

TAMPA INTERSTATE STUDY - PHASE II

DRAINAGE MASTER PLAN - PHASE I

ACTIVITY B - TASK 1

State Project No. 99007-1402

WPI No. 7140004

F.A.P. No. IR-9999(43)

FINAL SUMMARY REPORT

Submitted To:

THE FLORIDA DEPARTMENT OF TRANSPORTATION

Submitted By:

GREINER, INC.

NOVEMBER 1991

EXECUTIVE SUMMARY

The majority of the Tampa Interstate System was designed and constructed in the late 1950's and early 1960's. Realizing the need to upgrade the antiquated interstate system, the Florida Department of Transportation (FDOT) conducted a study in 1983 to evaluate reconstruction of the interstate system. Utilizing the 1983 study as a documented base, the Tampa Interstate Study (TIS) began in late 1987. Generally, the purpose of the TIS was to produce a Master Plan, a conceptual design and an environmental impact data base for improvements to I-4, I-75 and I-275. Following acceptance of the TIS Master Plan Report, Phase II of the TIS was implemented. The Drainage Master Plan is a portion of the TIS Phase II activities that include the evaluation (development) of a drainage plan to manage stormwater and surface waters within or adjacent to the project.

This document describes Task 1 of the Drainage Master Plan which consists of updating existing data and field inspections of existing stormwater conveyance systems within the TIS limits. Thirteen major drainage basins within the study area have been identified: the Cypress Memorial Basin, Sunshine Park Basin, Cleveland Street Basin, Hillsborough Avenue Basin, Curiosity Creek Basin, Duck Pond Basin, Cypress/Trout Creek Basin, Nuccio Parkway Basin, Ybor City Basin, 29th Street Basin, McKay Bay Outfall Basin, Tampa Bypass Canal Basin, and the Hillsborough River Basin. Each basin within the project corridor is described in this report and includes the outfall locations, outfall system condition, estimated outfall system capacity, and other physical characteristics or constraints.

The TIS project corridor generally extends from the Howard Frankland Bridge to the west, east to the I-4 and I-75 interchange, south along 30th Street to the Crosstown Expressway and S.R. 60 interchange, and north along I-275 to the I-75 and S.R. 54 interchange. From the available information and field inspections within the TIS project corridor, 103 cross-drain structures have been identified which include two bridges crossing the Hillsborough River, one bridge crossing Cypress Creek, and one bridge crossing the Tampa Bypass Canal. The drainage basins, outfall locations, and related cross-drain structures along the project corridor are also described in this report. The detailed analysis of each outfall drainage system will be performed in Task 2 of the TIS Drainage Master Plan.

Preliminary meetings were held with representatives of several of the regulatory agencies having jurisdiction within the TIS limits. General discussions were held related to the type of long-term commitments available from each agency. Most of the regulatory agencies stated that some agreement mechanism could be reached for long-term commitments between each agency and FDOT. Due to the length of the construction schedule for the TIS project, it is recommended that long-term commitments be pursued which would set drainage design criteria. The commitment should help to minimize future changes to the TIS design caused by changing regulatory agency drainage rules or policies.

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INTRODUCTION

Purpose

The majority of the Tampa Interstate System was designed and constructed in the late 1950's and early 1960's. Realizing the need to upgrade the antiquated interstate system, the Florida Department of Transportation (FDOT) began a study in 1983 to evaluate reconstruction with the addition of High Occupancy Vehicle (HOV) improvements to qualify the urban interstate system in Hillsborough County for federal interstate funds. The study established year 2010 traffic for the interstate system and described some potential short-term safety and geometric solutions for the existing interstate. Additionally, the study identified long-term, HOV-related improvements to accommodate year 2010 traffic volumes.

A significant conclusion from the completed study was that efforts must be expanded to consider all transportation needs within the corridor, including any concurrent highway, rail, or transit improvements to the area which may impact the corridor, and to recommend improvements to the interstate system to accommodate those needs.

Utilizing the 1983 justification as a documented base, the Tampa Interstate Study (TIS) began in late 1987. Generally, the purpose of the TIS was to produce a Master Plan, conceptual design, and environmental impact data base for improvements to I-4, I-75, and I-275. The improvements recommended are intended to serve traffic and transportation needs through the year 2010. Specifically, the objectives of the TIS are to prepare a series of reports documenting the requirements for conceptual design,

including existing and predicted conditions, typical sections, right-of-way requirements, environmental constraints, and costs of the recommended alternatives.

Following acceptance of the TIS Master Plan Report (Ref. 15), provisions were set forth by the FDOT to implement Phase II of the TIS. Phase II of the TIS is intended to satisfy those requirements necessary to fully complete environmental documentations of the recommended Master Plan. Completion of Phase II activities will enable the FDOT to proceed with final design and construction of the Tampa Interstate System. The Drainage Master Plan is a portion of the TIS Phase II activities that include the evaluation (development) of a drainage plan to manage stormwater and surface waters within or adjacent to the project right-of-way. The Drainage Master Plan is divided into two tasks.

This document describes Task 1 of the Drainage Master Plan which consists of updating existing data and field inspections of existing stormwater conveyance systems within the TIS study limits. Each basin within the project corridor is described in this document and includes the outfall locations, outfall system condition, estimated outfall system capacity, and other physical characteristics or constraints. The outfall system capacity is defined as the drainage system from the cross-drain structure at the interstate to the outfall receiving water body. The details of outfall system capacity improvements within the project corridor will be studied and discussed in Task 2 of the Drainage Master Plan.

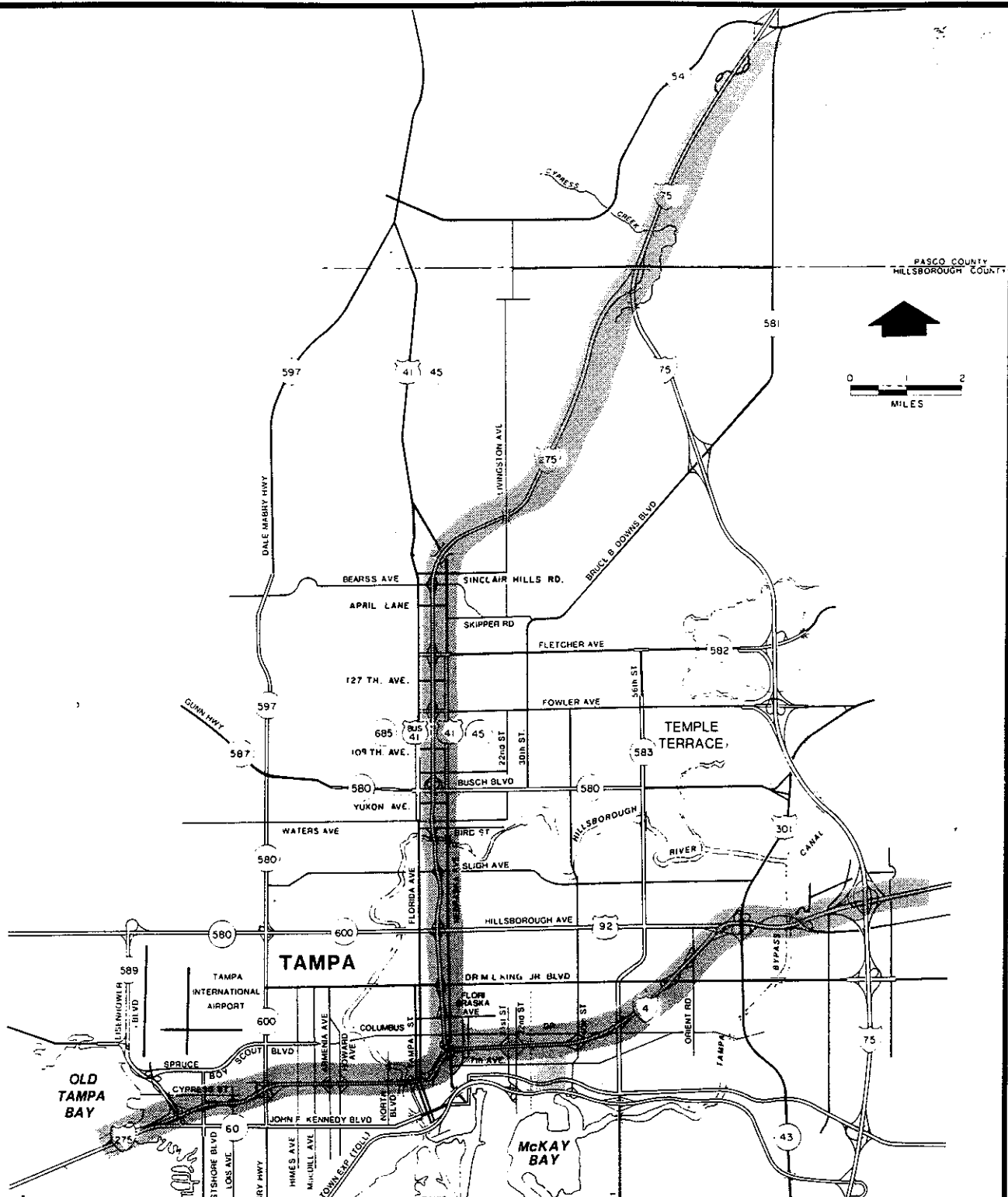
Task 1 also includes preliminary coordination with all regulatory agencies having jurisdiction within the TIS limits. Early coordination is needed to determine applicable design criteria and develop procedures for obtaining "conceptual approval or conceptual agreement" on this criteria as a long-term commitment by all parties for the TIS project.

Task 2 of the Drainage Master Plan will consist of the preparation of the conceptual stormwater management system design within the TIS limits. Task 2 will be completed at a later date.

Project Description

The TIS project corridor generally extends from the Howard Frankland Bridge to the west, east to the I-4 and I-75 interchange, south along 30th Street to the Crosstown Expressway and S.R. 60 interchange, and north along I-275 to the I-75 and S.R. 54 interchange. The study segments are shown in Exhibit 1.

