

Task A5b5 Wetlands Evaluation Report

TAMPA INTERSTATE STUDY

WPI No. 7140004, State Project No. 99007-1402, FAP No. IR-9999(43)

The project consists of approximately 12 miles (19.31km) of multi-lane improvements to I-275 from Dale Mabry Highway interchange north to Dr. Martin Luther King Jr. Boulevard and I-4 from I-275 (including interchange) to east of 50th Street (U.S. 41); a multi-lane controlled access facility (Crosstown Connector) on new alignment from I-4 south to the existing Tampa South Crosstown Expressway; and improvements to approximately 4.4 miles (7.08km) of the Tampa South Crosstown Expressway from the Kennedy Boulevard overpass east to Maydell Drive, Hillsborough County.

Prepared For FLORIDA DEPARTMENT OF TRANSPORTATION

**Prepared By
GREINER, INC.**

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1.0 INTRODUCTION

In 1987, the Greiner Team was contracted by the Florida Department of Transportation (FDOT) to develop a Master Plan (Phase I) for the Tampa interstate system. The purpose of Phase I of the Tampa Interstate Study (TIS) was to produce a Master Plan which identified possible improvements to I-275, I-4, and I-75 to accommodate traffic and transportation needs through the year 2010. Phase II of the TIS began in April 1989 and involves the preparation of the environmental documentation necessary for State and Federal approvals and funding for those concepts approved in Phase I of the TIS.

The purpose of this Wetlands Evaluation Report is to facilitate the integration of the National Environmental Policy Act (NEPA) and Section 404(b)(1) Guidelines with the intent of documenting acceptance or concurrence by various agencies responsible for permitting the project.

2.0 PROJECT NEED

Year 2010 traffic projections indicate I-275 is anticipated to carry 124,000 vehicles per day (vpd) west of the proposed Veterans Expressway and 157,000 vpd east of the expressway. Using the 2010 forecast traffic volumes a "Tier Analysis" was conducted to consider, develop, and evaluate various roadway design concepts for the study area. As a result of this tier evaluation process, a Master Plan concept was recommended for this facility. The FHWA approved the Master Plan which details the project need as supported by traffic projections, safety information, network planning, land use information, and additional documentation.

3.0 WETLANDS IDENTIFICATION AND DELINEATION

In compliance with Executive Order 11990, the study area has been evaluated for the presence of wetlands which have the potential to be impacted by the proposed project. Field reviews of the project area were conducted in October 1990. The following summary provides a brief description of twenty-two wetland sites identified in the project area. Exhibit 1 locates each wetland site, and Table 1 lists the USFWS classification (Cowardin et al, 1979) and acreage of each site identified in the project area.

Wetland sites which will potentially be impacted by the proposed improvements were evaluated using the Wetlands Evaluation Technique (WET-II). Section 9.0 of this report describes the functions and values of the existing wetland systems, and evaluates the mitigation proposed to compensate for the loss of wetland functions and values.

