.10    33.66
        0.10    34.16
        0.10    34.66
        0.20    36.16
        0.40    37.16
        0.40    98.16
```

```
*       Inlet   on      22nd    Street
E1      624320  99      -1      7
E2      0.010   26.56
        0.010   30.66
        0.25    31.16
        0.90    32.16
        4.53    33.16
        6.03    35.16
        6.03    98.16
*       Natural Depression      Between 20th    and     22nd    Streets
E1      624330  99      -1      7
E2      0.10    27.56
        0.10    30.66
        0.40    31.16
        2.60    32.16
        5.03    33.16
        10.98   35.16
        10.98   98.16
*       Depressional    Storage Area    South   of      Subbasin        624330
E1      624325  99      -1      9
E2      0.10    22.06
        0.17    24.16
        0.36    29.16
        0.57    30.16
        3.00    31.16
        3.65    33.16
        5.00    34.16
        8.08    35.16
        8.08    98.16
*
E1      624340  99      -1      4
E2      0.25    32.66
        0.30    34.16
        0.45    35.16
        3.50    37.66
*
E1      624350  99      -1      4
E2      1.30    32.59
        2.20    33.16
        5.30    35.16
        5.30    98.16
*
E1      624360  99      -1      4
E2      0.06    30.66
        0.15    32.66
        0.44    35.66
        0.44    98.16
*
E1      624370  99      -1      5
E2      0.010   32.74
        0.010   35.54
        2.80    36.16
        6.80    37.16
        6.80    98.16
*
```

```
E1      624380  99      -1      5
E2      0.010   31.61
        0.010   35.29
        1.10    36.16
        2.60    37.16
        2.60    98.16
*
E1      624390  99      -1      5
E2      0.010   32.74
        0.010   35.01
        0.70    36.16
        6.00    37.16
        6.00    98.16
*
E1      624400  99      -1      5
E2      0.010   34.91
        0.10    35.16
        0.20    36.16
        0.50    37.16
        0.50    98.16
*
E1      624410  99      -1      6
E2      0.10    35.66
        0.24    36.16
        0.73    37.16
        1.50    38.16
        2.50    39.16
        2.50    98.16
*
E1      624420  99      -1      4
E2      0.10    36.76
        0.20    37.16
        2.00    38.16
        2.00    98.16
*
E1      624430  99      -1      7
E2      0.05    35.66
        0.10    36.16
        0.60    37.16
        1.20    38.16
        1.70    39.16
        3.10    40.16
        3.10    98.16
*
E1      624440  99      -1      3
E2      1.00    36.66
        3.50    37.16
        3.50    98.16
*
E1      624450  99      -1      5
E2      0.20    31.66
        0.70    35.16
        1.80    36.16
        3.00    37.16
        3.00    98.16
```

```
*       Outfall Structure       at      Wal-Mart        Detention       Pond
E1      624460  99      -1      3
E2      0.10    32.66
        0.10    39.01
        0.10    98.16
*       Wal-Mart        Detention       Pond
E1      624470  99      -1      4
E2      1.20    32.66
        1.95    39.16
        2.90    40.16
        2.90    98.16
*       Outfall Structure       at      Forest  Place   Apartments      Detention       Pond
E1      624480  99      -1      3
E2      0.10    25.16
        0.10    27.18
        0.10    98.16
*       Forest  Place   Apartments      Detention       Pond
E1      624490  99      -1      5
E2      1.30    26.76
        2.30    32.16
        4.23    33.16
        4.55    35.16
        4.55    98.16
*       FDOT    Detention       Pond    Behind  Sports  Authority
E1      624520  99      -1      6
E2      0.50    20.96
        0.70    25.16
        1.20    32.16
        1.96    33.16
        6.94    35.16
        6.94    98.16
*       Inlet   on      Fowler  Avenue  South   of      University      of      Mall
E1      624530  99      -1      7
E2      0.010   22.46
        0.010   30.16
        0.20    31.16
        1.40    32.16
        11.00   33.16
        12.41   35.16
        12.41   98.16
*       Inlet   on      Fowler  Avenue  South   of      University      of      Mall
E1      624540  99      -1      5
E2      0.010   23.66
        0.010   31.56
        1.00    32.16
        3.41    35.16
        3.41    98.16
*       Inlet   on      Fowler  Avenue  South   of      University      of      Mall
E1      624550  99      -1      4
E2      0.010   24.76
        2.79    33.16
        10.60   35.16
        10.60   98.16
*       Inlet   on      Fowler  Avenue  South   of      University      of      Mall
E1      624560  99      -1      4
```

```
E2      0.010   25.46
        0.010   35.06
        1.40    35.16
        1.40    98.16
*
E1      624570  99      -1      6
E2      0.020   31.86
        0.04    32.16
        0.50    33.16
        5.10    34.16
        8.30    35.16
        8.30    98.16
*=======================================*
*       STAGE   /       AREAS   FOR     USF     EAST    AND     WEST
*=======================================*
*       TEMP    ADDED   STORAGE FOR     NODE    625150
E1      625150  99      -1      2
E2      0.10    28.60
        0.10    98.16
*
*       LAKE    625200
E1      625200  99      -1      11
E2      10.00   23.26
        16.37   27.16
        17.90   28.16
        19.43   29.16
        20.78   30.16
        22.44   31.16
        23.81   32.16
        28.08   33.16
        32.93   34.16
        37.20   35.16
        37.20   98.16
*
*       LAKE    625300
E1      625300  99      -1      8
E2      0.010   29.27
        0.11    30.16
        0.23    31.16
        0.40    32.16
        0.57    33.16
        0.85    34.16
        13.94   35.16
        13.94   98.16
*
*       LAKE    625400
E1      625400  99      -1      4
E2      0.30    53.36
        1.34    54.16
        2.65    55.16
        2.65    98.16
*
*       LAKE    625500
E1      625500  99      -1      7
E2      0.10    23.36
```

```
        2.42    28.16
        2.50    29.16
        5.80    32.16
        8.00    34.16
        9.00    35.16
        9.00    98.16
*
*       LAKE    64600
E1      625600  99      -1      3
E2      0.010   25.66
        0.05    29.96
        0.05    98.16
*
*       TEMP    ADDED   STORAGE FOR     NODE    625650
E1      625650  99      -1      2
E2      0.10    27.96
        0.10    98.16
*
*       LAKE    625700
E1      625700  99      -1      3
E2      0.010   27.06
        0.05    29.96
        0.05    98.16
*
*       LAKE    625800
E1      625800  99      -1      2
E2      0.10    31.66
        0.10    98.16
*
*       LAKE    625900
E1      625900  99      -1      11
E2      2.65    28.16
        2.79    29.16
        3.12    30.16
        3.45    31.16
        3.55    31.46
        3.82    32.16
        4.12    33.16
        4.45    34.16
        4.78    35.16
        6.40    36.16
        6.40    98.16
*
*       LAKE    626000
E1      626000  99      -1      5
E2      2.91    35.15
        2.91    35.16
        5.10    37.16
        19.40   39.16
        19.40   98.16
*
*       LAKE    626300
E1      626300  99      -1      10
E2      0.010   25.66
        4.75    26.16
```

```
        6.16    27.16
        8.17    28.16
        10.30   29.16
        13.40   30.16
        16.20   31.16
        18.20   32.16
        20.60   33.16
        20.60   98.16
*       TEMP    ADDED   FOLLOWING       STORAGE
E1      626350  99      -1      2
E2      0.10    40.96
        0.10    98.16
*
*       LAKE    626400
E1      626400  99      -1      5
E2      0.010   43.16
        0.010   44.16
        0.23    45.16
        0.75    46.16
        0.75    98.16
*
*       LAKE    626500
E1      626500  99      -1      12
E2      0.010   44.16
        0.33    45.16
        0.73    46.16
        1.21    47.16
        2.19    48.16
        3.38    49.16
        4.79    50.16
        6.45    51.16
        8.36    52.16
        10.54   53.16
        13.01   54.16
        13.01   98.16
*
*       LAKE    626600
E1      626600  99      -1      5
E2      0.010   65.66
        0.05    66.16
        0.31    67.16
        1.17    68.16
        1.17    98.16
*
*
*       LAKE    626700
E1      626700  99      -1      12
E2      0.30    44.16
        0.36    50.16
        0.43    51.16
        0.50    52.16
        0.58    53.16
        0.66    54.16
        0.92    55.36
        1.61    56.16
```

```
        4.13    57.16
        5.23    58.16
        5.97    59.16
        5.97    98.16
*
*       LAKE    626900
E1      626900  99      -1      6
E2      0.010   27.76
        0.70    31.16
        1.04    32.16
        1.38    33.16
        1.75    34.16
        1.75    98.16
*
*       ADDED   STORAGE FOR     FOLLOWING       NODE    THAT    REPRESENTS      A       DROP    STRUCT. #NAME?
*       LAKE    626950
E1      626950  99      -1      2
E2      0.10    27.86
        0.10    98.16
*
*       LAKE    627000
E1      627000  99      -1      8
E2      0.10    33.36
        0.10    34.16
        0.25    35.16
        0.95    36.16
        1.70    37.16
        2.60    38.16
        3.31    39.16
        3.31    98.16
*
*       LAKE    627100
E1      627100  99      -1      4
E2      0.010   32.36
        0.13    33.16
        1.69    34.16
        1.69    98.16
*
*       LAKE    627200
E1      627200  99      -1      2
E2      0.10    26.76
        0.10    98.16
*
*       LAKE    627300
E1      627300  99      -1      2
E2      0.10    28.66
        0.10    98.16
*
*       LAKE    627400
E1      627400  99      -1      2
E2      0.10    31.66
        0.10    98.16
*       TEMP    ADDED   FOLLOWING       STORAGE
E1      627450  99      -1      2
E2      0.10    32.16
```

```
        0.10    98.16
*
*       LAKE    627500
E1      627500  99      -1      3
E2      0.10    51.66
        0.33    55.16
        0.33    98.16
*
*       LAKE    627600
E1      627600  99      -1      11
E2      1.62    30.16
        1.73    31.16
        1.84    32.16
        1.96    33.16
        2.08    34.46
        2.20    35.16
        2.33    36.16
        3.38    37.16
        4.69    38.16
        6.07    39.16
        6.07    98.16
*
*       LAKE    627700
E1      627700  99      -1      11
E2      0.45    30.16
        0.50    31.16
        0.57    32.16
        0.63    33.16
        0.70    34.46
        0.77    35.16
        0.85    36.16
        1.26    37.16
        1.62    38.16
        2.05    39.16
        2.05    98.16
*
*===============================================================*
*               DATA    (STORAGE)       USF     NORTH
*===============================================================*
*               FOR     JUNCTIONS       ALONG   46TH    STREET  &       VANDERBILT      DR      R/W
*               CORRESPONDING   IDENTIFIER      JUNCTION        NUMBERS
*
*===============================================================*
*               ELEV NGVD    =       50
E1      629880  99      -1      6
E2      0.61    32.16
        1.39    37.16
        7.00    38.16
        16.00   39.16
        26.00   41.16
        26.00   98.16
*===============================================================*
*       GRADE   ELEV NGVD    =       51.5
E1      629900  99      -1      8
E2      0.010   22.16
```

```
        0.02    27.06
        0.10    27.16
        0.25    34.16
        0.80    37.16
        2.30    38.16
        21.20   39.16
        21.20   98.16
*===============================================================
*
E1      629920  99      -1      4
E2      0.010   27.02
        0.010   37.16
        1.00    39.16
        1.00    98.16
*===============================================================
*
E1      629925  99      -1      4
E2      0.010   27.02
        0.010   42.16
        1.00    43.16
        1.00    98.16
*===============================================================
*
E1      629940  99      -1      4
E2      0.010   31.43
        0.010   37.16
        5.44    39.16
        5.44    98.16
*===============================================================
*
E1      629960  99      -1      5
E2      0.50    37.86
        1.50    38.16
        10.00   39.16
        12.00   40.16
        12.00   98.16
*===============================================================
*       GRADE   ELEV NGVD    =       32.14
E1      629735  99      -1      6
E2      0.010   22.79
        0.010   32.06
        0.21    33.16
        1.65    35.16
        3.58    37.16
        3.58    98.16
*===============================================================
*       GRADE   ELEV NGVD    =       34.06
E1      629740  99      -1      7
E2      0.010   24.02
        0.010   27.86
        0.06    31.16
        0.21    33.16
        1.83    35.16
        7.00    37.16
        7.00    98.16
```

```
*============================================================
*       GRADE   ELEV NGVD    =       34.06
E1      629760  99     -1      4
E2      0.010   25.08
        0.010   35.56
        1.01    37.16
        1.01    98.16
*============================================================
*       GRADE   ELEV NGVD    =       34.06
E1      629780  99     -1      5
E2      0.010   26.80
        0.010   38.16
        1.01    39.16
        2.59    41.16
        2.59    98.16
*============================================================
*       GRADE   ELEV NGVD    =       34.06
E1      629800  99     -1      6
E2      0.010   28.82
        0.010   34.16
        1.51    37.16
        3.18    39.16
        3.18    41.16
        3.18    98.16
*============================================================*
*       GRADE   ELEV NGVD    =       39.5
E1      629825  99     -1      6
E2      0.010   32.88
        0.010   34.16
        0.77    35.16
        2.16    37.16
        5.45    39.16
        5.45    98.16
*============================================================*
*       GRADE   ELEV NGVD    =       39.5
E1      629820  99     -1      7
E2      0.010   31.59
        0.010   33.16
        0.81    35.16
        3.63    37.16
        5.41    39.16
        6.50    41.16
        6.50    98.16
*============================================================*
E1      629840  99     -1      5
E2      0.010   34.55
        0.010   38.16
        0.25    39.16
        0.65    41.16
        0.65    98.16
*       ============================================================
*       GRADE   ELEV NGVD    =       42.3
E1      629841  99     -1      4
E2      0.010   32.69
        0.010   38.16
```

```
        0.48    41.16
        0.48    98.16
*============================================================*
*       GRADE   ELEV NGVD    =       42.3
E1      629842  99     -1      6
E2      0.010   35.48
        0.010   38.16
        0.02    39.16
        0.48    41.16
        0.73    43.16
        0.73    98.16
*============================================================
*       GRADE   ELEV NGVD    =       42.3
E1      629860  99     -1      4
E2      0.10    37.19
        1.99    41.46
        1.28    43.16
        1.28    98.16
*============================*
*       Stage   Area    Input   For     Junctions       -       USF     EAST
*============================*
*       Upstream        48-inch Dia.    culvert crossing        Fletcher
E1      629100  99     -1      4
E2      0.07    21.66
        1.40    25.16
        2.20    26.16
        3.00    34.16
*
*       Upstream        18-inch sided-drain     adjacent        50th    Street  and     Village Square  Apartments
E1      629200  99     -1      5
E2      0.07    29.96
        0.50    32.16
        1.00    33.16
        1.60    34.16
        3.00    35.16
*
*       Borow   Pit     Pond
E1      629300  99     -1      4
E2      1.40    27.16
        3.00    28.16
        5.00    29.16
        8.00    34.16
*       Pump    Station
E1      629400  99     -1      10
E2      0.007   24.16
        0.007   27.46
        0.07    31.16
        0.20    32.16
        0.70    33.16
        2.10    34.16
        6.10    35.16
        11.80   36.16
        17.20   37.16
        18.00   38.16
*
```

```
*       Ditch   and     wetland Adjacent        Fletcher        between 52nd    and     53rd    Streets
E1      629500  99      -1      5
E2      0.07    25.49
        0.30    29.16
        0.50    30.16
        0.80    31.16
        2.40    32.16
*
*       Ditch   and     wetland Adjacent        Fletcher        between 53rd    and     56th    Streets
E1      629600  99      -1      5
E2      0.010   32.37
        0.03    36.16
        0.05    39.16
        0.12    44.16
        0.21    49.16
*       Blind   Pond    east    of      56th    Streets
E1      629700  99      -1      5
E2      0.32    39.16
        0.42    44.16
        0.56    49.16
        0.80    53.66
        6.00    54.16
*
*-----------------------*
*       STAGE   /       STORAGE AT      RAINTREE        NORTH
*-----------------------*
*
*       N5
E1      628550  99      -1      3
E2      0.003   23.78
        0.005   29.16
        0.006   98.16
*       N10
E1      628600  99      -1      3
E2      1.00    24.36
        1.46    29.16
        1.60    98.16
*
E1      628699  99      -1      2
E2      0.010   25.39
        0.010   98.16
*       N100
E1      628700  99      -1      3
E2      14.70   26.46
        24.00   29.16
        25.00   98.16
*       N110
E1      628660  99      -1      3
E2      0.003   25.30
        0.005   29.16
        0.006   98.16
*       N150
E1      628750  99      -1      3
E2      0.003   25.24
        0.005   32.16
```

```
        0.006   98.16
*       N1200
E1      628760  99      -1      3
E2      0.003   24.16
        0.005   29.16
        0.006   98.16
*       N30
E1      628650  99      -1      3
E2      0.003   24.96
        0.004   29.16
        0.005   98.16
*
E1      628679  99      -1      2
E2      0.10    25.30
        0.10    98.16
*       N200
E1      628680  99      -1      3
E2      3.90    25.16
        10.50   27.16
        11.00   98.16
*
E1      628669  99      -1      2
E2      0.010   25.49
        0.010   98.16
*       N300
E1      628670  99      -1      3
E2      2.80    24.16
        3.50    27.76
        4.00    98.16
*
E1      628684  99      -1      2
E2      0.010   25.96
        0.010   98.16
*
*       N400
E1      628685  99      -1      3
E2      0.70    24.16
        0.77    29.16
        0.10    98.16
*
E1      628689  99      -1      2
E2      0.010   26.66
        0.02    98.16
*       N500
E1      628690  99      -1      3
E2      0.37    29.16
        0.46    31.46
        0.50    98.16
*
E1      628729  99      -1      2
E2      0.10    29.16
        0.10    98.16
*
*       N600
E1      628730  99      -1      3
```

```
E2      1.40    29.16
        1.70    34.16
        2.00    98.16
*       N700
E1      628810  99      -1      3
E2      1.70    26.66
        2.20    29.16
        2.50    98.16
*       N800
E1      628820  99      -1      5
E2      0.003   25.36
        0.005   29.16
        4.54    35.16
        12.04   38.16
        13.00   98.16
*       N900
E1      628830  99      -1      4
E2      0.003   25.46
        0.005   29.16
        1.54    34.16
        2.00    98.16
*       N1000
E1      628840  99      -1      6
E2      0.003   25.46
        0.005   29.16
        0.65    33.16
        3.91    34.16
        8.04    35.16
        9.00    98.16
*       N1100
E1      628800  99      -1      5
E2      0.003   23.16
        0.20    26.16
        10.30   29.16
        2.16    31.16
        2.50    98.16
*       N1150
E1      628850  99      -1      4
E2      0.10    29.16
        0.50    33.16
        1.00    39.16
        1.00    98.16
*       N1400
E1      628860  99      -1      3
E2      0.36    23.16
        0.52    29.16
        0.60    98.16
*       N1500
E1      628710  99      -1      4
E2      0.07    24.16
        0.11    29.16
        0.11    31.16
        0.20    98.16
*       N1600
E1      628720  99      -1      4
```

```
E2      0.06    23.66
        0.10    29.16
        0.12    31.16
        0.14    98.16
*
*-----------------------*
*       STAGE   /       STORAGE AT      RAINTREE        SOUTH
*-----------------------*
*
*       101
E1      628160  99      -1      5
E2      0.010   23.86
        6.20    25.16
        10.80   27.66
        13.00   29.16
        15.00   98.16
*       102
E1      628200  99      -1      8
E2      0.010   17.66
        29.10   25.16
        33.30   26.16
        37.90   27.16
        42.80   28.16
        48.00   29.16
        53.60   30.16
        54.00   98.16
*       103
E1      628250  99      -1      9
E2      0.010   18.93
        25.00   27.66
        28.40   28.16
        33.90   29.16
        40.20   30.16
        47.50   31.16
        59.40   32.16
        77.00   33.16
        77.10   98.16
*       206
E1      628300  99      -1      4
E2      0.05    26.96
        0.10    28.16
        0.15    31.16
        0.16    98.16
*       105
E1      628350  99      -1      6
E2      0.010   22.91
        9.27    28.16
        11.10   29.16
        13.10   30.16
        15.30   31.16
        16.00   98.16
*       106
E1      628310  99      -1      9
E2      0.010   24.26
        4.78    26.16
```

```
        7.75    27.16
        11.60   28.16
        16.90   29.16
        23.00   30.16
        32.60   31.16
        58.60   33.16
        59.00   98.16
*       108
E1      628420  99      -1      5
E2      0.010   26.16
        1.30    31.16
        4.14    32.16
        11.46   33.16
        12.00   98.16
*       110
E1      628400  99      -1      5
E2      0.010   23.61
        0.60    29.16
        0.70    30.16
        7.90    33.16
        8.30    98.16
*       111
E1      628150  99      -1      6
E2      0.010   23.13
        0.64    26.16
        0.91    27.16
        1.40    28.16
        2.23    29.16
        2.50    98.16
*       112
E1      628110  99      -1      4
E2      0.010   22.03
        0.20    23.66
        0.35    25.16
        0.40    98.16
*       200
E1      628270  99      -1      5
E2      0.010   23.78
        0.45    28.26
        0.55    29.16
        6.32    33.16
        7.00    98.16
*       305
E1      628450  99      -1      10
E2      0.10    28.46
        0.70    29.16
        0.17    30.16
        0.89    31.16
        2.25    32.16
        5.04    33.16
        11.02   34.16
        20.75   35.16
        37.00   39.16
        35.00   98.16
*       99
```

```
E1      628100  99      -1      3
E2      0.010   21.83
        30.00   22.66
        31.00   98.16
*===============================================================================================
*       CITY    OF      TAMPA   STORAGE CURVES
*       Pond    storage derived from    available       data
*       Basin   flood   storage from    SWFWMD  topo    aerials (undeveloped    all     area    counted)
*       Developed       subbasins       utilize approx. 70%     basin   area    for     storage to      discount        structures)
*===============================================================================================
*       EASTERN DRAINAGE        BRANCH  (along  Railroad)
*       Pepsi   property        detention       ponds   plus    basin   flood
E1      648200  64.8    -1      6
E2      0.43    28.16
        0.79    34.16
        1.80    38.16
        2.85    43.16
        8.00    44.66
        15.00   63.96
*       FDOT    Pond    #9      plus    basin   flood
E1      648000  55.27   -1      14
E2      0.06    25.16
        0.08    26.16
        0.09    27.16
        0.11    28.16
        0.13    29.16
        0.15    30.16
        0.18    31.16
        0.20    32.16
        0.23    33.16
        0.26    34.16
        0.29    35.16
        1.00    39.16
        11.50   44.16
        11.50   54.16
*       Minimal default storage (stability)
E1      647990  55.27   200     0
E1      647950  55.27   200     0
E1      647900  55.27   200     0
E1      647902  55.27   200     0
E1      647904  55.27   200     0
E1      647906  55.27   200     0
E1      648950  55.27   200     0
E1      648870  55.27   200     0
E1      648730  55.27   200     0
E1      646490  50      200     0
*********************************************************************************
*       Primary Drainage        System  *
*********************************************************************************
*       upper   basin   pond
E1      648900  51.5    -1      6
E2      0.05    21.16
        0.05    22.88
        0.25    30.16
        10.00   32.16
```

```
        18.00   39.16
        18.70   50.66
*       basin   flood   (1/2    basin   647800)
E1      648750  51.5    -1      5
E2      0.05    19.95
        0.05    27.16
        1.00    29.16
        5.50    32.16
        5.50    50.66
*       basin   flood   (1/2    basin   647800)
E1      648700  50.1    -1      5
E2      0.05    20.53
        0.05    27.16
        2.00    29.16
        5.50    32.16
        5.50    49.26
*       Apartment       Pond    plus    basin   flood
E1      647805  53      -1      4
E2      1.07    26.16
        1.27    31.66
        12.70   33.16
        12.70   52.16
*       Depressional    Storage ("blind pond")east      of      apartments
E1      647810  51      -1      7
E2      0.10    25.26
        0.28    26.16
        0.57    27.16
        0.93    28.16
        1.30    29.16
        1.90    30.16
        13.00   50.16
*   2006 MODELING CHANNEL AS STORAGE - NO DRIVING HEAD/UNSTABLE
E1      647800  47.3    -1      6
*E2      0.020   20.99
*        0.02    25.16
*        0.13    26.16
*        0.29    27.16
E2      0.020   20.99
        0.020   22.00
        0.050   24.00
        0.120   27.00
        2.00    28.16
        2.00    46.46
*       Donut   Pond    113th-26th      St.     plus    basin   flood   storage
E1      647500  47      -1      13
E2      0.79    17.16
        0.82    18.16
        0.84    19.16
        0.87    20.16
        0.90    21.16
        0.92    22.16
        0.95    23.16
        0.98    24.16
        1.01    25.16
        5.03    27.01
```

```
        7.38    28.01
        20.49   29.01
        23.10   46.16
*       Basin   flood   storage
E1      647400  47.7    -1      6
E2      0.010   18.16
        0.48    27.16
        1.80    28.16
        3.60    29.16
        28.00   34.16
        30.00   46.86
*
E1      647402  99      -1      3
E2      0.010   16.91
        0.10    31.16
        0.50    41.16
*
E1      647404  99      -1      3
E2      0.010   18.68
        0.10    31.16
        0.50    41.16
*
E1      647406  99      -1      3
E2      0.010   18.35
        0.10    31.16
        0.50    41.16
*       Bacon   Lake    plus    basin   flood
E1      647000  50      -1      14
E2      3.59    14.16
        4.20    18.16
        4.36    19.16
        4.52    20.16
        4.68    21.16
        4.85    22.16
        5.02    23.16
        5.19    24.16
        5.37    25.16
        5.55    26.16
        24.00   28.16
        75.00   29.16
        90.00   34.16
        90.00   49.16
*       Basin   flood   storage
E1      646900  50      -1      5
E2      0.010   18.16
        0.41    29.56
        1.80    31.16
        6.00    32.16
        23.00   49.16
*       Apartments      pond    plus    basin   flood
E1      646905  53.4    -1      4
E2      1.07    25.16
        1.35    29.16
        1.90    32.16
        8.00    52.56
```

```
*
E1      646502  99      -1      3
E2      0.010   18.92
        0.10    31.16
        0.50    41.16
*
E1      646504  99      -1      3
E2      0.010   18.84
        0.10    31.16
        0.50    41.16
*
E1      646506  99      -1      3
E2      0.010   18.36
        0.10    31.16
        0.50    41.16
*
E1      646508  99      -1      3
E2      0.010   18.48
        0.10    31.16
        0.50    41.16
*       Poinsettia      Lake    plus    basin   flood
E1      646500  50      -1      18
E2      0.010   16.16
        0.91    17.16
        1.32    18.16
        1.92    19.16
        2.52    20.16
        2.58    21.16
        2.65    22.16
        2.71    23.16
        2.77    24.16
        2.84    25.16
        2.90    26.16
        2.97    27.16
        3.03    28.16
        3.10    29.16
        7.60    31.16
        16.40   34.16
        21.25   39.16
        71.00   49.16
*********************************************************************************
*       30th    Street  Drainage        System  *
*********************************************************************************
*       Basin   flood   storage
E1      646039  54      -1      5
E2      0.10    23.88
        0.10    32.96
        0.20    34.16
        13.80   39.16
        42.00   53.16
*       Basin   flood   storage
E1      646029  56      -1      7
E2      0.01    23.00
        0.10    30.16
        0.31    32.16
```