The land uses within the project corridor vary from heavily urbanized to rural areas. The existing drainage systems within the project corridor consist of a combination of open ditch and enclosed storm sewer systems. The majority of the stormwater outfall systems for the existing interstate drainage system are considered to be undersized and/or overloaded. The existing stormwater systems within the project corridor outfall to the following water bodies: Old Tampa Bay, Hillsborough River, Hillsborough Bay, McKay Bay, Tampa Bypass Canal, Cypress Creek, Trout Creek, and Curiosity Creek.



Greiner, Inc.

LEGEND



Study Limits

FLORIDA DEPARTMENT OF TRANSPORTATION

DRAINAGE MASTER PLAN

TAMPA INTERSTATE STUDY PHASE II

Hillsborough County, Florida

TAMPA INTERSTATE STUDY LIMITS

EXHIBIT 1

The area within the TIS project corridor is separate and drains through different conveyance systems. The area just west of Memorial Highway (S.R. 60) east to approximately Habana Avenue drains through the Lemon Street Canal and outfalls to Tampa Bay. I-275 from Habana Avenue east to the Hillsborough River and from the Hillsborough River east to the I-275/I-4 interchange drains through pipe systems parallel to I-275 and discharges to the Hillsborough River. I-4 from Nebraska Avenue east to 50th Street drains southward and outfalls to McKay Bay. I-4 from 50th Street east to the limits of the TIS project corridor drains to the Tampa Bypass Canal. I-275 from the I-275/I-4 interchange north to Lake Avenue drains westward to the Robles Park Pond and is then pumped to the Hillsborough River. I-275 from Lake Avenue north to 116th Street drains to the Hillsborough River. I-275 from 116th Street north to Bearss Avenue drains to Curiosity Creek. I-275 from Bearss Avenue north to the limits of the TIS project at the I-75/S.R. 54 interchange drains through Cypress and Trout creeks and ultimately outfalls to the Hillsborough River.

The FDOT (Ref. 4), Hillsborough County (Ref. 3) and City of Tampa (Ref. 5) maintenance personnel were contacted to provide information on historic flooding problem areas along the project corridor. The areas experiencing flooding problems along the corridor are listed in Table 1 and shown in Exhibit 2. Flooding in locations 4, 6, 7, and 8 near Tampa Bay is mainly caused by the combination of high winds, high tide, and heavy rains. Flooding in locations 14, 15 and 16 identified by the City of Tampa staff is due to the inadequate capacity of storm sewer drainage systems. Flooding in the remaining locations is due to inadequate inlet capacity problems and possible restriction of outlets.

TABLE 1

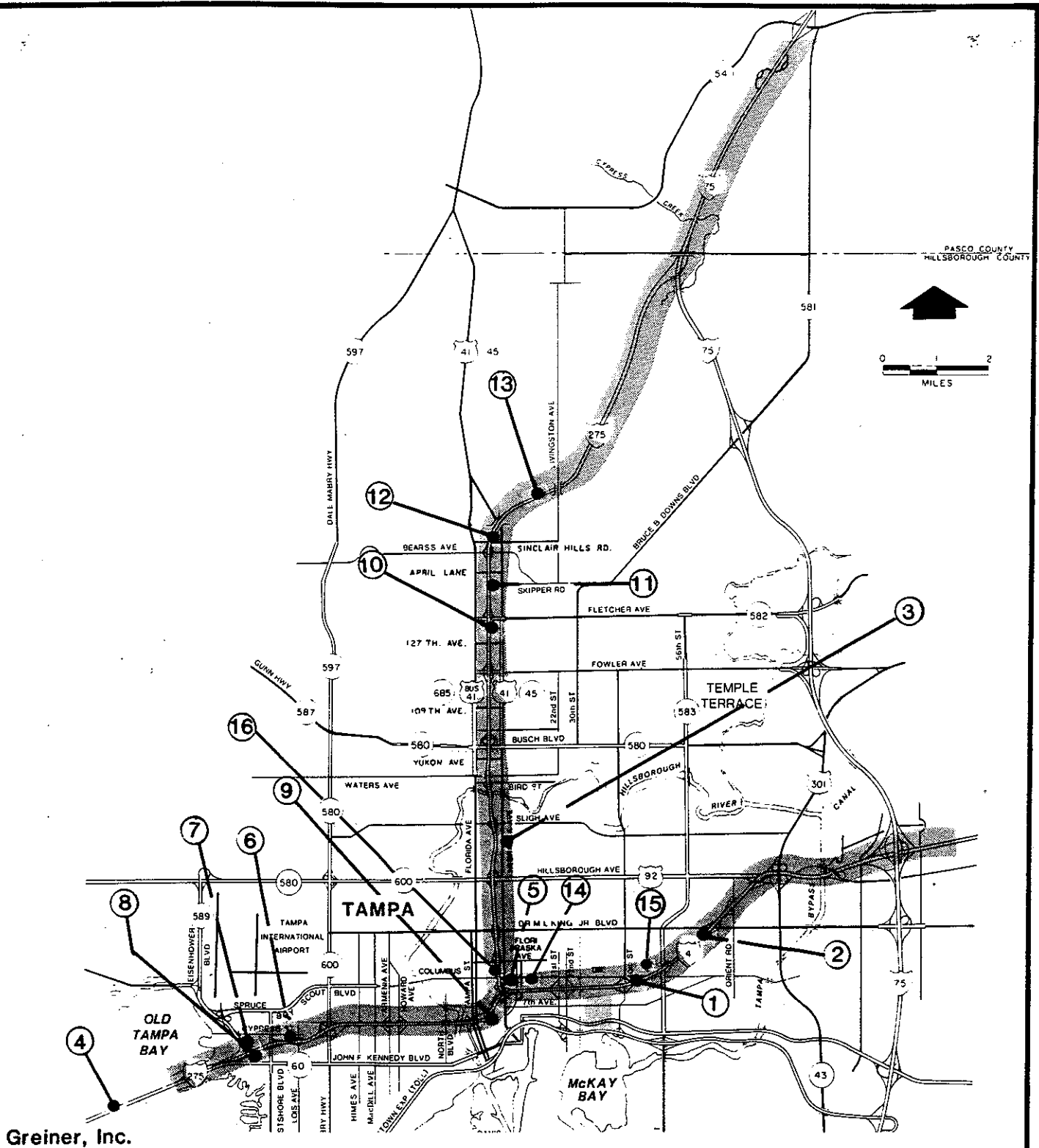
AREAS OF REPORTED FLOODING WITHIN TIS STUDY LIMITS

<u>NO.</u>	<u>LOCATION</u>	<u>SOURCES</u>
1	I-4 "off ramp" westbound at 40th Street - Ditches and ramp floods during heavy rains. Apparently no outlet for water to drain through private property.	FDOT
2	I-4 between Dr. Martin Luther King, Jr. Boulevard (Buffalo Avenue) and 50th Street - Lake on east side of I-4 floods which raises water in cross drain under I-4 which floods interstate ditches.	FDOT
3	Nebraska and Hanna Avenues - Inlet on west side of Nebraska Avenue cannot handle water, intersection floods.	FDOT
4	Howard Frankland Bridge Causeway - Causeway floods during extreme high tides.	FDOT
5	I-4, I-275 intersection, barrier walls - Inlets continually fill up with trash, and during heavy rains lanes of I-275 flood.	FDOT
6	I-275, cross drain inlet next to barrier wall, Westshore Boulevard to Lois Avenue - During high tide, and heavy rain, ditches on I-275 flood from Westshore Boulevard to Lois Avenue. Eastbound "on ramp" and westbound "off ramp" at Westshore Boulevard flood. Inlet in front of Holiday Inn on westbound inside lane of I-275 backs up over lane.	FDOT
7	S.R. 60 - Northbound at westbound "off ramp" from I-275, ramp floods during high tide and heavy rains.	FDOT
8	S.R. 60 - Eastbound "on ramp" to I-275, retention pond floods ramp during high tide and heavy rains.	FDOT
9	I-275 curb inlet - Westbound on north side just east of Morgan Street, curb inlet cannot handle water, slope washes out and Morgan Street floods.	FDOT
10	Dead end of 132nd Avenue between I-275 and Taliaferro Avenue - 132nd Avenue west of I-275 at dead end of road and Curiosity Creek.	Hills. County

TABLE 1 (cont.)

AREAS OF REPORTED FLOODING WITHIN TIS STUDY LIMITS

<u>NO.</u>	<u>LOCATION</u>	<u>SOURCES</u>
11	145th Avenue west of I-275. Due to backup of water from ponds on both sides of I-275 at dead end of Garland Ct.	Hills. County
12	Area of Sinclair Hills Road west of I-275, north of Bearss Ave.	Hills. County
13	Area of Lake September and September Drive. north of I-275 and Hanna Road.	Hills. County
14	I-4, 10th Street - north side of I-4, inadequate storm sewer drainage system.	City of Tampa
15	I-4, 44th Street - north side of I-4, inadequate storm sewer drainage system.	City of Tampa
16	I-275, Robles Park Pond - west side of I-275, inadequate capacity of pump station and drainage system to Hillsborough River.	City of Tampa



LEGEND

- Flood Area
- ▬ Study Limits

FLORIDA DEPARTMENT OF TRANSPORTATION DRAINAGE MASTER PLAN

TAMPA INTERSTATE STUDY PHASE II

Hillsborough County, Florida

TAMPA INTERSTATE STUDY FLOOD AREAS

EXHIBIT 2

DATA COLLECTION AND FIELD INSPECTION

Existing drainage structure information was obtained from FDOT Roadway Plans (Ref. 10), City of Tampa Drainage Atlas Sheets (Ref. 5) and other reports (Ref. 1, 2, 10, 11, 14, 16 and 17). During the study, six inspections occurred to verify and update recorded data. Drainage structures identified along the project corridor are listed in Table 2 and are also indicated on Exhibit A1 in Appendix A.