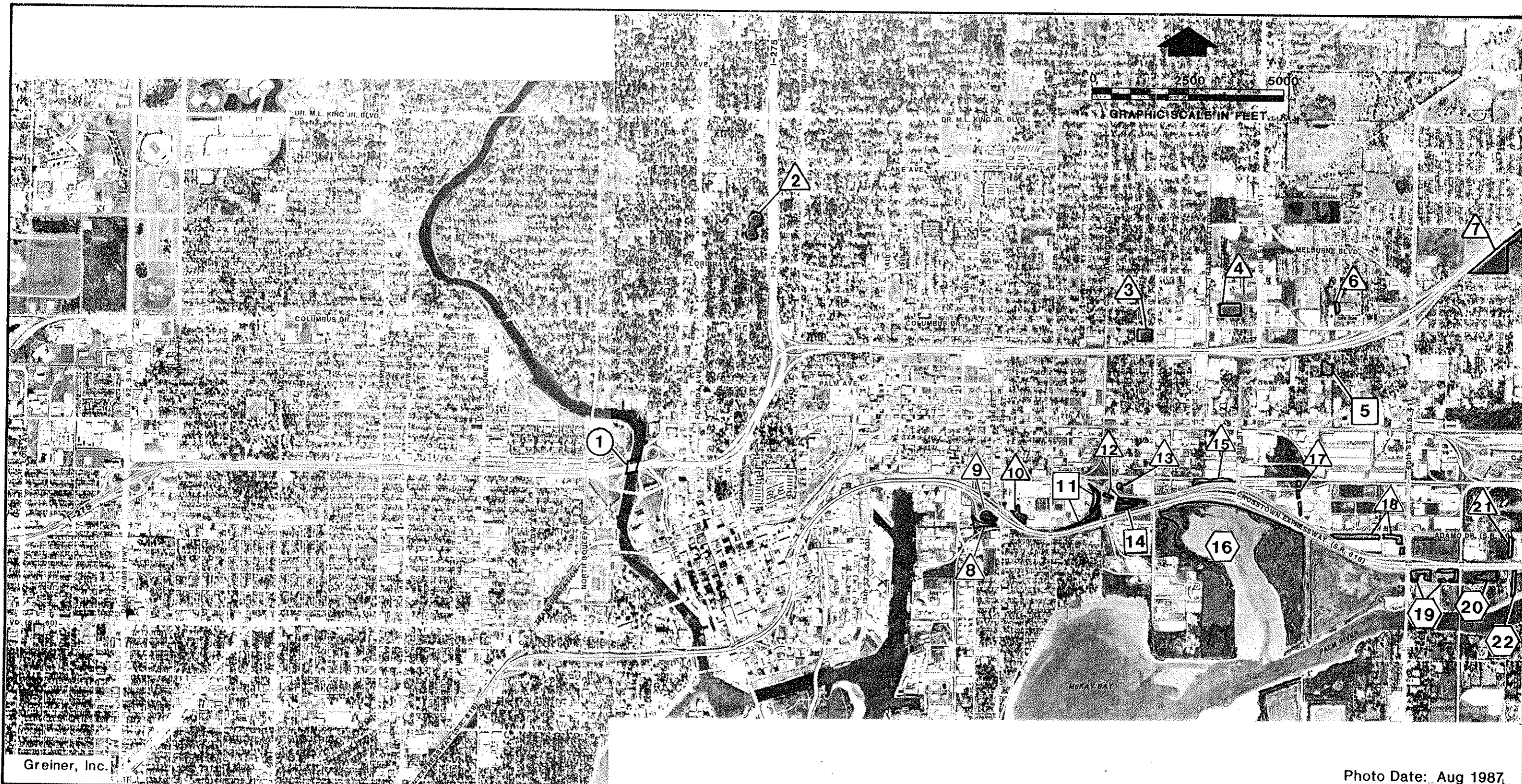
Site 1: Site 1 designates the Hillsborough River. The proposed project traverses a highly disturbed portion of the river which has concrete seawalls along its banks. The river is approximately 40 feet wide at this location. A 40-foot-wide by 1,000-foot-long portion of the Hillsborough River exists within the project right-of-way.

Site 2: Site 2 designates a 4.5-acre pond at Robles Park, north of Floribaska Avenue. This pond collects stormwater and also functions as the focal point for park visitors.

Site 3: Site 3 is a stormwater basin located north of I-4 and west of 34th Street. A concrete outfall structure exists in the northeast corner of this 3.5-acre basin. The basin is comprised of various sedges, rushes, and water tolerant grasses. It appears that this pond is regularly maintained. During field reviews, a crew planting cypress trees was observed.

Site 4: Site 4 is an undeveloped, rectangular parcel existing north of I-4 and west of 40th Street. This 4.1-acre parcel is comprised of low, grass-like wetland species and contained several inches of standing water at the time of field review.