```
        0.54    34.16
        1.01    34.96
        16.18   39.16
        20.00   55.16
*       Basin   flood   storage
E1      646000  54.2    -1      4
E2      0.001   22.66
        0.001   33.16
        1.00    34.16
        1.00    53.16
*       Basin   flood   storage
E1      645099  56      -1      4
E2      0.001   20.16
        0.001   34.96
        6.00    36.16
        10.00   55.16
*       Basin   flood   storage
E1      645079  53      -1      5
E2      0.001   19.66
        0.001   31.96
        4.50    34.16
        12.00   39.16
        12.00   52.16
*
*=============================================================*
*       Circular        Orifice Information     MALL    EAST
*=============================================================*
*       Orifice in      Outfall Structure       at      Forest  Place   Apartments
*       ASSUMED ORIFICE COEF.   OF      1.00    -       NJM
*F1     8624491 624490  624480  1       0.20    1       28.02 NGVD -NOT CONVERTED
*****************************************************************
* NAVD-CONVERTED BY AYRES (-0.84 FT)  YCREST ONLY
*    IDWEIR NJUNC(1)  NJUC(2) KWEIR YCREST_NAVD YTOP  WLEN   COEF    N/A
*  ------------------------------------------------------------------------------------------------------------
*   AYRES 2006 HIGH FLOOD SUBBASIN CONNECTIONS ADDED AT COUNTY REQUEST FOR COMBINED DUCK POND/RAINTREE/USF MODELS
G1      6620300 620300  629860  1       44.20   99      50      1       1
G1      6626900 626900  629900  1       44.20   99      50      1       1
G1      6627700 627700  625800  1       57.20   99      50      1       1
G1      6628450 628450  629400  1       38.20   99      50      1       1
*    ------------------------------------------------------------------------------------------------------------
*    WEIR  DATA  FOR   149TH  STREET OUTFALL TRIBUTARY
*  ------------------------------------------------------------------------------------------------------------
*    IDWEIR NJUNC(1)  NJUC(2) KWEIR YCREST_NAVD YTOP  WLEN   COEF    N/A
*  ------------------------------------------------------------------------------------------------------------
*    ROADWAY OVERTOPPING   AT   B.B.Downs    Blvd.
G1      7620200 620200  620120  1       47.97   99      25      2       1
*
*    ROADWAY OVERTOPPING
G1      7620260 620260  620200  1       47.71   99      50      2       1
*
*    ROADWAY OVERTOPPING
G1      7620400 620400  620200  1       46.59   99      30      2       1
*
G1      6620460 620460  620450  1       43.16   99      50      1       1
*
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G1      6620470 620470  620460  1       45.59   99      50      1       1
*
G1      6620480 620480  620470  1       46.16   99      50      1       1
*
*    ROADWAY OVERTOPPING
G1      7620600 620600  620480  1       46.59   99      20      2       1
G1      7620650 620650  623250  1       45.46   99      150     2       1
*  ------------------------------------------------------------------------------------------------------------
*    WEIR  INFORMATION   FOR   NEBRASKA    AVE.
*  ------------------------------------------------------------------------------------------------------------
*    IDWEIR JUNC(1) JUNC(2) KWEIR  YCREST_NAVD YTOP  WLEN    COEF      N/A
*  ------------------------------------------------------------------------------------------------------------
*
G1      6621050 621050  624190  1       27.16   99      10      1       1
*    SUBBASIN    TRANSFER    WEIR  FROM  STORM  SEWER  TO   DUCK  POND  WEST
G1      6621075 621075  621050  1       31.36   99      100     1       1
*  Broad Crest Sub-basin  OT  Weir Discharging  from natural depression  to  inlet 3C  in  Hillsborough County Survey
G1      6621125 621125  621150  1       31.26   99      30      1       1
*
G1      6621100 621100  621075  1       31.96   99      20      1       1
*
G1      7621150 621150  621075  1       31.56   99      100     2       1
*  Broad Crest Roadway OT  (15th Street) Weir Discharging  from natural depression  west of  15th Street
G1      7621200 621200  621150  1       31.66   99      100     2       1
*  Broad Crest Sub-basin  OT  Weir Discharging  from natural depression  west of  15th Street to  Inlet 3A  in  Hill. Co.  Survey
G1      6621225 621225  621200  1       31.76   99      100     1       1
*  Broad Crest Roadway OT  (14th street) Weir Discharging  from natural depression  west of  14th Street
G1      7621300 621300  621225  1       35.36   99      20      2       1
*    TEMP  ADDED  SUBBASIN    TRANSFER    WEIR  FROM  STORM  SEWER  TO   DUCK  POND  WEST
*  G1  6621250 621250 621050 1.00 31  99  80  1  1
*
*    SUBBASIN    OVERTOPPING   WEIR  FROM  POND  AREA  TO   DS   NODE
G1      6621275 621275  621200  1       36.16   99      150     1       1
*    Rectangular   Weir  Discharging   from  Pond  at   the   Corner of   122nd  Street and   the   CSX   RR
G1      8621275 621275  621250  1       29.11   99      11.5    3       1
*    Rectangular   Weir  Discharging   from  Pond  at   the   Corner of   122nd  Street and   the   CSX   RR
G1      8621276 621275  621250  1       30      99      15.5    3       1
*  Broad Crest Roadway OT  (122nd Street) Weir Discharging  from natural depression  north of  122nd Ave.
G1      7621325 621325  621200  1       33.56   99      10      2       1
*  Broad Crest Sub-basin  OT  Weir from low  area draining  to  inlet 1E  in  hill. Co.  Survey to  inlet 1N
G1      6621375 621375  621350  1       34.66   99      150     1       1
*  Broad Crest Sub-basin  OT  Weir Discharging  from natural depression  to  inlet 1N  in  Hillsborough County Survey
G1      6621390 621390  621395  1       36.26   99      100     1       1
*    Rectangular   Weir  Discharging   from  FDOT  Pond  #    2    -    changed ds   node  from  621400 to   621395
G1      8621425 621425  621395  1       31.77   99      4.35    3       1
*  Grate Top  Weir Discharging  from FDOT Pond #  2
G1      8621427 621425  621395  1       33.66   99      11.05   3       1
*  Broad Crest Sub-basin  OT  Weir Discharging  from low  area in  sub-basin  621600 to  621500
G1      6621600 621600  621500  1       34.46   99      250     1       1
G1      6621625 621625  621450  1       35.66   99      100     1       1
* CONTROL STRUCTURE IN POND
G1      8621630 621630  621625  1       35.16   99      15      3       1
*  Broad Crest Sub-basin  OT  Weir Discharging  from low  area in  sub-basin  621630 to  621625 over topping pond
G1      6621630 621630  621625  1       36.66   99      100     1       1
G1      6621650 621650  621625  1       36.16   99      100     1       1
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G1      6621675 621675  621650  1       36.66   99      100     1       1
*  Broad Crest Sub-basin  OT  Weir Discharging  from low  area in  sub-basin  621700 to  621650
G1      6621700 621700  621650  1       36.46   99      350     1       1
*  Broad Crest Sub-basin  OT  Weir Discharging  from ditch downstream  of  culvert under Fletcher  Ave. next to  CSX  RR
G1      6621715 621715  621775  1       38.66   99      60      1       1
G1      6621725 621725  621715  1       40.96   99      100     1       1
G1      6621750 621750  621725  1       44.56   99      200     1       1
G1      6621775 621775  621675  1       37.86   99      100     1       1
G1      6621800 621800  621775  1       36.26   99      100     1       1
G1      6621825 621825  621800  1       36.26   99      100     1       1
G1      6621875 621875  621725  1       44.66   99      200     1       1
*    Rectangular   Weir  Discharging   from  FDOT  Pond  #1
G1      8621875 621875  621850  1       38.36   99      5       3       1
G1      8621876 621875  621850  1       39.66   99      14.75   3       1
*  Broad Crest Roadway OT  (122nd Ave.) from Taliaferro  pond to  inlets draining  to  Structure  1A  in  Hill. Co.  Survey
G1      7621900 621900  621550  1       34.46   99      100     2       1
*  Broad Crest Sub-basin  OT  Weir Discharging  from pond sub-basin  621950 to  621875 over topping 45.5 foot contour
G1      6621950 621950  621875  1       44.66   99      50      1       1
*
*  ---------------------------------------------------------------------------------------------------------------
*    WEIR  INFORMATION   ROBBINS LUMBER
*  ---------------------------------------------------------------------------------------------------------------
*    IDWEIR NJUNC(1  NJUC(2) KWEIR  YCREST_NAVD YTOP  WLEN    COEF  N/A
*  ---------------------------------------------------------------------------------------------------------------
G1      6622500 622500  622400  1       34.56   99      50      1       1
G1      7622600 622600  622500  1       36.45   99      50      1       1
G1      7622700 622700  622600  1       37.16   99      50      1       1
G1      6622800 622800  622700  1       36.56   99      50      1       1
G1      6622900 622900  622600  1       36.66   99      50      1       1
G1      6622850 622850  622800  1       40.00   99      100     1       1  *Ayres 2006 edit crest using 2004 contours
G1      6622925 622925  622600  1       36.96   99      200     1       1
G1      6622950 622950  622700  1       36.56   99      250     1       1
*
*  ---------------------------------------------------------------------------------------------------------------
*    WEIR  INFORMATION   FOR   131st  AVE.  AREA
*  ---------------------------------------------------------------------------------------------------------------
*    IDWEIR NJUNC(1) NJUC(2) KWEIR  YCREST_NAVD YTOP   WLEN  COEF     N/A
*  ---------------------------------------------------------------------------------------------------------------
*    WEIR  AT   131ST  AVENUE POND
G1      6623170 623170  623160  1       37.16   99      100     1       1
G1      7623190 623190  623170  1       41.36   99      150     2       1
G1      7623200 623200  622850  1       39.16   99      150     2       1
*    Weir  At   12th  Street
G1      7623215 623215  623200  1       39.46   99      100     2       1
*  HOLE IN  RETAINING  WALL AT  MALIBU POND
G1      8623248 623248  623247  1       44.16   99      1       3       1
*
G1      7623243 623243  623240  1       45.66   99      80      2       1
G1      7623245 623245  621850  1       45.16   99      100     2       1
G1      7623248 623248  623245  1       48.06   99      100     2       1
*
G1      8623245 623245  623244  1       42.16   99      4       3       1
G1      7623220 623220  623210  1       41.86   99      200     2       1
G1      7623230 623230  623220  1       41.86   99      100     2       1
G1      7623240 623240  623230  1       42.46   99      100     2       1
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G1      7623250 623250  623240  1       44.16   99      150     2       1
*
*    Roadway OT   Weir  at   Skipper Road
G1      7623270 623270  623250  1       45.36   99      100     2       1
*  Fletcher  avenue &  19th street road overtopping
G1      7623320 623320  623310  1       39.86   99      50      2       1
*  19th street road overtopping
G1      7623340 623340  623330  1       39.86   99      100     2       1
*  19th street road overtopping
G1      7623350 623350  623340  1       40.46   99      200     2       1
G1      7623360 623360  623350  1       39.26   99      200     2       1
*  138th avenue road overtopping
G1      7623370 623370  623340  1       41.86   99      50      2       1
*  19th street road overtopping
G1      7623380 623380  623370  1       41.56   99      50      2       1
*  20th street road overtopping
G1      7623390 623390  623380  1       42.36   99      50      2       1
*
G1      6623340 623340  623330  1       38.66   99      50      1       1
*
G1      7623430 623430  623400  1       41.36   99      50      2       1
*    Sub-basin    overtopping   from  Livingston   Ave.  to   23rd  street
G1      6623750 623750  623700  1       41.66   99      50      1       1
*    Sub-basin    overtopping   from  Livingston   Ave.  to   23rd  street
G1      6623751 623750  623600  1       42.16   99      50      1       1
*    Sub-basin    overtopping   from  Livingston   Ave.  to   23rd  street
G1      6623800 623800  623750  1       43.16   99      50      1       1
*    Sub-basin    overtopping   from  Livingston   Ave.  to   23rd  street
G1      6623850 623850  623800  1       44.16   99      50      1       1
*    Sub-basin    overtopping   from  Livingston   Ave.  to   23rd  street
G1      6623900 623900  623850  1       46.16   99      50      1       1
*
*  ---------------------------------------------------------------------------------------------------------
*    WEIR  INFORMATION   FOR   MALL  WEST  AND   EAST
*  ---------------------------------------------------------------------------------------------------------
*    IDWEIR NJUNC(1) NJUC(2) KWEIR  YCREST_NAVD YTOP  WLEN   COEF     N/A
*  ---------------------------------------------------------------------------------------------------------
*
*    Weirs  From  Detention    Ponds
*    Weir  Structure    at   Duck  Pond  East
*  Hillsborough County Survey (Sec 8,  TWP  28  S,  RNG  19  E)  and  Fowler Ave. As-Builts  Project N0.  10290-3526
*    System 3    Structure    3A
G1      8624080 624080  624070  1       25.72   99      2.55    3       1
G1      8624081 624080  624070  1       29.5    99      10.25   3       1
* overtopping weirs from Duck Pond East to Fowler south, based on new survey 9/30/2004. J. Su
G1      6624070 624070  624060  1       34.67   99      10      3       1
G1      6624060 624060  624050  1       35.1    99      10      3       1
G1      6624050 624050  624040  1       32.15   99      10      3       1
G1      6624040 624040  624030  1       31.76   99      10      3       1
G1      6624030 624030  624010  1       32.06   99      10      3       1
*G1     8624020 624020  624010  1       32.06   99      10      3       1
G1      6624010 624010  648950  1       28.24   99      10      3       1
*    subbasin    overtopping   weir
G1      8624100 624100  624090  1       34.66   99      6       3       1
G1      8624101 624100  624090  1       35.91   99      10      3       1
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*    SUBBASIN    OVERTOPPING   WEIR  CINNECTING   VA   HOSPITAL    POND  TO   DPA   EAST
G1      6624100 624100  624080  1       37.16   99      60      1       1
*    Weir  From  conservation  Area  (FDOT  Type  H    Structure)
G1      8624230 624230  624220  1       31.66   99      19.17   3       1
*    Weir  From  Pond  in   Adult  Congregate   Living Facility    (FDOT  Type  E    Structure)
G1      8624250 624250  624230  1       36.66   99      15      3       1
*    Weir  From  Pond  in   UVRC(FDOT    Type  C    Structure)
G1      8624290 624290  624280  1       34.84   99      10.17   3       1
*    Weir  From  Pond  in   UVRC(FDOT    Type  E    Structure)
G1      8624310 624310  624300  1       33.66   99      15      3       1
*    Weir  From  Pond  at   Wal-Mart    (FDOT  Type  D    Structure)
G1      8624470 624470  624460  1       39.01   99      14.33   3       1
*    Weir  From  Pond  at   Forest Place  Apartments   (FDOT  Type  D    Structure)
G1      8624490 624490  624480  1       31.91   99      14.33   3       1
*
G1      7624490 624490  624190  1       32.16   99      10      2       1
*
*    Weir  From  FDOT  Pond  Behind Sports Authority    (Assumption   OF   TYPE  H    STRUCTURE    AND   ELEV.)
G1      8624520 624520  624190  1       28.16   99      4       3       1
G1      8624521 624520  624190  1       29.16   99      15.5    3       1
*
*    Roadway and   Sub-basin    Overtopping   Weirs
G1      7624410 624410  624390  1       37.36   99      50      2       1
G1      6624410 624410  624370  1       37.36   99      50      1       1
G1      6624420 624420  624390  1       37.66   99      50      1       1
G1      7624430 624430  624340  1       37.06   99      50      2       1
G1      7624440 624440  624100  1       36.86   99      50      2       1
G1      7624450 624450  624100  1       35.96   99      50      2       1
G1      7624451 624450  624440  1       36.96   99      50      2       1
G1      6624350 624350  624210  1       32.86   99      50      1       1
*  FOLLOWING  WEIR LOCATED WITH IN  A  TYPE E  INLET PER  PLANS
G1      8624360 624360  624350  1       34.66   99      3       3       1
*  FOLLOWING SUBBASIN TRANSFER WEIR BASED ON ELEV. IN PLANS
G1      6624360 624360  624350  1       36.66   99      50      1       1
*
G1      7624210 624210  624200  1       32.76   99      50      2       1
*G1     6624060 624060  624050  1       34.53   99      20      1       1
*G1     6624050 624050  624040  1       34.16   99      20      1       1
*
*G1     6624040 624040  624030  1       32.21   99      20      1       1
*G1     6624030 624030  624020  1       31.82   99      20      1       1
*G1     6624020 624020  624010  1       30.66   99      20      1       1
*G1     6624010 624010  648950  1       30.66   99      20      1       1
*
G1      6624090 624090  624080  1       32.16   99      50      1       1
*    Subbasin    overtopping   between Duck  Pond  West  and   Duck  Pond  East
G1      6624230 624230  624200  1       32.16   99      50      1       1
G1      6624250 624250  624200  1       39.16   99      50      1       1
G1      6624270 624270  624260  1       35.96   99      50      1       1
G1      6624290 624290  624260  1       36.16   99      50      1       1
G1      6624310 624310  624260  1       37.16   99      50      1       1
G1      6624320 624320  624260  1       30.66   99      50      1       1
G1      6624325 624325  624200  1       31.66   99      50      1       1
G1      6624330 624330  624325  1       31.86   99      50      1       1
G1      7624340 624340  624330  1       37.16   99      50      2       1
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G1      6624370 624370  624350  1       35.66   99      50      1       1
G1      6624380 624380  624370  1       35.66   99      50      1       1
G1      6624390 624390  624380  1       35.01   99      50      1       1
G1      6624400 624400  624390  1       36.96   99      50      1       1
*
G1      6624530 624530  624520  1       30.16   99      50      1       1
G1      6624540 624540  624530  1       31.56   99      50      1       1
G1      6624550 624550  624530  1       34.26   99      50      1       1
G1      6624560 624560  624550  1       35.06   99      50      1       1
G1      6624570 624570  624560  1       33.46   99      100     1       1
*
*=======================================
*    WEIR  DATA  FOR   USF   EAST  AND   WEST
*=======================================
*  Drop Structure  Weir
*    OUT   FALL  FOR   LAKE  BEHNKE
G1      8625200 625200  625150  1       29.96   99      15      3       1
*  30th Street Road Overtop Weir
*  DS NODE CHANGED FROM 625100 TO 624080 WHEN MODELS WERE COMBINED  - NJM
G1      7625200 625200  624080  1       35.76   99      100     2       1
*    Natural Ground Overtop Weir
G1      6625300 625300  625200  1       36.06   99      100     1       1
*    Natural Ground Overtop Weir
G1      6625400 625400  625200  1       54.66   99      100     1       1
*  Drop Structure  Weir
G1      8625900 625900  625650  1       32.06   99      15      3       1
*    Sycamore    Drive  Overtop Weir
G1      7626400 626400  626300  1       46.66   99      100     2       1
*  Drop Structure  Weir
G1      8626400 626400  626350  1       44.65   99      15      3       1
*  Elm  Drive Road Overtop Weir
G1      7626500 626500  626400  1       53.36   99      100     2       1
*  50th Street &  Fowler Avenue Intersection Road Overtop Weir
G1      7626600 626600  626500  1       67.66   99      100     2       1
*    Road  Overtop Weir
G1      7626700 626700  627450  1       56.56   99      100     2       1
*  Drop Structure  Weir
*    TEPM  CHANGED DS   FROM  626375.00    TO   626300
G1      8626900 626900  626300  1       34.65   99      15      3       1
*    Road  Overtop between Lot   1.00  &    Tennis Courts
G1      7627000 627000  626900  1       38.56   99      100     2       1
*  Drop Structure  Weir
G1      8627100 627100  626950  1       33.16   99      18      3.1     1
*  Drop Structure  Weir
G1      8627500 627500  627400  1       54.91   99      100     3       1
*  Drop Structure  Weir
G1      8627600 627600  627450  1       36.16   99      14.33   3       1
*
*============================================================*
*    WEIR  DATA  USF   NORTH
*    IDWEIR    NJUNC1 NJUNC2 KWEIR  YCREST_NAVD YTOP   WLEN   COEF  N/A
*=================================================================
*    ROAD  OVERTOPPING   WEIR  AT   INTERSECT.   OF   46TH  AND   ABBOT
G1      7629735 629735  629721  1       31.66   99.99   40      2       1
*
```

```
G1      6629960 629960  629940  1       39.26   99.99   100     1       1
*
G1      6629740 629740  629735  1       34.56   99.99   200     1       1
*
G1      6629760 629760  629740  1       35.56   99.99   100     1       1
*
G1      6629780 629780  629760  1       40.66   99.99   100     1       1
*
G1      6629800 629800  629780  1       37.36   99.99   200     1       1
*
G1      6629820 629820  629800  1       35.66   99.99   280     1       1
*
G1      6629825 629825  629820  1       35.66   99.99   390     1       1
*
G1      6629860 629860  629842  1       41.46   99.99   100     1       1
*
G1      6629842 629842  629841  1       38.16   99.99   100     1       1
*
G1      6629841 629841  629825  1       38.16   99.99   100     1       1
*
G1      6629840 629840  629825  1       38.16   99.99   100     1       1
*
G1      6629900 629900  629880  1       41.16   99.99   400     1       1
*
G1      6629920 629920  629735  1       37.16   99.99   100     1       1
*
G1      6629940 629940  629840  1       38.36   99.99   450     1       1
*==========================*
*Weir  Data  -    USF   EAST
*==========================*
*Broad Crest  Weir  Discharging   from  Borrow Pit   Pond
G1      6629300 629300  629100  1       30.66   99      80      1       1
*Broad Crest  Weir  Discharging   over  side  drain
G1      6629200 629200  629100  1       34.66   99      20      1       1
*Broad Crest  Weir  Discharging   over  cross  drain
G1      6629500 629500  629100  1       29.16   99      20      1       1
*Broad Crest  Weir  Discharging   over  cross  drain
G1      6629600 629600  629500  1       35.16   99      20      1       1
*Broad Crest  Weir  Discharging   over  cross  drain
G1      6629700 629700  629400  1       53.66   99      100     1       1
*
*==================================*
*    WEIR  INFORMATION   RAINTREE    NORTH
*==================================*
*   IDWEIR NJUNC(1) NJUNC(2) KWEIR YCREST_NAVD YTOP   WLEN    COEF     N/A
*    Note:  Half  of   54"   CMP   (as   B.C.)  @    Brightwa
G1      8628600 628600  628550  1       28.36   99      10.83   3       1
*
G1      86287001 628700  628699  1       26.56   99      4.17    3       1
G1      86287002 628700  628699  1       28.41   99      20      3       1
*
G1      8628800 628800  628750  1       30.66   99      30      3       1
*
*    Note:  Pampas Pond  to   Wetland
G1      8628860 628860  628800  1       29.16   99      150     3       1
```

```
*
G1      86287301 628730  628729  1       31.16   99      3.5     3       1
G1      86287302 628730  628729  1       32.66   99      10.83   3       1
*
G1      86286701 628670  628669  1       27.01   99      5.83    3       1
G1      86286702 628670  628669  1       27.76   99      10.83   3       1
*
G1      86286801 628680  628679  1       25.96   99      10      3       1
G1      86286802 628680  628679  1       28.16   99      9       3       1
*
G1      86286851 628685  628684  1       27.41   99      0.83    3       1
G1      86286852 628685  628684  1       28.41   99      11.17   3       1
*
G1      86286901 628690  628689  1       29.86   99      2.41    3       1
G1      86286902 628690  628689  1       31.46   99      12.59   3       1
*
G1      6628670 628670  628650  1       29.16   99      50      1       1
G1      6628700 628700  628650  1       31.66   99      50      1       1
G1      6628650 628650  628600  1       29.16   99      50      1       1
*==================================*
*    WEIR  INFORMATION   RAINTREE    SOUTH
*==================================*
*    IDWEIR  NJUNC(1) NJUNC(2) KWEIR YCREST_NAVD YTOP  WLEN    COEF   N/A
G1      8628150 628150  628100  1       29.06   99      105     2.2     1
G1      7628200 628200  628150  1       27.16   99      35      2       1
G1      7628250 628250  628200  1       33.16   99      195     2       1
G1      7628400 628400  628350  1       30.16   99      15      2       1
G1      7628270 628270  628250  1       33.16   99      100     2       1
G1      7628420 628420  628400  1       32.16   99      40      2       1
G1      7628350 628350  628310  1       30.16   99      40      2       1
G1      7628160 628160  628150  1       28.66   99      80      2       1
*
G1      6628420 628420  628400  1       32.16   99      100     1       1
G1      6628310 628310  628300  1       28.06   99      100     1       1
G1      7628450 628450  628400  1       36.56   99      300     2       1
*=============================================================================================
* CITY OF TAMPA WEIRS, ROAD OVERTOPPING & SUBBASIN EXCHANGE
*=============================================================================================
*********************************************************************************************
*  Eastern Drainage  Branch *
*********************************************************************************************
*    RR   overtopping
G1      7648200 648200  648000  1       40.66   61.5    50      2       1
*  FDOT Pond#9 outfall structure  -  rectangular  notch and  drop inlet
*G1     8648000 648000  647990  1       30.76   55.27   4       3       1
*  30"  discharge  pipe limits capacity/inlet-grate overflow  not  needed
*G1     8648001 648000  647990  1       34.16   55.27   14.33   3       1
*  30th Street overtopping  to  basin 647810
G1      7648000 648000  647810  1       41.16   55.27   50      2       1
*    Inlet  west  of   30th  Street interbasin   to   basin  647810
G1      6647900 647900  647810  1       39.16   55.27   10      1       1
*    this system is updated based on new survey dated on 12/10/2004 by J. Su
*G1     6647901 647900  647902  1       32.99   55.27   10      1       1
*G1     6647902 647902  647904  1       30.97   99      10      1       1
*G1     6647904 647904  647906  1       32.98   99      10      1       1
```

```
*G1     6647906 647906  647800  1       31.66   99      10      1       1
*******************************************************************************************
*    Primary Drainage    System *
*******************************************************************************************
*    RR   overtopping
G1      7648900 648900  648750  1       30.46   51.5    50      1       1
*  Apartment  drive overtopping
G1      7648750 648750  648730  1       28.62   51.5    20      1       1
*    Maintenance   Rd   overtopping
*G1      7648700 648700  647820  1       28.96   50.1    10      1       1
G1      7648700 648700  647800  1       28.96   50.1    10      1       1 * 2006 edit for stability
*  110th Ave  overtopping
G1      7647800 647800  647500  1       26.56   47.3    10      1       1
*  Apartment  pond overtopping  to  ditch
G1      7647805 647805  647800  1       32.16   53      10      1       1
*  Depressional area/ blind pond  overtopping  (INTERBASIN)
G1      6647810 647810  647800  1       30.16   51      50      1       1
*    Interbasin   exchange    from  26th  Street to   Bacon  Lake
G1      6647400 647400  647000  1       29.16   51      100     1       1
* additional weir data within subbasin by J.Su
*G1     6647401 641400  647402  1       27.16   51      10      1       1
*G1     6647402 647402  647404  1       28.03   99      10      1       1
*G1     6647404 647404  647406  1       28.17   99      10      1       1
*G1     6647406 647406  646900  1       29.03   99      10      1       1
*    Interbasin   exchange    from  26th  Street to   Bacon  Lake
G1      6646900 646900  647000  1       30.16   51      100     1       1
*    Interbasin   exchange    from  26th  Street to   Poinsettia   Lake
G1      6646901 646900  646500  1       32.16   53      20      1       1
*  Apartment  pond overtopping  (INTERBASIN)- NJM
G1      6646905 646905  646900  1       32.56   53.4    10      1       1
*  30th Street flood path (INTERBASIN)
G1      6646039 646039  646500  1       34.16   54      10      1       1
*** Ayres 2006 added edge of pavement path to 646029 "swale" storage
G1      6646038 646039  646029  1       32.16   54      10      1       1
*** Ayres 2006 adjusted weir elevation 1 ft lower after field review
G1      6646029 646029  646000  1       34.16   54.2    10      1       1
*  30th Street flood path (INTERBASIN)
G1      6646000 646000  646500  1       33.66   54.2    10      1       1
* added overtopping weirs J. Su 9/25/2004
G1      7647990 647990  647950  1       33.66   54.2    10      1       1
G1      7647950 647950  647900  1       33.51   54.2    10      1       1
*
*===========================*
* Pump Data - USF NORTH
*===========================*
*   IPTYP(I) NJUNC(1) NJUNC(2) PRATE(I,1)PRATE(I,2)PRATE(I,3) VRATE(I,1)VRATE(I,2) VRATE(I,3) VWELL(I) PON(I)  POF(I)
*
H1   2     629880  629840        0         1         1          4          5          0          0         0       0
*
H1   2     629900  629840        0       5.13      7.53         11.2      12.8         0          0         0        0
*===========================*
* Pump Data - USF EAST
*===========================*
* Pump draining Sub-basin 629400 to the Borrow Pit Node 629300
H1   2     629400  629300        0         3.2        5          5.6       7.2         0          0         0        0
```

```
*=====================================================
*       PUMP    DATA    City    of      Tampa
*=====================================================
*       Poinsettia      Lake    Pumps  (Existing)           EL=21.66 NAVD;22.16 NAVD
*  IPTYP(I) NJUNC(1) NJUNC(2) PRATE(I,1)PRATE(I,2)PRATE(I,3) VRATE(I,1)VRATE(I,2) VRATE(I,3) VWELL(I) PON(I)  POF(I)
H1      2       646500  646490  0       26.74     53.48         5.5       6.0        0           0       0       0
*       added by J. Su
*       COT confirms in 2006 that 2001 fixed pump scenario (ABOVE) has not changed.  Card below represents portable diesel pumps
H1     2       646500  646000  0       10.00     21.11           7       7.5       0           0       0       0
*=====================================================
*       PUMP    DATA    149th Outfall           Tributary-      Cypress Creek
*=====================================================
*
H1      2       620300  620200  0       2.00    3       2.2     4       0       0       0       0
*
* City of Tampa Boundary
I1  645000  1
* Cypress Creek Boundary
*I1  620115  2
I1    201151  2
* USF EAST BOUNDARY
I1  626200  3
*
* BOUNDARY DATA -USF NORTH
I1      629720  4
I1      629721  4
* BOUNDARY DATA USF EAST
I1      629000  5
*   BOUNDARIES AT RAINTREE NORTH
I1      628500  6
* BOUNDARY AT RAINTREE SOUTH
I1      628000  6
**** 25yr  ****************************************
* NAVD-CONVERTED BY AYRES (-0.84 FT)
* Boundary#1 72" 30TH STREET OUTFALL - AT HILLSBOROUGH RIVER
J1     5
J3  0    3   1
*J4  0.0 22.5  24   22.5  100  22.5
J4  0.0 21.66  24   21.66  100  21.66
* Boundary#2 TAKEN FROM CYPRESS CREEK MODEL RESULTS
J1  5
J3  0    4   1
*J4  0.0   35.00     12.0   35.8     16.5   37.02    60.00  37.02
J4  0.0   34.16     12.0   34.96    16.5   36.18    60.00  36.18
*
* Boundary#3 USF BOUNDARY CONDITION
J1  5
J3  0    4    1
*J4  0.0   27.00     12   28.8     24   28.8       60   28.8
J4  0.0   26.16     12   27.96     24   27.96       60   27.96
*********************************************************
* Boundary #4
*   OUTFALL DATA -USF NORTH
* CYPRESS CREEK OUTFALL EAST OF USF POND
J1      5
```

```
J3      0       3       1
*J4      0       28.4    24      30.6    60      30.6
J4      0       27.56   24      29.76   60      29.76
* Boundary#5
* BOUNDARY DATA USF EAST
J1      5
J3      0       3       1
*J4      0       26.5
*       12      29.4
*       60      29.4
J4      0       25.66
        12      28.56
        60      28.56
*   ------------------------------------------------------------------------------------------
*   BOUNDARY #6 AT RAINTREE NORTH & SOUTH
J1      5
J3      0       5       1
*J4      0       23.5
*        12      27.15
*        24      26.28
*        48      23.5
J4      0       22.66
        12      26.31
        24      25.44
        48      22.66
* Ayres extended stage-time 2006
        60      22.66
**********************************
$ENDPROGRAM
```

```
E2     0.010   24.26
      4.78    26.16
      7.75    27.16
      11.60   28.16
      16.90   29.16
      23.00   30.16
      32.60   31.16
      58.60   33.16
      59.00   98.16
*     108
E1     628420  99    -1     5
E2     0.010   26.16
      1.30    31.16
      4.14    32.16
      11.46   33.16
      12.00   98.16
*     110
E1     628400  99    -1     5
E2     0.010   23.61
      0.60    29.16
      0.70    30.16
      7.90    33.16
      8.30    98.16
*     111
E1     628150  99    -1     6
E2     0.010   23.13
      0.64    26.16
      0.91    27.16
      1.40    28.16
      2.23    29.16
      2.50    98.16
*     112
E1     628110  99    -1     4
E2     0.010   22.03
      0.20    23.66
      0.35    25.16
      0.40    98.16
*     200
E1     628270  99    -1     5
E2     0.010   23.78
```

```
      0.45    28.26
      0.55    29.16
      6.32    33.16
      7.00    98.16
*     305
E1    628450  99    -1     10
E2    0.10    28.46
      0.70    29.16
      0.17    30.16
      0.89    31.16
      2.25    32.16
      5.04    33.16
      11.02   34.16
      20.75   35.16
      37.00   39.16
      35.00   98.16
*     99
E1    628100  99    -1     3
E2    0.010   21.83
      30.00   22.66
      31.00   98.16
*=============================================================================================
*     CITY    OF      TAMPA   STORAGE CURVES
*     Pond    storage derived from    available       data
*     Basin   flood   storage from    SWFWMD  topo    aerials (undeveloped    all     area    counted)
*     Developed       subbasins       utilize approx. 70%     basin   area    for     storage to      discount        structures)
*=============================================================================================
*     EASTERN DRAINAGE        BRANCH  (along  Railroad)
*     Pepsi   property        detention       ponds   plus    basin   flood
E1    648200  64.8    -1     6
E2    0.43    28.16
      0.79    34.16
      1.80    38.16
      2.85    43.16
      8.00    44.66
      15.00   63.96
*     FDOT    Pond    #9      plus    basin   flood
E1    648000  55.27   -1     14
E2    0.06    25.16
      0.08    26.16
```

```
      0.09    27.16
      0.11    28.16
      0.13    29.16
      0.15    30.16
      0.18    31.16
      0.20    32.16
      0.23    33.16
      0.26    34.16
      0.29    35.16
      1.00    39.16
      11.50   44.16
      11.50   54.16
*     Minimal default storage (stability)
E1    647990  55.27   200     0
E1    647950  55.27   200     0
E1    647900  55.27   200     0
E1    647902  55.27   200     0
E1    647904  55.27   200     0
E1    647906  55.27   200     0
E1    648950  55.27   200     0
E1    648870  55.27   200     0
E1    648730  55.27   200     0
E1    646490  50      200     0
*****************************************************************************************
*     Primary Drainage        System  *
*****************************************************************************************
*     upper   basin   pond
E1    648900  51.5    -1      6
E2    0.05    21.16
      0.05    22.88
      0.25    30.16
      10.00   32.16
      18.00   39.16
      18.70   50.66
*     basin   flood   (1/2    basin   647800)
E1    648750  51.5    -1      5
E2    0.05    19.95
      0.05    27.16
      1.00    29.16
      5.50    32.16
```

```
      5.50    50.66
*     basin   flood   (1/2    basin   647800)
E1    648700  50.1    -1      5
E2    0.05    20.53
      0.05    27.16
      2.00    29.16
      5.50    32.16
      5.50    49.26
*     Apartment       Pond    plus    basin   flood
E1    647805  53      -1      4
E2    1.07    26.16
      1.27    31.66
      12.70   33.16
      12.70   52.16
*     Depressional    Storage ("blind pond")east      of      apartments
E1    647810  51      -1      7
E2    0.10    25.26
      0.28    26.16
      0.57    27.16
      0.93    28.16
      1.30    29.16
      1.90    30.16
      13.00   50.16
*   2006 MODELING CHANNEL AS STORAGE - NO DRIVING HEAD/UNSTABLE
E1    647800  47.3    -1      6
*E2   0.020   20.99
*     0.02    25.16
*     0.13    26.16
*     0.29    27.16
E2    0.020   20.99
      0.020   22.00
      0.050   24.00
      0.120   27.00
      2.00    28.16
      2.00    46.46
*     Donut   Pond    113th-26th      St.     plus    basin   flood   storage
E1    647500  47      -1      13
E2    0.79    17.16
      0.82    18.16
      0.84    19.16
```