A total of 103 existing cross drain structures were identified within the project and include two bridge crossings of the Hillsborough River, one bridge crossing of Cypress Creek, and one bridge crossing of the Tampa Bypass Canal. The remaining structures include reinforced concrete pipes (RCP) which vary from 18 inches to 84 inches and box culverts (BC) which vary from 3 feet by 3 feet to 12 feet by 6 feet in dimensions. These drainage structures were built in the late 1950's and early 1960's. The majority of the structures are in good condition. Although the cross-drain structures are maintained regularly by FDOT, siltation and vegetation were still found around many of the structures' inlets and outlets during the field inspection. Generally speaking, cross-drain structures in the urban areas are maintained better than those in rural areas. Severe erosion at the headwall of the cross-drain structure was noted at the location where the Lemon Street Canal crosses I-275. Detailed information on existing and proposed cross-drain structures is contained in the TIS Environmental Assessment and the TIS Environmental Impact Statement Location Hydraulic Reports (Ref. 19, 20).

TABLE 2
EXISTING CROSS-DRAIN STRUCTURES

<u>Structure I.D.</u>	<u>Location</u>	<u>Size/Type</u>	<u>Length (feet)</u>	<u>Invert (HW) (ft.NGVD)</u>	<u>Invert (TW) (ft.NGVD)</u>	<u>Drainage Basin</u>
CD1-1	Memorial Hwy. (S.R.60)	24" RCP	190	2.67	2.41	Cypress/Memorial
CD1-2	Memorial Hwy. (S.R. 60)	24" RCP	190	1.74	1.60	Cypress/Memorial
CD2	Westshore Blvd.	24"	240	N/A	N/A	Cypress/Memorial
CD3	West of Hubert Ave.	36"	260	N/A	N/A	Cypress/Memorial
CD4-1	Lemon St. Canal	12'x6' B.C.	270	8.8	8.8	Cypress/Memorial
CD4-8	Memorial Highway	(2) 10'x6' BCs	470	0.01	0.00	Cypress/Memorial
CD4-10	Cypress Street	48" RCP	275	N/A	N/A	Cypress/Memorial
CD5	Church Avenue	24" RCP	210	N/A	N/A	Cypress/Memorial
CD6	Dale Mabry Hwy.	60" RCP	257	18.44	17.99	Cypress/Memorial
CD7	Himes Avenue	21" RCP	225	25.32	24.35	Cypress/Memorial
CD8	Glen Avenue	30" RCP	226	29.97	28.65	Cypress/Memorial
CD9	MacDill Avenue	42" RCP	200	N/A	N/A	Cypress/Memorial
CD10	Armenia Avenue	24" RCP	203	25.20	24.00	East to Hillsborough River
CD11	Howard Avenue	24" RCP	212	23.50	23.00	East to Hillsborough River
CD12	Albany Avenue	24" RCP	N/A	21.43	20.40	East to Hillsborough River
CD13	North Boulevard	24" RCP	N/A	N/A	N/A	East to Hillsborough River
CD14	Franklin Street	36" RCP	300	12.49	7.10	West to Hillsborough River
CD15	Morgan Street	60" RCP	200	10.60	10.32	West to Hillsborough River
CD16	Henderson Avenue	18" RCP	270	43.40	37.00	West to Hillsborough River
CD17	Palm Street	24" RCP	440	40.06	36.08	Nuccio Parkway
CD18	10th Street	5'x5' BC	232	28.61	28.05	Nuccio Parkway
CD19	13th Street	7'x5' BC	1023	26.97	24.89	Ybor City
CD20	14th Street	18" RCP	250	35.74	31.25	Ybor City
CD21	15th Street	42" RCP	200	N/A	29.09	Ybor City
CD22	22nd Street	30" RCP	N/A	N/A	17.49	29th Street
CD23	23rd Street	9'x6' BC	230	16.9	15.8	29th Street
CD24	24th Street	3'x3' BC	260	16.9	14.8	29th Street
CD25	26th Street	84" RCP	N/A	N/A	N/A	29th Street

TABLE 2 (cont.)
EXISTING CROSS-DRAIN STRUCTURES

<u>Structure I.D.</u>	<u>Location</u>	<u>Size/Type</u>	<u>Length (feet)</u>	<u>Invert (HW) (ft. NGVD)</u>	<u>Invert (TW) (ft. NGVD)</u>	<u>Drainage Basin</u>
CD26	28th Street	10'x6' BC	231	12.6	11.9	29th Street
CD27	34th Street	18" RCP	N/A	N/A	N/A	McKay Bay Outfall
CD28	35th Street	6'x5' BC	231	16.6	16.0	McKay Bay Outfall
CD29	37th Street	30" RCP	N/A	N/A	N/A	McKay Bay Outfall
CD30	42nd Street	36" RCP	288	26.8	26.5	McKay Bay Outfall
CD31	44th Street	12'x4' BC	244	23.40	22.90	McKay Bay Outfall
CD32	50th Street	42" RCP	N/A	N/A	N/A	McKay Bay Outfall
CD33	East of 56th St.	36" RCP	N/A	26.79	25.21	Tampa Bypass Canal
CD34	Along Dr. MLK, Jr. Blvd. (Buffalo Avenue)	24" RCP	N/A	N/A	N/A	Tampa Bypass Canal
CD35	Chelsea Street	48" RCP	N/A	25.18	25.0	Tampa Bypass Canal
CD36	Outfall for Bellows Lake	12'x4' BC	N/A	19.2	19.0	Tampa Bypass Canal
CD37	West of U.S. 301	48" RCP	N/A	17.0	16.8	Tampa Bypass Canal
CD38	West of Hillsborough Avenue	(2) 24" RCPs	N/A	N/A	N/A	Tampa Bypass Canal
CD39	West of I-75	38"x60" ERCP	N/A	N/A	N/A	Tampa Bypass Canal
CD40	West of I-75	38"x60" ERCP	N/A	N/A	N/A	Tampa Bypass Canal
CD41	East of I-75	10'x5' CBC	N/A	N/A	N/A	Tampa Bypass Canal
CD42	East of I-75 and West of Williams Rd.	36" RCP	N/A	N/A	N/A	Tampa Bypass Canal
CD100	Columbus Drive	18" RCP	260	N/A	N/A	Nuccio Parkway
CD101	Floribraska Ave.	24" RCP	N/A	N/A	N/A	Robles Park/Hillsborough River
CD102	Plymouth Street	36" RCP	276	31.0	21.5	Robles Park/Hillsborough River
CD103	26th Avenue	36" RCP	339	26.2	21.1	Robles Park/Hillsborough River
CD104	N. Bay St.	48" RCP	N/A	N/A	N/A	Sunshine Park
CD105	Emma Street	3' x 3' BC	N/A	N/A	N/A	Sunshine Park
CD106	Giddens Ave.	(2) 54" RCPs	N/A	N/A	N/A	Hillsborough Avenue
CD107	Hanna Ave.	24" RCP	N/A	N/A	N/A	North to Hillsborough River
CD108	Sligh Ave.	36" RCP	N/A	N/A	N/A	North to Hillsborough River

TABLE 2 (cont.)
EXISTING CROSS-DRAIN STRUCTURES

<u>Structure I.D.</u>	<u>Location</u>	<u>Size/Type</u>	<u>Length (feet)</u>	<u>Invert (HW) (ft.NGVD)</u>	<u>Invert (TW) (ft.NGVD)</u>	<u>Drainage Basin</u>
CD109	Broad Street	24" RCP	245	23.8	23.0	North to Hillsborough River
CD110	Kirby Street	24" RCP	201	19.5	17.9	North to Hillsborough River
CD111	Water Avenue	42" RCP	N/A	N/A	N/A	South to Hillsborough River
CD112	Okalossa Avenue	36" RCP	N/A	N/A	N/A	South to Hillsborough River
CD113	Busch Blvd.	54" RCP	180	15.9	15.6	South to Hillsborough River
CD114	Linebaugh Ave.	36" RCP	177	19.4	19.4	South to Hillsborough River
CD115	Bougenvillea Ave.	42" RCP	199	22.8	22.9	South to Hillsborough River
CD116	Senca Avenue	42" RCP	178	23.6	23.2	South to Hillsborough River
CD117	115th Avenue	42" RCP	205	27.6	27.3	South to Hillsborough River
CD118	116th Avenue	36" RCP	155	32.0	31.3	South to Hillsborough River
CD119	124th Avenue	18" RCP	N/A	N/A	N/A	Curiosity Creek
CD120	132nd Avenue	24" RCP	N/A	N/A	N/A	Curiosity Creek
CD121	137-138th Ave.	24" RCP	N/A	N/A	N/A	Curiosity Creek
CD122	Oak Drive	24" RCP	N/A	N/A	N/A	Duck Pond
CD123	Station 229+05*	30" RCP	231	53.0	52.5	Cypress Creek
CD124	Station 274+00 (US 41)	30" RCP	177	52.0	52.0	Cypress Creek
CD125	Station 295+00	24" RCP	168	54.0	53.8	Cypress Creek
CD126	Station 301+00	24" RCP	177	49.6	49.6	Cypress Creek
CD127	Station 320+00	24" RCP	194	49.6	49.6	Cypress Creek
CD128	Station 346+80	10' x 5' BC	164	33.0	32.8	Cypress Creek
CD129	Station 362+00	30" RCP	178	32.9	32.9	Cypress Creek
CD130	Station 369+80	(2) 36" RCPs	192	31.5	31.5	Cypress Creek
CD131	Station 381+00	24" RCP	167	34.6	34.6	Cypress Creek
CD132	Station 393+00	6' x 4' BC	154	32.0	32.0	Cypress Creek
CD133	Station 402+00	6' x 4' BC	154	32.0	32.0	Cypress Creek
CD134	Station 430+00	6' x 4' BC	160	31.2	31.2	Cypress Creek
CD135	Station 439+30	30" RCP	173	33.0	33.0	Cypress Creek
CD136	Station 445+90	24" RCP	192	35.4	35.0	Cypress Creek