Site 5: Site 5 is a disturbed forested wetland located north of 10th Avenue and east of 43rd Street in a primarily residential neighborhood. The dominant vegetation in this system includes laurel oak (Quercus laurifolia), red maple (Acer rubrum), elderberry (Sambucus canadensis), and primrose willow (Ludwigia sp.).



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Photo Date: Aug 1987

LEGEND

- Portion of the Hillsborough River
- △ Man-made Basins and Ditches
- Areas Heavily Impacted by Surrounding Development
- 1 Site Designation
- Estuarine Wetlands

FLORIDA DEPARTMENT OF TRANSPORTATION

WETLANDS EVALUATION REPORT TAMPA INTERSTATE STUDY PHASE II

Hillsborough County, Florida
WETLAND INVENTORY

TABLE 1
EXISTING WETLANDS
Tampa Interstate Study - Phase II

<u>Site</u>	<u>USFWS NWI Classification(1)</u>	<u>Existing System Area (Acres)</u>
1	E1UBL (Estuarine, Subtidal, Unconsolidated Bottom, Subtidal)	9.2
2	PUBH (Palustrine, Unconsolidated Bottom, Permanently Flooded)	4.8
3	PEM1C (Palustrine, Emergent, Persistent, Seasonally Flooded)	3.5
4	PEM1C (Palustrine, Emergent, Persistent, Seasonally Flooded)(2)	4.2
5	PFO3/1A (Palustrine, Forested, Broad-leaved Evergreen/Deciduous, Temporarily Flooded)	1.4
6	PUBHx (Palustrine, Unconsolidated Bottom, Permanently Flooded, Excavated)	0.5
7	L1UBH (Lacustrine, Limnetic, Unconsolidated Bottom, Permanently Flooded)	55.0
8	PEM1C (Palustrine, Emergent, Persistent, Seasonally Flooded)(2)	1.4
9	PUBHx (Palustrine, Unconsolidated Bottom, Permanently Flooded)(2)	2.0
10	PUBHx (Palustrine, Unconsolidated Bottom, Permanently Flooded)(2)	1.3
11	PUBH (Palustrine, Unconsolidated Bottom, Permanently Flooded)	2.4
12	R2UBHx (Riverine, Lower Perennial, Unconsolidated Bottom, Permanently Flooded, Excavated)	1.4
13	PUBFx (Palustrine, Unconsolidated Bottom, Semi-permanently Flooded, Excavated)	0.4
14	PUBHx (Palustrine, Unconsolidated Bottom, Permanently Flooded, Excavated)(2)	1.3

TABLE 1
EXISTING WETLANDS
Tampa Interstate Study - Phase II
(Continued)

<u>Site</u>	<u>USFWS NWI Classification(1)</u>	<u>Existing System Area (Acres)</u>
15	R2UBHx (Riverine, Lower Perennial, Unconsolidated Bottom, Permanently Flooded, Excavated)(2)	0.9
16	E2SS3U (Estuarine, Intertidal, Scrub/ Shrub, Broad-leaved Evergreen, Unknown)	*
17	PEM1C (Palustrine, Emergent, Persistent, Seasonally Flooded)(2)	0.7
18	PUBHx (Palustrine, Unconsolidated Bottom, Permanently Flooded)(2)	2.2
19	E2SS3U (Estuarine, Intertidal, Scrub/ Shrub, Broad-leaved Evergreen, Unknown)	3.4
20	E2SS3U (Estuarine, Intertidal, Scrub/ Shrub, Broad-leaved Evergreen, Unknown)	3.4
21	L1UBH (Lacustrine, Limnetic, Unconsolidated Bottom, Permanently Flooded)(2)	0.5
22	E2SB3M (Estuarine, Intertidal, Streambed, Mud, Irregularly Exposed)	0.7

(1) United States Fish and Wildlife Service, National Wetlands Inventory Classification System-Tampa Quadrangle, December 1982 and Gandy Bridge Quadrangle, December 1982.