```
      0.87    20.16
      0.90    21.16
      0.92    22.16
      0.95    23.16
      0.98    24.16
      1.01    25.16
      5.03    27.01
      7.38    28.01
      20.49   29.01
      23.10   46.16
*     Basin   flood   storage
E1    647400  47.7    -1      6
E2    0.010   18.16
      0.48    27.16
      1.80    28.16
      3.60    29.16
      28.00   34.16
      30.00   46.86
*
E1    647402  99      -1      3
E2    0.010   16.91
      0.10    31.16
      0.50    41.16
*
E1    647404  99      -1      3
E2    0.010   18.68
      0.10    31.16
      0.50    41.16
*
E1    647406  99      -1      3
E2    0.010   18.35
      0.10    31.16
      0.50    41.16
*     Bacon   Lake    plus    basin   flood
E1    647000  50      -1      14
E2    3.59    14.16
      4.20    18.16
      4.36    19.16
      4.52    20.16
      4.68    21.16
```

```
      4.85    22.16
      5.02    23.16
      5.19    24.16
      5.37    25.16
      5.55    26.16
      24.00   28.16
      75.00   29.16
      90.00   34.16
      90.00   49.16
*     Basin   flood   storage
E1    646900  50      -1      5
E2    0.010   18.16
      0.41    29.56
      1.80    31.16
      6.00    32.16
      23.00   49.16
*     Apartments      pond    plus    basin   flood
E1    646905  53.4    -1      4
E2    1.07    25.16
      1.35    29.16
      1.90    32.16
      8.00    52.56
*
E1    646502  99      -1      3
E2    0.010   18.92
      0.10    31.16
      0.50    41.16
*
E1    646504  99      -1      3
E2    0.010   18.84
      0.10    31.16
      0.50    41.16
*
E1    646506  99      -1      3
E2    0.010   18.36
      0.10    31.16
      0.50    41.16
*
E1    646508  99      -1      3
E2    0.010   18.48
```

```
      0.10    31.16
      0.50    41.16
*     Poinsettia     Lake    plus    basin   flood
E1     646500  50     -1     18
E2     0.010   16.16
      0.91    17.16
      1.32    18.16
      1.92    19.16
      2.52    20.16
      2.58    21.16
      2.65    22.16
      2.71    23.16
      2.77    24.16
      2.84    25.16
      2.90    26.16
      2.97    27.16
      3.03    28.16
      3.10    29.16
      7.60    31.16
      16.40   34.16
      21.25   39.16
      71.00   49.16
*********************************************************************************************
*     30th    Street  Drainage       System  *
*********************************************************************************************
*     Basin   flood   storage
E1     646039  54     -1     5
E2     0.10    23.88
      0.10    32.96
      0.20    34.16
      13.80   39.16
      42.00   53.16
*     Basin   flood   storage
E1     646029  56     -1     7
E2     0.01    23.00
      0.10    30.16
      0.31    32.16
      0.54    34.16
      1.01    34.96
      16.18   39.16
```

```
      20.00   55.16
*      Basin   flood   storage
E1     646000  54.2    -1      4
E2     0.001   22.66
       0.001   33.16
       1.00    34.16
       1.00    53.16
*      Basin   flood   storage
E1     645099  56      -1      4
E2     0.001   20.16
       0.001   34.96
       6.00    36.16
       10.00   55.16
*      Basin   flood   storage
E1     645079  53      -1      5
E2     0.001   19.66
       0.001   31.96
       4.50    34.16
       12.00   39.16
       12.00   52.16
*
*=========================================================*
*      Circular        Orifice Information     MALL    EAST
*=========================================================*
*      Orifice in      Outfall Structure       at      Forest  Place   Apartments
*      ASSUMED ORIFICE COEF.   OF      1.00    -       NJM
*F1    8624491 624490  624480  1       0.20    1       28.02 NGVD -NOT CONVERTED
**************************************************************************
* NAVD-CONVERTED BY AYRES (-0.84 FT)  YCREST ONLY
*    IDWEIR NJUNC(1)  NJUC(2) KWEIR YCREST_NAVD YTOP  WLEN   COEF    N/A
*  ------------------------------------------------------------------------------------------------------------
*   AYRES 2006 HIGH FLOOD SUBBASIN CONNECTIONS ADDED AT COUNTY REQUEST FOR COMBINED DUCK POND/RAINTREE/USF
MODELS
G1      6620300 620300  629860  1       44.20   99      50      1       1
G1      6626900 626900  629900  1       44.20   99      50      1       1
G1      6627700 627700  625800  1       57.20   99      50      1       1
G1      6628450 628450  629400  1       38.20   99      50      1       1
*    ------------------------------------------------------------------------------------------------------------
*    WEIR  DATA  FOR   149TH  STREET OUTFALL TRIBUTARY
*  ------------------------------------------------------------------------------------------------------------
```

```
*   IDWEIR NJUNC(1)  NJUC(2) KWEIR YCREST_NAVD YTOP  WLEN   COEF    N/A
* ---------------------------------------------------------------------------------------------------------------
*   ROADWAY OVERTOPPING   AT   B.B.Downs    Blvd.
G1      7620200 620200  620120  1       47.97   99      25      2       1
*
*   ROADWAY OVERTOPPING
G1      7620260 620260  620200  1       47.71   99      50      2       1
*
*   ROADWAY OVERTOPPING
G1      7620400 620400  620200  1       46.59   99      30      2       1
*
G1      6620460 620460  620450  1       43.16   99      50      1       1
*
G1      6620470 620470  620460  1       45.59   99      50      1       1
*
G1      6620480 620480  620470  1       46.16   99      50      1       1
*
*   ROADWAY OVERTOPPING
G1      7620600 620600  620480  1       46.59   99      20      2       1
G1      7620650 620650  623250  1       45.46   99      150     2       1
* ---------------------------------------------------------------------------------------------------------------
*   WEIR  INFORMATION   FOR   NEBRASKA    AVE.
* ---------------------------------------------------------------------------------------------------------------
*   IDWEIR JUNC(1) JUNC(2) KWEIR  YCREST_NAVD YTOP  WLEN    COEF      N/A
* ---------------------------------------------------------------------------------------------------------------
*
G1      6621050 621050  624190  1       27.16   99      10      1       1
*   SUBBASIN    TRANSFER    WEIR  FROM  STORM  SEWER  TO   DUCK  POND  WEST
G1      6621075 621075  621050  1       31.36   99      100     1       1
*  Broad Crest Sub-basin  OT  Weir Discharging  from natural depression  to  inlet 3C  in  Hillsborough County Survey
G1      6621125 621125  621150  1       31.26   99      30      1       1
*
G1      6621100 621100  621075  1       31.96   99      20      1       1
*
G1      7621150 621150  621075  1       31.56   99      100     2       1
*  Broad Crest Roadway OT  (15th Street) Weir Discharging  from natural depression  west of  15th Street
G1      7621200 621200  621150  1       31.66   99      100     2       1
*  Broad Crest Sub-basin  OT  Weir Discharging  from natural depression  west of  15th Street to  Inlet 3A  in  Hill. Co.  Survey
G1      6621225 621225  621200  1       31.76   99      100     1       1
*  Broad Crest Roadway OT  (14th street) Weir Discharging  from natural depression  west of  14th Street
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G1      7621300 621300  621225  1       35.36   99      20      2       1
*   TEMP  ADDED  SUBBASIN   TRANSFER   WEIR  FROM  STORM  SEWER  TO   DUCK  POND  WEST
*  G1  6621250 621250 621050 1.00 31  99  80  1  1
*
*   SUBBASIN   OVERTOPPING   WEIR  FROM  POND  AREA  TO   DS   NODE
G1      6621275 621275  621200  1       36.16   99      150     1       1
*   Rectangular   Weir  Discharging   from  Pond  at   the   Corner of   122nd  Street and   the   CSX   RR
G1      8621275 621275  621250  1       29.11   99      11.5    3       1
*   Rectangular   Weir  Discharging   from  Pond  at   the   Corner of   122nd  Street and   the   CSX   RR
G1      8621276 621275  621250  1       30      99      15.5    3       1
*  Broad Crest Roadway OT  (122nd Street) Weir Discharging  from natural depression  north of  122nd Ave.
G1      7621325 621325  621200  1       33.56   99      10      2       1
*  Broad Crest Sub-basin  OT  Weir from low  area draining  to  inlet 1E  in  hill. Co.  Survey to  inlet 1N
G1      6621375 621375  621350  1       34.66   99      150     1       1
*  Broad Crest Sub-basin  OT  Weir Discharging  from natural depression  to  inlet 1N  in  Hillsborough County Survey
G1      6621390 621390  621395  1       36.26   99      100     1       1
*   Rectangular   Weir  Discharging   from  FDOT  Pond  #    2    -    changed ds   node  from  621400 to   621395
G1      8621425 621425  621395  1       31.77   99      4.35    3       1
*  Grate Top  Weir Discharging  from FDOT Pond #  2
G1      8621427 621425  621395  1       33.66   99      11.05   3       1
*  Broad Crest Sub-basin  OT  Weir Discharging  from low  area in  sub-basin  621600 to  621500
G1      6621600 621600  621500  1       34.46   99      250     1       1
G1      6621625 621625  621450  1       35.66   99      100     1       1
* CONTROL STRUCTURE IN POND
G1      8621630 621630  621625  1       35.16   99      15      3       1
*  Broad Crest Sub-basin  OT  Weir Discharging  from low  area in  sub-basin  621630 to  621625 over topping pond
G1      6621630 621630  621625  1       36.66   99      100     1       1
G1      6621650 621650  621625  1       36.16   99      100     1       1
G1      6621675 621675  621650  1       36.66   99      100     1       1
*  Broad Crest Sub-basin  OT  Weir Discharging  from low  area in  sub-basin  621700 to  621650
G1      6621700 621700  621650  1       36.46   99      350     1       1
*  Broad Crest Sub-basin  OT  Weir Discharging  from ditch downstream  of  culvert under Fletcher  Ave. next to  CSX  RR
G1      6621715 621715  621775  1       38.66   99      60      1       1
G1      6621725 621725  621715  1       40.96   99      100     1       1
G1      6621750 621750  621725  1       44.56   99      200     1       1
G1      6621775 621775  621675  1       37.86   99      100     1       1
G1      6621800 621800  621775  1       36.26   99      100     1       1
G1      6621825 621825  621800  1       36.26   99      100     1       1
G1      6621875 621875  621725  1       44.66   99      200     1       1
*   Rectangular   Weir  Discharging   from  FDOT  Pond  #1
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G1      8621875 621875  621850  1       38.36   99      5       3       1
G1      8621876 621875  621850  1       39.66   99      14.75   3       1
*  Broad Crest Roadway OT  (122nd Ave.) from Taliaferro  pond to  inlets draining  to  Structure  1A  in  Hill. Co.  Survey
G1      7621900 621900  621550  1       34.46   99      100     2       1
*  Broad Crest Sub-basin  OT  Weir Discharging  from pond sub-basin  621950 to  621875 over topping 45.5 foot contour
G1      6621950 621950  621875  1       44.66   99      50      1       1
*
*  ---------------------------------------------------------------------------------------------------------------
*    WEIR  INFORMATION   ROBBINS LUMBER
*  ---------------------------------------------------------------------------------------------------------------
*    IDWEIR NJUNC(1  NJUC(2) KWEIR  YCREST_NAVD YTOP  WLEN    COEF  N/A
*  ---------------------------------------------------------------------------------------------------------------
G1      6622500 622500  622400  1       34.56   99      50      1       1
G1      7622600 622600  622500  1       36.45   99      50      1       1
G1      7622700 622700  622600  1       37.16   99      50      1       1
G1      6622800 622800  622700  1       36.56   99      50      1       1
G1      6622900 622900  622600  1       36.66   99      50      1       1
G1      6622850 622850  622800  1       40.00   99      100     1       1  *Ayres 2006 edit crest using 2004 contours
G1      6622925 622925  622600  1       36.96   99      200     1       1
G1      6622950 622950  622700  1       36.56   99      250     1       1
*
*  ---------------------------------------------------------------------------------------------------------------
*    WEIR  INFORMATION   FOR   131st  AVE.  AREA
*  ---------------------------------------------------------------------------------------------------------------
*    IDWEIR NJUNC(1) NJUC(2) KWEIR  YCREST_NAVD YTOP   WLEN  COEF     N/A
*  ---------------------------------------------------------------------------------------------------------------
*    WEIR  AT   131ST  AVENUE POND
G1      6623170 623170  623160  1       37.16   99      100     1       1
G1      7623190 623190  623170  1       41.36   99      150     2       1
G1      7623200 623200  622850  1       39.16   99      150     2       1
*    Weir  At   12th  Street
G1      7623215 623215  623200  1       39.46   99      100     2       1
*  HOLE IN  RETAINING  WALL AT  MALIBU POND
G1      8623248 623248  623247  1       44.16   99      1       3       1
*
G1      7623243 623243  623240  1       45.66   99      80      2       1
G1      7623245 623245  621850  1       45.16   99      100     2       1
G1      7623248 623248  623245  1       48.06   99      100     2       1
*
G1      8623245 623245  623244  1       42.16   99      4       3       1
```

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G1      7623220 623220  623210  1       41.86   99      200     2       1
G1      7623230 623230  623220  1       41.86   99      100     2       1
G1      7623240 623240  623230  1       42.46   99      100     2       1
G1      7623250 623250  623240  1       44.16   99      150     2       1
*
*    Roadway OT   Weir  at   Skipper Road
G1      7623270 623270  623250  1       45.36   99      100     2       1
*  Fletcher  avenue &  19th street road overtopping
G1      7623320 623320  623310  1       39.86   99      50      2       1
*  19th street road overtopping
G1      7623340 623340  623330  1       39.86   99      100     2       1
*  19th street road overtopping
G1      7623350 623350  623340  1       40.46   99      200     2       1
G1      7623360 623360  623350  1       39.26   99      200     2       1
*  138th avenue road overtopping
G1      7623370 623370  623340  1       41.86   99      50      2       1
*  19th street road overtopping
G1      7623380 623380  623370  1       41.56   99      50      2       1
*  20th street road overtopping
G1      7623390 623390  623380  1       42.36   99      50      2       1
*
G1      6623340 623340  623330  1       38.66   99      50      1       1
*
G1      7623430 623430  623400  1       41.36   99      50      2       1
*    Sub-basin    overtopping   from  Livingston   Ave.  to   23rd  street
G1      6623750 623750  623700  1       41.66   99      50      1       1
*    Sub-basin    overtopping   from  Livingston   Ave.  to   23rd  street
G1      6623751 623750  623600  1       42.16   99      50      1       1
*    Sub-basin    overtopping   from  Livingston   Ave.  to   23rd  street
G1      6623800 623800  623750  1       43.16   99      50      1       1
*    Sub-basin    overtopping   from  Livingston   Ave.  to   23rd  street
G1      6623850 623850  623800  1       44.16   99      50      1       1
*    Sub-basin    overtopping   from  Livingston   Ave.  to   23rd  street
G1      6623900 623900  623850  1       46.16   99      50      1       1
*
*  ---------------------------------------------------------------------------------------------------------
*    WEIR  INFORMATION   FOR   MALL  WEST  AND   EAST
*  ---------------------------------------------------------------------------------------------------------
*    IDWEIR NJUNC(1) NJUC(2) KWEIR  YCREST_NAVD YTOP  WLEN   COEF     N/A
*  ---------------------------------------------------------------------------------------------------------
```

```
*
*   Weirs  From  Detention    Ponds
*   Weir  Structure    at   Duck  Pond  East
*  Hillsborough County Survey (Sec 8,  TWP  28  S,  RNG  19  E)  and  Fowler Ave. As-Builts  Project N0.  10290-3526
*   System 3    Structure    3A
G1      8624080 624080  624070  1       25.72   99      2.55    3       1
G1      8624081 624080  624070  1       29.5    99      10.25   3       1
* overtopping weirs from Duck Pond East to Fowler south, based on new survey 9/30/2004. J. Su
G1      6624070 624070  624060  1       34.67   99      10      3       1
G1      6624060 624060  624050  1       35.1    99      10      3       1
G1      6624050 624050  624040  1       32.15   99      10      3       1
G1      6624040 624040  624030  1       31.76   99      10      3       1
G1      6624030 624030  624010  1       32.06   99      10      3       1
*G1     8624020 624020  624010  1       32.06   99      10      3       1
G1      6624010 624010  648950  1       28.24   99      10      3       1
*   subbasin    overtopping    weir
G1      8624100 624100  624090  1       34.66   99      6       3       1
G1      8624101 624100  624090  1       35.91   99      10      3       1
*   SUBBASIN    OVERTOPPING    WEIR  CINNECTING    VA    HOSPITAL    POND  TO    DPA    EAST
G1      6624100 624100  624080  1       37.16   99      60      1       1
*   Weir  From  conservation  Area  (FDOT  Type  H    Structure)
G1      8624230 624230  624220  1       31.66   99      19.17   3       1
*   Weir  From  Pond  in   Adult  Congregate   Living Facility    (FDOT  Type  E    Structure)
G1      8624250 624250  624230  1       36.66   99      15      3       1
*   Weir  From  Pond  in   UVRC(FDOT    Type  C    Structure)
G1      8624290 624290  624280  1       34.84   99      10.17   3       1
*   Weir  From  Pond  in   UVRC(FDOT    Type  E    Structure)
G1      8624310 624310  624300  1       33.66   99      15      3       1
*   Weir  From  Pond  at   Wal-Mart    (FDOT  Type  D    Structure)
G1      8624470 624470  624460  1       39.01   99      14.33   3       1
*   Weir  From  Pond  at   Forest Place  Apartments    (FDOT  Type  D    Structure)
G1      8624490 624490  624480  1       31.91   99      14.33   3       1
*
G1      7624490 624490  624190  1       32.16   99      10      2       1
*
*   Weir  From  FDOT  Pond  Behind Sports Authority    (Assumption    OF    TYPE  H    STRUCTURE    AND    ELEV.)
G1      8624520 624520  624190  1       28.16   99      4       3       1
G1      8624521 624520  624190  1       29.16   99      15.5    3       1
*
*   Roadway and   Sub-basin    Overtopping   Weirs
```

```
G1      7624410 624410  624390  1       37.36   99      50      2       1
G1      6624410 624410  624370  1       37.36   99      50      1       1
G1      6624420 624420  624390  1       37.66   99      50      1       1
G1      7624430 624430  624340  1       37.06   99      50      2       1
G1      7624440 624440  624100  1       36.86   99      50      2       1
G1      7624450 624450  624100  1       35.96   99      50      2       1
G1      7624451 624450  624440  1       36.96   99      50      2       1
G1      6624350 624350  624210  1       32.86   99      50      1       1
*  FOLLOWING  WEIR LOCATED WITH IN  A  TYPE E  INLET PER  PLANS
G1      8624360 624360  624350  1       34.66   99      3       3       1
*  FOLLOWING SUBBASIN TRANSFER WEIR BASED ON ELEV. IN PLANS
G1      6624360 624360  624350  1       36.66   99      50      1       1
*
G1      7624210 624210  624200  1       32.76   99      50      2       1
*G1     6624060 624060  624050  1       34.53   99      20      1       1
*G1     6624050 624050  624040  1       34.16   99      20      1       1
*
*G1     6624040 624040  624030  1       32.21   99      20      1       1
*G1     6624030 624030  624020  1       31.82   99      20      1       1
*G1     6624020 624020  624010  1       30.66   99      20      1       1
*G1     6624010 624010  648950  1       30.66   99      20      1       1
*
G1      6624090 624090  624080  1       32.16   99      50      1       1
*   Subbasin    overtopping    between Duck  Pond  West  and    Duck  Pond  East
G1      6624230 624230  624200  1       32.16   99      50      1       1
G1      6624250 624250  624200  1       39.16   99      50      1       1
G1      6624270 624270  624260  1       35.96   99      50      1       1
G1      6624290 624290  624260  1       36.16   99      50      1       1
G1      6624310 624310  624260  1       37.16   99      50      1       1
G1      6624320 624320  624260  1       30.66   99      50      1       1
G1      6624325 624325  624200  1       31.66   99      50      1       1
G1      6624330 624330  624325  1       31.86   99      50      1       1
G1      7624340 624340  624330  1       37.16   99      50      2       1
G1      6624370 624370  624350  1       35.66   99      50      1       1
G1      6624380 624380  624370  1       35.66   99      50      1       1
G1      6624390 624390  624380  1       35.01   99      50      1       1
G1      6624400 624400  624390  1       36.96   99      50      1       1
*
G1      6624530 624530  624520  1       30.16   99      50      1       1
G1      6624540 624540  624530  1       31.56   99      50      1       1
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G1     6624550 624550  624530  1      34.26   99     50     1      1
G1     6624560 624560  624550  1      35.06   99     50     1      1
G1     6624570 624570  624560  1      33.46   99     100    1      1
*
*=====================================
*   WEIR  DATA  FOR   USF   EAST  AND   WEST
*=====================================
*  Drop Structure  Weir
*    OUT   FALL  FOR   LAKE  BEHNKE
G1     8625200 625200  625150  1      29.96   99     15     3      1
*  30th Street Road Overtop Weir
*  DS NODE CHANGED FROM 625100 TO 624080 WHEN MODELS WERE COMBINED  - NJM
G1     7625200 625200  624080  1      35.76   99     100    2      1
*    Natural Ground Overtop Weir
G1     6625300 625300  625200  1      36.06   99     100    1      1
*    Natural Ground Overtop Weir
G1     6625400 625400  625200  1      54.66   99     100    1      1
*  Drop Structure  Weir
G1     8625900 625900  625650  1      32.06   99     15     3      1
*    Sycamore    Drive  Overtop Weir
G1     7626400 626400  626300  1      46.66   99     100    2      1
*  Drop Structure  Weir
G1     8626400 626400  626350  1      44.65   99     15     3      1
*  Elm  Drive Road Overtop Weir
G1     7626500 626500  626400  1      53.36   99     100    2      1
*  50th Street &  Fowler Avenue Intersection Road Overtop Weir
G1     7626600 626600  626500  1      67.66   99     100    2      1
*    Road  Overtop Weir
G1     7626700 626700  627450  1      56.56   99     100    2      1
*  Drop Structure  Weir
*    TEPM  CHANGED DS   FROM  626375.00    TO   626300
G1     8626900 626900  626300  1      34.65   99     15     3      1
*    Road  Overtop between Lot   1.00  &    Tennis Courts
G1     7627000 627000  626900  1      38.56   99     100    2      1
*  Drop Structure  Weir
G1     8627100 627100  626950  1      33.16   99     18     3.1    1
*  Drop Structure  Weir
G1     8627500 627500  627400  1      54.91   99     100    3      1
*  Drop Structure  Weir
G1     8627600 627600  627450  1      36.16   99     14.33  3      1
```

```
*
*============================================================*
*   WEIR  DATA  USF   NORTH
*   IDWEIR    NJUNC1 NJUNC2 KWEIR  YCREST_NAVD YTOP   WLEN   COEF  N/A
*=============================================================================
*   ROAD  OVERTOPPING   WEIR  AT   INTERSECT.   OF   46TH  AND   ABBOT
G1     7629735 629735  629721  1      31.66   99.99   40     2      1
*
G1     6629960 629960  629940  1      39.26   99.99   100    1      1
*
G1     6629740 629740  629735  1      34.56   99.99   200    1      1
*
G1     6629760 629760  629740  1      35.56   99.99   100    1      1
*
G1     6629780 629780  629760  1      40.66   99.99   100    1      1
*
G1     6629800 629800  629780  1      37.36   99.99   200    1      1
*
G1     6629820 629820  629800  1      35.66   99.99   280    1      1
*
G1     6629825 629825  629820  1      35.66   99.99   390    1      1
*
G1     6629860 629860  629842  1      41.46   99.99   100    1      1
*
G1     6629842 629842  629841  1      38.16   99.99   100    1      1
*
G1     6629841 629841  629825  1      38.16   99.99   100    1      1
*
G1     6629840 629840  629825  1      38.16   99.99   100    1      1
*
G1     6629900 629900  629880  1      41.16   99.99   400    1      1
*
G1     6629920 629920  629735  1      37.16   99.99   100    1      1
*
G1     6629940 629940  629840  1      38.36   99.99   450    1      1
*============================*
*Weir  Data  -    USF   EAST
*============================*
*Broad Crest  Weir  Discharging   from  Borrow Pit   Pond
G1     6629300 629300  629100  1      30.66   99      80     1      1
```

```
*Broad Crest  Weir  Discharging   over  side  drain
G1      6629200 629200  629100  1       34.66   99      20      1       1
*Broad Crest  Weir  Discharging   over  cross  drain
G1      6629500 629500  629100  1       29.16   99      20      1       1
*Broad Crest  Weir  Discharging   over  cross  drain
G1      6629600 629600  629500  1       35.16   99      20      1       1
*Broad Crest  Weir  Discharging   over  cross  drain
G1      6629700 629700  629400  1       53.66   99      100     1       1
*
*==================================*
*    WEIR  INFORMATION    RAINTREE    NORTH
*==================================*
*   IDWEIR NJUNC(1) NJUNC(2) KWEIR YCREST_NAVD YTOP    WLEN    COEF     N/A
*    Note:  Half  of  54"   CMP   (as   B.C.)  @    Brightwa
G1      8628600 628600  628550  1       28.36   99      10.83   3       1
*
G1      8628700 628700  628699  1       26.56   99      4.17    3       1
G1      8628700 628700  628699  1       28.41   99      20      3       1
*
G1      8628800 628800  628750  1       30.66   99      30      3       1
*
*    Note:  Pampas Pond  to   Wetland
G1      8628860 628860  628800  1       29.16   99      150     3       1
*
G1      8628730 628730  628729  1       31.16   99      3.5     3       1
G1      8628730 628730  628729  1       32.66   99      10.83   3       1
*
G1      8628670 628670  628669  1       27.01   99      5.83    3       1
G1      8628670 628670  628669  1       27.76   99      10.83   3       1
*
G1      8628680 628680  628679  1       25.96   99      10      3       1
G1      8628680 628680  628679  1       28.16   99      9       3       1
*
G1      8628685 628685  628684  1       27.41   99      0.83    3       1
G1      8628685 628685  628684  1       28.41   99      11.17   3       1
*
G1      8628690 628690  628689  1       29.86   99      2.41    3       1
G1      8628690 628690  628689  1       31.46   99      12.59   3       1
*
G1      6628670 628670  628650  1       29.16   99      50      1       1
```

```
G1     6628700 628700  628650  1      31.66   99     50     1      1
G1     6628650 628650  628600  1      29.16   99     50     1      1
*==================================*
*   WEIR  INFORMATION   RAINTREE    SOUTH
*==================================*
*   IDWEIR  NJUNC(1) NJUNC(2) KWEIR YCREST_NAVD YTOP  WLEN    COEF   N/A
G1     8628150 628150  628100  1      29.06   99     105    2.2    1
G1     7628200 628200  628150  1      27.16   99     35     2      1
G1     7628250 628250  628200  1      33.16   99     195    2      1
G1     7628400 628400  628350  1      30.16   99     15     2      1
G1     7628270 628270  628250  1      33.16   99     100    2      1
G1     7628420 628420  628400  1      32.16   99     40     2      1
G1     7628350 628350  628310  1      30.16   99     40     2      1
G1     7628160 628160  628150  1      28.66   99     80     2      1
*
G1     6628420 628420  628400  1      32.16   99     100    1      1
G1     6628310 628310  628300  1      28.06   99     100    1      1
G1     7628450 628450  628400  1      36.56   99     300    2      1
*=============================================================================================
* CITY OF TAMPA WEIRS, ROAD OVERTOPPING & SUBBASIN EXCHANGE
*=============================================================================================
*********************************************************************************************
*  Eastern Drainage  Branch *
*********************************************************************************************
*   RR   overtopping
G1     7648200 648200  648000  1      40.66   61.5   50     2      1
*  FDOT Pond#9 outfall structure  -  rectangular  notch and  drop inlet
*G1    8648000 648000  647990  1      30.76   55.27  4      3      1
*  30"  discharge  pipe limits capacity/inlet-grate overflow  not  needed
*G1    8648001 648000  647990  1      34.16   55.27  14.33  3      1
*  30th Street overtopping  to  basin 647810
G1     7648000 648000  647810  1      41.16   55.27  50     2      1
*   Inlet  west  of   30th  Street interbasin   to   basin  647810
G1     6647900 647900  647810  1      39.16   55.27  10     1      1
*   this system is updated based on new survey dated on 12/10/2004 by J. Su
*G1    6647901 647900  647902  1      32.99   55.27  10     1      1
*G1    6647902 647902  647904  1      30.97   99     10     1      1
*G1    6647904 647904  647906  1      32.98   99     10     1      1
*G1    6647906 647906  647800  1      31.66   99     10     1      1
*********************************************************************************************
```

```
*    Primary Drainage    System *
*********************************************************************************************
*    RR   overtopping
G1      7648900 648900  648750  1       30.46   51.5    50      1       1
*  Apartment  drive overtopping
G1      7648750 648750  648730  1       28.62   51.5    20      1       1
*    Maintenance   Rd   overtopping
*G1      7648700 648700  647820  1       28.96   50.1    10      1       1
G1      7648700 648700  647800  1       28.96   50.1    10      1       1 * 2006 edit for stability
*  110th Ave  overtopping
G1      7647800 647800  647500  1       26.56   47.3    10      1       1
*  Apartment  pond overtopping  to  ditch
G1      7647805 647805  647800  1       32.16   53      10      1       1
*  Depressional area/ blind pond  overtopping  (INTERBASIN)
G1      6647810 647810  647800  1       30.16   51      50      1       1
*    Interbasin   exchange    from  26th  Street to   Bacon  Lake
G1      6647400 647400  647000  1       29.16   51      100     1       1
* additional weir data within subbasin by J.Su
*G1     6647401 641400  647402  1       27.16   51      10      1       1
*G1     6647402 647402  647404  1       28.03   99      10      1       1
*G1     6647404 647404  647406  1       28.17   99      10      1       1
*G1     6647406 647406  646900  1       29.03   99      10      1       1
*    Interbasin   exchange    from  26th  Street to   Bacon  Lake
G1      6646900 646900  647000  1       30.16   51      100     1       1
*    Interbasin   exchange    from  26th  Street to   Poinsettia   Lake
G1      6646901 646900  646500  1       32.16   53      20      1       1
*  Apartment  pond overtopping  (INTERBASIN)- NJM
G1      6646905 646905  646900  1       32.56   53.4    10      1       1
*  30th Street flood path (INTERBASIN)
G1      6646039 646039  646500  1       34.16   54      10      1       1
*** Ayres 2006 added edge of pavement path to 646029 "swale" storage
G1      6646038 646039  646029  1       32.16   54      10      1       1
*** Ayres 2006 adjusted weir elevation 1 ft lower after field review
G1      6646029 646029  646000  1       34.16   54.2    10      1       1
*  30th Street flood path (INTERBASIN)
G1      6646000 646000  646500  1       33.66   54.2    10      1       1
* added overtopping weirs J. Su 9/25/2004
G1      7647990 647990  647950  1       33.66   54.2    10      1       1
G1      7647950 647950  647900  1       33.51   54.2    10      1       1
*
```

```
*==========================*
* Pump Data - USF NORTH
*==========================*
*   IPTYP(I) NJUNC(1) NJUNC(2) PRATE(I,1)PRATE(I,2)PRATE(I,3) VRATE(I,1)VRATE(I,2) VRATE(I,3) VWELL(I) PON(I)  POF(I)
*
H1   2     629880  629840       0        1        1         4         5         0         0        0      0
*
H1   2     629900  629840       0      5.13      7.53       11.2      12.8        0         0        0       0
*==========================*
* Pump Data - USF EAST
*==========================*
* Pump draining Sub-basin 629400 to the Borrow Pit Node 629300
H1   2     629400  629300       0        3.2        5          5.6       7.2        0         0        0       0
*=====================================================
*      PUMP    DATA    City    of      Tampa
*=====================================================
*      Poinsettia      Lake    Pumps  (Existing)          EL=21.66 NAVD;22.16 NAVD
*  IPTYP(I) NJUNC(1) NJUNC(2) PRATE(I,1)PRATE(I,2)PRATE(I,3) VRATE(I,1)VRATE(I,2) VRATE(I,3) VWELL(I) PON(I)  POF(I)
H1      2       646500  646490  0       26.74     53.48         5.5       6.0        0          0       0       0
*      added by J. Su
*      COT confirms in 2006 that 2001 fixed pump scenario (ABOVE) has not changed.  Card below represents portable diesel pumps
H1     2       646500  646000  0       10.00     21.11          7       7.5       0          0       0       0
*=====================================================
*      PUMP    DATA    149th Outfall          Tributary-      Cypress Creek
*=====================================================
*
H1      2       620300  620200  0       2.00    3       2.2     4       0       0       0       0
*
* City of Tampa Boundary
I1  645000  1
* Cypress Creek Boundary
*I1  620115  2
I1    201151  2
* USF EAST BOUNDARY
I1  626200  3
*
* BOUNDARY DATA -USF NORTH
I1      629720  4
I1      629721  4
* BOUNDARY DATA USF EAST
```

```
I1      629000  5
*   BOUNDARIES AT RAINTREE NORTH
I1      628500  6
* BOUNDARY AT RAINTREE SOUTH
I1      628000  6
**** 25yr  ****************************************
* NAVD-CONVERTED BY AYRES (-0.84 FT)
* Boundary#1 72" 30TH STREET OUTFALL - AT HILLSBOROUGH RIVER
J1     5
J3  0    3   1
*J4  0.0 22.5  24   22.5  100  22.5
J4  0.0 21.66  24   21.66  100  21.66
* Boundary#2 TAKEN FROM CYPRESS CREEK MODEL RESULTS
J1  5
J3  0    4   1
*J4  0.0   35.00     12.0   35.8     16.5   37.02    60.00  37.02
J4  0.0   34.16     12.0   34.96    16.5   36.18    60.00  36.18
*
* Boundary#3 USF BOUNDARY CONDITION
J1  5
J3  0    4    1
*J4  0.0   27.00     12   28.8     24   28.8       60   28.8
J4  0.0   26.16     12   27.96     24   27.96       60   27.96
************************************************************
* Boundary #4
*   OUTFALL DATA -USF NORTH
* CYPRESS CREEK OUTFALL EAST OF USF POND
J1      5
J3      0       3       1
*J4      0       28.4    24      30.6    60      30.6
J4      0       27.56   24      29.76   60      29.76
* Boundary#5
* BOUNDARY DATA USF EAST
J1      5
J3      0       3       1
*J4      0       26.5
*       12      29.4
*       60      29.4
J4      0       25.66
        12      28.56
```

```
       60      28.56
*   ------------------------------------------------------------------------------------------
*   BOUNDARY #6 AT RAINTREE NORTH & SOUTH
J1      5
J3      0       5       1
*J4     0       23.5
*       12      27.15
*       24      26.28
*       48      23.5
J4      0       22.66
        12      26.31
        24      25.44
        48      22.66
* Ayres extended stage-time 2006
        60 22.66
************************************
$ENDPROGRAM
```