TABLE 2 (cont.)
EXISTING CROSS-DRAIN STRUCTURES

Structure I.D.	Location	Size/Type	Length (feet)	Invert (HW) (ft. NGVD)	Invert (TW) (ft. NGVD)	Drainage Basin
CD137	Station 470+00	(2) 6'x4' BCs	158	34.5	34.5	Cypress Creek
CD138	Station 482+00	36" RCP	157	35.6	35.6	Cypress Creek
CD139	Station 490+00	36" RCP	161	35.6	35.6	Cypress Creek
CD140	Station 499+00	48" RCP	161	34.6	34.6	Cypress Creek
CD141	Station 511+89.08	(2) 10'x4' BCs	153	35.0	35.0	Cypress Creek
CD142	Station 523+89.08	(2) 10'x4' BCs	159	35.0	35.0	Cypress Creek
CD143	Station 542+83.75	(3) 10'x5' BCs	166	34.9	34.9	Cypress Creek
CD144	Station 569+00 (Station 597+42.42 - Hillsborough and Pasco County Line)	30" RCP	167	38.0	38.0	Cypress Creek
CD145	Station 618+70	10' x 4' BC	160	45.7	45.5	Cypress Creek
CD146	Station 653+00	10' x 10' BC	155	48.5	48.5	Cypress Creek
CD147	Station 683+27	4' x 4' BC	155	49.0	48.8	Cypress Creek
CD148	Cabbage Swamp	(3) 12' x 5' BC	151	48.0	48.0	Trout Creek
CD149	Station 726+00	(2) 30" RCPs	159	50.5	50.5	Trout Creek
CD150	Station 753+00	36" RCP	162	57.4	57.0	Trout Creek
CD151	(Trout Creek)	(2) 6'x3' BCs	161	63.8	63.0	Trout Creek
CD152	Station 816+00	(2) 36" RCPs	170	66.0	65.8	Trout Creek
CD153	Station 852+00	(2) 36" RCPs	109	70.5	70.5	Trout Creek
B1	Hillsborough River	Bridge				
B2	Hillsborough River	Bridge				
B3	Tampa Bypass Canal	Bridge				
B4	Cypress Creek	Bridge				

* Station distance based on FDOT Drainage Map; FA Project No. I-75-1(11)9.

BC = Box Culvert

RCP = Reinforced Concrete Pipe

ERCP = Elliptical Reinforced Concrete Pipe

CMP = Corrugated Metal Pipe

N/A = Not Available

" = Inches

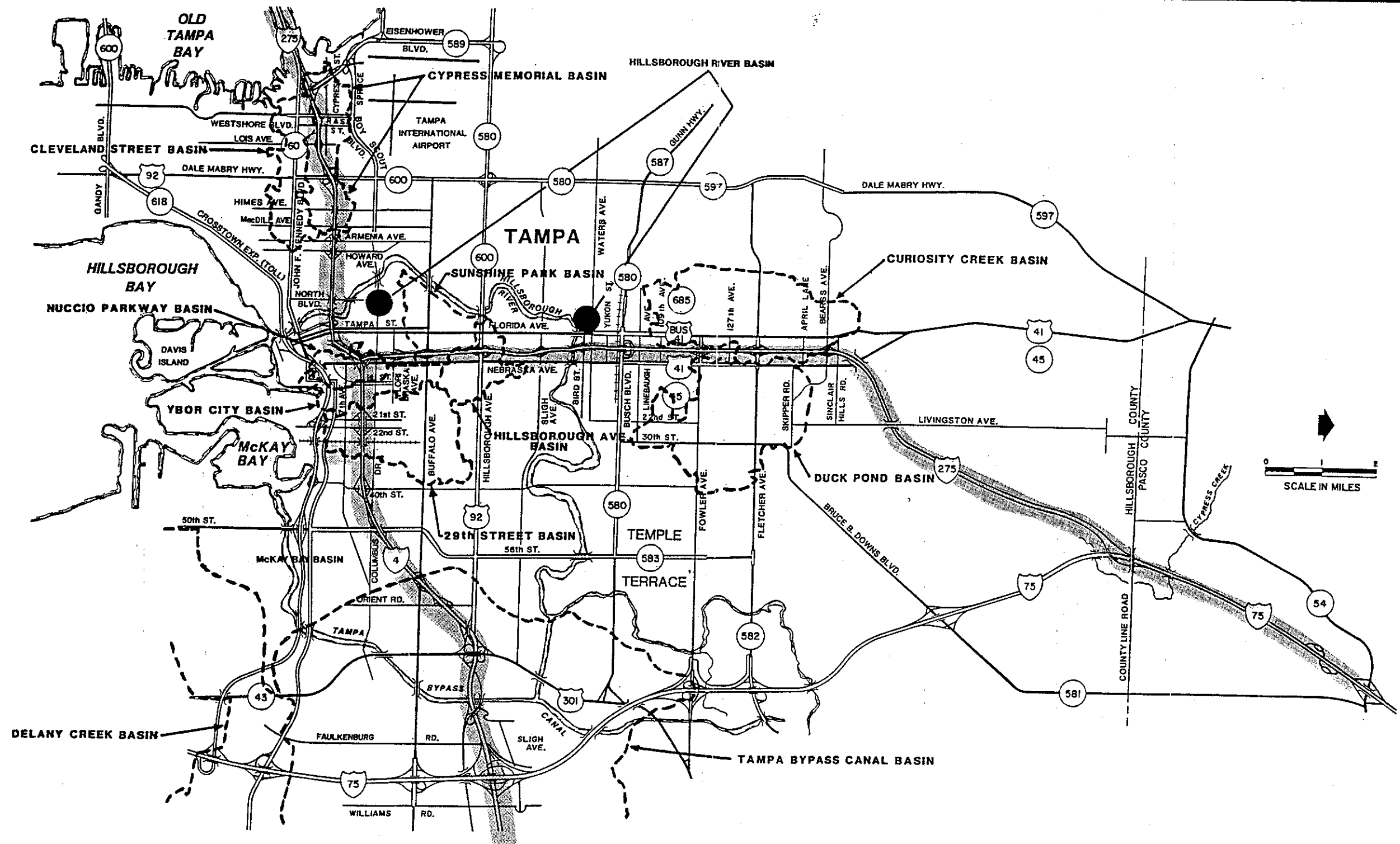
' = Feet

BASIN STUDIES

The entire project corridor can be delineated into thirteen drainage sub-basins as shown on Exhibit 3. Various drainage basin studies within the TIS project limits have been supplied to the TIS study team by Hillsborough County (Ref. 6, 7, 9 and 12), Pasco County (Ref. 6, 7 and 9), Southwest Florida Water Management District (SWFWMD) (Ref. 9), Department of the Army (Ref. 13), and the City of Tampa (Ref. 1, 2, 8, 11, 12, 14, 16, and 17). The existing drainage basins studied by the City of Tampa were based on a 5-year, 90-minute design storm for general stormwater sewer systems and a 25-year, 24-hour design storm for stormwater detention facilities. The details of the outfall system capacity within the project corridor will be studied in Task 2 of the TIS Drainage Master Plan. The basin outfall locations are listed in Table 3 and shown on Exhibit 4. Drainage basins and related cross-drain structures and outfalls within the project corridor are as follows:

Cleveland Street Basin

The Cleveland Street Basin includes areas adjacent to and south of I-275 from Memorial Avenue (S.R. 60) east to Manhattan Avenue. Westshore Plaza is drained by this system. The outfall is at the southwest end of the basin crossing Azeele Street known as Culbreath Bayou. No cross-drain structure of I-275 is located in this sub-basin. Significant flooding occurs in the area south of Westshore Plaza. This area has inadequate outfall drainage capacity based on the study conducted by the City of Tampa (Ref. 1).



Greiner, Inc.

LEGEND

- Major Drainage Basin
- ▨ Study Limits

FLORIDA DEPARTMENT OF TRANSPORTATION

DRAINAGE MASTER PLAN
TAMPA INTERSTATE STUDY
PHASE II
Hillsborough County, Florida