(2) Classified by Greiner, Inc. using the USFWS NWI Classification System.

* Part of the Tampa Bay Estuarine System.

Site 6: Site 6 is a 0.5-acre open water pond located in a commercial area north of I-4 and west of U.S. 41.

Site 7: Site 7 includes man-made borrow pits located south of I-4 and east of U.S. 41. The majority of this area could not be accessed because it is fenced by the property owner due to contamination of soil. The site is presently being monitored by the U.S. Environmental Protection Agency. This large open water area is bordered by dense vegetation including: cattail (Typha sp.), water hyacinth (Eichhornia crassipes), Brazilian pepper (Schinus terebinthifolius), wax myrtle (Myrica cerifera), and laurel oak. The entire system is approximately 55 acres, 10 acres of which falls within the project right-of-way.

Site 8: Site 8 is comprised of a series of drainage channels located south of the Crosstown Expressway exit ramp to 22nd Street. These channels are used to convey runoff from adjacent impervious areas to the south-east and eventually discharge into McKay Bay. Dominant vegetation present within these areas consist of early colonizing species such as cattail and primrose willow.

Site 9: Site 9 is an open-water borrow pit located between the Crosstown Expressway and its exit ramp to 22nd Street. The banks of this pit are regularly maintained with minimal wetlands vegetation along its outer edge.

Site 10: Site 10 consists of a man-made pond located north of the Crosstown Expressway and between 22nd and 26th Streets. Much of this pond is open water, however, an outer band of wetland vegetation consisting of early colonizing species is present. Dominant species include cattail, primrose willow, and Brazilian pepper.

Site 12: Site 12 is a concrete channel south of and parallel to S.R. 60. It begins east of the railroad tracks and flows into McKay Bay. Existing vegetation above the concrete top of bank include Brazilian pepper, cabbage palm (Sabal palmetto), salt bush (Iva frutescens), and other species tolerant of disturbance. During field reviews water in this concrete channel exhibited signs of degraded water quality such as floating trash, heavy sedimentation, and an oily film on the water surface. Although several seagulls and a great egret were observed at this location, the poor condition of the wetland limits the habitat value of this area.

Site 13: Site 13 designates a man-made pond within the Linde Natural Gas property located north of S.R. 60 and west of 34th Street. The banks of this pond are regularly maintained as lawn; however, a limited amount of herbaceous vegetation is present in the shallow pond edges. Approximately 0.1-acre of this 0.4-acre pond is within the project right-of-way.

Sites 11 and 14: Sites 11 and 14 are undeveloped parcels of land which have been segmented by the construction of the Crosstown Expressway and the CSX Railroad tracks. The sites are located south of S.R. 60 and north of the Crosstown Expressway. These sites are dominated by such species as Brazilian pepper, salt bush, and broom sedge (Andropogon glomeratus). Site 14 is 1.3 acres and is located closer to McKay Bay than Site 11, which is approximately 2.4 acres.

Site 15: Site 15 is a man-made drainage channel located east of 34th Street and north of the Crosstown Expressway. This channel is presently used to convey runoff, from impervious areas north of the project area, to McKay Bay. Vegetation within this system is limited to the channel banks and is comprised of species such as cattail, Brazilian pepper, and elderberry.

Site 16: Site 16 is McKay Bay and its associated mangrove and smooth cordgrass wetlands. This section of the Tampa Bay system is known to be heavily utilized as feeding areas for multiple species of wading and shore birds. During the alternatives phase of the project, great care was taken to avoid impacts to this system, and as designs, the proposed project will not impact this extensive wetland system.

Site 17: Site 17 is a man-made drainage ditch located west of 45th Street. This ditch presently conveys water from areas located north of the Crosstown Expressway to McKay Bay. Dominant vegetation within this channel is comprised of cattail, primrose willow, and Brazilian pepper.