	JUNC_ID	INVT	Z_MAX	T_MAX
ZMAX	620115	35.06	37.55	14.30
ZMAX	620120	35.16	37.85	14.32
ZMAX	620200	33.16	39.28	13.72
ZMAX	620250	36.21	39.36	13.57
ZMAX	620260	38.26	42.50	12.80
ZMAX	620300	29.16	37.43	25.98
ZMAX	620400	33.56	40.99	24.88
ZMAX	620410	38.86	41.00	24.92
ZMAX	620450	37.94	41.65	24.70
ZMAX	620460	38.06	41.66	24.72
ZMAX	620470	38.86	41.66	24.65
ZMAX	620480	40.01	41.67	24.53
ZMAX	620600	35.16	42.59	14.27
ZMAX	620650	35.16	42.99	25.10
ZMAX	621050	22.17	33.38	34.48
ZMAX	621075	26.50	33.38	34.62
ZMAX	621100	31.16	33.38	34.75
ZMAX	621125	22.56	33.37	34.63
ZMAX	621150	28.16	33.38	34.63
ZMAX	621200	29.62	33.38	34.68
ZMAX	621225	30.46	33.38	34.72
ZMAX	621250	23.16	34.68	18.62
ZMAX	621275	23.16	34.72	18.38
ZMAX	621300	32.36	35.20	26.95
ZMAX	621325	32.46	34.65	14.08
ZMAX	621350	23.16	34.78	18.30
ZMAX	621375	23.16	34.81	18.13
ZMAX	621390	35.56	36.50	12.73
ZMAX	621395	25.16	34.82	18.15
ZMAX	621425	29.16	34.83	18.10
ZMAX	621450	23.16	34.91	17.40
ZMAX	621500	25.73	34.92	17.75
ZMAX	621550	26.37	34.93	18.07
ZMAX	621600	29.66	34.92	17.75
ZMAX	621625	25.16	35.91	13.65
ZMAX	621630	33.16	35.98	13.80
ZMAX	621650	27.16	36.57	12.87
ZMAX	621675	28.46	37.32	12.82
ZMAX	621700	31.36	36.53	13.90
ZMAX	621715	36.46	39.09	13.28
ZMAX	621725	36.59	40.25	14.07
ZMAX	621750	42.56	44.63	13.42
ZMAX	621775	29.76	38.47	12.65
ZMAX	621800	30.96	38.50	12.65
ZMAX	621825	32.96	38.51	12.65
ZMAX	621850	34.16	41.96	14.40
ZMAX	621875	34.16	41.97	14.42
ZMAX	621900	31.36	34.93	18.07
ZMAX	621950	41.46	44.73	24.10
ZMAX	622400	30.17	33.62	15.02
ZMAX	622500	30.12	35.13	15.03
ZMAX	622600	31.16	35.77	14.98
ZMAX	622700	31.26	36.25	14.57
ZMAX	622800	31.31	36.93	13.95

ZMAX	622850	31.31	39.52	13.37
ZMAX	622900	31.69	36.69	15.30
ZMAX	622925	34.36	36.85	25.58
ZMAX	622950	34.16	36.60	14.25
ZMAX	623140	24.91	33.65	26.12
ZMAX	623150	26.46	34.02	24.83
ZMAX	623160	26.56	34.39	23.67
ZMAX	623170	24.16	35.12	22.37
ZMAX	623190	29.16	36.17	16.13
ZMAX	623200	32.49	37.98	14.37
ZMAX	623210	33.29	38.89	14.70
ZMAX	623215	32.49	38.75	20.82
ZMAX	623220	34.64	39.04	14.93
ZMAX	623225	34.89	39.74	15.10
ZMAX	623230	34.99	40.73	15.03
ZMAX	623240	35.33	41.58	15.10
ZMAX	623243	38.96	44.31	13.48
ZMAX	623244	40.66	45.48	13.32
ZMAX	623245	37.16	45.47	13.30
ZMAX	623247	43.16	47.31	13.92
ZMAX	623248	43.16	47.47	13.93
ZMAX	623250	29.16	41.96	15.38
ZMAX	623270	34.16	42.19	14.80
ZMAX	623300	28.60	35.84	13.05
ZMAX	623305	28.55	35.32	21.65
ZMAX	623307	27.74	35.21	21.88
ZMAX	623310	30.71	37.65	13.15
ZMAX	623320	33.30	38.18	12.77
ZMAX	623330	36.66	40.58	12.55
ZMAX	623340	36.79	40.59	12.53
ZMAX	623350	36.96	40.01	20.70
ZMAX	623360	34.16	40.01	20.70
ZMAX	623370	37.33	41.98	14.52
ZMAX	623380	37.74	41.98	14.53
ZMAX	623390	36.66	42.00	19.18
ZMAX	623400	29.26	38.33	13.25
ZMAX	623430	29.34	38.60	13.60
ZMAX	623450	32.65	38.77	13.12
ZMAX	623500	32.95	39.42	13.03
ZMAX	623510	34.66	39.79	13.68
ZMAX	623550	33.22	39.78	13.02
ZMAX	623600	34.16	40.25	13.00
ZMAX	623650	34.19	40.21	12.73
ZMAX	623700	34.69	39.82	13.72
ZMAX	623725	35.86	39.75	14.78
ZMAX	623750	37.62	40.72	13.13
ZMAX	623800	39.08	40.92	13.10
ZMAX	623850	40.01	41.38	14.77
ZMAX	623900	39.16	43.47	15.17
ZMAX	624010	22.16	31.20	35.03
ZMAX	624030	23.27	31.74	35.03
ZMAX	624040	23.69	32.04	35.03
ZMAX	624050	23.92	32.36	35.03
ZMAX	624060	24.29	32.71	35.02
ZMAX	624070	24.61	33.06	35.03

ZMAX	624080	21.16	33.16	35.03
ZMAX	624090	25.16	33.16	35.02
ZMAX	624100	33.16	36.45	13.62
ZMAX	624190	22.20	33.38	33.02
ZMAX	624200	25.96	33.38	33.42
ZMAX	624210	29.67	33.38	33.30
ZMAX	624220	27.66	33.38	33.43
ZMAX	624230	25.16	33.38	33.40
ZMAX	624250	33.76	34.89	24.93
ZMAX	624260	26.41	33.38	33.23
ZMAX	624270	26.46	33.38	33.38
ZMAX	624280	31.31	33.38	33.28
ZMAX	624290	33.16	35.30	12.70
ZMAX	624300	30.41	33.38	33.42
ZMAX	624310	32.16	34.16	12.50
ZMAX	624320	26.56	33.38	33.32
ZMAX	624325	22.06	33.38	33.42
ZMAX	624330	27.56	33.38	33.42
ZMAX	624340	32.66	37.23	16.77
ZMAX	624350	32.59	33.77	14.02
ZMAX	624360	30.66	34.92	13.53
ZMAX	624370	32.74	36.43	13.50
ZMAX	624380	31.61	36.49	13.30
ZMAX	624390	32.74	36.53	13.25
ZMAX	624400	34.91	36.97	13.10
ZMAX	624410	35.66	37.47	12.85
ZMAX	624420	36.76	37.80	13.07
ZMAX	624430	35.66	37.45	12.60
ZMAX	624440	36.66	37.29	12.87
ZMAX	624450	31.66	36.56	13.28
ZMAX	624460	32.66	36.56	13.28
ZMAX	624470	32.66	39.14	22.98
ZMAX	624480	25.16	33.38	33.02
ZMAX	624490	26.76	33.38	33.02
ZMAX	624520	20.96	33.38	34.47
ZMAX	624530	22.46	33.38	33.53
ZMAX	624540	23.66	33.38	33.52
ZMAX	624550	24.76	33.38	33.32
ZMAX	624560	25.46	33.38	34.38
ZMAX	624570	31.86	33.82	13.37
ZMAX	625150	28.60	34.04	25.97
ZMAX	625200	23.26	34.08	25.73
ZMAX	625300	29.27	34.08	25.82
ZMAX	625400	53.36	54.72	15.45
ZMAX	625500	23.36	34.08	25.73
ZMAX	625600	25.66	34.10	25.37
ZMAX	625650	27.96	34.13	25.17
ZMAX	625700	27.06	34.10	25.30
ZMAX	625800	31.66	38.60	13.53
ZMAX	625900	28.16	34.16	25.05
ZMAX	626000	35.15	38.09	14.80
ZMAX	626200	26.16	27.96	12.00
ZMAX	626300	25.66	33.14	17.60
ZMAX	626350	40.96	45.90	12.93
ZMAX	626400	43.16	45.94	12.92

ZMAX	626500	44.16	52.23	25.63
ZMAX	626600	65.66	67.77	12.80
ZMAX	626700	44.16	56.69	14.18
ZMAX	626900	27.76	36.94	13.08
ZMAX	626950	27.86	37.13	13.18
ZMAX	627000	33.36	38.02	24.78
ZMAX	627100	32.36	37.16	13.20
ZMAX	627200	26.76	33.15	17.60
ZMAX	627300	28.66	33.89	12.73
ZMAX	627400	31.66	35.18	12.98
ZMAX	627450	32.16	35.56	13.98
ZMAX	627500	51.66	55.00	12.93
ZMAX	627600	30.16	36.85	14.27
ZMAX	627700	30.16	36.91	14.13
ZMAX	555555	80.00	80.00	0.00
ZMAX	201151	34.16	36.18	16.50
ZMAX	555554	80.00	80.00	0.00
ZMAX	555553	80.00	80.00	0.00
ZMAX	555552	80.00	80.00	0.00
ZMAX	555559	80.00	80.00	0.00
ZMAX	577777	80.00	80.00	0.00
ZMAX	566666	80.00	80.00	0.00
ZMAX	566665	80.00	80.00	0.00
ZMAX	544444	80.00	80.00	0.00
ZMAX	533333	80.00	80.00	0.00
ZMAX	629720	22.49	29.76	24.00
ZMAX	629721	22.49	29.76	24.00
ZMAX	629735	22.79	31.16	33.57
ZMAX	629740	24.02	30.43	12.63
ZMAX	629760	25.08	31.39	12.55
ZMAX	629780	26.80	31.66	12.58
ZMAX	629800	28.82	37.68	14.47
ZMAX	629820	31.59	37.70	14.48
ZMAX	629825	32.88	37.71	14.50
ZMAX	629840	34.55	38.53	12.67
ZMAX	629841	34.69	38.44	13.27
ZMAX	629842	35.48	38.51	13.77
ZMAX	629860	37.19	40.47	13.82
ZMAX	629880	32.16	38.65	24.87
ZMAX	629900	22.16	38.54	14.60
ZMAX	629920	27.02	33.76	12.85
ZMAX	629925	29.73	35.94	13.00
ZMAX	629940	31.43	38.14	13.20
ZMAX	629960	37.86	39.33	23.38
ZMAX	555557	80.00	80.00	0.00
ZMAX	555556	80.00	80.00	0.00
ZMAX	629000	21.46	28.56	12.00
ZMAX	629100	21.66	30.36	13.37
ZMAX	629200	29.96	32.32	13.45
ZMAX	629300	27.16	30.82	25.33
ZMAX	629400	24.16	36.42	25.13
ZMAX	629500	25.49	30.85	13.08
ZMAX	629600	32.37	35.21	12.70
ZMAX	629700	39.16	53.92	14.25
ZMAX	628500	21.16	26.31	12.00

ZMAX	628550	23.78	26.31	12.03
ZMAX	628600	24.36	26.81	38.20
ZMAX	628650	24.96	26.84	38.27
ZMAX	628699	25.39	29.04	25.45
ZMAX	628700	26.46	29.10	25.45
ZMAX	628750	25.24	31.71	14.53
ZMAX	628800	23.16	31.76	14.55
ZMAX	628760	24.16	31.74	14.52
ZMAX	628850	29.16	31.78	14.55
ZMAX	628840	25.46	33.59	13.07
ZMAX	628830	25.46	31.79	15.00
ZMAX	628820	25.36	31.83	15.33
ZMAX	628810	26.66	30.81	18.40
ZMAX	628729	29.16	30.89	13.38
ZMAX	628730	29.16	32.17	13.20
ZMAX	628720	23.66	29.80	12.67
ZMAX	628710	24.16	29.61	12.67
ZMAX	628669	25.49	27.87	13.98
ZMAX	628670	24.16	27.96	13.98
ZMAX	628679	25.30	26.88	16.27
ZMAX	628680	25.16	26.91	16.27
ZMAX	628684	25.96	28.68	13.07
ZMAX	628685	24.16	29.01	13.05
ZMAX	628689	26.66	31.42	12.65
ZMAX	628690	29.16	31.71	12.62
ZMAX	628860	23.16	31.76	14.55
ZMAX	628660	25.30	26.84	38.18
ZMAX	628000	20.66	26.31	12.00
ZMAX	628100	21.83	26.29	12.27
ZMAX	628150	23.13	26.27	12.30
ZMAX	628200	18.75	26.77	26.68
ZMAX	628250	18.93	26.77	26.63
ZMAX	628300	26.96	28.85	29.95
ZMAX	628350	22.91	29.47	21.37
ZMAX	628400	23.61	29.86	16.37
ZMAX	628450	28.46	32.59	14.78
ZMAX	628270	23.78	32.27	14.30
ZMAX	628310	24.26	28.85	29.95
ZMAX	628160	23.86	26.27	14.18
ZMAX	628420	26.16	32.50	13.27
ZMAX	628110	22.03	26.27	12.30
ZMAX	648950	22.41	31.12	35.03
ZMAX	648900	21.16	31.11	35.03
ZMAX	648870	21.89	30.48	25.15
ZMAX	648750	19.95	30.48	25.15
ZMAX	648730	18.28	30.21	25.15
ZMAX	648700	21.26	30.21	25.08
ZMAX	648200	28.16	37.80	13.58
ZMAX	648000	25.16	37.75	13.45
ZMAX	647990	29.46	38.16	12.47
ZMAX	647950	29.01	37.70	12.47
ZMAX	647900	28.00	37.42	12.47
ZMAX	647902	26.31	32.93	13.62
ZMAX	647904	25.16	31.77	13.70
ZMAX	647906	23.94	30.64	13.92

ZMAX	647800	20.99	29.91	24.60
ZMAX	647805	26.16	32.55	24.52
ZMAX	647810	25.26	30.69	13.18
ZMAX	647500	17.16	29.62	24.77
ZMAX	647400	18.16	29.60	24.77
ZMAX	647402	16.91	29.38	24.77
ZMAX	647404	18.68	29.12	24.75
ZMAX	647406	18.35	28.78	14.83
ZMAX	647000	14.16	28.75	28.50
ZMAX	646900	19.02	28.74	14.78
ZMAX	646905	25.16	32.79	25.15
ZMAX	646500	16.16	28.87	14.55
ZMAX	646502	18.92	28.77	14.70
ZMAX	646504	18.84	28.79	14.65
ZMAX	646506	18.36	28.82	14.62
ZMAX	646508	18.48	28.84	14.58
ZMAX	646490	21.96	36.17	13.55
ZMAX	555558	80.00	80.00	0.00
ZMAX	645000	17.76	21.66	0.00
ZMAX	645079	19.66	30.90	13.00
ZMAX	645099	20.16	32.50	13.17
ZMAX	646000	22.66	35.40	13.55
ZMAX	646029	23.00	35.74	13.73
ZMAX	646039	23.88	35.99	13.80

	PIPE_ID	FROM	TO	SIZE(INCH)	LENGTH	INV_U	ZMAXU	INV_D	ZMAXD	QMAX	VMAX	TMAX
QMAX	1620120	620120	620115	36.	100.	35.16	37.85	35.06	37.55	101.46	3.94	14.37
QMAX	1620200	620200	620120	36.	100.	36.76	39.28	35.16	37.85	53.63	8.63	13.95
QMAX	2620200	620200	620120	36.	100.	36.76	39.28	35.16	37.85	53.63	8.63	13.95
QMAX	1620250	620250	620200	34.	174.	36.21	39.36	36.01	39.28	48.28	5.50	12.88
QMAX	1620260	620260	620200	29.	105.	38.26	42.50	38.16	39.28	59.06	8.18	12.80
QMAX	1620400	620400	620200	34.	130.	39.86	40.99	39.66	39.28	8.24	2.84	24.88
QMAX	2620400	620400	620200	34.	130.	39.86	40.99	39.66	39.28	8.24	2.84	24.88
QMAX	9620410	620410	620400	240.	1400.	38.86	41.00	33.56	40.99	11.32	-0.09	25.52
QMAX	9620450	620450	620410	240.	550.	40.66	41.65	38.86	41.00	11.24	0.45	24.70
QMAX	1620460	620460	620450	38.	110.	38.06	41.66	37.94	41.65	25.45	3.62	12.63
QMAX	2620460	620460	620450	38.	110.	38.06	41.66	37.94	41.65	25.45	3.62	12.63
QMAX	1620470	620470	620460	36.	310.	38.86	41.66	38.06	41.66	15.36	2.44	14.33
QMAX	2620470	620470	620460	36.	310.	38.86	41.66	38.06	41.66	15.36	2.44	14.33
QMAX	1620480	620480	620470	36.	333.	40.06	41.67	38.86	41.66	15.48	3.43	14.32
QMAX	2620480	620480	620470	36.	333.	40.06	41.67	38.86	41.66	15.48	3.43	14.32
QMAX	1620600	620600	620480	24.	100.	41.29	42.59	40.01	41.67	15.50	6.64	14.27
QMAX	2620600	620600	620480	24.	100.	41.29	42.59	40.01	41.67	15.50	6.64	14.27
QMAX	5620200	555555	620200	120.	100.	80.00	80.00	33.16	39.28	0.00	0.00	0.00
QMAX	5620600	555555	620600	120.	100.	80.00	80.00	35.16	42.59	0.00	0.00	0.00
QMAX	5620650	555555	620650	120.	100.	80.00	80.00	35.16	42.99	0.00	0.00	0.00
QMAX	5620300	555555	620300	120.	100.	80.00	80.00	29.16	37.43	0.00	0.00	0.00
QMAX	5620115	620115	201151	120.	100.	35.06	37.55	34.16	36.18	101.50	5.17	14.37
QMAX	1621050	621050	624190	54.	280.	22.22	33.38	22.20	33.38	65.20	4.09	13.17
QMAX	1621075	621075	621050	24.	96.	26.50	33.38	26.30	33.38	20.68	6.44	12.85
QMAX	1621150	621150	621075	24.	340.	28.22	33.38	26.55	33.38	11.58	3.70	12.10
QMAX	1621200	621200	621150	24.	295.	29.62	33.38	28.16	33.38	9.44	3.10	11.95
QMAX	1621250	621250	621050	54.	2030.	23.76	34.68	22.17	33.38	79.96	5.00	13.68
QMAX	1621350	621350	621275	60.	130.	24.04	34.78	23.94	34.72	83.16	4.22	12.78
QMAX	1621375	621375	621275	60.	130.	24.13	34.81	23.94	34.72	118.06	5.99	12.78
QMAX	2621375	621375	621350	60.	130.	24.13	34.81	24.04	34.78	83.85	4.25	12.78

QMAX	1621395	621395	621375	42.	175.	25.63	34.82	24.13	34.81	42.56	4.38	12.85
QMAX	1621450	621450	621375	72.	975.	24.37	34.91	24.13	34.81	124.29	2.95	13.17
QMAX	1621500	621500	621450	42.	110.	25.82	34.92	25.65	34.91	-25.17	-2.60	12.65
QMAX	1621550	621550	621500	36.	110.	26.37	34.93	25.73	34.92	33.75	4.74	12.67
QMAX	1621600	621600	621500	18.	120.	29.66	34.92	29.13	34.92	12.66	7.11	12.42
QMAX	1621625	621625	621450	66.	1532.	26.66	35.91	25.06	34.91	127.47	5.35	12.67
QMAX	1621650	621650	621625	60.	672.	27.46	36.57	26.66	35.91	101.13	5.13	12.58
QMAX	1621675	621675	621650	54.	360.	28.46	37.32	27.96	36.57	86.78	5.43	12.50
QMAX	1621700	621700	621650	18.	123.	31.36	36.53	30.46	36.57	10.62	6.04	12.22
QMAX	1621725	621725	621715	18.	100.	36.59	40.25	36.46	39.09	9.00	5.06	14.38
QMAX	1621775	621775	621675	48.	498.	29.76	38.47	28.96	37.32	61.75	4.88	12.58
QMAX	1621800	621800	621775	42.	326.	30.96	38.50	30.26	38.47	20.50	2.95	18.12
QMAX	1621825	621825	621800	36.	672.	32.96	38.51	31.46	38.50	-17.86	2.73	12.40
QMAX	1621850	621850	621825	30.	1833.	34.16	41.96	33.46	38.51	21.25	4.30	15.28
QMAX	1621900	621900	621550	24.	564.	31.36	34.93	30.22	34.93	11.10	4.17	12.45
QMAX	5621125	555554	621125	120.	100.	80.00	80.00	22.56	33.37	0.00	0.00	0.00
QMAX	5621225	555554	621225	120.	100.	80.00	80.00	30.46	33.38	0.00	0.00	0.00
QMAX	5621250	555554	621250	120.	100.	80.00	80.00	23.16	34.68	0.00	0.00	0.00
QMAX	5621275	555554	621275	120.	100.	80.00	80.00	23.16	34.72	0.00	0.00	0.00
QMAX	5621300	555554	621300	120.	100.	80.00	80.00	32.36	35.20	0.00	0.00	0.00
QMAX	5621325	555554	621325	120.	100.	80.00	80.00	32.46	34.65	0.00	0.00	0.00
QMAX	5621350	555554	621350	120.	100.	80.00	80.00	23.16	34.78	0.00	0.00	0.00
QMAX	5621375	555554	621375	120.	100.	80.00	80.00	23.16	34.81	0.00	0.00	0.00
QMAX	5621390	555554	621390	120.	100.	80.00	80.00	35.56	36.50	0.00	0.00	0.00
QMAX	5621395	555554	621395	120.	100.	80.00	80.00	25.16	34.82	0.00	0.00	0.00
QMAX	5621425	555553	621425	120.	100.	80.00	80.00	29.16	34.83	0.00	0.00	0.00
QMAX	5621450	555553	621450	120.	100.	80.00	80.00	23.16	34.91	0.00	0.00	0.00
QMAX	5621550	555553	621550	120.	100.	80.00	80.00	26.37	34.93	0.00	0.00	0.00
QMAX	5621625	555553	621625	120.	100.	80.00	80.00	25.16	35.91	0.00	0.00	0.00
QMAX	5621630	555553	621630	120.	100.	80.00	80.00	33.16	35.98	0.00	0.00	0.00
QMAX	5621650	555553	621650	120.	100.	80.00	80.00	27.16	36.57	0.00	0.00	0.00
QMAX	5621715	555552	621715	120.	100.	80.00	80.00	36.46	39.09	0.00	0.00	0.00
QMAX	5621875	555552	621875	120.	100.	80.00	80.00	34.16	41.97	0.00	0.00	0.00
QMAX	5621900	555552	621900	120.	100.	80.00	80.00	31.36	34.93	0.00	0.00	0.00
QMAX	5621750	555552	621750	120.	100.	80.00	80.00	42.56	44.63	0.00	0.00	0.00
QMAX	5621950	555552	621950	120.	100.	80.00	80.00	41.46	44.73	0.00	0.00	0.00
QMAX	5621100	555552	621100	120.	100.	80.00	80.00	31.16	33.38	0.00	0.00	0.00
QMAX	1622400	622400	624190	54.	100.	30.17	33.62	29.24	33.38	83.24	7.25	15.02
QMAX	1622500	622500	622400	36.	660.	31.27	35.13	30.17	33.62	34.54	4.87	18.43
QMAX	1622600	622600	622500	48.	102.	31.16	35.77	30.12	35.13	51.94	4.03	14.93
QMAX	1622700	622700	622600	48.	102.	32.66	36.25	31.36	35.77	52.91	5.28	14.02
QMAX	1622800	622800	622700	36.	100.	31.31	36.93	31.26	36.25	51.37	6.40	13.10
QMAX	1622900	622900	622600	12.	140.	31.69	36.69	31.46	35.77	4.90	6.15	20.90
QMAX	5622850	555559	622850	120.	100.	80.00	80.00	31.31	39.52	0.00	0.00	0.00
QMAX	5622925	555559	622925	120.	100.	80.00	80.00	34.36	36.85	0.00	0.00	0.00
QMAX	5622950	555559	622950	120.	100.	80.00	80.00	34.16	36.60	0.00	0.00	0.00
QMAX	1623140	623140	624190	72.	770.	24.91	33.65	24.53	33.38	173.47	3.61	20.75
QMAX	1623150	623150	623140	72.	370.	26.46	34.02	24.91	33.65	173.72	3.58	20.62
QMAX	1623160	623160	623150	72.	305.	26.56	34.39	26.46	34.02	173.54	3.57	20.65
QMAX	1623170	623170	623160	60.	480.	27.56	35.12	26.56	34.39	174.23	4.34	20.43
QMAX	1623190	623190	623170	72.	848.	32.04	36.17	29.37	35.12	187.90	7.95	16.57
QMAX	1623200	623200	623190	72.	475.	32.49	37.98	32.04	36.17	189.10	7.31	14.37
QMAX	1623215	623215	623200	15.	106.	37.86	38.75	37.26	37.98	1.98	2.68	20.82
QMAX	1623210	623210	623200	72.	800.	33.29	38.89	32.49	37.98	157.15	4.83	15.28
QMAX	1623220	623220	623210	60.	352.	34.64	39.04	34.29	38.89	139.72	6.69	14.93

QMAX	1623225	623225	623220	60.	248.	34.89	39.74	34.64	39.04	134.62	4.86	15.35
QMAX	1623230	623230	623225	60.	224.	34.99	40.73	34.89	39.74	134.65	5.22	14.77
QMAX	1623240	623240	623230	60.	335.	35.33	41.58	35.00	40.73	126.02	4.81	15.15
QMAX	1623250	623250	623240	60.	311.	35.66	41.96	35.33	41.58	110.98	5.13	13.00
QMAX	1623270	623270	623250	48.	100.	34.66	42.19	34.03	41.96	71.20	3.46	14.22
QMAX	1623307	623307	623170	66.	252.	27.74	35.21	27.56	35.12	141.47	7.19	13.07
QMAX	1623305	623305	623307	66.	268.	28.55	35.32	27.74	35.21	141.49	5.92	13.05
QMAX	1623300	623300	623305	60.	200.	28.60	35.84	28.55	35.32	141.57	7.03	13.02
QMAX	1623310	623310	623300	60.	1055.	30.71	37.65	28.60	35.84	109.63	5.44	14.22
QMAX	1623320	623320	623310	30.	240.	33.30	38.18	31.48	37.65	21.29	4.54	12.60
QMAX	1623330	623330	623320	24.	560.	36.66	40.58	33.47	38.18	11.36	3.79	15.63
QMAX	1623340	623340	623330	12.	120.	36.79	40.59	36.66	40.58	3.15	4.08	9.27
QMAX	1623350	623350	623330	24.	440.	36.96	40.01	36.66	40.58	-6.24	-1.94	12.45
QMAX	1623360	623360	623350	15.	120.	38.15	40.01	38.10	40.01	-1.81	-2.03	12.55
QMAX	1623370	623370	623340	24.	570.	37.45	41.98	36.79	40.59	7.31	2.32	26.17
QMAX	1623380	623380	623370	36.	100.	37.74	41.98	37.33	41.98	12.33	1.73	12.57
QMAX	1623390	623390	623380	18.	100.	39.27	42.00	39.19	41.98	-2.90	-1.63	13.78
QMAX	1623400	623400	623310	60.	580.	31.87	38.33	30.71	37.65	93.73	4.65	14.33
QMAX	1623430	623430	623400	42.	122.	29.34	38.60	29.26	38.33	43.22	4.45	14.25
QMAX	1623450	623450	623400	54.	380.	32.65	38.77	31.87	38.33	68.35	4.75	12.28
QMAX	1623500	623500	623450	48.	305.	32.95	39.42	32.65	38.77	64.31	5.03	12.27
QMAX	1623510	623510	623500	24.	300.	34.66	39.79	33.00	39.42	17.62	5.57	15.82
QMAX	1623550	623550	623500	48.	235.	33.22	39.78	32.95	39.42	47.86	3.80	12.37
QMAX	1623600	623600	623550	42.	425.	34.19	40.25	33.22	39.78	39.47	4.09	12.25
QMAX	1623650	623650	623600	30.	120.	34.19	40.21	34.16	40.25	22.19	4.50	16.08
QMAX	1623700	623700	623650	30.	236.	34.69	39.82	34.19	40.21	20.52	4.16	16.20
QMAX	1623725	623725	623700	30.	414.	35.86	39.75	34.69	39.82	15.43	3.08	19.43
QMAX	1623750	623750	623600	42.	700.	37.62	40.72	35.03	40.25	28.89	4.12	13.43
QMAX	1623800	623800	623750	36.	310.	39.08	40.92	37.62	40.72	16.77	4.37	12.53
QMAX	1623850	623850	623800	30.	310.	40.01	41.38	39.08	40.92	11.01	4.11	13.22
QMAX	1623900	623900	623850	18.	173.	41.77	43.47	40.51	41.38	9.07	5.34	15.17
QMAX	1623247	623247	623244	18.	450.	43.16	47.31	42.36	45.48	6.92	3.88	14.53
QMAX	1623244	623244	623243	18.	520.	40.66	45.48	38.96	44.31	9.18	5.16	20.47
QMAX	1623243	623243	623240	24.	102.	38.96	44.31	38.84	41.58	34.53	10.97	13.48
QMAX	5623170	577777	623170	120.	100.	80.00	80.00	24.16	35.12	0.00	0.00	0.00
QMAX	5623190	577777	623190	120.	100.	80.00	80.00	29.16	36.17	0.00	0.00	0.00
QMAX	5623215	577777	623215	120.	100.	80.00	80.00	32.49	38.75	0.00	0.00	0.00
QMAX	5623254	577777	623244	120.	100.	80.00	80.00	40.66	45.48	0.00	0.00	0.00
QMAX	5623250	577777	623250	120.	100.	80.00	80.00	29.16	41.96	0.00	0.00	0.00
QMAX	5623270	577777	623270	120.	100.	80.00	80.00	34.16	42.19	0.00	0.00	0.00
QMAX	5623360	577777	623360	120.	100.	80.00	80.00	34.16	40.01	0.00	0.00	0.00
QMAX	5623390	577777	623390	120.	100.	80.00	80.00	36.66	42.00	0.00	0.00	0.00
QMAX	5623900	577777	623900	120.	100.	80.00	80.00	39.16	43.47	0.00	0.00	0.00
QMAX	5623248	577777	623248	120.	100.	80.00	80.00	43.16	47.47	0.00	0.00	0.00
QMAX	5623245	577777	623245	120.	100.	80.00	80.00	37.16	45.47	0.00	0.00	0.00
QMAX	1624010	648950	624010	54.	14.	22.41	31.12	22.16	31.20	-38.92	-2.35	12.30
QMAX	1624030	624030	624010	48.	143.	23.27	31.74	22.46	31.20	65.52	4.07	35.03
QMAX	1624040	624040	624030	48.	428.	23.78	32.04	23.52	31.74	30.52	2.41	35.03
QMAX	2624040	624040	624030	48.	428.	23.69	32.04	23.44	31.74	30.53	2.41	35.03
QMAX	1624050	624050	624040	48.	441.	23.95	32.36	23.78	32.04	31.32	2.48	35.03
QMAX	2624050	624050	624040	48.	441.	23.92	32.36	23.78	32.04	31.32	2.48	35.03
QMAX	1624060	624060	624050	48.	430.	24.30	32.71	24.03	32.36	32.78	2.59	35.03
QMAX	2624060	624060	624050	48.	430.	24.29	32.71	24.03	32.36	32.78	2.59	35.03
QMAX	1624070	624070	624060	48.	440.	24.70	33.06	24.36	32.71	32.78	2.59	35.03
QMAX	2624070	624070	624060	48.	440.	24.61	33.06	24.47	32.71	32.78	2.59	35.03