MAJOR DRAINAGE BASINS

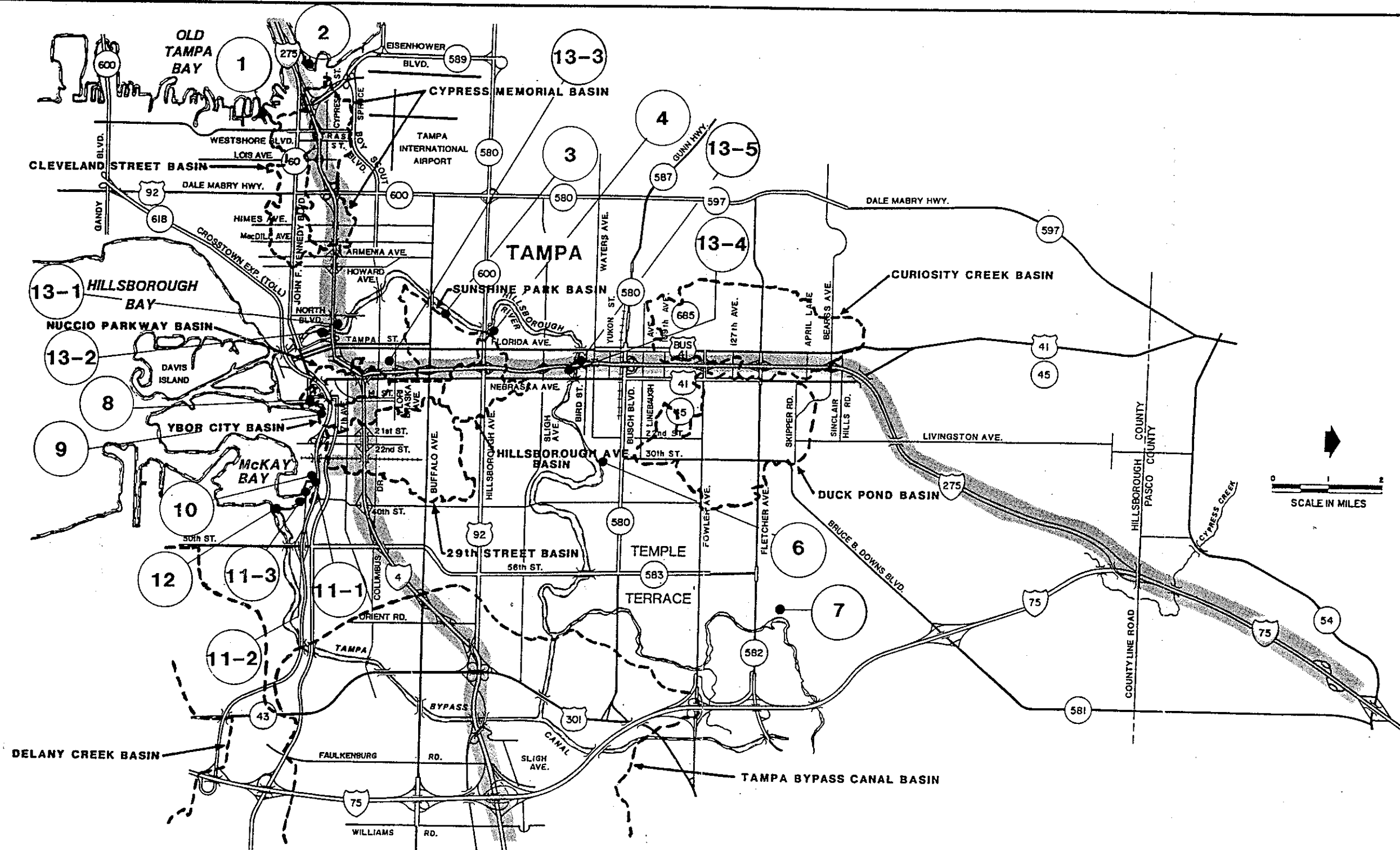
EXHIBIT 3

TABLE 3
SUMMARY OF DRAINAGE BASINS OUTFALL

<u>BASIN NAME</u>	<u>BASIN OUTFALL I.D.</u>	<u>BASIN OUTFALL LOCATION</u>	<u>DOWNSTREAM¹ OUTFALL SYSTEM CAPACITY</u>	<u>SOURCES</u>
Cleveland Street	1	Old Tampa Bay (Culbreath Bayou)	inadequate	City of Tampa
Cypress/Memorial	2	Old Tampa Bay (Lemon Street)	inadequate	City of Tampa
Sunshine Park	3	Hillsborough River (Violet Street South Avenue)	inadequate	City of Tampa
Hillsborough Avenue	4	Hillsborough River (Hillsborough Ave.)	inadequate	City of Tampa
Curiosity Creek	5	Blue Sink	inadequate	SWFWMD
Duck Pond	6	Hillsborough River	inadequate	Hillsborough County
Cypress Creek and Trout Creek	7	Hillsborough River	adequate	SWFWMD
Nuccio Parkway	8	Ybor Channel (14th Street)	inadequate	City of Tampa
Ybor City	9	Ybor Channel (15th Street)	inadequate	City of Tampa
29th Street	10	McKay Bay (between 34th and 35th St.)	inadequate	City of Tampa
McKay Bay	11-1	McKay Bay (between 34th and 35th St.)	*	*
	11-2	McKay Bay (43rd Street)	*	*
	11-3	McKay Bay (43rd Street)	*	*
Tampa Bypass Canal	12	McKay Bay	adequate	Dept. of the Army
Hillsborough River	13-1	Hillsborough River (Green St.)	*	*
	13-2	Hillsborough River (Scott St.)	*	*
	13-3	Robles Park Pond	*	*
	13-4	Hillsborough River (I-275)	*	*
	13-5	Hillsborough River (I-275)	*	*

¹ As identified in previous study.

* No detailed studies completed for this area.



Greiner, Inc.

LEGEND

- Major Drainage Basins
- Outfall Locations
- Study Limits

FLORIDA DEPARTMENT OF TRANSPORTATION

DRAINAGE MASTER PLAN

TAMPA INTERSTATE STUDY

PHASE II

Hillsborough County, Florida

OUTFALL LOCATIONS

EXHIBIT 4

Cypress Memorial Basin (includes the Lemon Street Basin)

I-275 from just west of Memorial Highway (S.R. 60) east to approximately Habana Avenue is within the Cypress Memorial Basin. The outfall system of this basin is the Lemon Street Canal, which is recognized by both the FDOT Maintenance Department and the City of Tampa as having inadequate drainage capacity (Ref. 2). The canal flows east to west and outfalls to Tampa Bay south of Cypress Street. It first crosses I-275 near Clark Avenue through a 12-foot by 6-foot box culvert (CD4-1) and then crosses Memorial Highway (S.R. 60) through two 10-foot by 6-foot box culverts (CD4-8) located between Cypress Street and Lemon Street.

Sunshine Park Basin

The I-275 corridor just north of Lake Avenue north to approximately Osbourne Avenue is included in the Sunshine Park Basin. Two cross-drain structures are located at North Bay Street (48-inch RCP, CD104) and Emma Street (3' x 3' BC, CD105) in this basin. The major drainage system carries stormwater north along Highland Avenue and then flows east to outfall to the Hillsborough River at Violet Street and South Avenue. The Sunshine Park Basin study indicated inadequate drainage outfall capacity from Highland Avenue (Ref. 14).

Hillsborough Avenue Basin

I-275 from Osbourne Avenue north to approximately Idlewild Avenue is included in the Hillsborough Avenue Basin. This area drains toward Hillsborough Avenue and then flows west to the Hillsborough River. The outfall structure to the Hillsborough

River is a 7-foot by 4.5-foot box culvert located at Hillsborough Avenue. The City of Tampa has indicated that the outfall culvert along Hillsborough Avenue has inadequate drainage capacity (Ref. 8). The major cross drain structure at I-275 within this basin is two 54-inch RCPs (CD106) located at Giddens Avenue which drains approximately 319 acres.

Curiosity Creek Basin

The I-275 corridor from just south of Atlantic Boulevard north to Bearss Avenue is included in the Curiosity Creek Basin. This basin is of particular importance since it has been designated as "volume sensitive" by Hillsborough County. This basin has no positive outfall and the normal runoff from the area exits through infiltration into an area known as Blue Sink. For this reason, additional concern may be directed toward water quality of stormwater runoff. The cross-drain structures of I-275 within this basin include CD119, CD120 and CD121. A sinkhole is located under the northbound lanes of I-275 between Hoffman and 129th Streets. Based on a previous study (Ref. 9), Curiosity Creek drains several thousand acres and has a very limited outlet capacity. The only existing outlet is a 6' x 6' box culvert between Busch Boulevard and the Hillsborough River. However, this system has an inadequate capacity for the Curiosity Creek Basin.

Duck Pond Basin

The western edge of the Duck Pond Basin is adjacent to I-275 between Fletcher Avenue and Skipper Road (Ref. 12). A portion of the interstate outfalls to this basin through cross-drain structure CD122 and discharges into Duck Pond which is located

north of the University Square Mall. Duck Pond also receives runoff from the small retention pond just east of the railroad and west of Duck Pond, which is fed by an FDOT storm sewer system along Nebraska Avenue. The existing drainage system is inadequate (Ref. 12). A proposed outfall system has been designed to convey water from the Bearss/Skipper detention pond to the proposed 131st Avenue detention pond and finally to discharge into Duck Pond. The Duck Pond Basin has also been designated "volume sensitive." Duck Pond discharges south into the City of Tampa drainage system located south of Fowler Avenue. The drainage system in this area consists of three small ponds (retention basins connected by storm sewers). At the southernmost pond (Poinsetta Lake), stormwater is pumped into the FDOT 30th Street storm sewer system and flows into the Hillsborough River.

Cypress Creek and Trout Creek

This basin extends from the Bearss Avenue exit north to the I-75 and S.R. 54 interchange and is considered a rural area. The I-275/I-75 roadway crosses Cypress Creek, Trout Creek and several wetland areas. Thirty-one cross-drain structures (CD123 through CD153) and a three-span bridge (B4) crossing Cypress Creek are located in this region.

The drainage basins for Cypress and Trout creeks have been studied by the SWFWMD (Ref. 6). The flow in this area drains from northwest to southeast and outfalls into the Hillsborough River approximately 16,000 feet upstream from the Fletcher Avenue crossing of the Hillsborough River.

Nuccio Parkway Basin

A portion of I-275 adjacent to the I-4 interchange and I-4 from Nebraska Avenue east to 13th Street is included in the Nuccio Parkway Basin. The area north of I-4 within this basin drains through a 5-foot by 5-foot box culvert (CD18) located at 10th Street and outfalls south to the Ybor Channel through two 72-inch RCPs located at 14th Street. This cross-drain culvert (CD18) is considered undersized by the City of Tampa Stormwater Management Division and contributes to flooding in the area. However, this cross-drain structure (CD18) has enclosed systems both upstream and downstream of the interstate and is considered as part of the City of Tampa storm sewer system (FDOT District 7 drainage staff, Ref. 18). The downstream outfall drainage system has inadequate capacity as documented in a study by the City of Tampa (Ref. 16, 17).

Ybor City Basin

The Ybor City Basin includes a portion of I-4 from 13th Street east to 19th Street. The flow north of I-4 within this basin drains through a cross drain located at 13th Street (CD19, 7' x 5' CBC). This sub-basin outfalls to Ybor Channel through a 5-foot by 6-foot double box culvert located at 15th Street. This cross drain (CD19) also has inadequate drainage capacity according to the City of Tampa Stormwater Management Division (Ref. 16, 17) and contributes to flooding north of the interstate. It is also considered as part of the City of Tampa storm sewer system by FDOT.