Site 18: Site 18 consists of a series of interconnected drainage ditches located south of Adamo Drive (S.R. 60) and west of 50th Street (U.S. 41). These ditches are dominated by early colonizing species such as cattail, primrose willow, and Brazilian pepper.

Site 19: Site 19 consists of disturbed estuarine wetlands located south of the Crosstown Expressway and between the CSX Rail Road and 50th Street. These areas appear to be remnants of an historic section of McKay Bay which was filled sometime in the past. Dominant vegetation within these areas are comprised of Brazilian pepper and cabbage palms, with lesser amounts of smooth cordgrass (Spartina alterniflora) and black mangroves (Avicennia germinans). This wetland system will not be impacted by the proposed project.

Site 20: Site 20 consists of brackish water wetland located south of the Crosstown Express and east of the CSX Railroad. This system is comprised of high marsh areas dominated by sea-side paspalum (Paspalum vaginatum) and saltgrass (Distichlis spicata), with multiple sand flats interspersed throughout. Site 20 will not be impacted by the project.

Site 21: Site 21 is a man-made ditch system located north of the Crosstown Expressway and east of Site 20. This ditch carries stormwater runoff to the south and discharges under the Expressway into Site 22. This drainage ditch is dominated by early succession wetlands species such as primrose willow, elderberry, and cattail.

Site 22: Site 22 is an extension of Site 21 located on the south side of the Crosstown Expressway. This ditch is a brackish water channel with little to no wetlands vegetation present. No impacts to this channel will occur as a result of the construction of the project.

4.0 ALTERNATIVES ANALYSIS

The preferred alternative for the TIS project which was analyzed in the Master Plan evolved through a process which began by the FDOT in 1983. Several alternatives were considered including a No-Action Alternative, Multi-Modal alternatives, and Construction Alternatives. The Preferred Alternative consists of approximately 12

miles (19.31 km) of multi-lane improvements to I-275 from Dale Mabry Highway interchange north to Dr. Martin Luther King, Jr. Boulevard and I-4 from I-275 (including the interchange) to east of 50th Street (U.S. 41); a multi-lane controlled access facility (Crosstown Connector) on new alignment from I-4 south to the existing Crosstown Expressway; and improvements to approximately 4.4 miles (7.08 km) of the Crosstown Expressway from the Kennedy Boulevard overpass east to Maydell Drive.

The selection of the preferred alternative followed a three-tier analysis of alternatives, agency coordination, and public workshops. The Tampa Interstate Study Master Plan presents a detailed analysis of the alternatives selection process.

5.0 WETLANDS IMPACT ASSESSMENT

Existing wetland sites within the proposed right-of-way may potentially be disturbed as a result of roadway construction. Table 2 lists the potential area of impact to each site proposed for disturbance. These sites are located on Exhibit 2. These wetland sites will be affected primarily by filling activities necessary to widen the existing roadway and to construct new roadway. In some areas, drainage systems along the corridor will be modified. Drainage structures which traverse the roadway will likely require the extension of existing culverts or their replacement with new culverts. A discussion of the type of proposed impact to each site follows. Detailed descriptions of these wetland sites are provided previously in Section 1.0.

Site 3: Approximately 0.6 acres of this 3.5-acre stormwater basin is proposed for disturbance.

Site 5: Approximately 0.1 acres of this 1.4-acre system may be disturbed by the construction of a stormwater management pond proposed for this area.