QMAX	1624190	624190	624080	72.	1480.	22.56	33.38	22.46	33.16	-52.68	-1.78	13.43
QMAX	1624090	624090	624080	72.	100.	25.16	33.16	25.06	33.16	-152.81	6.63	14.27
QMAX	1624200	624200	624190	72.	620.	25.96	33.38	25.65	33.38	110.66	5.98	13.10
QMAX	1624210	624210	624200	30.	104.	29.67	33.38	29.06	33.38	30.15	6.38	14.25
QMAX	1624220	624220	624200	29.	96.	27.66	33.38	26.66	33.38	-28.61	-3.85	22.17
QMAX	1624260	624260	624200	72.	460.	26.41	33.38	26.36	33.38	81.70	5.27	12.87
QMAX	1624270	624270	624260	48.	101.	26.46	33.38	26.41	33.38	21.72	1.10	12.60
QMAX	1624280	624280	624270	24.	105.	31.31	33.38	30.96	33.38	9.14	3.63	12.80
QMAX	1624300	624300	624270	29.	246.	30.41	33.38	29.96	33.38	15.27	3.89	12.53
QMAX	1624320	624320	624260	24.	410.	26.56	33.38	26.46	33.38	14.89	4.62	12.18
QMAX	1624330	624330	624320	18.	470.	27.56	33.38	26.56	33.38	7.45	4.17	14.23
QMAX	1624370	624370	624350	18.	105.	32.74	36.43	32.59	33.77	9.40	5.76	13.85
QMAX	1624380	624370	624380	24.	102.	32.74	36.43	31.61	36.49	-7.40	-2.34	12.57
QMAX	1624390	624390	624380	19.	170.	32.74	36.53	31.61	36.49	3.38	1.29	12.70
QMAX	1624400	624400	624390	18.	735.	34.91	36.97	33.16	36.53	2.68	1.51	12.80
QMAX	1624460	624460	624450	24.	102.	32.66	36.56	31.66	36.56	-6.24	-1.95	12.52
QMAX	1624480	624480	624190	24.	100.	25.16	33.38	25.01	33.38	-11.02	-3.45	19.85
QMAX	1624530	624530	624520	60.	682.	22.46	33.38	20.96	33.38	35.25	1.79	13.62
QMAX	1624540	624540	624530	48.	550.	23.66	33.38	22.46	33.38	29.05	2.27	12.50
QMAX	1624550	624550	624530	42.	650.	24.76	33.38	23.86	33.38	29.29	3.03	13.68
QMAX	1624560	624560	624550	42.	600.	25.46	33.38	24.76	33.38	49.39	5.11	13.33
QMAX	5624100	566666	624100	120.	100.	80.00	80.00	33.16	36.45	0.00	0.00	0.00
QMAX	5624250	566666	624250	120.	100.	80.00	80.00	33.76	34.89	0.00	0.00	0.00
QMAX	5624290	566666	624290	120.	100.	80.00	80.00	33.16	35.30	0.00	0.00	0.00
QMAX	5624310	566666	624310	120.	100.	80.00	80.00	32.16	34.16	0.00	0.00	0.00
QMAX	5624325	566666	624325	120.	100.	80.00	80.00	22.06	33.38	0.00	0.00	0.00
QMAX	5624410	566666	624410	120.	100.	80.00	80.00	35.66	37.47	0.00	0.00	0.00
QMAX	5624420	566666	624420	120.	100.	80.00	80.00	36.76	37.80	0.00	0.00	0.00
QMAX	5624430	566666	624430	120.	100.	80.00	80.00	35.66	37.45	0.00	0.00	0.00
QMAX	5624440	566666	624440	120.	100.	80.00	80.00	36.66	37.29	0.00	0.00	0.00
QMAX	5624470	566666	624470	120.	100.	80.00	80.00	32.66	39.14	0.00	0.00	0.00
QMAX	5624080	566665	624080	120.	100.	80.00	80.00	21.16	33.16	0.00	0.00	0.00
QMAX	5624490	566665	624490	120.	100.	80.00	80.00	26.76	33.38	0.00	0.00	0.00
QMAX	5624360	566665	624360	120.	100.	80.00	80.00	30.66	34.92	0.00	0.00	0.00
QMAX	5624570	566665	624570	120.	100.	80.00	80.00	31.86	33.82	0.00	0.00	0.00
QMAX	5624340	566665	624340	120.	100.	80.00	80.00	32.66	37.23	0.00	0.00	0.00
QMAX	5624230	566665	624230	120.	100.	80.00	80.00	25.16	33.38	0.00	0.00	0.00
QMAX	1625150	625150	624080	14.	141.	28.60	34.04	27.70	33.16	37.25	6.56	13.18
QMAX	1625300	625300	625200	24.	145.	29.27	34.08	29.05	34.08	14.32	3.16	12.80
QMAX	2625300	625300	625200	24.	145.	29.27	34.08	29.05	34.08	14.32	3.16	12.80
QMAX	1625500	625500	625200	60.	100.	23.36	34.08	23.26	34.08	129.28	2.86	13.23
QMAX	1625600	625600	625500	48.	450.	25.66	34.10	24.56	34.08	122.46	3.81	14.35
QMAX	1625650	625650	625600	42.	100.	27.96	34.13	27.86	34.10	34.21	3.54	15.12
QMAX	2625650	625650	625600	42.	100.	27.96	34.13	27.86	34.10	34.21	3.54	15.12
QMAX	1625700	625700	625600	48.	352.	27.06	34.10	25.66	34.10	80.53	3.35	13.47
QMAX	1625800	625800	625700	42.	765.	31.66	38.60	28.66	34.10	81.44	8.28	13.50
QMAX	1626000	626000	625900	24.	110.	35.15	38.09	34.86	34.16	18.89	6.11	14.80
QMAX	1626300	626300	626200	42.	128.	26.26	33.14	26.16	27.96	72.02	9.82	17.60
QMAX	1626350	626350	626300	18.	105.	40.96	45.90	40.86	33.14	16.72	9.43	12.93
QMAX	1626950	626950	626900	38.	160.	27.86	37.13	27.76	36.94	41.79	3.22	13.53
QMAX	1627200	627200	626300	84.	100.	26.76	33.15	26.56	33.14	285.48	8.02	12.72
QMAX	1627300	627300	627200	72.	950.	28.66	33.89	26.76	33.15	238.38	6.44	12.80
QMAX	1627400	627400	627300	60.	950.	32.06	35.18	28.66	33.89	139.90	6.36	13.07
QMAX	1627450	627450	627400	36.	290.	32.16	35.56	31.66	35.18	34.30	5.11	14.28
QMAX	1627700	627700	627600	36.	104.	32.16	36.91	32.06	36.85	12.72	2.46	12.72

QMAX	5625400	544444	625400	120.	100.	80.00	80.00	53.36	54.72	0.00	0.00	0.00
QMAX	5625900	544444	625900	120.	100.	80.00	80.00	28.16	34.16	0.00	0.00	0.00
QMAX	5626300	544444	626300	192.	100.	80.00	80.00	25.66	33.14	0.00	0.00	0.00
QMAX	5626400	544444	626400	120.	100.	80.00	80.00	43.16	45.94	0.00	0.00	0.00
QMAX	5626500	544444	626500	120.	100.	80.00	80.00	44.16	52.23	0.00	0.00	0.00
QMAX	5626600	544444	626600	120.	100.	80.00	80.00	65.66	67.77	0.00	0.00	0.00
QMAX	5626700	544444	626700	120.	100.	80.00	80.00	44.16	56.69	0.00	0.00	0.00
QMAX	5627000	544444	627000	120.	100.	80.00	80.00	33.36	38.02	0.00	0.00	0.00
QMAX	5627100	533333	627100	120.	100.	80.00	80.00	32.36	37.16	0.00	0.00	0.00
QMAX	5627500	533333	627500	120.	100.	80.00	80.00	51.66	55.00	0.00	0.00	0.00
QMAX	5627600	533333	627600	120.	100.	80.00	80.00	30.16	36.85	0.00	0.00	0.00
QMAX	5627700	533333	627700	120.	100.	80.00	80.00	30.16	36.91	0.00	0.00	0.00
QMAX	1629735	629735	629720	60.	144.	22.79	31.16	22.49	29.76	176.43	3.50	12.67
QMAX	1629740	629740	629735	60.	322.	24.02	30.43	22.79	31.16	118.70	6.02	12.60
QMAX	1629760	629760	629740	60.	500.	25.08	31.39	24.02	30.43	90.64	4.60	14.48
QMAX	1629780	629780	629760	60.	412.	26.82	31.66	26.04	31.39	87.05	4.48	14.48
QMAX	1629800	629800	629780	30.	318.	28.82	37.68	26.80	31.66	52.90	10.68	17.23
QMAX	1629820	629820	629800	30.	437.	31.59	37.70	28.82	37.68	30.80	6.48	25.87
QMAX	1629825	629825	629820	30.	204.	32.88	37.71	31.59	37.70	24.29	5.26	28.78
QMAX	1629840	629840	629825	30.	264.	34.55	38.53	32.88	37.71	34.31	6.83	12.27
QMAX	1629841	629841	629840	30.	100.	34.69	38.44	34.68	38.53	-14.94	-3.01	12.22
QMAX	2629841	629841	629825	24.	230.	34.86	38.44	33.06	37.71	19.36	6.14	12.50
QMAX	1629842	629842	629841	36.	300.	35.48	38.51	35.05	38.44	9.28	2.28	13.85
QMAX	1629860	629860	629842	30.	326.	37.19	40.47	35.40	38.51	27.57	5.59	13.83
QMAX	1629920	629920	629735	36.	505.	27.02	33.76	25.51	31.16	59.47	8.19	12.85
QMAX	1629925	629925	629920	30.	388.	29.73	35.94	27.43	33.76	32.88	6.67	14.00
QMAX	1629940	629940	629925	30.	375.	31.43	38.14	29.70	35.94	32.67	6.61	13.98
QMAX	5629880	555557	629880	60.	100.	80.00	80.00	32.16	38.65	0.00	0.00	0.00
QMAX	5629900	555557	629900	60.	100.	80.00	80.00	22.16	38.54	0.00	0.00	0.00
QMAX	1629100	629100	629000	48.	118.	21.66	30.36	21.46	28.56	96.34	7.62	13.37
QMAX	1629200	629200	629100	18.	65.	29.96	32.32	29.68	30.36	7.29	4.30	13.45
QMAX	1629500	629500	629100	24.	135.	25.49	30.85	24.76	30.36	15.14	4.78	12.62
QMAX	1629600	629600	629500	24.	84.	32.37	35.21	30.56	30.85	28.01	8.80	12.70
QMAX	5629500	555557	629500	60.	100.	80.00	80.00	26.16	30.85	0.00	0.00	0.00
QMAX	5629100	555557	629100	60.	100.	80.00	80.00	24.76	30.36	0.00	0.00	0.00
QMAX	9628550	628550	628500	600.	375.	23.78	26.31	21.16	26.31	37.84	1.36	16.45
QMAX	1628600	628600	628550	54.	24.	24.36	26.81	23.78	26.31	37.74	5.05	16.43
QMAX	9628650	628650	628600	600.	300.	24.96	26.84	24.36	26.81	37.70	1.61	16.25
QMAX	1628699	628699	628650	30.	260.	25.39	29.04	25.16	26.84	26.44	5.64	25.45
QMAX	1628750	628750	628700	36.	150.	26.66	31.71	26.46	29.10	49.32	8.32	15.42
QMAX	1628800	628750	628800	36.	150.	25.24	31.71	24.31	31.76	-32.66	-4.60	19.22
QMAX	1628760	628760	628750	30.	366.	27.80	31.74	25.35	31.71	24.36	4.85	12.67
QMAX	1628850	628850	628800	36.	200.	29.16	31.78	28.16	31.76	29.90	5.89	12.95
QMAX	1628840	628840	628800	36.	172.	25.46	33.59	25.16	31.76	73.56	10.34	12.78
QMAX	1628830	628830	628800	18.	170.	25.46	31.79	25.16	31.76	11.02	6.15	12.62
QMAX	1628820	628820	628800	18.	110.	25.36	31.83	25.16	31.76	11.03	6.15	12.78
QMAX	1628810	628810	628800	15.	40.	26.66	30.81	26.16	31.76	-9.49	-7.61	14.23
QMAX	1628729	628729	628700	24.	305.	29.16	30.89	28.24	29.10	10.32	4.31	13.40
QMAX	9628720	628720	628700	600.	50.	29.16	29.80	26.66	29.10	19.86	5.09	12.67
QMAX	9628710	628710	628700	600.	50.	29.16	29.61	26.66	29.10	10.70	3.14	12.67
QMAX	1628669	628669	628650	24.	270.	25.49	27.87	25.16	26.84	11.73	3.98	13.98
QMAX	1628679	628679	628650	24.	35.	25.30	26.88	25.16	26.84	6.24	2.37	18.63
QMAX	1628684	628684	628680	24.	30.	25.96	28.68	25.81	26.91	19.32	6.28	13.07
QMAX	1628689	628689	628685	24.	255.	26.66	31.42	25.64	29.01	19.73	6.25	12.58
QMAX	9628660	628660	628650	600.	500.	25.30	26.84	24.96	26.84	11.70	0.80	12.50

QMAX	5628860	555557	628860	60.	100.	80.00	80.00	23.16	31.76	0.00	0.00	0.00
QMAX	5628670	555557	628670	60.	100.	80.00	80.00	24.16	27.96	0.00	0.00	0.00
QMAX	5628760	555557	628760	60.	100.	80.00	80.00	24.16	31.74	0.00	0.00	0.00
QMAX	5628730	555557	628730	60.	100.	80.00	80.00	29.16	32.17	0.00	0.00	0.00
QMAX	5628710	555557	628710	60.	100.	80.00	80.00	24.16	29.61	0.00	0.00	0.00
QMAX	5628690	555557	628690	60.	100.	80.00	80.00	29.16	31.71	0.00	0.00	0.00
QMAX	5628685	555557	628685	60.	100.	80.00	80.00	24.16	29.01	0.00	0.00	0.00
QMAX	5628680	555557	628680	60.	100.	80.00	80.00	25.16	26.91	0.00	0.00	0.00
QMAX	5628720	555557	628720	67.	100.	80.00	80.00	23.66	29.80	0.00	0.00	0.00
QMAX	5629300	555556	629300	24.	100.	80.00	80.00	27.16	30.82	0.00	0.00	0.00
QMAX	5629960	555556	629960	24.	100.	80.00	80.00	37.86	39.33	0.00	0.00	0.00
QMAX	5629400	555556	629400	24.	100.	80.00	80.00	24.16	36.42	0.00	0.00	0.00
QMAX	5629700	555556	629700	24.	100.	80.00	80.00	39.16	53.92	0.00	0.00	0.00
QMAX	5628800	555556	628800	24.	100.	80.00	80.00	23.16	31.76	0.00	0.00	0.00
QMAX	1628100	628100	628000	54.	100.	21.83	26.29	20.66	26.31	-145.05	-2.69	5.30
QMAX	1628110	628110	628100	24.	96.	22.03	26.27	21.83	26.29	4.71	2.42	38.72
QMAX	1628150	628150	628100	54.	250.	22.96	26.27	22.16	26.29	-12.99	2.41	12.03
QMAX	2628150	628150	628100	54.	250.	22.96	26.27	22.16	26.29	-12.99	2.41	12.03
QMAX	1628200	628200	628150	18.	100.	24.66	26.77	24.61	26.27	9.76	5.60	26.68
QMAX	1628250	628250	628200	30.	120.	18.93	26.77	18.75	26.77	14.20	2.86	14.80
QMAX	2628250	628250	628200	30.	120.	18.93	26.77	18.75	26.77	14.20	2.86	14.80
QMAX	3628250	628250	628200	30.	120.	18.93	26.77	18.75	26.77	14.20	2.86	14.80
QMAX	4628250	628250	628200	54.	126.	21.26	26.77	21.16	26.77	51.95	3.35	14.13
QMAX	5628250	628250	628200	54.	126.	21.26	26.77	21.16	26.77	51.95	3.35	14.13
QMAX	9628300	628300	628250	600.	310.	27.66	28.85	26.16	26.77	9.46	2.19	29.95
QMAX	1628350	628350	628300	36.	200.	27.66	29.47	26.96	28.85	18.87	4.68	23.47
QMAX	9628310	628310	628300	600.	40.	28.06	28.85	27.66	28.85	-0.39	-0.46	25.97
QMAX	1628400	628400	628350	54.	442.	23.61	29.86	22.91	29.47	116.15	7.82	13.67
QMAX	1628450	628450	628400	48.	1148.	28.46	32.59	25.71	29.86	74.94	6.37	14.60
QMAX	1628160	628160	628150	30.	99.	23.86	26.27	23.36	26.27	-19.39	-4.56	12.28
QMAX	3628150	628150	628110	36.	98.	23.13	26.27	22.03	26.27	4.94	2.35	38.37
QMAX	1628270	628270	628250	54.	160.	23.78	32.27	23.26	26.77	195.35	12.44	14.30
QMAX	5628350	555555	628350	60.	100.	80.00	80.00	24.16	29.47	0.00	0.00	0.00
QMAX	5628310	555555	628310	60.	100.	80.00	80.00	24.26	28.85	0.00	0.00	0.00
QMAX	5628420	555555	628420	60.	100.	80.00	80.00	26.16	32.50	0.00	0.00	0.00
QMAX	1648200	648200	648000	36.	150.	28.16	37.80	27.16	37.75	28.24	3.95	14.83
QMAX	1648000	648000	647990	90.	100.	30.76	37.75	30.66	38.16	-98.78	6.05	12.48
QMAX	1647990	647990	647950	30.	240.	29.46	38.16	29.38	37.70	34.63	7.15	12.32
QMAX	1647950	647950	647900	42.	125.	29.01	37.70	28.56	37.42	50.62	6.08	12.32
QMAX	1647900	647900	647902	36.	400.	28.00	37.42	26.39	32.93	67.73	9.50	12.47
QMAX	1647902	647902	647904	54.	328.	26.31	32.93	25.16	31.77	64.08	4.17	12.48
QMAX	1647904	647904	647906	54.	333.	25.16	31.77	23.94	30.64	60.16	4.04	12.48
QMAX	1647906	647906	647800	54.	498.	23.99	30.64	21.69	29.91	56.47	3.52	12.48
QMAX	9648950	648950	648900	132.	415.	24.77	31.12	23.85	31.11	65.49	2.10	35.03
QMAX	1648900	648900	648870	36.	100.	22.98	31.11	22.88	30.48	63.82	8.97	12.80
QMAX	9648870	648750	648870	135.	406.	22.33	30.48	21.89	30.48	-56.11	-1.18	12.80
QMAX	1648750	648730	648750	36.	200.	20.67	30.21	19.95	30.48	-34.74	-4.90	12.20
QMAX	9648730	648700	648730	187.	488.	21.44	30.21	18.28	30.21	-65.48	-4.97	40.93
QMAX	1648700	648700	647800	48.	128.	21.26	30.21	21.14	29.91	53.92	4.26	41.15
QMAX	1647800	647800	647500	48.	162.	20.99	29.91	20.53	29.62	79.25	6.54	12.50
QMAX	1647500	647500	647400	60.	322.	18.84	29.62	18.36	29.60	41.92	2.04	12.17
QMAX	1647400	647400	647402	60.	275.	18.36	29.60	16.91	29.38	66.96	3.40	12.47
QMAX	1647402	647404	647402	60.	372.	18.68	29.12	16.91	29.38	-62.67	-3.17	12.47
QMAX	1647404	647404	647406	60.	701.	18.68	29.12	18.35	28.78	58.81	2.99	12.47
QMAX	1647406	646900	647406	60.	158.	19.02	28.74	18.35	28.78	-55.51	-2.77	12.58

QMAX	1647000	646900	647000	48.	365.	19.02	28.74	18.15	28.75	57.94	4.59	13.00
QMAX	1646900	646900	646502	60.	420.	19.02	28.74	18.92	28.77	74.46	3.77	49.83
QMAX	1646502	646502	646504	60.	256.	18.92	28.77	18.84	28.79	74.46	3.77	49.95
QMAX	1646504	646504	646506	60.	336.	18.84	28.79	18.36	28.82	74.46	3.78	49.95
QMAX	1646506	646508	646506	60.	306.	18.48	28.84	18.36	28.82	-74.47	-3.78	49.95
QMAX	1646508	646508	646500	60.	294.	18.48	28.84	18.26	28.87	74.47	3.78	49.97
QMAX	1646490	646000	646490	48.	350.	22.66	35.40	21.96	36.17	-63.40	-5.34	12.10
QMAX	9647400	647400	647500	120.	380.	27.16	29.60	26.46	29.62	-65.33	-0.77	25.43
QMAX	5648000	555558	648000	108.	100.	80.00	80.00	25.16	37.75	0.00	0.00	0.00
QMAX	5648900	555558	648900	108.	100.	80.00	80.00	21.16	31.11	0.00	0.00	0.00
QMAX	5648750	555558	648750	72.	100.	80.00	80.00	20.76	30.48	0.00	0.00	0.00
QMAX	5647500	555558	647500	120.	100.	80.00	80.00	17.16	29.62	0.00	0.00	0.00
QMAX	5647400	555558	647400	120.	100.	80.00	80.00	18.16	29.60	0.00	0.00	0.00
QMAX	5647000	555558	647000	72.	100.	80.00	80.00	14.16	28.75	0.00	0.00	0.00
QMAX	5646500	555558	646500	72.	100.	80.00	80.00	16.16	28.87	0.00	0.00	0.00
QMAX	5646900	555558	646900	96.	100.	80.00	80.00	22.16	28.74	0.00	0.00	0.00
QMAX	5647805	555555	647805	60.	100.	79.16	80.00	26.16	32.55	1.15	13.67	8.58
QMAX	5647810	555555	647810	60.	100.	79.16	80.00	25.26	30.69	1.16	13.79	2.42
QMAX	5646905	555555	646905	60.	100.	79.16	80.00	25.16	32.79	1.16	13.80	9.25
QMAX	1645079	645079	645000	72.	1570.	19.66	30.90	17.76	21.66	246.27	10.29	13.00
QMAX	1645099	645099	645079	72.	410.	20.16	32.50	19.66	30.90	196.69	6.93	13.83
QMAX	1646000	646000	645099	72.	3000.	22.06	35.40	20.16	32.50	175.91	6.19	14.83
QMAX	1646029	646029	646000	72.	550.	23.00	35.74	22.06	35.40	103.10	3.63	12.63
QMAX	1646039	646039	646029	60.	610.	23.88	35.99	23.55	35.74	66.11	4.43	12.50

	WEIR_ID	FROM	TO	ZCREST	ZU	ZD	ZMAXU	QMAX	ZMAXD	TMAX
QWEIR	6620300	620300	629860	44.20	29.16	37.19	37.43	0.00	40.47	0.0
QWEIR	6626900	626900	629900	44.20	27.76	22.16	36.94	0.00	38.54	0.0
QWEIR	6627700	627700	625800	57.20	30.16	31.66	36.91	0.00	38.60	0.0
QWEIR	6628450	628450	629400	38.20	28.46	24.16	32.59	0.00	36.42	0.0
QWEIR	7620200	620200	620120	47.97	33.16	35.16	39.28	0.00	37.85	0.0
QWEIR	7620260	620260	620200	47.71	38.26	33.16	42.50	0.00	39.28	0.0
QWEIR	7620400	620400	620200	46.59	33.56	33.16	40.99	0.00	39.28	0.0
QWEIR	6620460	620460	620450	43.16	38.06	37.94	41.66	0.00	41.65	0.0
QWEIR	6620470	620470	620460	45.59	38.86	38.06	41.66	0.00	41.66	0.0
QWEIR	6620480	620480	620470	46.16	40.01	38.86	41.67	0.00	41.66	0.0
QWEIR	7620600	620600	620480	46.59	35.16	40.01	42.59	0.00	41.67	0.0
QWEIR	7620650	620650	623250	45.46	35.16	29.16	42.99	0.00	41.96	0.0
QWEIR	6621050	621050	624190	27.16	22.17	22.20	33.38	41.33	33.38	13.6
QWEIR	6621075	621075	621050	31.36	26.50	22.17	33.38	-57.17	33.38	22.3
QWEIR	6621125	621125	621150	31.26	22.56	28.16	33.37	-52.07	33.38	22.3
QWEIR	6621100	621100	621075	31.96	31.16	26.50	33.38	-5.34	33.38	24.9
QWEIR	7621150	621150	621075	31.56	28.16	26.50	33.38	-54.89	33.38	22.3
QWEIR	7621200	621200	621150	31.66	29.62	28.16	33.38	57.44	33.38	13.0
QWEIR	6621225	621225	621200	31.76	30.46	29.62	33.38	23.46	33.38	13.0
QWEIR	7621300	621300	621225	35.36	32.36	30.46	35.20	0.00	33.38	0.0
QWEIR	6621275	621275	621200	36.16	23.16	29.62	34.72	0.00	33.38	0.0
QWEIR	8621275	621275	621250	29.11	23.16	23.16	34.72	62.04	34.68	12.5
QWEIR	8621276	621275	621250	30.00	23.16	23.16	34.72	44.60	34.68	13.6
QWEIR	7621325	621325	621200	33.56	32.46	29.62	34.65	22.68	33.38	14.1
QWEIR	6621375	621375	621350	34.66	23.16	23.16	34.81	7.43	34.78	18.1
QWEIR	6621390	621390	621395	36.26	35.56	25.16	36.50	11.62	34.82	12.8
QWEIR	8621425	621425	621395	31.77	29.16	25.16	34.83	23.69	34.82	12.7
QWEIR	8621427	621425	621395	33.66	29.16	25.16	34.83	4.80	34.82	13.8
QWEIR	6621600	621600	621500	34.46	29.66	25.73	34.92	10.67	34.92	13.2
QWEIR	6621625	621625	621450	35.66	25.16	23.16	35.91	12.64	34.91	13.6

QWEIR	8621630	621630	621625	35.16	33.16	25.16	35.98	19.30	35.91	14.0
QWEIR	6621630	621630	621625	36.66	33.16	25.16	35.98	0.00	35.91	0.0
QWEIR	6621650	621650	621625	36.16	27.16	25.16	36.57	25.81	35.91	12.9
QWEIR	6621675	621675	621650	36.66	28.46	27.16	37.32	53.96	36.57	12.8
QWEIR	6621700	621700	621650	36.46	31.36	27.16	36.53	-11.97	36.57	12.9
QWEIR	6621715	621715	621775	38.66	36.46	29.76	39.09	17.04	38.47	13.3
QWEIR	6621725	621725	621715	40.96	36.59	36.46	40.25	0.00	39.09	0.0
QWEIR	6621750	621750	621725	44.56	42.56	36.59	44.63	4.05	40.25	13.4
QWEIR	6621775	621775	621675	37.86	29.76	28.46	38.47	47.49	37.32	12.6
QWEIR	6621800	621800	621775	36.26	30.96	29.76	38.50	42.84	38.47	12.6
QWEIR	6621825	621825	621800	36.26	32.96	30.96	38.51	-23.67	38.50	12.4
QWEIR	6621875	621875	621725	44.66	34.16	36.59	41.97	0.00	40.25	0.0
QWEIR	8621875	621875	621850	38.36	34.16	34.16	41.97	16.18	41.96	17.9
QWEIR	8621876	621875	621850	39.66	34.16	34.16	41.97	11.82	41.96	16.0
QWEIR	7621900	621900	621550	34.46	31.36	26.37	34.93	22.23	34.93	13.3
QWEIR	6621950	621950	621875	44.66	41.46	34.16	44.73	0.86	41.97	24.1
QWEIR	6622500	622500	622400	34.56	30.12	30.17	35.13	21.54	33.62	15.0
QWEIR	7622600	622600	622500	36.45	31.16	30.12	35.77	0.00	35.13	0.0
QWEIR	7622700	622700	622600	37.16	31.26	31.16	36.25	0.00	35.77	0.0
QWEIR	6622800	622800	622700	36.56	31.31	31.26	36.93	11.37	36.25	13.9
QWEIR	6622900	622900	622600	36.66	31.69	31.16	36.69	0.27	35.77	15.3
QWEIR	6622850	622850	622800	40.00	31.31	31.31	39.52	0.00	36.93	0.0
QWEIR	6622925	622925	622600	36.96	34.36	31.16	36.85	0.00	35.77	0.0
QWEIR	6622950	622950	622700	36.56	34.16	31.26	36.60	1.71	36.25	14.2
QWEIR	6623170	623170	623160	37.16	24.16	26.56	35.12	0.00	34.39	0.0
QWEIR	7623190	623190	623170	41.36	29.16	24.16	36.17	0.00	35.12	0.0
QWEIR	7623200	623200	622850	39.16	32.49	31.31	37.98	-65.35	39.52	13.4
QWEIR	7623215	623215	623200	39.46	32.49	32.49	38.75	0.00	37.98	0.0
QWEIR	8623248	623248	623247	44.16	43.16	43.16	47.47	12.93	47.31	12.9
QWEIR	7623243	623243	623240	45.66	38.96	35.33	44.31	0.00	41.58	0.0
QWEIR	7623245	623245	621850	45.16	37.16	34.16	45.47	34.62	41.96	13.3
QWEIR	7623248	623248	623245	48.06	43.16	37.16	47.47	0.00	45.47	0.0
QWEIR	8623245	623245	623244	42.16	37.16	40.66	45.47	8.56	45.48	12.4
QWEIR	7623220	623220	623210	41.86	34.64	33.29	39.04	0.00	38.89	0.0
QWEIR	7623230	623230	623220	41.86	34.99	34.64	40.73	0.00	39.04	0.0
QWEIR	7623240	623240	623230	42.46	35.33	34.99	41.58	0.00	40.73	0.0
QWEIR	7623250	623250	623240	44.16	29.16	35.33	41.96	0.00	41.58	0.0
QWEIR	7623270	623270	623250	45.36	34.16	29.16	42.19	0.00	41.96	0.0
QWEIR	7623320	623320	623310	39.86	33.30	30.71	38.18	0.00	37.65	0.0
QWEIR	7623340	623340	623330	39.86	36.79	36.66	40.59	18.00	40.58	12.4
QWEIR	7623350	623350	623340	40.46	36.96	36.79	40.01	-19.05	40.59	12.5
QWEIR	7623360	623360	623350	39.26	34.16	36.96	40.01	-23.40	40.01	12.6
QWEIR	7623370	623370	623340	41.86	37.33	36.79	41.98	4.15	40.59	14.5
QWEIR	7623380	623380	623370	41.56	37.74	37.33	41.98	-5.08	41.98	13.4
QWEIR	7623390	623390	623380	42.36	36.66	37.74	42.00	0.00	41.98	0.0
QWEIR	6623340	623340	623330	38.66	36.79	36.66	40.59	23.44	40.58	12.2
QWEIR	7623430	623430	623400	41.36	29.34	29.26	38.60	0.00	38.33	0.0
QWEIR	6623750	623750	623700	41.66	37.62	34.69	40.72	0.00	39.82	0.0
QWEIR	6623751	623750	623600	42.16	37.62	34.16	40.72	0.00	40.25	0.0
QWEIR	6623800	623800	623750	43.16	39.08	37.62	40.92	0.00	40.72	0.0
QWEIR	6623850	623850	623800	44.16	40.01	39.08	41.38	0.00	40.92	0.0
QWEIR	6623900	623900	623850	46.16	39.16	40.01	43.47	0.00	41.38	0.0
QWEIR	8624080	624080	624070	25.72	21.16	24.61	33.16	-48.51	33.06	12.9
QWEIR	8624081	624080	624070	29.50	21.16	24.61	33.16	48.97	33.06	32.8
QWEIR	6624070	624070	624060	34.67	24.61	24.29	33.06	0.00	32.71	0.0