29th Street Basin

I-4 between 19th Street and 32nd Street is within the 29th Street Basin. This area drains from north to south into McKay Bay. Four major drainage structures cross I-4 in this basin. The structures are a 9-foot by 6-foot box culvert (CD23), 3-foot by 3-foot box culvert (CD24), 84-inch RCP (CD25), and 10-foot by 6-1/4-foot box culvert (CD26) located at 23rd, 24th, 26th and 28th Streets, respectively. The downstream outfall drainage is inadequate as indicated in the City of Tampa study (Ref. 11). All of these drainage systems combine and discharge into a ditch located north of the Crosstown Expressway. This ditch then outfalls to McKay Bay between 34th and 35th Streets. There is a concrete bridge located at 34th Street near the outfall and a gauge station at the upstream end of bridge. The connector between I-4 and the Crosstown Expressway is proposed in this sub-basin.

McKay Bay Outfall Basin

In this basin, three drainage systems cross I-4 and outfall to McKay Bay. The first system consists of cross-drain structures located at 34th Street (18-inch RCP, CD27), 35th Street (60-inch RCP, CD28) and 37th Street (30-inch RCP, CD29). Stormwater from the three pipes combines at 34th Street and flows south to discharge into McKay Bay. The second drainage system crosses I-4 at 44th Street through a 12-foot by 4-foot box culvert (CD31) and outfalls to McKay Bay. The third system is a 42-inch RCP (CD32) which crosses I-4 at 50th Street and outfalls to McKay Bay.

Tampa Bypass Canal Basin

I-4 from the Dr. Martin Luther King, Jr. Boulevard (Buffalo Avenue) interchange east to the limits of the study area is included in the Tampa Bypass Canal Basin. The area drains from north to south through the Tampa Bypass Canal, previously known as Six Mile Creek and the Palm River. The Tampa Bypass Canal is a project of the U.S. Army Corps of Engineers, Jacksonville District. Design criteria are specified in a detailed design memorandum published in May 1974. The Tampa Bypass Canal is operated by the Southwest Florida Water Management District. The operations schedule for the lower Hillsborough Flood Detention Area and the Tampa Bay Bypass Canal was published in April 1983 (Ref. 13). The system controls flooding in the Hillsborough River.

On the west side of the canal, between the McKay Bay Outfall Basin and the Tampa Bypass Canal, the basin is divided into two sub-basins that drain to the Tampa Bypass Canal. The east sub-basin drains northwest to Bellows Lake through a 48-inch RCP (CD35) under I-4 near Chelsea Street. Bellows Lake then drains through a 12-foot by 4-foot box culvert (CD36) located at I-4 and finally discharges into the Tampa Bypass Canal. The west sub-basin drains through a 48-inch RCP (CD37) located near Hillsborough Avenue from south to north and outfalls east to Tampa Bypass Canal.

On the east side of the canal, the basin drains from south to north and then flows east to discharge into the Tampa Bypass Canal. The major drainage structures in this region include two 38-inch by 60-inch elliptical RCPs (CD39, CD40) located west of

the I-275/I-75 interchange, one 10-foot by 5-foot box culvert (CD41) located east of the interchange, and one 36-inch RCP (CD42) near Williams Road.

Hillsborough River Basin

This basin includes all areas within the project corridor discharging directly into the Hillsborough River. There are two sub-basins located at the east and west end of the I-275/Hillsborough River bridge (B1, see map in Appendix A) near North Boulevard, one sub-basin near Robles Park, and the two sub-basins located at the south and north end of the I-275/Hillsborough River bridge (B2, see map in Appendix A) near Bird Street.

The area between the Cypress Memorial Highway Basin and the Nuccio Parkway Basin drains to the Hillsborough River. West of the Hillsborough River at Bridge B1, the sub-basin drains north through the structures crossing I-275 from Armenia Avenue to North Boulevard (CD10, CD11, CD12 and CD13), and then drains eastward by a 48-inch pipe to outfall to the Hillsborough River at Green Street. East of the Hillsborough River, the sub-basin drains from northeast to southwest through structures at Franklin Street, Morgan Street, Henderson Avenue, and Palm Street (near the I-275/I-4 interchange) and outfalls to the Hillsborough River near Scott Street (66-inch RCP). The sub-basin between Floribaska Avenue and Virginia Avenue in the east of I-275 drains through structures CD101, CD102, and CD103 to a pond at Robles Park. The pond discharges by a stormwater pump station into the Hillsborough River.

The areas along I-275 between the Hillsborough Avenue Basin and Curiosity Creek Basin are drained to the Hillsborough River by two systems. The south sub-basin (from the boundary of the Hillsborough Avenue Basin north to Hillsborough River) drains through structures (CD107-CD110) under I-275 to a 42-inch RCP parallel with I-275 and outfalls north to the Hillsborough River.

The north sub-basin from the Hillsborough River to 116th Street drains through structures (CD111-CD118) to a 78-inch pipe under I-275 and outfalls south to the Hillsborough River.

REGULATORY AGENCY COORDINATION

As part of Task 1 of the Drainage Master Plan, the TIS team contacted and met with representatives of regulatory agencies having jurisdiction within the project limits. Each agency's "conceptual approval or conceptual agreement" process and applicable design criteria related to drainage for the TIS project were discussed. The procedures and results are described as follows:

On August 15, 1990, the TIS team sent letters of invitation to thirteen regulatory agencies requesting that they attend the preliminary agency coordination meeting including:

- * Tampa Port Authority
- * U.S. Coast Guard
- * U.S. Army Corps of Engineers
- * Southwest Florida Water Management District
- * Federal Highway Administration

- * Hillsborough County
- * City of Tampa
- * Pasco County
- * Florida Department of Environmental Regulation
- * Environmental Protection Agency
- * Florida Department of Natural Resources
- * Florida Game and Fresh Water Fish Commission
- * Hillsborough County Environmental Protection Commission

On August 30, 1990, an agency coordination meeting was held at the FDOT Tampa office. Representatives from the FDOT, SWFWMD, DNR, FDER, Pasco County, Hillsborough County EPC, and the TIS team were in attendance (see Appendix B for meeting minutes). The TIS team briefed the agencies on the TIS purpose and the results of Phase I of the TIS. General discussions were held related to the type of long-term commitments available from each agency including: Conceptual Permits, Memorandums of Agreement, Memorandums of Understanding and Letters of Intent.

Each agency briefly reviewed their permitting process and drainage-related design criteria. Several agencies were concerned with wetland and water quality issues. Mitigation "banking" and stormwater treatment trade-offs were discussed. At the conclusion of the meeting, each agency stated that some agreement mechanism could be reached for long-term commitments between the agency and FDOT. Each agency requested that they have input on the Drainage Master Plan and further workshops should be scheduled to provide further dialogue.

As a follow-up to the August 30, 1990 agency coordination meeting, the TIS study team requested from the thirteen regulatory agencies written verification that long-term commitments would be feasible, a preferred method or methods for obtaining commitments and potential drainage-related design criteria. To date, only the HCEPC, FGFWFC, and FDNR have responded to this request (see Appendix C).

Although responses to the request for written verification on the feasibility of obtaining long-term commitments from the regulatory agencies was minimal, the TIS team believes that long-term commitments from the regulatory agencies should be pursued further. Due to the length of the construction schedule for the TIS project, long-term commitments are vital so that set stormwater design criteria can be used in the final design of each interstate design segment. The set criteria should minimize future changes to the TIS design created by changing regulatory agency rules or policies.

REFERENCES

1. Cleveland Street Basin Drainage Study; City of Tampa, Florida; June 1988.
2. Cypress/Memorial Area Drainage Study; City of Tampa, Florida; August 1989.
3. Correspondence; Hillsborough County, Florida; October 19, 1990.
4. Correspondence; Florida Department of Transportation; November 8, 1990.
5. Drainage Atlas; City of Tampa, Florida.
6. Floodplain Information on Trout Creek; Hillsborough and Pasco Counties, Florida; June 1983.
7. Floodplain Information on Hillsborough River Watershed; Hillsborough and Pasco Counties, Florida; November 1979.
8. Hillsborough Avenue Basin Drainage Study; City of Tampa, Florida; September 1983.
9. Hydrologic Investigation and Stormwater Management Plan for the Curiosity Creek Watershed; Southwest Florida Water Management District, Hillsborough River Basin Board, Northwest Hillsborough Basin Board, Hillsborough County, and the City of Tampa; September 1982.
10. Plan of Proposed State Highway I-4-1(39)-14, I-4-1(42)18, I-4-1(34)19, I-4-1(22)20, I-75-1(17)0 and I-75-1(33)0, Florida Department of Transportation.
11. Preliminary Report Phase IV: 29th Street Outfall Drainage System; City of Tampa, Florida; July 1973.
12. Preliminary Design of the Duck Pond Outfall System; Hillsborough County; April 1988.
13. Regulation Manual for Lower Hillsborough Flood Detention Area and Tampa Bypass Canal; Department of the Army; April 1983.
14. Sunshine Park Master Basin Plan: Phases I and II; City of Tampa, Florida; August 1985.
15. TIS Master Plan Report; Florida Department of Transportation; 1989.
16. Ybor City Stormwater Management Study Phase I; City of Tampa, Florida; March 1985.
17. Ybor City Stormwater Management Study Phase II; City of Tampa, Florida; October 1985.
18. Telephone Conversation with Staff in FDOT District 7; January 15, 1991.
19. TIS Environmental Assessment Location Hydraulic Report; Florida Department of Transportation; January, 1991.
20. TIS Environmental Impact Statement Location Hydraulic Report; Florida Department of Transportation; February, 1991.

APPENDIX A
CROSS-DRAIN STRUCTURES
LOCATION MAP

APPENDIX B

TIS AGENCY
COORDINATION MEETING MINUTES



C2380.21 B1, C21A
September 4, 1990

MEMORANDUM

TO: Files

FROM: Robert E. Johnson, P.E.

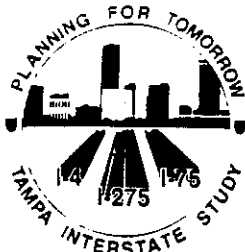
SUBJECT: Tampa Interstate Study #C2380.; WP Item #7140004; State
Job #99007-1402; F.A.P. #IR-9999(43); F.E.I.D. #59208795 -
Phase 2, Drainage Master Plan
Agency Coordination Meeting

On Thursday, August 30, 1990, an agency coordination meeting was held at the FDOT District 7 office to discuss the above referenced project. The following were in attendance:

Lisa Hansen, FDOT
Larry Gaddy, FDOT
Victor Gagliardo, SWFWMD
B.J. White, DNR
Bob Stetler, FDER
Bipin Parikh, Pasco County
Rick Perry, HCEPC
Dick Combs, Greiner, Inc.
Lynn Miller, Greiner, Inc.
Robert Johnson, Greiner, Inc.

The following major topics were discussed:

- * Participants in the meeting were introduced.
- * Greiner reviewed the Agency Coordination letter of August 15, 1990 and stated the Agency Coordination Meeting objectives.
- * Greiner gave a brief Tampa Interstate Study Phase 1 project summary.
- * Greiner briefly described existing drainage conditions, and proposed conceptual stormwater management alternatives identified in the TIS Master Plan.



Memo/Files
C2380.21 B1, C21A
September 4, 1990
Page 2

- * Greiner reviewed the TIS Phase 2 project initiatives which included the Environmental Assessment, Environmental Impact Statement and Drainage Master Plan.
- * Greiner briefly discussed Agency permitting interests and procedures including "long-term" permitting procedures.
- * SWFWMD indicated that they have had problems with permitting of a major roadway project (e.g. Northwest Expressway) due to lack of ownership of right-of-way.
- * Both FDER and DNR indicated that their agencies would be involved in navigational permitting.
- * SWFWMD indicated that rulemaking had begun on requiring that alterations to existing impervious areas provide treatment for the entire project area (i.e., retrofitting). FDER indicated that they were also revising the state water policy to include retrofitting.
- * FDER indicated that delegation of NPDES permitting for stormwater by EPA was going slow.
- * FDER stated that currently there is no substitute for construction permits; although they may be able to use Memorandum of Understanding for project. FDER has made commitment to work with FDOT on long-term projects.
- * FDNR indicated that they must review project with the Division of State lands and submerged lands. FDNR is concerned that FDOT has easements where project is crossing state owned lands (if that occurs).
- * Pasco County indicated that they follow permitting criteria similar to SWFWMD and FDER. Duration of permits are 5-6 years, but permit time frame can be extended by agreement.
- * HCEPC stated that they have no permitting process, but comment on projects through Hillsborough County Development Review. They are concerned with wetlands to be impacted and proposed pond locations. May be possible to work out a MOU or letter of intent for long-term commitment.
- * FDER stated that they could provide declaratory jurisdiction statements for areas within corridor that are under FDER jurisdiction at no cost to FDOT.



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September 4, 1990
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- * FDNR indicated that they would be concerned about any State park impacts associated with the project.
- * FDER indicated that as a result of past permitting, several areas in the vicinity of the TIS corridor have been dedicated as conservation easements. Greiner should check with FDER to see where these conservation easements are located to avoid impacting them.
- * SWFWMD stated that they cannot issue conceptual permits without ownership of right-of-way. FDOT can apply for permit for areas currently owned by FDOT, then add areas as purchased. SWFWMD can review the conceptual permit and inactivate the permit until R.O.W. is acquired, then the permit will be issued. SWFWMD is considering rule revisions to require permit fees for governmental agencies. Conceptual permit duration is two years and indefinitely if a phase is built within two years. SWFWMD may consider an MOU for a conceptual permit with FDOT.
- * FDOT indicated that they were concerned about including treatment volumes for segments not yet purchased in segments that have been purchased and how they would be permitted. FDOT also asked if legislation is required so SWFWMD can issue permits if land is not owned by FDOT. There was no resolution to that question.
- * SWFWMD indicated that they may allow mitigation "banking". FDER also allows mitigation "banking". Procedures are in place at FDER for "banking" (contact Ann Redmond at FDER Tallahassee).
- * FDER and SWFWMD may consider trade-offs for stormwater treatment. These may include wetland mitigation, treatment of other areas, etc.
- * SWFWMD indicated that SWIM funds may be available for new stormwater treatment technology used for cleaning up stormwater.
- * At the conclusion of the meeting, the agencies stated that some agreement mechanism (i.e, conceptual permit, MOU, letter of intent, etc.) could be reached for long-term commitments between the agencies and FDOT. All agencies would like to have input on the drainage master plan and further workshops would be scheduled with the agencies to provide further dialog.

REJ:vaj

cc: Lisa Hansen, FDOT
Larry Gaddy, FDOT
Ron Gregory, Greiner, Inc.
Lynn Miller, Greiner, Inc.
Jim Burnside, City of Tampa-Transportation Division

APPENDIX C

**RESPONSES FROM AUGUST 30, 1991
AGENCY COORDINATION MEETING**

COMMISSION
PHYLLIS BUSANSKY
RODNEY COLSON
PAM IORIO
RUBIN E. PADGETT
JAN KAMINS PLATT
HAVEN POE
JAMES D. SELVEY



ROGER P. STEWART
EXECUTIVE DIRECTOR
MAIN OFFICES
1900 - 9TH AVENUE
TAMPA, FLORIDA 33605
TELEPHONE (813) 272-6980
AIR PROGRAM
TELEPHONE (813) 272-5530
WASTE MANAGEMENT PROGRAM
TELEPHONE (813) 272-5788

RECEIVED

November 8, 1990

NOV 28 1990

GREINER, INC.
TAMPA

C. Lynn Miller
Greiner Engineering
Post Office Box 23646
Tampa, Florida 33630

SUBJECT: TAMPA INTERSTATE STUDY/LETTER OF 10-26-90/WP ITEM #71404/
STATE JOB #99007-1402

Dear Mr. Miller:

This letter is being transmitted in response to your correspondence of 10/26/90. As we discussed in our meeting of 8/30/90, the Ecosystems Management Division of EPC has as its main responsibility the protection of all wetland areas within Hillsborough County. Review of proposed development within the county is accomplished through submittal of construction plans to the Hillsborough County Development Review Department (DRD).

This agency does not issue any permits of its own, but through our approval/denial recommendations to DRD, permits to construct projects are either issued or denied by that agency.

Your letter requests a long-term regulatory approval or commitment for the Tampa Interstate Study project. Any long-term approval would be based on submitted plans reviewed by the agency, and only if those plans provided assurance that the following had been completed:

1. Alternative alignment considerations which would eliminate or reduce any wetland impact.
2. All wetland areas within the project boundaries are delineated by the EPC and surveyed by the applicant.
3. Wetland surveys submitted to and approved by the EPC.
4. Any proposed wetland impacts must be approved by the EPC Executive Director. Any approved wetland impacts must be compensated for by an approved mitigation plan.
5. Conceptual or detailed mitigation proposals, whether incorporated into site plans or otherwise, must clearly show areas to be removed, location of mitigation and acreages of each. Mitigation must be approved by the EPC Executive Director or his authorized agent. Mitigation approval will be valid for a period of two and one half years, effective from the date of initial approval, unless site plans are altered, in which case the approval is void.

C. Lynn Miller
November 8, 1990
page two

6. At a minimum, detailed mitigation plans must include cross sections showing slopes, depth of excavation, desired water levels, types of plants to be used and spacing, total acreage of wetlands destroyed and mitigated for, time tables for starting and completing mitigation work, monitoring schedule, and reports and statement that 85% survival of each planted species will be attained with replanting on an annual basis if necessary. Before the construction plan can be approved by EPC a completed "Mitigation Agreement" and approval from the Environmental Review Section of the Hillsborough County Development Review Department for potential mitigation sites are required.
7. Monitoring and maintenance is required for a minimum of three years (five if forested); year 1 - quarterly; years 2 & 3 semi-annually; years 4/5 annually (if forested).
 - A. Monitoring reports must be submitted to EPC within 30 days following each monitoring event. At a minimum, monitoring reports should address:
 1. Date planted and number of planted materials used
 2. Soil stabilization measures used
 3. Percent survival of planted species
 4. Number of plants replanted if necessary to meet 85% and when planted
 5. 20-25% of trees tagged to monitor tree growth rate and DBH (Forested Systems)
 6. Water quality
 - a. Visual observations
 - b. Lab data if necessary, i.e. salinity, conductivity, Ph, etc.
 7. Total percent coverage of vegetation
 8. Plant diversification and natural recruitment (list species present)
 9. Depth of water at monitoring event
 10. Permanently marked photo stations
 11. Wildlife usage
 12. Overall ecological evaluation
 13. Problems encountered and corrective actions implemented or needed
 - B. Maintenance shall mean the removal of nuisance or exotic species. Nuisance species coverage must not exceed 10%. (Cattails, Typha spp.; Willows, Salix spp; Primrose willow, Ludwigia peruviana, Dogfennel, Eupatorium spp.; Sesbania spp.; Water Hyacinths, Eichhornius spp.)
 - C. 85% survival must be guaranteed for each planted species and must be replanted annually if any species survivorship falls below 85%.
 - D. A time table for the start and completion of the mitigation work must be included.
 - E. Indicate plant source (i.e. certified nursery grown, bare root, transplanted from on site). If collected plants are to be used, donor sites must be identified and approved by the EPC.
8. Monitoring and maintenance must continue until a Certificate of Completion is issued by the EPC. Reconstruction of the site design may be necessary to achieve functioning wetlands. Monitoring and maintenance must continue

C. Lynn Miller
November 8, 1990
page three

until approved by EPC. A Certificate of Completion will be issued when all success criteria have been met.