QWEIR	6624060	624060	624050	35.10	24.29	23.92	32.71	0.00	32.36	0.0
QWEIR	6624050	624050	624040	32.15	23.92	23.69	32.36	2.92	32.04	35.0
QWEIR	6624040	624040	624030	31.76	23.69	23.27	32.04	4.51	31.74	35.0
QWEIR	6624030	624030	624010	32.06	23.27	22.16	31.74	0.00	31.20	0.0
QWEIR	6624010	624010	648950	28.24	22.16	22.41	31.20	35.36	31.12	35.0
QWEIR	8624100	624100	624090	34.66	33.16	25.16	36.45	42.97	33.16	13.6
QWEIR	8624101	624100	624090	35.91	33.16	25.16	36.45	11.78	33.16	13.6
QWEIR	6624100	624100	624080	37.16	33.16	21.16	36.45	0.00	33.16	0.0
QWEIR	8624230	624230	624220	31.66	25.16	27.66	33.38	-28.58	33.38	22.1
QWEIR	8624250	624250	624230	36.66	33.76	25.16	34.89	0.00	33.38	0.0
QWEIR	8624290	624290	624280	34.84	33.16	31.31	35.30	9.39	33.38	12.7
QWEIR	8624310	624310	624300	33.66	32.16	30.41	34.16	15.72	33.38	12.5
QWEIR	8624470	624470	624460	39.01	32.66	32.66	39.14	2.06	36.56	23.0
QWEIR	8624490	624490	624480	31.91	26.76	25.16	33.38	-10.95	33.38	19.8
QWEIR	7624490	624490	624190	32.16	26.76	22.20	33.38	-8.82	33.38	20.8
QWEIR	8624520	624520	624190	28.16	20.96	22.20	33.38	22.29	33.38	13.2
QWEIR	8624521	624520	624190	29.16	20.96	22.20	33.38	20.22	33.38	13.6
QWEIR	7624410	624410	624390	37.36	35.66	32.74	37.47	3.90	36.53	12.9
QWEIR	6624410	624410	624370	37.36	35.66	32.74	37.47	1.95	36.43	12.9
QWEIR	6624420	624420	624390	37.66	36.76	32.74	37.80	2.52	36.53	13.1
QWEIR	7624430	624430	624340	37.06	35.66	32.66	37.45	24.62	37.23	12.6
QWEIR	7624440	624440	624100	36.86	36.66	33.16	37.29	28.57	36.45	12.9
QWEIR	7624450	624450	624100	35.96	31.66	33.16	36.56	45.61	36.45	13.2
QWEIR	7624451	624450	624440	36.96	31.66	36.66	36.56	-19.28	37.29	12.9
QWEIR	6624350	624350	624210	32.86	32.59	29.67	33.77	43.69	33.38	14.0
QWEIR	8624360	624360	624350	34.66	30.66	32.59	34.92	1.22	33.77	13.5
QWEIR	6624360	624360	624350	36.66	30.66	32.59	34.92	0.00	33.77	0.0
QWEIR	7624210	624210	624200	32.76	29.67	25.96	33.38	16.12	33.38	14.2
QWEIR	6624090	624090	624080	32.16	25.16	21.16	33.16	1.34	33.16	17.9
QWEIR	6624230	624230	624200	32.16	25.16	25.96	33.38	-24.59	33.38	22.6
QWEIR	6624250	624250	624200	39.16	33.76	25.96	34.89	0.00	33.38	0.0
QWEIR	6624270	624270	624260	35.96	26.46	26.41	33.38	0.00	33.38	0.0
QWEIR	6624290	624290	624260	36.16	33.16	26.41	35.30	0.00	33.38	0.0
QWEIR	6624310	624310	624260	37.16	32.16	26.41	34.16	0.00	33.38	0.0
QWEIR	6624320	624320	624260	30.66	26.56	26.41	33.38	28.24	33.38	12.7
QWEIR	6624325	624325	624200	31.66	22.06	25.96	33.38	-25.46	33.38	18.0
QWEIR	6624330	624330	624325	31.86	27.56	22.06	33.38	13.39	33.38	13.6
QWEIR	7624340	624340	624330	37.16	32.66	27.56	37.23	1.98	33.38	16.8
QWEIR	6624370	624370	624350	35.66	32.74	32.59	36.43	33.87	33.77	13.5
QWEIR	6624380	624380	624370	35.66	31.61	32.74	36.49	28.15	36.43	12.9
QWEIR	6624390	624390	624380	35.01	32.74	31.61	36.53	26.20	36.49	12.7
QWEIR	6624400	624400	624390	36.96	34.91	32.74	36.97	0.09	36.53	13.1
QWEIR	6624530	624530	624520	30.16	22.46	20.96	33.38	9.21	33.38	14.4
QWEIR	6624540	624540	624530	31.56	23.66	22.46	33.38	-0.35	33.38	16.8
QWEIR	6624550	624550	624530	34.26	24.76	22.46	33.38	0.00	33.38	0.0
QWEIR	6624560	624560	624550	35.06	25.46	24.76	33.38	0.00	33.38	0.0
QWEIR	6624570	624570	624560	33.46	31.86	25.46	33.82	21.29	33.38	13.4
QWEIR	8625200	625200	625150	29.96	23.26	28.60	34.08	39.33	34.04	13.0
QWEIR	7625200	625200	624080	35.76	23.26	21.16	34.08	0.00	33.16	0.0
QWEIR	6625300	625300	625200	36.06	29.27	23.26	34.08	0.00	34.08	0.0
QWEIR	6625400	625400	625200	54.66	53.36	23.26	54.72	1.33	34.08	15.4
QWEIR	8625900	625900	625650	32.06	28.16	27.96	34.16	68.55	34.13	15.1
QWEIR	7626400	626400	626300	46.66	43.16	25.66	45.94	0.00	33.14	0.0
QWEIR	8626400	626400	626350	44.65	43.16	40.96	45.94	28.43	45.90	12.4
QWEIR	7626500	626500	626400	53.36	44.16	43.16	52.23	0.00	45.94	0.0

QWEIR	7626600	626600	626500	67.66	65.66	44.16	67.77	7.04	52.23	12.8
QWEIR	7626700	626700	627450	56.56	44.16	32.16	56.69	9.13	35.56	14.2
QWEIR	8626900	626900	626300	34.65	27.76	25.66	36.94	155.81	33.14	13.1
QWEIR	7627000	627000	626900	38.56	33.36	27.76	38.02	0.00	36.94	0.0
QWEIR	8627100	627100	626950	33.16	32.36	27.86	37.16	40.46	37.13	13.5
QWEIR	8627500	627500	627400	54.91	51.66	31.66	55.00	7.46	35.18	12.9
QWEIR	8627600	627600	627450	36.16	30.16	32.16	36.85	24.56	35.56	14.3
QWEIR	7629735	629735	629721	31.66	22.79	22.49	31.16	0.00	29.76	0.0
QWEIR	6629960	629960	629940	39.26	37.86	31.43	39.33	1.87	38.14	23.4
QWEIR	6629740	629740	629735	34.56	24.02	22.79	30.43	0.00	31.16	0.0
QWEIR	6629760	629760	629740	35.56	25.08	24.02	31.39	0.00	30.43	0.0
QWEIR	6629780	629780	629760	40.66	26.80	25.08	31.66	0.00	31.39	0.0
QWEIR	6629800	629800	629780	37.36	28.82	26.80	37.68	36.49	31.66	14.5
QWEIR	6629820	629820	629800	35.66	31.59	28.82	37.70	59.14	37.68	15.0
QWEIR	6629825	629825	629820	35.66	32.88	31.59	37.71	62.76	37.70	12.5
QWEIR	6629860	629860	629842	41.46	37.19	35.48	40.47	0.00	38.51	0.0
QWEIR	6629842	629842	629841	38.16	35.48	34.69	38.51	18.30	38.44	13.8
QWEIR	6629841	629841	629825	38.16	34.69	32.88	38.44	14.46	37.71	13.3
QWEIR	6629840	629840	629825	38.16	34.55	32.88	38.53	22.10	37.71	12.7
QWEIR	6629900	629900	629880	41.16	22.16	32.16	38.54	0.00	38.65	0.0
QWEIR	6629920	629920	629735	37.16	27.02	22.79	33.76	0.00	31.16	0.0
QWEIR	6629940	629940	629840	38.36	31.43	34.55	38.14	-30.30	38.53	12.7
QWEIR	6629300	629300	629100	30.66	27.16	21.66	30.82	5.16	30.36	25.3
QWEIR	6629200	629200	629100	34.66	29.96	21.66	32.32	0.00	30.36	0.0
QWEIR	6629500	629500	629100	29.16	25.49	21.66	30.85	41.12	30.36	13.1
QWEIR	6629600	629600	629500	35.16	32.37	25.49	35.21	0.20	30.85	12.7
QWEIR	6629700	629700	629400	53.66	39.16	24.16	53.92	12.93	36.42	14.2
QWEIR	8628600	628600	628550	28.36	24.36	23.78	26.81	0.00	26.31	0.0
QWEIR	86287001	628700	628699	26.56	26.46	25.39	29.10	20.55	29.04	15.4
QWEIR	86287002	628700	628699	28.41	26.46	25.39	29.10	17.71	29.04	25.5
QWEIR	8628800	628800	628750	30.66	23.16	25.24	31.76	37.86	31.71	15.1
QWEIR	8628860	628860	628800	29.16	23.16	23.16	31.76	-98.53	31.76	13.1
QWEIR	86287301	628730	628729	31.16	29.16	29.16	32.17	10.62	30.89	13.2
QWEIR	86287302	628730	628729	32.66	29.16	29.16	32.17	0.00	30.89	0.0
QWEIR	86286701	628670	628669	27.01	24.16	25.49	27.96	10.42	27.87	13.3
QWEIR	86286702	628670	628669	27.76	24.16	25.49	27.96	2.66	27.87	14.0
QWEIR	86286801	628680	628679	25.96	25.16	25.30	26.91	6.22	26.88	18.7
QWEIR	86286802	628680	628679	28.16	25.16	25.30	26.91	0.00	26.88	0.0
QWEIR	86286851	628685	628684	27.41	24.16	25.96	29.01	4.39	28.68	12.9
QWEIR	86286852	628685	628684	28.41	24.16	25.96	29.01	15.02	28.68	13.1
QWEIR	86286901	628690	628689	29.86	29.16	26.66	31.71	17.01	31.42	12.5
QWEIR	86286902	628690	628689	31.46	29.16	26.66	31.71	4.84	31.42	12.6
QWEIR	6628670	628670	628650	29.16	24.16	24.96	27.96	0.00	26.84	0.0
QWEIR	6628700	628700	628650	31.66	26.46	24.96	29.10	0.00	26.84	0.0
QWEIR	6628650	628650	628600	29.16	24.96	24.36	26.84	0.00	26.81	0.0
QWEIR	8628150	628150	628100	29.06	23.13	21.83	26.27	0.00	26.29	0.0
QWEIR	7628200	628200	628150	27.16	18.75	23.13	26.77	0.00	26.27	0.0
QWEIR	7628250	628250	628200	33.16	18.93	18.75	26.77	0.00	26.77	0.0
QWEIR	7628400	628400	628350	30.16	23.61	22.91	29.86	0.00	29.47	0.0
QWEIR	7628270	628270	628250	33.16	23.78	18.93	32.27	0.00	26.77	0.0
QWEIR	7628420	628420	628400	32.16	26.16	23.61	32.50	15.52	29.86	13.3
QWEIR	7628350	628350	628310	30.16	22.91	24.26	29.47	0.00	28.85	0.0
QWEIR	7628160	628160	628150	28.66	23.86	23.13	26.27	0.00	26.27	0.0
QWEIR	6628420	628420	628400	32.16	26.16	23.61	32.50	19.40	29.86	13.3
QWEIR	6628310	628310	628300	28.06	24.26	26.96	28.85	-14.00	28.85	19.7

QWEIR	7628450	628450	628400	36.56	28.46	23.61	32.59	0.00	29.86	0.0
QWEIR	7648200	648200	648000	40.66	28.16	25.16	37.80	0.00	37.75	0.0
QWEIR	7648000	648000	647810	41.16	25.16	25.26	37.75	0.00	30.69	0.0
QWEIR	6647900	647900	647810	39.16	28.00	25.26	37.42	0.00	30.69	0.0
QWEIR	7648900	648900	648750	30.46	21.16	19.95	31.11	26.36	30.48	35.0
QWEIR	7648750	648750	648730	28.62	19.95	18.28	30.48	39.71	30.21	39.8
QWEIR	7648700	648700	647800	28.96	21.26	20.99	30.21	12.59	29.91	25.3
QWEIR	7647800	647800	647500	26.56	20.99	17.16	29.91	37.40	29.62	14.8
QWEIR	7647805	647805	647800	32.16	26.16	20.99	32.55	2.41	29.91	24.5
QWEIR	6647810	647810	647800	30.16	25.26	20.99	30.69	19.38	29.91	13.2
QWEIR	6647400	647400	647000	29.16	18.16	14.16	29.60	29.13	28.75	24.8
QWEIR	6646900	646900	647000	30.16	19.02	14.16	28.74	0.00	28.75	0.0
QWEIR	6646901	646900	646500	32.16	19.02	16.16	28.74	0.00	28.87	0.0
QWEIR	6646905	646905	646900	32.56	25.16	19.02	32.79	1.12	28.74	25.2
QWEIR	6646039	646039	646500	34.16	23.88	16.16	35.99	24.69	28.87	13.8
QWEIR	6646038	646039	646029	32.16	23.88	23.00	35.99	34.85	35.74	13.9
QWEIR	6646029	646029	646000	34.16	23.00	22.66	35.74	17.73	35.40	13.9
QWEIR	6646000	646000	646500	33.66	22.66	16.16	35.40	22.90	28.87	13.6
QWEIR	7647990	647990	647950	33.66	29.46	29.01	38.16	58.63	37.70	12.5
QWEIR	7647950	647950	647900	33.51	29.01	28.00	37.70	41.49	37.42	12.5
QWEIR	90545	629880	629840	32.16	32.16	34.55	38.65	1.00	38.53	12.5
QWEIR	90546	629900	629840	22.16	22.16	34.55	38.54	7.53	38.53	12.2
QWEIR	90547	629400	629300	24.16	24.16	27.16	36.42	5.00	30.82	12.3
QWEIR	90548	646500	646490	16.16	16.16	21.96	28.87	53.48	36.17	12.1
QWEIR	90549	646500	646000	16.16	16.16	22.66	28.87	21.11	35.40	12.7
QWEIR	90550	620300	620200	29.16	29.16	33.16	37.43	3.00	39.28	12.7
QWEIR	90551	645000	0	17.76	17.76	0.00	21.66	246.27	0.00	13.0
QWEIR	90552	201151	0	34.16	34.16	0.00	36.18	101.50	0.00	14.4
QWEIR	90553	626200	0	26.16	26.16	0.00	27.96	72.02	0.00	17.6
QWEIR	90554	629720	0	22.49	22.49	0.00	29.76	176.43	0.00	12.7
QWEIR	90555	629721	0	22.49	22.49	0.00	29.76	0.00	0.00	0.0
QWEIR	90556	629000	0	21.46	21.46	0.00	28.56	96.34	0.00	13.4
QWEIR	90557	628500	0	21.16	21.16	0.00	26.31	37.84	0.00	16.5
QWEIR	90558	628000	0	20.66	20.66	0.00	26.31	-145.05	0.00	5.3

	JUNC_ID	INVT	Z_MAX	T_MAX
ZMAX	620115	35.06	37.94	14.00
ZMAX	620120	35.16	38.38	14.08
ZMAX	620200	33.16	40.22	13.93
ZMAX	620250	36.21	40.67	13.30
ZMAX	620260	38.26	43.49	12.92
ZMAX	620300	29.16	39.10	26.20
ZMAX	620400	33.56	41.81	16.23
ZMAX	620410	38.86	41.84	16.50
ZMAX	620450	37.94	42.42	19.70
ZMAX	620460	38.06	42.43	19.52
ZMAX	620470	38.86	42.57	16.00
ZMAX	620480	40.01	42.95	14.92
ZMAX	620600	35.16	44.43	14.25
ZMAX	620650	35.16	44.91	25.03
ZMAX	621050	22.17	34.62	41.60
ZMAX	621075	26.50	34.61	42.10
ZMAX	621100	31.16	34.61	42.13
ZMAX	621125	22.56	34.61	42.12
ZMAX	621150	28.16	34.61	42.13
ZMAX	621200	29.62	34.61	42.28
ZMAX	621225	30.46	34.61	42.28
ZMAX	621250	23.16	36.02	18.15
ZMAX	621275	23.16	36.07	17.92
ZMAX	621300	32.36	35.53	20.82
ZMAX	621325	32.46	34.92	14.15
ZMAX	621350	23.16	36.15	17.70
ZMAX	621375	23.16	36.17	17.50
ZMAX	621390	35.56	36.57	12.73
ZMAX	621395	25.16	36.22	13.63
ZMAX	621425	29.16	36.24	13.63
ZMAX	621450	23.16	36.32	14.78
ZMAX	621500	25.73	36.19	19.00
ZMAX	621550	26.37	36.19	22.20
ZMAX	621600	29.66	36.20	19.00
ZMAX	621625	25.16	36.75	13.92
ZMAX	621630	33.16	36.79	13.93
ZMAX	621650	27.16	37.14	13.52
ZMAX	621675	28.46	37.87	12.85
ZMAX	621700	31.36	37.15	13.55
ZMAX	621715	36.46	39.32	13.03
ZMAX	621725	36.59	41.25	14.82
ZMAX	621750	42.56	44.76	12.82
ZMAX	621775	29.76	39.04	12.55
ZMAX	621800	30.96	39.09	12.55
ZMAX	621825	32.96	39.10	12.55
ZMAX	621850	34.16	44.94	13.95
ZMAX	621875	34.16	44.93	14.00
ZMAX	621900	31.36	36.20	22.20
ZMAX	621950	41.46	44.95	14.85
ZMAX	622400	30.17	34.59	40.10
ZMAX	622500	30.12	35.35	15.55
ZMAX	622600	31.16	36.25	15.77
ZMAX	622700	31.26	36.89	15.53
ZMAX	622800	31.31	37.38	13.98

ZMAX	622850	31.31	39.69	13.13
ZMAX	622900	31.69	36.95	14.37
ZMAX	622925	34.36	37.01	17.23
ZMAX	622950	34.16	36.89	15.58
ZMAX	623140	24.91	34.98	30.73
ZMAX	623150	26.46	35.47	28.43
ZMAX	623160	26.56	35.99	25.93
ZMAX	623170	24.16	36.99	24.80
ZMAX	623190	29.16	38.04	21.02
ZMAX	623200	32.49	39.11	13.87
ZMAX	623210	33.29	40.06	14.35
ZMAX	623215	32.49	39.51	16.05
ZMAX	623220	34.64	41.00	15.42
ZMAX	623225	34.89	41.50	15.53
ZMAX	623230	34.99	42.23	15.47
ZMAX	623240	35.33	42.86	15.35
ZMAX	623243	38.96	45.04	13.75
ZMAX	623244	40.66	45.67	13.28
ZMAX	623245	37.16	45.65	13.27
ZMAX	623247	43.16	48.09	13.35
ZMAX	623248	43.16	48.25	13.33
ZMAX	623250	29.16	43.42	15.85
ZMAX	623270	34.16	43.81	14.95
ZMAX	623300	28.60	37.60	21.63
ZMAX	623305	28.55	37.33	23.10
ZMAX	623307	27.74	37.15	24.52
ZMAX	623310	30.71	38.60	13.28
ZMAX	623320	33.30	39.25	12.78
ZMAX	623330	36.66	41.75	24.57
ZMAX	623340	36.79	41.76	24.57
ZMAX	623350	36.96	41.76	24.57
ZMAX	623360	34.16	41.76	24.57
ZMAX	623370	37.33	42.41	13.63
ZMAX	623380	37.74	42.42	13.67
ZMAX	623390	36.66	42.44	15.40
ZMAX	623400	29.26	39.16	13.43
ZMAX	623430	29.34	39.36	13.88
ZMAX	623450	32.65	39.60	13.37
ZMAX	623500	32.95	40.25	13.22
ZMAX	623510	34.66	40.57	14.02
ZMAX	623550	33.22	40.65	12.83
ZMAX	623600	34.16	41.11	13.07
ZMAX	623650	34.19	41.01	13.03
ZMAX	623700	34.69	40.53	16.63
ZMAX	623725	35.86	40.55	17.08
ZMAX	623750	37.62	41.64	13.40
ZMAX	623800	39.08	41.99	13.22
ZMAX	623850	40.01	42.56	13.23
ZMAX	623900	39.16	45.63	15.07
ZMAX	624010	22.16	31.78	59.97
ZMAX	624030	23.27	32.46	55.47
ZMAX	624040	23.69	32.71	55.30
ZMAX	624050	23.92	33.00	55.28
ZMAX	624060	24.29	33.53	55.28
ZMAX	624070	24.61	34.07	54.15

ZMAX	624080	21.16	34.18	48.25
ZMAX	624090	25.16	34.18	48.25
ZMAX	624100	33.16	37.22	13.40
ZMAX	624190	22.20	34.59	40.30
ZMAX	624200	25.96	34.59	40.63
ZMAX	624210	29.67	34.59	40.75
ZMAX	624220	27.66	34.59	40.63
ZMAX	624230	25.16	34.59	40.63
ZMAX	624250	33.76	35.43	24.95
ZMAX	624260	26.41	34.59	40.57
ZMAX	624270	26.46	34.59	40.78
ZMAX	624280	31.31	34.59	40.68
ZMAX	624290	33.16	35.44	12.70
ZMAX	624300	30.41	34.59	40.63
ZMAX	624310	32.16	34.59	40.63
ZMAX	624320	26.56	34.59	40.57
ZMAX	624325	22.06	34.59	40.93
ZMAX	624330	27.56	34.59	40.93
ZMAX	624340	32.66	37.45	13.28
ZMAX	624350	32.59	34.59	41.02
ZMAX	624360	30.66	35.38	12.98
ZMAX	624370	32.74	36.70	13.53
ZMAX	624380	31.61	36.78	13.32
ZMAX	624390	32.74	36.83	13.25
ZMAX	624400	34.91	37.19	12.72
ZMAX	624410	35.66	37.59	12.58
ZMAX	624420	36.76	37.90	12.80
ZMAX	624430	35.66	37.57	12.60
ZMAX	624440	36.66	37.42	12.83
ZMAX	624450	31.66	37.30	13.35
ZMAX	624460	32.66	38.20	13.57
ZMAX	624470	32.66	39.58	13.45
ZMAX	624480	25.16	34.59	40.18
ZMAX	624490	26.76	34.59	40.20
ZMAX	624520	20.96	34.59	41.92
ZMAX	624530	22.46	34.59	41.92
ZMAX	624540	23.66	34.59	42.10
ZMAX	624550	24.76	34.59	41.17
ZMAX	624560	25.46	34.59	41.08
ZMAX	624570	31.86	34.59	41.08
ZMAX	625150	28.60	35.82	25.87
ZMAX	625200	23.26	35.86	25.58
ZMAX	625300	29.27	35.86	26.00
ZMAX	625400	53.36	54.89	13.10
ZMAX	625500	23.36	35.87	25.32
ZMAX	625600	25.66	36.04	14.95
ZMAX	625650	27.96	36.69	15.22
ZMAX	625700	27.06	36.74	14.35
ZMAX	625800	31.66	53.06	13.67
ZMAX	625900	28.16	36.82	15.23
ZMAX	626000	35.15	38.87	15.48
ZMAX	626200	26.16	27.96	12.00
ZMAX	626300	25.66	36.53	22.23
ZMAX	626350	40.96	46.83	12.75
ZMAX	626400	43.16	46.86	12.75

ZMAX	626500	44.16	53.50	20.97
ZMAX	626600	65.66	67.85	12.58
ZMAX	626700	44.16	57.06	12.85
ZMAX	626900	27.76	38.18	12.92
ZMAX	626950	27.86	38.84	13.10
ZMAX	627000	33.36	38.61	17.98
ZMAX	627100	32.36	38.89	13.12
ZMAX	627200	26.76	36.55	22.20
ZMAX	627300	28.66	39.23	12.70
ZMAX	627400	31.66	41.37	12.75
ZMAX	627450	32.16	39.70	14.30
ZMAX	627500	51.66	55.07	12.55
ZMAX	627600	30.16	39.75	14.37
ZMAX	627700	30.16	39.85	14.38
ZMAX	555555	80.00	80.00	0.00
ZMAX	201151	34.16	36.18	16.50
ZMAX	555554	80.00	80.00	0.00
ZMAX	555553	80.00	80.00	0.00
ZMAX	555552	80.00	80.00	0.00
ZMAX	555559	80.00	80.00	0.00
ZMAX	577777	80.00	80.00	0.00
ZMAX	566666	80.00	80.00	0.00
ZMAX	566665	80.00	80.00	0.00
ZMAX	544444	80.00	80.00	0.00
ZMAX	533333	80.00	80.00	0.00
ZMAX	629720	22.49	30.16	24.00
ZMAX	629721	22.49	30.16	24.00
ZMAX	629735	22.79	31.61	39.57
ZMAX	629740	24.02	33.23	13.53
ZMAX	629760	25.08	35.76	13.63
ZMAX	629780	26.80	38.22	14.05
ZMAX	629800	28.82	38.35	14.05
ZMAX	629820	31.59	38.37	14.07
ZMAX	629825	32.88	38.38	14.07
ZMAX	629840	34.55	38.88	13.12
ZMAX	629841	34.69	38.71	13.62
ZMAX	629842	35.48	38.80	13.63
ZMAX	629860	37.19	41.73	13.72
ZMAX	629880	32.16	39.29	24.97
ZMAX	629900	22.16	38.89	15.53
ZMAX	629920	27.02	36.56	12.83
ZMAX	629925	29.73	37.68	12.97
ZMAX	629940	31.43	38.88	13.13
ZMAX	629960	37.86	39.48	14.50
ZMAX	555557	80.00	80.00	0.00
ZMAX	555556	80.00	80.00	0.00
ZMAX	629000	21.46	29.36	12.00
ZMAX	629100	21.66	31.61	13.17
ZMAX	629200	29.96	33.41	13.62
ZMAX	629300	27.16	31.28	14.02
ZMAX	629400	24.16	37.98	25.52
ZMAX	629500	25.49	32.01	13.18
ZMAX	629600	32.37	36.23	12.67
ZMAX	629700	39.16	54.39	13.40
ZMAX	628500	21.16	28.06	12.00

ZMAX	628550	23.78	28.06	12.00
ZMAX	628600	24.36	27.95	12.38
ZMAX	628650	24.96	27.95	12.42
ZMAX	628699	25.39	30.58	25.55
ZMAX	628700	26.46	30.62	25.55
ZMAX	628750	25.24	35.36	14.15
ZMAX	628800	23.16	34.86	14.15
ZMAX	628760	24.16	34.94	14.08
ZMAX	628850	29.16	34.92	14.22
ZMAX	628840	25.46	34.96	14.60
ZMAX	628830	25.46	34.15	15.58
ZMAX	628820	25.36	33.87	16.85
ZMAX	628810	26.66	32.98	19.30
ZMAX	628729	29.16	32.62	13.17
ZMAX	628730	29.16	32.83	13.15
ZMAX	628720	23.66	30.63	25.20
ZMAX	628710	24.16	30.63	25.03
ZMAX	628669	25.49	29.07	14.18
ZMAX	628670	24.16	29.10	14.18
ZMAX	628679	25.30	27.92	15.58
ZMAX	628680	25.16	27.95	15.70
ZMAX	628684	25.96	29.67	13.10
ZMAX	628685	24.16	29.75	13.10
ZMAX	628689	26.66	32.66	12.73
ZMAX	628690	29.16	32.71	12.73
ZMAX	628860	23.16	34.86	14.15
ZMAX	628660	25.30	27.97	12.42
ZMAX	628000	20.66	28.06	12.00
ZMAX	628100	21.83	27.96	12.35
ZMAX	628150	23.13	27.77	12.45
ZMAX	628200	18.75	28.04	25.30
ZMAX	628250	18.93	28.12	24.85
ZMAX	628300	26.96	29.87	24.67
ZMAX	628350	22.91	30.71	20.68
ZMAX	628400	23.61	31.12	19.25
ZMAX	628450	28.46	34.60	15.87
ZMAX	628270	23.78	34.14	13.82
ZMAX	628310	24.26	29.88	24.67
ZMAX	628160	23.86	27.61	14.65
ZMAX	628420	26.16	32.79	13.02
ZMAX	628110	22.03	27.79	12.47
ZMAX	648950	22.41	31.68	61.95
ZMAX	648900	21.16	31.67	62.05
ZMAX	648870	21.89	31.43	69.55
ZMAX	648750	19.95	31.43	69.58
ZMAX	648730	18.28	31.16	71.95
ZMAX	648700	21.26	31.16	71.98
ZMAX	648200	28.16	39.98	13.85
ZMAX	648000	25.16	39.90	13.63
ZMAX	647990	29.46	39.80	13.63
ZMAX	647950	29.01	39.55	13.63
ZMAX	647900	28.00	39.35	13.63
ZMAX	647902	26.31	34.68	13.97
ZMAX	647904	25.16	33.39	14.18
ZMAX	647906	23.94	32.14	14.68

ZMAX	647800	20.99	30.84	17.93
ZMAX	647805	26.16	32.82	18.13
ZMAX	647810	25.26	31.10	12.93
ZMAX	647500	17.16	30.53	71.98
ZMAX	647400	18.16	30.52	71.98
ZMAX	647402	16.91	30.44	71.98
ZMAX	647404	18.68	30.34	71.98
ZMAX	647406	18.35	30.26	16.38
ZMAX	647000	14.16	30.47	71.98
ZMAX	646900	19.02	30.27	16.08
ZMAX	646905	25.16	33.27	16.70
ZMAX	646500	16.16	31.76	14.88
ZMAX	646502	18.92	30.58	15.32
ZMAX	646504	18.84	30.85	15.15
ZMAX	646506	18.36	31.16	15.02
ZMAX	646508	18.48	31.46	14.93
ZMAX	646490	21.96	37.27	13.82
ZMAX	555558	80.00	80.00	0.00
ZMAX	645000	17.76	21.66	0.00
ZMAX	645079	19.66	33.22	13.33
ZMAX	645099	20.16	34.86	13.28
ZMAX	646000	22.66	36.50	13.82
ZMAX	646029	23.00	36.76	14.00
ZMAX	646039	23.88	36.97	14.02

	PIPE_ID	FROM	TO	SIZE(INCH)	LENGTH	INV_U	ZMAXU	INV_D	ZMAXD	QMAX	VMAX	TMAX
QMAX	1620120	620120	620115	36.	100.	35.16	38.38	35.06	37.94	119.30	4.29	14.45
QMAX	1620200	620200	620120	36.	100.	36.76	40.22	35.16	38.38	61.76	8.83	13.35
QMAX	2620200	620200	620120	36.	100.	36.76	40.22	35.16	38.38	61.76	8.83	13.35
QMAX	1620250	620250	620200	34.	174.	36.21	40.67	36.01	40.22	54.95	5.30	12.78
QMAX	1620260	620260	620200	29.	105.	38.26	43.49	38.16	40.22	71.71	9.79	12.92
QMAX	1620400	620400	620200	34.	130.	39.86	41.81	39.66	40.22	25.90	4.31	16.25
QMAX	2620400	620400	620200	34.	130.	39.86	41.81	39.66	40.22	25.90	4.31	16.25
QMAX	9620410	620410	620400	240.	1400.	38.86	41.84	33.56	41.81	31.21	0.20	19.70
QMAX	9620450	620450	620410	240.	550.	40.66	42.42	38.86	41.84	30.88	0.71	19.70
QMAX	1620460	620460	620450	38.	110.	38.06	42.43	37.94	42.42	36.54	3.86	12.58
QMAX	2620460	620460	620450	38.	110.	38.06	42.43	37.94	42.42	36.54	3.86	12.58
QMAX	1620470	620470	620460	36.	310.	38.86	42.57	38.06	42.43	22.99	3.13	13.97
QMAX	2620470	620470	620460	36.	310.	38.86	42.57	38.06	42.43	22.99	3.13	13.97
QMAX	1620480	620480	620470	36.	333.	40.06	42.95	38.86	42.57	23.10	3.78	13.97
QMAX	2620480	620480	620470	36.	333.	40.06	42.95	38.86	42.57	23.10	3.78	13.97
QMAX	1620600	620600	620480	24.	100.	41.29	44.43	40.01	42.95	23.63	7.49	13.53
QMAX	2620600	620600	620480	24.	100.	41.29	44.43	40.01	42.95	23.63	7.49	13.53
QMAX	5620200	555555	620200	120.	100.	80.00	80.00	33.16	40.22	0.00	0.00	0.00
QMAX	5620600	555555	620600	120.	100.	80.00	80.00	35.16	44.43	0.00	0.00	0.00
QMAX	5620650	555555	620650	120.	100.	80.00	80.00	35.16	44.91	0.00	0.00	0.00
QMAX	5620300	555555	620300	120.	100.	80.00	80.00	29.16	39.10	0.00	0.00	0.00
QMAX	5620115	620115	201151	120.	100.	35.06	37.94	34.16	36.18	119.35	5.58	14.45
QMAX	1621050	621050	624190	54.	280.	22.22	34.62	22.20	34.59	62.45	3.91	12.92
QMAX	1621075	621075	621050	24.	96.	26.50	34.61	26.30	34.62	18.72	5.92	12.58
QMAX	1621150	621150	621075	24.	340.	28.22	34.61	26.55	34.61	11.19	3.48	11.70
QMAX	1621200	621200	621150	24.	295.	29.62	34.61	28.16	34.61	9.31	3.07	10.85
QMAX	1621250	621250	621050	54.	2030.	23.76	36.02	22.17	34.62	78.11	4.88	12.78
QMAX	1621350	621350	621275	60.	130.	24.04	36.15	23.94	36.07	90.53	4.59	12.67
QMAX	1621375	621375	621275	60.	130.	24.13	36.17	23.94	36.07	128.63	6.51	12.67
QMAX	2621375	621375	621350	60.	130.	24.13	36.17	24.04	36.15	91.44	4.63	12.67

QMAX	1621395	621395	621375	42.	175.	25.63	36.22	24.13	36.17	58.02	5.96	13.05
QMAX	1621450	621450	621375	72.	975.	24.37	36.32	24.13	36.17	162.53	3.85	13.53
QMAX	1621500	621500	621450	42.	110.	25.82	36.19	25.65	36.32	-38.91	-4.00	13.70
QMAX	1621550	621550	621500	36.	110.	26.37	36.19	25.73	36.19	36.23	5.08	12.50
QMAX	1621600	621600	621500	18.	120.	29.66	36.20	29.13	36.19	11.39	6.39	12.25
QMAX	1621625	621625	621450	66.	1532.	26.66	36.75	25.06	36.32	123.44	5.18	12.42
QMAX	1621650	621650	621625	60.	672.	27.46	37.14	26.66	36.75	96.07	4.87	12.33
QMAX	1621675	621675	621650	54.	360.	28.46	37.87	27.96	37.14	81.54	5.10	12.32
QMAX	1621700	621700	621650	18.	123.	31.36	37.15	30.46	37.14	9.65	5.50	12.10
QMAX	1621725	621725	621715	18.	100.	36.59	41.25	36.46	39.32	11.56	6.48	14.47
QMAX	1621775	621775	621675	48.	498.	29.76	39.04	28.96	37.87	66.49	5.25	12.45
QMAX	1621800	621800	621775	42.	326.	30.96	39.09	30.26	39.04	-17.74	3.14	12.23
QMAX	1621825	621825	621800	36.	672.	32.96	39.10	31.46	39.09	-21.52	-3.06	12.25
QMAX	1621850	621850	621825	30.	1833.	34.16	44.94	33.46	39.10	25.86	5.20	14.20
QMAX	1621900	621900	621550	24.	564.	31.36	36.20	30.22	36.19	10.85	4.07	12.20
QMAX	5621125	555554	621125	120.	100.	80.00	80.00	22.56	34.61	0.00	0.00	0.00
QMAX	5621225	555554	621225	120.	100.	80.00	80.00	30.46	34.61	0.00	0.00	0.00
QMAX	5621250	555554	621250	120.	100.	80.00	80.00	23.16	36.02	0.00	0.00	0.00
QMAX	5621275	555554	621275	120.	100.	80.00	80.00	23.16	36.07	0.00	0.00	0.00
QMAX	5621300	555554	621300	120.	100.	80.00	80.00	32.36	35.53	0.00	0.00	0.00
QMAX	5621325	555554	621325	120.	100.	80.00	80.00	32.46	34.92	0.00	0.00	0.00
QMAX	5621350	555554	621350	120.	100.	80.00	80.00	23.16	36.15	0.00	0.00	0.00
QMAX	5621375	555554	621375	120.	100.	80.00	80.00	23.16	36.17	0.00	0.00	0.00
QMAX	5621390	555554	621390	120.	100.	80.00	80.00	35.56	36.57	0.00	0.00	0.00
QMAX	5621395	555554	621395	120.	100.	80.00	80.00	25.16	36.22	0.00	0.00	0.00
QMAX	5621425	555553	621425	120.	100.	80.00	80.00	29.16	36.24	0.00	0.00	0.00
QMAX	5621450	555553	621450	120.	100.	80.00	80.00	23.16	36.32	0.00	0.00	0.00
QMAX	5621550	555553	621550	120.	100.	80.00	80.00	26.37	36.19	0.00	0.00	0.00
QMAX	5621625	555553	621625	120.	100.	80.00	80.00	25.16	36.75	0.00	0.00	0.00
QMAX	5621630	555553	621630	120.	100.	80.00	80.00	33.16	36.79	0.00	0.00	0.00
QMAX	5621650	555553	621650	120.	100.	80.00	80.00	27.16	37.14	0.00	0.00	0.00
QMAX	5621715	555552	621715	120.	100.	80.00	80.00	36.46	39.32	0.00	0.00	0.00
QMAX	5621875	555552	621875	120.	100.	80.00	80.00	34.16	44.93	0.00	0.00	0.00
QMAX	5621900	555552	621900	120.	100.	80.00	80.00	31.36	36.20	0.00	0.00	0.00
QMAX	5621750	555552	621750	120.	100.	80.00	80.00	42.56	44.76	0.00	0.00	0.00
QMAX	5621950	555552	621950	120.	100.	80.00	80.00	41.46	44.95	0.00	0.00	0.00
QMAX	5621100	555552	621100	120.	100.	80.00	80.00	31.16	34.61	0.00	0.00	0.00
QMAX	1622400	622400	624190	54.	100.	30.17	34.59	29.24	34.59	100.95	7.76	15.23
QMAX	1622500	622500	622400	36.	660.	31.27	35.35	30.17	34.59	34.22	4.84	12.57
QMAX	1622600	622600	622500	48.	102.	31.16	36.25	30.12	35.35	61.75	4.90	16.10
QMAX	1622700	622700	622600	48.	102.	32.66	36.89	31.36	36.25	61.62	4.84	13.40
QMAX	1622800	622800	622700	36.	100.	31.31	37.38	31.26	36.89	50.06	6.23	12.83
QMAX	1622900	622900	622600	12.	140.	31.69	36.95	31.46	36.25	3.96	4.95	25.65
QMAX	5622850	555559	622850	120.	100.	80.00	80.00	31.31	39.69	0.00	0.00	0.00
QMAX	5622925	555559	622925	120.	100.	80.00	80.00	34.36	37.01	0.00	0.00	0.00
QMAX	5622950	555559	622950	120.	100.	80.00	80.00	34.16	36.89	0.00	0.00	0.00
QMAX	1623140	623140	624190	72.	770.	24.91	34.98	24.53	34.59	203.08	4.22	21.45
QMAX	1623150	623150	623140	72.	370.	26.46	35.47	24.91	34.98	210.48	4.37	21.13
QMAX	1623160	623160	623150	72.	305.	26.56	35.99	26.46	35.47	210.25	4.37	21.10
QMAX	1623170	623170	623160	60.	480.	27.56	36.99	26.56	35.99	211.15	5.26	21.05
QMAX	1623190	623190	623170	72.	848.	32.04	38.04	29.37	36.99	230.87	8.42	15.30
QMAX	1623200	623200	623190	72.	475.	32.49	39.11	32.04	38.04	247.62	8.00	13.87
QMAX	1623215	623215	623200	15.	106.	37.86	39.51	37.26	39.11	3.81	3.41	17.77
QMAX	1623210	623210	623200	72.	800.	33.29	40.06	32.49	39.11	184.53	4.92	15.80
QMAX	1623220	623220	623210	60.	352.	34.64	41.00	34.29	40.06	167.63	6.85	15.77

QMAX	1623225	623225	623220	60.	248.	34.89	41.50	34.64	41.00	141.38	4.42	18.38
QMAX	1623230	623230	623225	60.	224.	34.99	42.23	34.89	41.50	137.62	5.32	18.42
QMAX	1623240	623240	623230	60.	335.	35.33	42.86	35.00	42.23	122.97	4.85	20.93
QMAX	1623250	623250	623240	60.	311.	35.66	43.42	35.33	42.86	119.64	4.62	12.98
QMAX	1623270	623270	623250	48.	100.	34.66	43.81	34.03	43.42	91.60	4.45	14.43
QMAX	1623307	623307	623170	66.	252.	27.74	37.15	27.56	36.99	155.49	7.54	13.10
QMAX	1623305	623305	623307	66.	268.	28.55	37.33	27.74	37.15	155.50	6.33	13.08
QMAX	1623300	623300	623305	60.	200.	28.60	37.60	28.55	37.33	155.54	7.90	13.05
QMAX	1623310	623310	623300	60.	1055.	30.71	38.60	28.60	37.60	113.88	5.79	14.18
QMAX	1623320	623320	623310	30.	240.	33.30	39.25	31.48	38.60	27.37	5.53	12.50
QMAX	1623330	623330	623320	24.	560.	36.66	41.75	33.47	39.25	12.49	4.09	39.93
QMAX	1623340	623340	623330	12.	120.	36.79	41.76	36.66	41.75	3.18	4.13	7.32
QMAX	1623350	623350	623330	24.	440.	36.96	41.76	36.66	41.75	-6.25	-1.95	12.27
QMAX	1623360	623360	623350	15.	120.	38.15	41.76	38.10	41.76	-1.97	-2.17	12.37
QMAX	1623370	623370	623340	24.	570.	37.45	42.41	36.79	41.76	6.55	2.07	13.47
QMAX	1623380	623380	623370	36.	100.	37.74	42.42	37.33	42.41	12.88	1.81	12.52
QMAX	1623390	623390	623380	18.	100.	39.27	42.44	39.19	42.42	2.91	1.64	20.60
QMAX	1623400	623400	623310	60.	580.	31.87	39.16	30.71	38.60	92.91	4.72	14.30
QMAX	1623430	623430	623400	42.	122.	29.34	39.36	29.26	39.16	42.45	4.36	14.32
QMAX	1623450	623450	623400	54.	380.	32.65	39.60	31.87	39.16	73.33	4.60	12.48
QMAX	1623500	623500	623450	48.	305.	32.95	40.25	32.65	39.60	63.15	4.98	12.18
QMAX	1623510	623510	623500	24.	300.	34.66	40.57	33.00	40.25	-11.48	-3.62	12.47
QMAX	1623550	623550	623500	48.	235.	33.22	40.65	32.95	40.25	47.49	3.77	12.35
QMAX	1623600	623600	623550	42.	425.	34.19	41.11	33.22	40.65	38.87	4.03	12.15
QMAX	1623650	623650	623600	30.	120.	34.19	41.01	34.16	41.11	15.39	3.12	27.08
QMAX	1623700	623700	623650	30.	236.	34.69	40.53	34.19	41.01	-22.92	-4.63	12.57
QMAX	1623725	623725	623700	30.	414.	35.86	40.55	34.69	40.53	-14.49	-2.88	12.40
QMAX	1623750	623750	623600	42.	700.	37.62	41.64	35.03	41.11	31.54	3.47	14.38
QMAX	1623800	623800	623750	36.	310.	39.08	41.99	37.62	41.64	26.27	4.30	12.62
QMAX	1623850	623850	623800	30.	310.	40.01	42.56	39.08	41.99	17.26	4.44	12.57
QMAX	1623900	623900	623850	18.	173.	41.77	45.63	40.51	42.56	13.80	7.92	15.37
QMAX	1623247	623247	623244	18.	450.	43.16	48.09	42.36	45.67	7.87	4.41	15.13
QMAX	1623244	623244	623243	18.	520.	40.66	45.67	38.96	45.04	9.01	4.97	27.00
QMAX	1623243	623243	623240	24.	102.	38.96	45.04	38.84	42.86	36.36	11.26	13.07
QMAX	5623170	577777	623170	120.	100.	80.00	80.00	24.16	36.99	0.00	0.00	0.00
QMAX	5623190	577777	623190	120.	100.	80.00	80.00	29.16	38.04	0.00	0.00	0.00
QMAX	5623215	577777	623215	120.	100.	80.00	80.00	32.49	39.51	0.00	0.00	0.00
QMAX	5623254	577777	623244	120.	100.	80.00	80.00	40.66	45.67	0.00	0.00	0.00
QMAX	5623250	577777	623250	120.	100.	80.00	80.00	29.16	43.42	0.00	0.00	0.00
QMAX	5623270	577777	623270	120.	100.	80.00	80.00	34.16	43.81	0.00	0.00	0.00
QMAX	5623360	577777	623360	120.	100.	80.00	80.00	34.16	41.76	0.00	0.00	0.00
QMAX	5623390	577777	623390	120.	100.	80.00	80.00	36.66	42.44	0.00	0.00	0.00
QMAX	5623900	577777	623900	120.	100.	80.00	80.00	39.16	45.63	0.00	0.00	0.00
QMAX	5623248	577777	623248	120.	100.	80.00	80.00	43.16	48.25	0.00	0.00	0.00
QMAX	5623245	577777	623245	120.	100.	80.00	80.00	37.16	45.65	0.00	0.00	0.00
QMAX	1624010	648950	624010	54.	14.	22.41	31.68	22.16	31.78	-33.62	-2.10	48.27
QMAX	1624030	624030	624010	48.	143.	23.27	32.46	22.46	31.78	74.36	4.62	44.58
QMAX	1624040	624040	624030	48.	428.	23.78	32.71	23.52	32.46	28.57	2.26	38.17
QMAX	2624040	624040	624030	48.	428.	23.69	32.71	23.44	32.46	28.57	2.26	38.17
QMAX	1624050	624050	624040	48.	441.	23.95	33.00	23.78	32.71	30.17	2.38	40.98
QMAX	2624050	624050	624040	48.	441.	23.92	33.00	23.78	32.71	30.18	2.38	40.98
QMAX	1624060	624060	624050	48.	430.	24.30	33.53	24.03	33.00	40.77	3.22	48.25
QMAX	2624060	624060	624050	48.	430.	24.29	33.53	24.03	33.00	40.77	3.22	48.25
QMAX	1624070	624070	624060	48.	440.	24.70	34.07	24.36	33.53	40.78	3.22	48.25
QMAX	2624070	624070	624060	48.	440.	24.61	34.07	24.47	33.53	40.77	3.22	48.25

QMAX	1624190	624190	624080	72.	1480.	22.56	34.59	22.46	34.18	-74.68	-2.61	13.00
QMAX	1624090	624090	624080	72.	100.	25.16	34.18	25.06	34.18	218.90	8.45	12.72
QMAX	1624200	624200	624190	72.	620.	25.96	34.59	25.65	34.59	160.93	6.99	13.25
QMAX	1624210	624210	624200	30.	104.	29.67	34.59	29.06	34.59	32.39	6.81	13.88
QMAX	1624220	624220	624200	29.	96.	27.66	34.59	26.66	34.59	-34.28	-4.61	18.00
QMAX	1624260	624260	624200	72.	460.	26.41	34.59	26.36	34.59	-135.61	-6.36	14.12
QMAX	1624270	624270	624260	48.	101.	26.46	34.59	26.41	34.59	33.97	1.59	12.57
QMAX	1624280	624280	624270	24.	105.	31.31	34.59	30.96	34.59	14.06	4.22	12.78
QMAX	1624300	624300	624270	29.	246.	30.41	34.59	29.96	34.59	23.04	4.50	12.53
QMAX	1624320	624320	624260	24.	410.	26.56	34.59	26.46	34.59	14.55	4.56	12.05
QMAX	1624330	624330	624320	18.	470.	27.56	34.59	26.56	34.59	6.68	3.73	14.08
QMAX	1624370	624370	624350	18.	105.	32.74	36.70	32.59	34.59	10.26	5.90	13.20
QMAX	1624380	624370	624380	24.	102.	32.74	36.70	31.61	36.78	-8.10	-2.56	12.65
QMAX	1624390	624390	624380	19.	170.	32.74	36.83	31.61	36.78	4.07	1.41	12.68
QMAX	1624400	624400	624390	18.	735.	34.91	37.19	33.16	36.83	2.98	1.68	12.57
QMAX	1624460	624460	624450	24.	102.	32.66	38.20	31.66	37.30	18.29	5.76	13.63
QMAX	1624480	624480	624190	24.	100.	25.16	34.59	25.01	34.59	-11.52	-3.60	15.85
QMAX	1624530	624530	624520	60.	682.	22.46	34.59	20.96	34.59	50.74	2.57	12.50
QMAX	1624540	624540	624530	48.	550.	23.66	34.59	22.46	34.59	44.02	3.48	12.50
QMAX	1624550	624550	624530	42.	650.	24.76	34.59	23.86	34.59	33.69	3.48	13.25
QMAX	1624560	624560	624550	42.	600.	25.46	34.59	24.76	34.59	61.03	6.30	12.87
QMAX	5624100	566666	624100	120.	100.	80.00	80.00	33.16	37.22	0.00	0.00	0.00
QMAX	5624250	566666	624250	120.	100.	80.00	80.00	33.76	35.43	0.00	0.00	0.00
QMAX	5624290	566666	624290	120.	100.	80.00	80.00	33.16	35.44	0.00	0.00	0.00
QMAX	5624310	566666	624310	120.	100.	80.00	80.00	32.16	34.59	0.00	0.00	0.00
QMAX	5624325	566666	624325	120.	100.	80.00	80.00	22.06	34.59	0.00	0.00	0.00
QMAX	5624410	566666	624410	120.	100.	80.00	80.00	35.66	37.59	0.00	0.00	0.00
QMAX	5624420	566666	624420	120.	100.	80.00	80.00	36.76	37.90	0.00	0.00	0.00
QMAX	5624430	566666	624430	120.	100.	80.00	80.00	35.66	37.57	0.00	0.00	0.00
QMAX	5624440	566666	624440	120.	100.	80.00	80.00	36.66	37.42	0.00	0.00	0.00
QMAX	5624470	566666	624470	120.	100.	80.00	80.00	32.66	39.58	0.00	0.00	0.00
QMAX	5624080	566665	624080	120.	100.	80.00	80.00	21.16	34.18	0.00	0.00	0.00
QMAX	5624490	566665	624490	120.	100.	80.00	80.00	26.76	34.59	0.00	0.00	0.00
QMAX	5624360	566665	624360	120.	100.	80.00	80.00	30.66	35.38	0.00	0.00	0.00
QMAX	5624570	566665	624570	120.	100.	80.00	80.00	31.86	34.59	0.00	0.00	0.00
QMAX	5624340	566665	624340	120.	100.	80.00	80.00	32.66	37.45	0.00	0.00	0.00
QMAX	5624230	566665	624230	120.	100.	80.00	80.00	25.16	34.59	0.00	0.00	0.00
QMAX	1625150	625150	624080	14.	141.	28.60	35.82	27.70	34.18	35.55	6.43	22.65
QMAX	1625300	625300	625200	24.	145.	29.27	35.86	29.05	35.86	19.99	3.83	12.78
QMAX	2625300	625300	625200	24.	145.	29.27	35.86	29.05	35.86	19.99	3.83	12.78
QMAX	1625500	625500	625200	60.	100.	23.36	35.87	23.26	35.86	210.03	4.64	13.75
QMAX	1625600	625600	625500	48.	450.	25.66	36.04	24.56	35.87	190.01	5.89	14.22
QMAX	1625650	625650	625600	42.	100.	27.96	36.69	27.86	36.04	52.32	5.39	15.55
QMAX	2625650	625650	625600	42.	100.	27.96	36.69	27.86	36.04	52.32	5.39	15.55
QMAX	1625700	625700	625600	48.	352.	27.06	36.74	25.66	36.04	132.82	5.50	13.62
QMAX	1625800	625800	625700	42.	765.	31.66	53.06	28.66	36.74	134.38	13.70	13.58
QMAX	1626000	626000	625900	24.	110.	35.15	38.87	34.86	36.82	22.80	7.42	15.48
QMAX	1626300	626300	626200	42.	128.	26.26	36.53	26.16	27.96	92.80	12.60	22.23
QMAX	1626350	626350	626300	18.	105.	40.96	46.83	40.86	36.53	18.40	10.32	12.75
QMAX	1626950	626950	626900	38.	160.	27.86	38.84	27.76	38.18	72.85	5.60	13.43
QMAX	1627200	627200	626300	84.	100.	26.76	36.55	26.56	36.53	470.12	9.54	12.68
QMAX	1627300	627300	627200	72.	950.	28.66	39.23	26.76	36.55	384.06	9.12	12.72
QMAX	1627400	627400	627300	60.	950.	32.06	41.37	28.66	39.23	217.48	7.24	13.33
QMAX	1627450	627450	627400	36.	290.	32.16	39.70	31.66	41.37	-55.64	-7.79	12.73
QMAX	1627700	627700	627600	36.	104.	32.16	39.85	32.06	39.75	-13.70	-1.93	12.85

QMAX	5625400	544444	625400	120.	100.	80.00	80.00	53.36	54.89	0.00	0.00	0.00
QMAX	5625900	544444	625900	120.	100.	80.00	80.00	28.16	36.82	0.00	0.00	0.00
QMAX	5626300	544444	626300	192.	100.	80.00	80.00	25.66	36.53	0.00	0.00	0.00
QMAX	5626400	544444	626400	120.	100.	80.00	80.00	43.16	46.86	0.00	0.00	0.00
QMAX	5626500	544444	626500	120.	100.	80.00	80.00	44.16	53.50	0.00	0.00	0.00
QMAX	5626600	544444	626600	120.	100.	80.00	80.00	65.66	67.85	0.00	0.00	0.00
QMAX	5626700	544444	626700	120.	100.	80.00	80.00	44.16	57.06	0.00	0.00	0.00
QMAX	5627000	544444	627000	120.	100.	80.00	80.00	33.36	38.61	0.00	0.00	0.00
QMAX	5627100	533333	627100	120.	100.	80.00	80.00	32.36	38.89	0.00	0.00	0.00
QMAX	5627500	533333	627500	120.	100.	80.00	80.00	51.66	55.07	0.00	0.00	0.00
QMAX	5627600	533333	627600	120.	100.	80.00	80.00	30.16	39.75	0.00	0.00	0.00
QMAX	5627700	533333	627700	120.	100.	80.00	80.00	30.16	39.85	0.00	0.00	0.00
QMAX	1629735	629735	629720	60.	144.	22.79	31.61	22.49	30.16	249.83	4.99	13.38
QMAX	1629740	629740	629735	60.	322.	24.02	33.23	22.79	31.61	189.34	9.61	13.53
QMAX	1629760	629760	629740	60.	500.	25.08	35.76	24.02	33.23	158.38	8.02	14.45
QMAX	1629780	629780	629760	60.	412.	26.82	38.22	26.04	35.76	152.96	7.74	14.45
QMAX	1629800	629800	629780	30.	318.	28.82	38.35	26.80	38.22	51.39	10.37	18.90
QMAX	1629820	629820	629800	30.	437.	31.59	38.37	28.82	38.35	30.13	6.48	28.25
QMAX	1629825	629825	629820	30.	204.	32.88	38.38	31.59	38.37	24.53	5.36	32.23
QMAX	1629840	629840	629825	30.	264.	34.55	38.88	32.88	38.38	33.05	6.65	12.10
QMAX	1629841	629841	629840	30.	100.	34.69	38.71	34.68	38.88	-11.68	-2.77	13.03
QMAX	2629841	629841	629825	24.	230.	34.86	38.71	33.06	38.38	19.00	6.03	12.20
QMAX	1629842	629842	629841	36.	300.	35.48	38.80	35.05	38.71	9.70	2.25	11.97
QMAX	1629860	629860	629842	30.	326.	37.19	41.73	35.40	38.80	33.69	6.84	13.80
QMAX	1629920	629920	629735	36.	505.	27.02	36.56	25.51	31.61	71.00	9.97	12.85
QMAX	1629925	629925	629920	30.	388.	29.73	37.68	27.43	36.56	33.85	6.85	15.33
QMAX	1629940	629940	629925	30.	375.	31.43	38.88	29.70	37.68	33.80	6.82	15.33
QMAX	5629880	555557	629880	60.	100.	80.00	80.00	32.16	39.29	0.00	0.00	0.00
QMAX	5629900	555557	629900	60.	100.	80.00	80.00	22.16	38.89	0.00	0.00	0.00
QMAX	1629100	629100	629000	48.	118.	21.66	31.61	21.46	29.36	107.82	8.51	13.17
QMAX	1629200	629200	629100	18.	65.	29.96	33.41	29.68	31.61	9.35	5.36	14.33
QMAX	1629500	629500	629100	24.	135.	25.49	32.01	24.76	31.61	12.23	3.85	12.53
QMAX	1629600	629600	629500	24.	84.	32.37	36.23	30.56	32.01	32.01	10.22	12.67
QMAX	5629500	555557	629500	60.	100.	80.00	80.00	26.16	32.01	0.00	0.00	0.00
QMAX	5629100	555557	629100	60.	100.	80.00	80.00	24.76	31.61	0.00	0.00	0.00
QMAX	9628550	628550	628500	600.	375.	23.78	28.06	21.16	28.06	58.51	1.87	18.43
QMAX	1628600	628600	628550	54.	24.	24.36	27.95	23.78	28.06	58.15	5.94	18.43
QMAX	9628650	628650	628600	600.	300.	24.96	27.95	24.36	27.95	57.09	1.61	18.87
QMAX	1628699	628699	628650	30.	260.	25.39	30.58	25.16	27.95	36.24	7.56	25.55
QMAX	1628750	628750	628700	36.	150.	26.66	35.36	26.46	30.62	86.53	12.65	14.40
QMAX	1628800	628750	628800	36.	150.	25.24	35.36	24.31	34.86	14.34	2.61	12.63
QMAX	1628760	628760	628750	30.	366.	27.80	34.94	25.35	35.36	43.15	8.72	12.67
QMAX	1628850	628850	628800	36.	200.	29.16	34.92	28.16	34.86	47.21	7.02	13.02
QMAX	1628840	628840	628800	36.	172.	25.46	34.96	25.16	34.86	75.65	10.62	12.67
QMAX	1628830	628830	628800	18.	170.	25.46	34.15	25.16	34.86	11.39	6.33	12.67
QMAX	1628820	628820	628800	18.	110.	25.36	33.87	25.16	34.86	11.07	6.17	12.67
QMAX	1628810	628810	628800	15.	40.	26.66	32.98	26.16	34.86	-13.22	-10.50	13.92
QMAX	1628729	628729	628700	24.	305.	29.16	32.62	28.24	30.62	17.61	5.85	13.17
QMAX	9628720	628720	628700	600.	50.	29.16	30.63	26.66	30.62	30.58	4.91	12.67
QMAX	9628710	628710	628700	600.	50.	29.16	30.63	26.66	30.62	19.91	3.12	17.43
QMAX	1628669	628669	628650	24.	270.	25.49	29.07	25.16	27.95	13.02	4.13	14.52
QMAX	1628679	628679	628650	24.	35.	25.30	27.92	25.16	27.95	-16.94	-5.70	12.30
QMAX	1628684	628684	628680	24.	30.	25.96	29.67	25.81	27.95	26.06	8.40	13.10
QMAX	1628689	628689	628685	24.	255.	26.66	32.66	25.64	29.75	20.77	6.55	12.62
QMAX	9628660	628660	628650	600.	500.	25.30	27.97	24.96	27.95	18.07	0.80	12.50