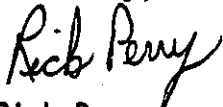
9. Once the detailed mitigation plan has been approved by EPC staff, a Mitigation Agreement must be signed by the owner/developer and notarized, and approved by the Executive Director of EPC. If the Mitigation Agreement is to be recorded, the recording fee must be paid by the owner/developer and should accompany the Mitigation Agreement. Recording fees are \$6.00 for the first page and \$4.50 for each additional page. Money orders or certified checks (no personal checks accepted) must be made payable to the Clerk of Circuit Court.
10. To maintain good water quality, the project must be designed to properly treat stormwater runoff, complying with the requirements of FAC 17-325, Regulation of Stormwater Discharge. Prior to final approval, the developer must submit to EPC a copy of the SWFWMD/DER FAC 17-325 stormwater discharge permit or exemption letter for the project.
11. Data and calculations for determining the maintenance of the natural hydroperiod of each wetland must be submitted. This is needed in order to evaluate and ensure maintenance of wetland amenities.

Finally, with regard to long-term approval, once submitted plans are reviewed by the EPC, and approved, a memorandum of understanding could be prepared and, subsequent to construction plan review/approval, a final letter of agreement could be supplied.

Please note that any approvals would have to be based on agency rules/regulations which are in place at the time of review. Regulatory rules/policies are constantly being revised; therefore, this agency would necessarily impose any new specifications/guidelines in place at the time of construction plan review.

If you have any further questions, please do not hesitate to contact this office.

Sincerely,



Rick Perry
Environmental Scientist II
Environmental Protection Commission
of Hillsborough County

/cw
PF

FLORIDA GAME AND FRESH WATER FISH COMMISSION

WILLIAM G. BOSTICK, JR.
Winter Haven

DON WRIGHT
Orlando

THOMAS L. HIRES, SR.
Lake Wales

MRS. GILBERT W. HUMPHREY
Miccosukee

JOE MARLIN HILLIARD
Clewiston

ROBERT M. BRANTLY, Executive Director
ALLAN L. EGBERT, Ph.D., Assistant Executive Director



COPY

FARRIS BRYANT BUILDING
830 South Meridian Street
Tallahassee, Florida 32399-1600
(904) 488-1960

December 13, 1990

C. Lynn Miller
Tampa Interstate Study
P. O. Box 31646
7650 West Courtney Campbell Causeway
Tampa, Florida 33607-1462

Re: Tampa Interstate Study,
Hillsborough and Pasco
Counties

Dear Ms. Miller:

Thank you for your letter of October 29, 1990, concerning the Tampa Interstate Study.

Our records indicate that the Florida Game and Fresh Water Fish Commission was not notified by the Agency Coordination letter of August 15, 1990, and did not attend the August 30, 1990, Tampa Interstate Study (TIS) Agency Coordination Meeting.

The Florida Game and Fresh Water Fish Commission is not a regulatory agency in the same sense as Florida Department of Environmental Regulation, Florida Department of Natural Resources, Florida Department of Transportation, or Southwest Florida Water Management District. The Commission does not issue long-term commitments or long-term regulatory approval for those activities regulated by Chapter 39, Florida Administrative Code.

By its nature, the protection of the fish and wildlife resources of the State is a site-specific and time-specific process. Given the dynamic nature of fish and wildlife populations, the Commission cannot grant authorization which might not reflect site conditions at the time of construction.

Sincerely,

RECEIVED

Bradley J. Hartman
Bradley J. Hartman, Director
Office of Environmental Services

BJH/JWB/rs
ENV 2-1-1/5

DEC 24 1990

GREINER, INC.
TAMPA

COPY

STATE OF FLORIDA
DEPARTMENT OF NATURAL RESOURCES

Marjory Stoneman Douglas Building • 3900 Commonwealth Boulevard • Tallahassee, Florida 32399
Tom Gardner, Executive Director

November 14, 1990

RECEIVED

NOV 14 1990

GREINER, INC.
TAMPA

Mr. C. Lynn Miller, P.E.
Associate Vice President
Tampa Interstate Study
The Greiner Team
P.O. Box 31646
Tampa, Florida 33631-3416

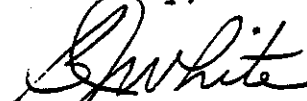
Dear Mr. Miller:

This is in response to your letter of October 26, 1990. Along with environmental concerns, the Department's involvement would be where the Tampa Interstate project may affect lands where title is vested in the Board of Trustees of the Internal Improvement Trust Fund.

The Department would be unable to process any request for long term approval or commitment until specific state-owned land needs are determined. Should the project traverse sovereignty submerged lands or state-owned uplands, an easement from the Board of Trustees of the Internal Improvement Trust Fund will be required. Use of state-owned uplands designated as natural resource lands will be evaluated for consistency with the Incompatible Use Policy approved by the Board of Trustees on May 24, 1988. A copy of the policy is attached.

Also for your information and use as appropriate is a paper regarding standard manatee protection construction conditions.

Sincerely,

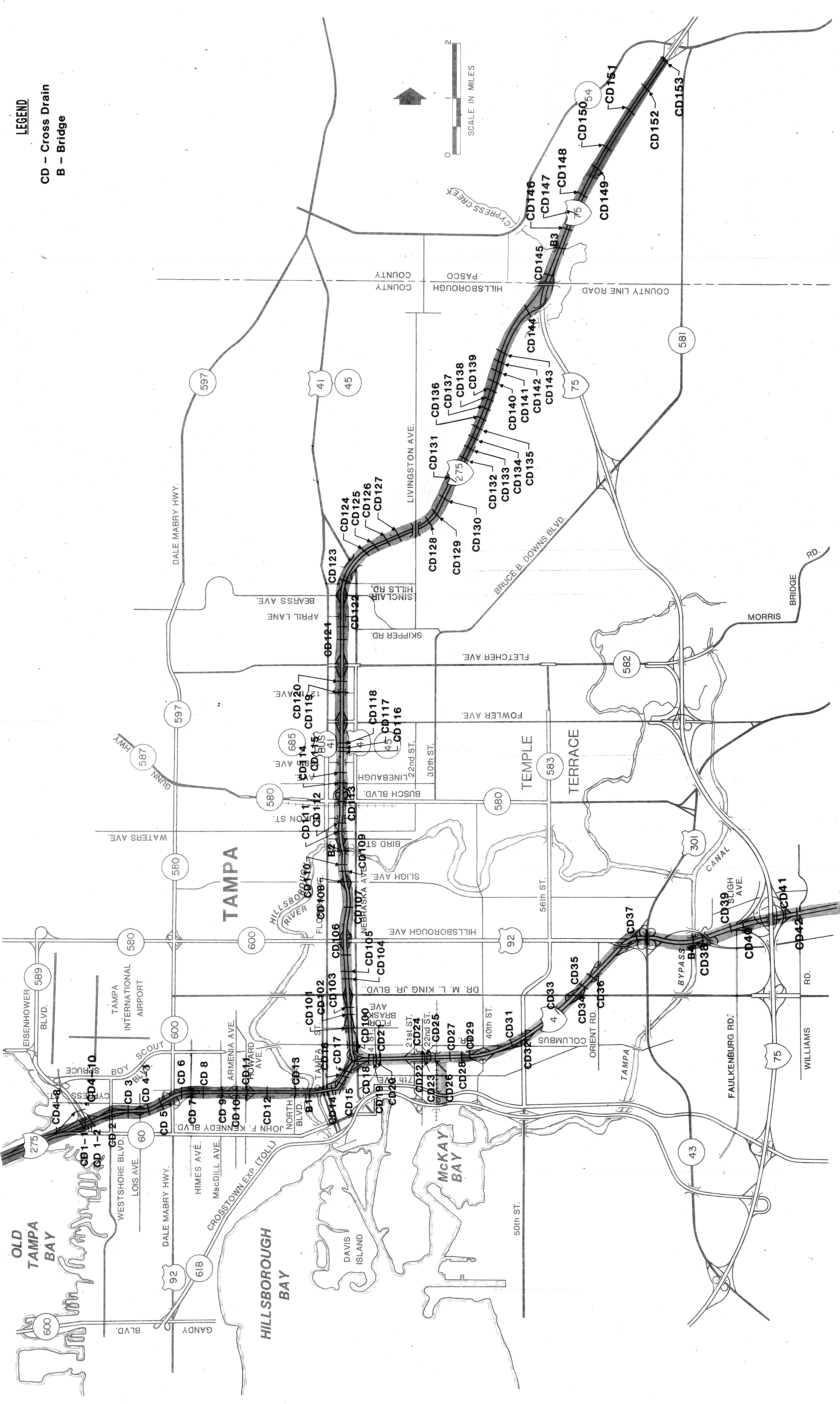


Bobby Jack White
Environmental Administrator
Office of Land Use Planning
and Biological Services

BJW/jp
Attachments



Administration	Beaches and Shores	Law Enforcement	Marine Resources	Recreation and Parks	Resource Management	State Lands
Bob Martinez Governor	Jim Smith Secretary of State	Bob Butterworth Attorney General	Gerald Lewis State Comptroller	Tom Gallagher State Treasurer	Doyle Conner Commissioner of Agriculture	Betty Castor Commissioner of Education



LEGEND

- CD - Cross Drain
- B - Bridge

PROJECT No. C2380	
PROJECT DATES	
DATES	DESCRIPTION



THE GREINER TEAM
GREINER, INC.
PIPER ARCHAEOLOGICAL RESEARCH, INC.
KNIGHT APPRAISAL SERVICES

**CROSS DRAIN STRUCTURES
LOCATION MAP**

**TAMPA INTERSTATE
STUDY**
FLORIDA DEPARTMENT OF TRANSPORTATION
STATE PROJECT No. 99007-1402
EXHIBIT A-1