QMAX	5628860	555557	628860	60.	100.	80.00	80.00	23.16	34.86	0.00	0.00	0.00
QMAX	5628670	555557	628670	60.	100.	80.00	80.00	24.16	29.10	0.00	0.00	0.00
QMAX	5628760	555557	628760	60.	100.	80.00	80.00	24.16	34.94	0.00	0.00	0.00
QMAX	5628730	555557	628730	60.	100.	80.00	80.00	29.16	32.83	0.00	0.00	0.00
QMAX	5628710	555557	628710	60.	100.	80.00	80.00	24.16	30.63	0.00	0.00	0.00
QMAX	5628690	555557	628690	60.	100.	80.00	80.00	29.16	32.71	0.00	0.00	0.00
QMAX	5628685	555557	628685	60.	100.	80.00	80.00	24.16	29.75	0.00	0.00	0.00
QMAX	5628680	555557	628680	60.	100.	80.00	80.00	25.16	27.95	0.00	0.00	0.00
QMAX	5628720	555557	628720	67.	100.	80.00	80.00	23.66	30.63	0.00	0.00	0.00
QMAX	5629300	555556	629300	24.	100.	80.00	80.00	27.16	31.28	0.00	0.00	0.00
QMAX	5629960	555556	629960	24.	100.	80.00	80.00	37.86	39.48	0.00	0.00	0.00
QMAX	5629400	555556	629400	24.	100.	80.00	80.00	24.16	37.98	0.00	0.00	0.00
QMAX	5629700	555556	629700	24.	100.	80.00	80.00	39.16	54.39	0.00	0.00	0.00
QMAX	5628800	555556	628800	24.	100.	80.00	80.00	23.16	34.86	0.00	0.00	0.00
QMAX	1628100	628100	628000	54.	100.	21.83	27.96	20.66	28.06	-232.21	-3.57	12.00
QMAX	1628110	628110	628100	24.	96.	22.03	27.79	21.83	27.96	12.68	4.27	39.97
QMAX	1628150	628150	628100	54.	250.	22.96	27.77	22.16	27.96	43.03	3.87	24.58
QMAX	2628150	628150	628100	54.	250.	22.96	27.77	22.16	27.96	43.03	3.87	24.58
QMAX	1628200	628200	628150	18.	100.	24.66	28.04	24.61	27.77	15.38	8.79	22.85
QMAX	1628250	628250	628200	30.	120.	18.93	28.12	18.75	28.04	22.91	4.60	14.57
QMAX	2628250	628250	628200	30.	120.	18.93	28.12	18.75	28.04	22.91	4.60	14.57
QMAX	3628250	628250	628200	30.	120.	18.93	28.12	18.75	28.04	22.91	4.60	14.57
QMAX	4628250	628250	628200	54.	126.	21.26	28.12	21.16	28.04	85.84	5.27	14.50
QMAX	5628250	628250	628200	54.	126.	21.26	28.12	21.16	28.04	85.84	5.27	14.50
QMAX	9628300	628300	628250	600.	310.	27.66	29.87	26.16	28.12	41.72	3.19	24.72
QMAX	1628350	628350	628300	36.	200.	27.66	30.71	26.96	29.87	37.32	5.89	20.12
QMAX	9628310	628310	628300	600.	40.	28.06	29.88	27.66	29.87	4.04	-9.96	25.27
QMAX	1628400	628400	628350	54.	442.	23.61	31.12	22.91	30.71	145.12	9.34	13.13
QMAX	1628450	628450	628400	48.	1148.	28.46	34.60	25.71	31.12	78.24	6.21	15.48
QMAX	1628160	628160	628150	30.	99.	23.86	27.61	23.36	27.77	-35.62	-7.36	11.70
QMAX	3628150	628150	628110	36.	98.	23.13	27.77	22.03	27.79	12.52	3.22	39.92
QMAX	1628270	628270	628250	54.	160.	23.78	34.14	23.26	28.12	229.97	14.51	13.82
QMAX	5628350	555555	628350	60.	100.	80.00	80.00	24.16	30.71	0.00	0.00	0.00
QMAX	5628310	555555	628310	60.	100.	80.00	80.00	24.26	29.88	0.00	0.00	0.00
QMAX	5628420	555555	628420	60.	100.	80.00	80.00	26.16	32.79	0.00	0.00	0.00
QMAX	1648200	648200	648000	36.	150.	28.16	39.98	27.16	39.90	29.25	4.07	15.92
QMAX	1648000	648000	647990	90.	100.	30.76	39.90	30.66	39.80	-100.44	6.01	12.30
QMAX	1647990	647990	647950	30.	240.	29.46	39.80	29.38	39.55	34.46	7.15	12.15
QMAX	1647950	647950	647900	42.	125.	29.01	39.55	28.56	39.35	50.14	6.01	12.20
QMAX	1647900	647900	647902	36.	400.	28.00	39.35	26.39	34.68	64.97	9.11	12.30
QMAX	1647902	647902	647904	54.	328.	26.31	34.68	25.16	33.39	62.15	3.78	12.30
QMAX	1647904	647904	647906	54.	333.	25.16	33.39	23.94	32.14	60.31	3.78	13.10
QMAX	1647906	647906	647800	54.	498.	23.99	32.14	21.69	30.84	60.21	3.77	13.12
QMAX	9648950	648950	648900	132.	415.	24.77	31.68	23.85	31.67	81.42	2.22	48.27
QMAX	1648900	648900	648870	36.	100.	22.98	31.67	22.88	31.43	68.49	9.62	12.52
QMAX	9648870	648750	648870	135.	406.	22.33	31.43	21.89	31.43	-59.60	-1.18	12.48
QMAX	1648750	648730	648750	36.	200.	20.67	31.16	19.95	31.43	-31.82	-4.45	12.68
QMAX	9648730	648700	648730	187.	488.	21.44	31.16	18.28	31.16	-80.78	-4.60	51.20
QMAX	1648700	648700	647800	48.	128.	21.26	31.16	21.14	30.84	54.56	4.30	47.25
QMAX	1647800	647800	647500	48.	162.	20.99	30.84	20.53	30.53	71.07	5.63	12.32
QMAX	1647500	647500	647400	60.	322.	18.84	30.53	18.36	30.52	44.32	2.25	11.53
QMAX	1647400	647400	647402	60.	275.	18.36	30.52	16.91	30.44	63.02	3.19	12.28
QMAX	1647402	647404	647402	60.	372.	18.68	30.34	16.91	30.44	-59.48	-3.02	12.27
QMAX	1647404	647404	647406	60.	701.	18.68	30.34	18.35	30.26	57.67	2.89	11.88
QMAX	1647406	646900	647406	60.	158.	19.02	30.27	18.35	30.26	-56.56	-2.83	11.87

QMAX	1647000	646900	647000	48.	365.	19.02	30.27	18.15	30.47	68.03	5.36	13.50
QMAX	1646900	646900	646502	60.	420.	19.02	30.27	18.92	30.58	75.06	3.79	60.52
QMAX	1646502	646502	646504	60.	256.	18.92	30.58	18.84	30.85	75.04	3.80	60.57
QMAX	1646504	646504	646506	60.	336.	18.84	30.85	18.36	31.16	75.02	3.80	60.63
QMAX	1646506	646508	646506	60.	306.	18.48	31.46	18.36	31.16	-75.01	-3.80	60.77
QMAX	1646508	646508	646500	60.	294.	18.48	31.46	18.26	31.76	74.99	3.80	60.95
QMAX	1646490	646000	646490	48.	350.	22.66	36.50	21.96	37.27	-62.06	-5.07	17.00
QMAX	9647400	647400	647500	120.	380.	27.16	30.52	26.46	30.53	-122.36	2.15	18.33
QMAX	5648000	555558	648000	108.	100.	80.00	80.00	25.16	39.90	0.00	0.00	0.00
QMAX	5648900	555558	648900	108.	100.	80.00	80.00	21.16	31.67	0.00	0.00	0.00
QMAX	5648750	555558	648750	72.	100.	80.00	80.00	20.76	31.43	0.00	0.00	0.00
QMAX	5647500	555558	647500	120.	100.	80.00	80.00	17.16	30.53	0.00	0.00	0.00
QMAX	5647400	555558	647400	120.	100.	80.00	80.00	18.16	30.52	0.00	0.00	0.00
QMAX	5647000	555558	647000	72.	100.	80.00	80.00	14.16	30.47	0.00	0.00	0.00
QMAX	5646500	555558	646500	72.	100.	80.00	80.00	16.16	31.76	0.00	0.00	0.00
QMAX	5646900	555558	646900	96.	100.	80.00	80.00	22.16	30.27	0.00	0.00	0.00
QMAX	5647805	555555	647805	60.	100.	79.16	80.00	26.16	32.82	1.15	13.67	7.17
QMAX	5647810	555555	647810	60.	100.	79.16	80.00	25.26	31.10	1.16	13.79	2.42
QMAX	5646905	555555	646905	60.	100.	79.16	80.00	25.16	33.27	1.16	13.80	7.78
QMAX	1645079	645079	645000	72.	1570.	19.66	33.22	17.76	21.66	275.79	11.50	13.35
QMAX	1645099	645099	645079	72.	410.	20.16	34.86	19.66	33.22	212.92	7.49	14.00
QMAX	1646000	646000	645099	72.	3000.	22.06	36.50	20.16	34.86	178.36	6.27	15.35
QMAX	1646029	646029	646000	72.	550.	23.00	36.76	22.06	36.50	98.45	3.45	14.87
QMAX	1646039	646039	646029	60.	610.	23.88	36.97	23.55	36.76	61.19	3.60	12.32

	WEIR_ID	FROM	TO	ZCREST	ZU	ZD	ZMAXU	QMAX	ZMAXD	TMAX
QWEIR	6620300	620300	629860	44.20	29.16	37.19	39.10	0.00	41.73	0.0
QWEIR	6626900	626900	629900	44.20	27.76	22.16	38.18	0.00	38.89	0.0
QWEIR	6627700	627700	625800	57.20	30.16	31.66	39.85	0.00	53.06	0.0
QWEIR	6628450	628450	629400	38.20	28.46	24.16	34.60	0.00	37.98	0.0
QWEIR	7620200	620200	620120	47.97	33.16	35.16	40.22	0.00	38.38	0.0
QWEIR	7620260	620260	620200	47.71	38.26	33.16	43.49	0.00	40.22	0.0
QWEIR	7620400	620400	620200	46.59	33.56	33.16	41.81	0.00	40.22	0.0
QWEIR	6620460	620460	620450	43.16	38.06	37.94	42.43	0.00	42.42	0.0
QWEIR	6620470	620470	620460	45.59	38.86	38.06	42.57	0.00	42.43	0.0
QWEIR	6620480	620480	620470	46.16	40.01	38.86	42.95	0.00	42.57	0.0
QWEIR	7620600	620600	620480	46.59	35.16	40.01	44.43	0.00	42.95	0.0
QWEIR	7620650	620650	623250	45.46	35.16	29.16	44.91	0.00	43.42	0.0
QWEIR	6621050	621050	624190	27.16	22.17	22.20	34.62	54.65	34.59	13.1
QWEIR	6621075	621075	621050	31.36	26.50	22.17	34.61	-87.39	34.62	19.1
QWEIR	6621125	621125	621150	31.26	22.56	28.16	34.61	-74.58	34.61	19.0
QWEIR	6621100	621100	621075	31.96	31.16	26.50	34.61	-11.18	34.61	16.6
QWEIR	7621150	621150	621075	31.56	28.16	26.50	34.61	-80.41	34.61	19.1
QWEIR	7621200	621200	621150	31.66	29.62	28.16	34.61	84.64	34.61	13.0
QWEIR	6621225	621225	621200	31.76	30.46	29.62	34.61	33.38	34.61	13.0
QWEIR	7621300	621300	621225	35.36	32.36	30.46	35.53	2.69	34.61	20.8
QWEIR	6621275	621275	621200	36.16	23.16	29.62	36.07	0.00	34.61	0.0
QWEIR	8621275	621275	621250	29.11	23.16	23.16	36.07	49.38	36.02	11.8
QWEIR	8621276	621275	621250	30.00	23.16	23.16	36.07	44.55	36.02	12.7
QWEIR	7621325	621325	621200	33.56	32.46	29.62	34.92	31.65	34.61	14.1
QWEIR	6621375	621375	621350	34.66	23.16	23.16	36.17	48.41	36.15	14.0
QWEIR	6621390	621390	621395	36.26	35.56	25.16	36.57	17.50	36.22	12.7
QWEIR	8621425	621425	621395	31.77	29.16	25.16	36.24	32.57	36.22	12.5
QWEIR	8621427	621425	621395	33.66	29.16	25.16	36.24	13.00	36.22	12.6
QWEIR	6621600	621600	621500	34.46	29.66	25.73	36.20	22.60	36.19	12.8
QWEIR	6621625	621625	621450	35.66	25.16	23.16	36.75	108.96	36.32	13.8

QWEIR	8621630	621630	621625	35.16	33.16	25.16	36.79	-36.92	36.75	12.8
QWEIR	6621630	621630	621625	36.66	33.16	25.16	36.79	4.08	36.75	13.9
QWEIR	6621650	621650	621625	36.16	27.16	25.16	37.14	92.66	36.75	13.5
QWEIR	6621675	621675	621650	36.66	28.46	27.16	37.87	132.94	37.14	12.9
QWEIR	6621700	621700	621650	36.46	31.36	27.16	37.15	-83.53	37.14	12.8
QWEIR	6621715	621715	621775	38.66	36.46	29.76	39.32	32.30	39.04	13.0
QWEIR	6621725	621725	621715	40.96	36.59	36.46	41.25	15.58	39.32	14.8
QWEIR	6621750	621750	621725	44.56	42.56	36.59	44.76	18.54	41.25	12.8
QWEIR	6621775	621775	621675	37.86	29.76	28.46	39.04	127.82	37.87	12.6
QWEIR	6621800	621800	621775	36.26	30.96	29.76	39.09	75.85	39.04	12.5
QWEIR	6621825	621825	621800	36.26	32.96	30.96	39.10	-44.92	39.09	12.3
QWEIR	6621875	621875	621725	44.66	34.16	36.59	44.93	27.60	41.25	14.0
QWEIR	8621875	621875	621850	38.36	34.16	34.16	44.93	18.99	44.94	12.7
QWEIR	8621876	621875	621850	39.66	34.16	34.16	44.93	-28.64	44.94	13.2
QWEIR	7621900	621900	621550	34.46	31.36	26.37	36.20	45.63	36.19	12.9
QWEIR	6621950	621950	621875	44.66	41.46	34.16	44.95	7.11	44.93	15.0
QWEIR	6622500	622500	622400	34.56	30.12	30.17	35.35	34.97	34.59	15.6
QWEIR	7622600	622600	622500	36.45	31.16	30.12	36.25	0.00	35.35	0.0
QWEIR	7622700	622700	622600	37.16	31.26	31.16	36.89	0.00	36.25	0.0
QWEIR	6622800	622800	622700	36.56	31.31	31.26	37.38	37.34	36.89	14.0
QWEIR	6622900	622900	622600	36.66	31.69	31.16	36.95	7.98	36.25	14.4
QWEIR	6622850	622850	622800	40.00	31.31	31.31	39.69	0.00	37.38	0.0
QWEIR	6622925	622925	622600	36.96	34.36	31.16	37.01	2.44	36.25	17.2
QWEIR	6622950	622950	622700	36.56	34.16	31.26	36.89	10.79	36.89	13.2
QWEIR	6623170	623170	623160	37.16	24.16	26.56	36.99	0.00	35.99	0.0
QWEIR	7623190	623190	623170	41.36	29.16	24.16	38.04	0.00	36.99	0.0
QWEIR	7623200	623200	622850	39.16	32.49	31.31	39.11	-116.64	39.69	13.1
QWEIR	7623215	623215	623200	39.46	32.49	32.49	39.51	2.44	39.11	16.0
QWEIR	8623248	623248	623247	44.16	43.16	43.16	48.25	16.01	48.09	12.6
QWEIR	7623243	623243	623240	45.66	38.96	35.33	45.04	0.00	42.86	0.0
QWEIR	7623245	623245	621850	45.16	37.16	34.16	45.65	69.13	44.94	13.3
QWEIR	7623248	623248	623245	48.06	43.16	37.16	48.25	16.10	45.65	13.3
QWEIR	8623245	623245	623244	42.16	37.16	40.66	45.65	6.00	45.67	11.4
QWEIR	7623220	623220	623210	41.86	34.64	33.29	41.00	0.00	40.06	0.0
QWEIR	7623230	623230	623220	41.86	34.99	34.64	42.23	44.76	41.00	15.5
QWEIR	7623240	623240	623230	42.46	35.33	34.99	42.86	50.47	42.23	15.4
QWEIR	7623250	623250	623240	44.16	29.16	35.33	43.42	0.00	42.86	0.0
QWEIR	7623270	623270	623250	45.36	34.16	29.16	43.81	0.00	43.42	0.0
QWEIR	7623320	623320	623310	39.86	33.30	30.71	39.25	0.00	38.60	0.0
QWEIR	7623340	623340	623330	39.86	36.79	36.66	41.76	22.23	41.75	12.2
QWEIR	7623350	623350	623340	40.46	36.96	36.79	41.76	-45.83	41.76	12.5
QWEIR	7623360	623360	623350	39.26	34.16	36.96	41.76	-50.41	41.76	12.5
QWEIR	7623370	623370	623340	41.86	37.33	36.79	42.41	40.88	41.76	13.6
QWEIR	7623380	623380	623370	41.56	37.74	37.33	42.42	15.87	42.41	12.8
QWEIR	7623390	623390	623380	42.36	36.66	37.74	42.44	2.13	42.42	15.4
QWEIR	6623340	623340	623330	38.66	36.79	36.66	41.76	23.74	41.75	12.1
QWEIR	7623430	623430	623400	41.36	29.34	29.26	39.36	0.00	39.16	0.0
QWEIR	6623750	623750	623700	41.66	37.62	34.69	41.64	0.00	40.53	0.0
QWEIR	6623751	623750	623600	42.16	37.62	34.16	41.64	0.00	41.11	0.0
QWEIR	6623800	623800	623750	43.16	39.08	37.62	41.99	0.00	41.64	0.0
QWEIR	6623850	623850	623800	44.16	40.01	39.08	42.56	0.00	41.99	0.0
QWEIR	6623900	623900	623850	46.16	39.16	40.01	45.63	0.00	42.56	0.0
QWEIR	8624080	624080	624070	25.72	21.16	24.61	34.18	-51.47	34.07	12.5
QWEIR	8624081	624080	624070	29.50	21.16	24.61	34.18	68.47	34.07	14.6
QWEIR	6624070	624070	624060	34.67	24.61	24.29	34.07	0.00	33.53	0.0

QWEIR	6624060	624060	624050	35.10	24.29	23.92	33.53	0.00	33.00	0.0
QWEIR	6624050	624050	624040	32.15	23.92	23.69	33.00	21.64	32.71	55.3
QWEIR	6624040	624040	624030	31.76	23.69	23.27	32.71	25.14	32.46	55.3
QWEIR	6624030	624030	624010	32.06	23.27	22.16	32.46	7.57	31.78	55.5
QWEIR	6624010	624010	648950	28.24	22.16	22.41	31.78	47.81	31.68	48.3
QWEIR	8624100	624100	624090	34.66	33.16	25.16	37.22	73.52	34.18	13.4
QWEIR	8624101	624100	624090	35.91	33.16	25.16	37.22	44.73	34.18	13.4
QWEIR	6624100	624100	624080	37.16	33.16	21.16	37.22	0.78	34.18	13.4
QWEIR	8624230	624230	624220	31.66	25.16	27.66	34.59	-34.25	34.59	18.0
QWEIR	8624250	624250	624230	36.66	33.76	25.16	35.43	0.00	34.59	0.0
QWEIR	8624290	624290	624280	34.84	33.16	31.31	35.44	14.35	34.59	12.7
QWEIR	8624310	624310	624300	33.66	32.16	30.41	34.59	23.54	34.59	12.5
QWEIR	8624470	624470	624460	39.01	32.66	32.66	39.58	18.49	38.20	13.4
QWEIR	8624490	624490	624480	31.91	26.76	25.16	34.59	-11.29	34.59	15.8
QWEIR	7624490	624490	624190	32.16	26.76	22.20	34.59	-13.10	34.59	16.6
QWEIR	8624520	624520	624190	28.16	20.96	22.20	34.59	34.47	34.59	12.8
QWEIR	8624521	624520	624190	29.16	20.96	22.20	34.59	55.39	34.59	12.9
QWEIR	7624410	624410	624390	37.36	35.66	32.74	37.59	10.83	36.83	12.6
QWEIR	6624410	624410	624370	37.36	35.66	32.74	37.59	5.42	36.70	12.6
QWEIR	6624420	624420	624390	37.66	36.76	32.74	37.90	5.72	36.83	12.8
QWEIR	7624430	624430	624340	37.06	35.66	32.66	37.57	36.62	37.45	12.6
QWEIR	7624440	624440	624100	36.86	36.66	33.16	37.42	41.82	37.22	12.8
QWEIR	7624450	624450	624100	35.96	31.66	33.16	37.30	74.61	37.22	13.2
QWEIR	7624451	624450	624440	36.96	31.66	36.66	37.30	-31.12	37.42	12.8
QWEIR	6624350	624350	624210	32.86	32.59	29.67	34.59	66.28	34.59	13.9
QWEIR	8624360	624360	624350	34.66	30.66	32.59	35.38	5.51	34.59	13.0
QWEIR	6624360	624360	624350	36.66	30.66	32.59	35.38	0.00	34.59	0.0
QWEIR	7624210	624210	624200	32.76	29.67	25.96	34.59	43.59	34.59	14.1
QWEIR	6624090	624090	624080	32.16	25.16	21.16	34.18	23.81	34.18	14.8
QWEIR	6624230	624230	624200	32.16	25.16	25.96	34.59	-43.18	34.59	18.4
QWEIR	6624250	624250	624200	39.16	33.76	25.96	35.43	0.00	34.59	0.0
QWEIR	6624270	624270	624260	35.96	26.46	26.41	34.59	0.00	34.59	0.0
QWEIR	6624290	624290	624260	36.16	33.16	26.41	35.44	0.00	34.59	0.0
QWEIR	6624310	624310	624260	37.16	32.16	26.41	34.59	0.00	34.59	0.0
QWEIR	6624320	624320	624260	30.66	26.56	26.41	34.59	46.59	34.59	12.7
QWEIR	6624325	624325	624200	31.66	22.06	25.96	34.59	-16.78	34.59	14.1
QWEIR	6624330	624330	624325	31.86	27.56	22.06	34.59	36.12	34.59	13.6
QWEIR	7624340	624340	624330	37.16	32.66	27.56	37.45	15.73	34.59	13.3
QWEIR	6624370	624370	624350	35.66	32.74	32.59	36.70	52.98	34.59	13.5
QWEIR	6624380	624380	624370	35.66	31.61	32.74	36.78	44.40	36.70	12.9
QWEIR	6624390	624390	624380	35.01	32.74	31.61	36.83	41.27	36.78	12.7
QWEIR	6624400	624400	624390	36.96	34.91	32.74	37.19	5.58	36.83	12.7
QWEIR	6624530	624530	624520	30.16	22.46	20.96	34.59	17.67	34.59	13.4
QWEIR	6624540	624540	624530	31.56	23.66	22.46	34.59	-1.27	34.59	14.1
QWEIR	6624550	624550	624530	34.26	24.76	22.46	34.59	-2.52	34.59	32.6
QWEIR	6624560	624560	624550	35.06	25.46	24.76	34.59	0.00	34.59	0.0
QWEIR	6624570	624570	624560	33.46	31.86	25.46	34.59	24.62	34.59	12.8
QWEIR	8625200	625200	625150	29.96	23.26	28.60	35.86	38.78	35.82	12.5
QWEIR	7625200	625200	624080	35.76	23.26	21.16	35.86	6.13	34.18	25.6
QWEIR	6625300	625300	625200	36.06	29.27	23.26	35.86	0.00	35.86	0.0
QWEIR	6625400	625400	625200	54.66	53.36	23.26	54.89	11.14	35.86	13.1
QWEIR	8625900	625900	625650	32.06	28.16	27.96	36.82	104.29	36.69	15.5
QWEIR	7626400	626400	626300	46.66	43.16	25.66	46.86	18.16	36.53	12.8
QWEIR	8626400	626400	626350	44.65	43.16	40.96	46.86	33.67	46.83	12.3
QWEIR	7626500	626500	626400	53.36	44.16	43.16	53.50	10.30	46.86	21.0

QWEIR	7626600	626600	626500	67.66	65.66	44.16	67.85	16.69	53.50	12.6
QWEIR	7626700	626700	627450	56.56	44.16	32.16	57.06	71.57	39.70	12.9
QWEIR	8626900	626900	626300	34.65	27.76	25.66	38.18	297.93	36.53	12.9
QWEIR	7627000	627000	626900	38.56	33.36	27.76	38.61	2.45	38.18	18.0
QWEIR	8627100	627100	626950	33.16	32.36	27.86	38.89	70.59	38.84	13.4
QWEIR	8627500	627500	627400	54.91	51.66	31.66	55.07	20.07	41.37	12.6
QWEIR	8627600	627600	627450	36.16	30.16	32.16	39.75	-124.12	39.70	12.8
QWEIR	7629735	629735	629721	31.66	22.79	22.49	31.61	0.00	30.16	0.0
QWEIR	6629960	629960	629940	39.26	37.86	31.43	39.48	10.40	38.88	14.5
QWEIR	6629740	629740	629735	34.56	24.02	22.79	33.23	0.00	31.61	0.0
QWEIR	6629760	629760	629740	35.56	25.08	24.02	35.76	9.22	33.23	13.6
QWEIR	6629780	629780	629760	40.66	26.80	25.08	38.22	0.00	35.76	0.0
QWEIR	6629800	629800	629780	37.36	28.82	26.80	38.35	142.69	38.22	14.4
QWEIR	6629820	629820	629800	35.66	31.59	28.82	38.37	101.93	38.35	14.9
QWEIR	6629825	629825	629820	35.66	32.88	31.59	38.38	79.00	38.37	13.6
QWEIR	6629860	629860	629842	41.46	37.19	35.48	41.73	14.27	38.80	13.7
QWEIR	6629842	629842	629841	38.16	35.48	34.69	38.80	38.42	38.71	13.7
QWEIR	6629841	629841	629825	38.16	34.69	32.88	38.71	40.89	38.38	13.6
QWEIR	6629840	629840	629825	38.16	34.55	32.88	38.88	61.22	38.38	13.1
QWEIR	6629900	629900	629880	41.16	22.16	32.16	38.89	0.00	39.29	0.0
QWEIR	6629920	629920	629735	37.16	27.02	22.79	36.56	0.00	31.61	0.0
QWEIR	6629940	629940	629840	38.36	31.43	34.55	38.88	-68.54	38.88	12.6
QWEIR	6629300	629300	629100	30.66	27.16	21.66	31.28	-74.46	31.61	13.2
QWEIR	6629200	629200	629100	34.66	29.96	21.66	33.41	0.00	31.61	0.0
QWEIR	6629500	629500	629100	29.16	25.49	21.66	32.01	73.02	31.61	13.3
QWEIR	6629600	629600	629500	35.16	32.37	25.49	36.23	22.12	32.01	12.7
QWEIR	6629700	629700	629400	53.66	39.16	24.16	54.39	61.80	37.98	13.4
QWEIR	8628600	628600	628550	28.36	24.36	23.78	27.95	0.00	28.06	0.0
QWEIR	86287001	628700	628699	26.56	26.46	25.39	30.62	19.79	30.58	62.6
QWEIR	86287002	628700	628699	28.41	26.46	25.39	30.62	28.26	30.58	25.5
QWEIR	8628800	628800	628750	30.66	23.16	25.24	34.86	444.46	35.36	14.2
QWEIR	8628860	628860	628800	29.16	23.16	23.16	34.86	-106.96	34.86	12.6
QWEIR	86287301	628730	628729	31.16	29.16	29.16	32.83	20.05	32.62	12.8
QWEIR	86287302	628730	628729	32.66	29.16	29.16	32.83	2.20	32.62	13.1
QWEIR	86286701	628670	628669	27.01	24.16	25.49	29.10	7.05	29.07	22.2
QWEIR	86286702	628670	628669	27.76	24.16	25.49	29.10	7.78	29.07	14.4
QWEIR	86286801	628680	628679	25.96	25.16	25.30	27.95	-16.00	27.92	12.2
QWEIR	86286802	628680	628679	28.16	25.16	25.30	27.95	0.00	27.92	0.0
QWEIR	86286851	628685	628684	27.41	24.16	25.96	29.75	4.55	29.67	12.4
QWEIR	86286852	628685	628684	28.41	24.16	25.96	29.75	23.50	29.67	13.1
QWEIR	86286901	628690	628689	29.86	29.16	26.66	32.71	16.57	32.66	12.3
QWEIR	86286902	628690	628689	31.46	29.16	26.66	32.71	16.20	32.66	12.6
QWEIR	6628670	628670	628650	29.16	24.16	24.96	29.10	0.00	27.95	0.0
QWEIR	6628700	628700	628650	31.66	26.46	24.96	30.62	0.00	27.95	0.0
QWEIR	6628650	628650	628600	29.16	24.96	24.36	27.95	0.00	27.95	0.0
QWEIR	8628150	628150	628100	29.06	23.13	21.83	27.77	0.00	27.96	0.0
QWEIR	7628200	628200	628150	27.16	18.75	23.13	28.04	57.80	27.77	25.3
QWEIR	7628250	628250	628200	33.16	18.93	18.75	28.12	0.00	28.04	0.0
QWEIR	7628400	628400	628350	30.16	23.61	22.91	31.12	26.63	30.71	19.0
QWEIR	7628270	628270	628250	33.16	23.78	18.93	34.14	193.16	28.12	13.8
QWEIR	7628420	628420	628400	32.16	26.16	23.61	32.79	40.18	31.12	13.0
QWEIR	7628350	628350	628310	30.16	22.91	24.26	30.71	32.93	29.88	20.7
QWEIR	7628160	628160	628150	28.66	23.86	23.13	27.61	0.00	27.77	0.0
QWEIR	6628420	628420	628400	32.16	26.16	23.61	32.79	50.23	31.12	13.0
QWEIR	6628310	628310	628300	28.06	24.26	26.96	29.88	-19.98	29.87	17.5

QWEIR	7628450	628450	628400	36.56	28.46	23.61	34.60	0.00	31.12	0.0
QWEIR	7648200	648200	648000	40.66	28.16	25.16	39.98	0.00	39.90	0.0
QWEIR	7648000	648000	647810	41.16	25.16	25.26	39.90	0.00	31.10	0.0
QWEIR	6647900	647900	647810	39.16	28.00	25.26	39.35	0.86	31.10	13.6
QWEIR	7648900	648900	648750	30.46	21.16	19.95	31.67	56.96	31.43	57.0
QWEIR	7648750	648750	648730	28.62	19.95	18.28	31.43	55.62	31.16	55.2
QWEIR	7648700	648700	647800	28.96	21.26	20.99	31.16	26.27	30.84	69.4
QWEIR	7647800	647800	647500	26.56	20.99	17.16	30.84	63.46	30.53	18.2
QWEIR	7647805	647805	647800	32.16	26.16	20.99	32.82	5.32	30.84	18.1
QWEIR	6647810	647810	647800	30.16	25.26	20.99	31.10	45.65	30.84	12.9
QWEIR	6647400	647400	647000	29.16	18.16	14.16	30.52	118.25	30.47	17.5
QWEIR	6646900	646900	647000	30.16	19.02	14.16	30.27	-17.32	30.47	72.0
QWEIR	6646901	646900	646500	32.16	19.02	16.16	30.27	0.00	31.76	0.0
QWEIR	6646905	646905	646900	32.56	25.16	19.02	33.27	5.93	30.27	16.7
QWEIR	6646039	646039	646500	34.16	23.88	16.16	36.97	47.21	31.76	14.0
QWEIR	6646038	646039	646029	32.16	23.88	23.00	36.97	40.96	36.76	14.2
QWEIR	6646029	646029	646000	34.16	23.00	22.66	36.76	33.71	36.50	14.2
QWEIR	6646000	646000	646500	33.66	22.66	16.16	36.50	47.87	31.76	13.8
QWEIR	7647990	647990	647950	33.66	29.46	29.01	39.80	57.03	39.55	12.3
QWEIR	7647950	647950	647900	33.51	29.01	28.00	39.55	40.07	39.35	12.3
QWEIR	90545	629880	629840	32.16	32.16	34.55	39.29	1.00	38.88	12.1
QWEIR	90546	629900	629840	22.16	22.16	34.55	38.89	7.53	38.88	11.6
QWEIR	90547	629400	629300	24.16	24.16	27.16	37.98	5.00	31.28	11.5
QWEIR	90548	646500	646490	16.16	16.16	21.96	31.76	53.48	37.27	10.7
QWEIR	90549	646500	646000	16.16	16.16	22.66	31.76	21.11	36.50	12.4
QWEIR	90550	620300	620200	29.16	29.16	33.16	39.10	3.00	40.22	12.1
QWEIR	90551	645000	0	17.76	17.76	0.00	21.66	275.79	0.00	13.4
QWEIR	90552	201151	0	34.16	34.16	0.00	36.18	119.35	0.00	14.4
QWEIR	90553	626200	0	26.16	26.16	0.00	27.96	92.80	0.00	22.2
QWEIR	90554	629720	0	22.49	22.49	0.00	30.16	249.83	0.00	13.4
QWEIR	90555	629721	0	22.49	22.49	0.00	30.16	0.00	0.00	0.0
QWEIR	90556	629000	0	21.46	21.46	0.00	29.36	107.82	0.00	13.2
QWEIR	90557	628500	0	21.16	21.16	0.00	28.06	58.51	0.00	18.4
QWEIR	90558	628000	0	20.66	20.66	0.00	28.06	-232.21	0.00	12.0