TABLE 2
POTENTIAL WETLAND IMPACTS
Tampa Interstate Study - Phase II

<u>Site</u>	<u>USFWS NWI Classification</u> ⁽¹⁾	<u>Potential Area of Impact (Acres)</u>	<u>Existing System</u>		<u>Remaining Area (Acres)</u>
			<u>Area (Acres)</u>	<u>Percent to be impacted</u>	
3	PEMIC	0.6	3.5	17	2.9
5	PFO3/1A	0.1	1.4	7	1.3
10	PUBHx	0.2	1.3	15	1.1
11	PUBH	0.9	2.4	38	1.5
13	PUBFx	0.4	0.4	100	0
14	PUBHx	0.3	1.3	23	1.0
15	R2UBHx	<u>0.04</u>	<u>0.9</u>	<u>4</u>	<u>0.86</u>
	TOTAL	2.54	11.2	23	8.66

(1) United States Fish and Wildlife Service, National Wetlands Inventory Classification System-Tampa Quadrangle, December, 1982 and Gandy Bridge Quadrangle, December, 1982. See Table 1 for explanations of USFWS Classifications.

(2) Classified by Greiner, Inc. using the USFWS NWI Classification System.

Site 10: Approximately 0.2 acres of this pond will be filled in order to construct the westbound off-ramp from the Crosstown Expressway to 22nd Street.

Site 13: This 0.4 acre open water drainage facility will be replaced by a stormwater management pond to be developed to treat stormwater runoff associated with the proposed Crosstown Connector/Crosstown Expressway interchange.

Sites 11 and 14: Approximately 0.9 acres of Site 11 and 0.3 acres of Site 14 will be disturbed by proposed ramps. These proposed ramps will be bridge structures supported by pilings.

Site 15: Approximately 0.04 acres of this 0.9 acre drainage channel will be impacted due to the construction of a retaining wall along the northern outside lanes of Adamo Drive (S.R. 60).

6.0 AVOIDANCE AND MINIMIZATION ANALYSIS

Steps taken to avoid or minimize wetland impacts included the utilization of a comparative analysis known as the "three-tier analysis". This analysis enabled the study team to compare each alternative based on potential impacts to various key factors, including wetlands. The three-tier analysis is presented in the TIS Master Plan, available for review under separate cover.

Although some man-made wetlands will be impacted, it is important to protect remaining man-made wetlands from degradation during the construction phase. Best Management Practices and FDOT Standard Specifications will be used during construction to control soil erosion and pollutant runoff. These measures may include:

- * hay bales
- * siltation fences
- * seed or mulch over bare soil areas
- * sediment basins
- * swales or grassed waterways
- * storm sewer inlet protection

7.0 COORDINATION

Permits will be required from the U.S. Army Corps of Engineers pursuant to Section 404 of the Clean Water Act, as codified as 33 CFR Part 323, for discharges of dredged or fill material into waters of the United States, which include wetlands. Additional permits for activities which impact wetlands may also be required from the following state and local regulatory agencies:

- * Florida Department of Environmental Protection (DEP)
- * Southwest Florida Water Management District (SWFWMD)

Regulatory agencies were contacted regarding this project during the Advanced Notification process. The DEP indicated that permits will be required prior to start of construction. Detailed coordination with regulatory agencies regarding impacts to wetlands will occur during the permitting phase of the proposed project.

8.0 CONCEPTUAL MITIGATION

Wetlands which will be disturbed consist solely of man-made ponds and ditches. It is anticipated that mitigation for impacts on a one-to-one replacement ratio would be accepted by the permitting agencies. Disturbance of these areas will be mitigated by constructing additional ponds or ditches to replace lost stormwater treatment volume or to treat newly created runoff. These ponds will contain littoral shelves vegetated with wetland species. These created wetland areas will replace the approximately 2.54 acres of wetlands proposed for disturbance.

The exact ponds which will be used in the development of the final plan are not known at this time. The ponds to be used, as well as the type and amounts of planting, will be determined during the permitting phase of the project. The mitigation concept used for this project is a standard concept which targets the primary function of the wetlands to be impacted (i.e., water treatment and attenuation) and which has been accepted in the past by the state and federal permitting agencies.

Due to the level of development within the project area and the excessive cost of right-of-way, the number of mitigation approaches available for this project were limited. Because of this, the use of stormwater ponds as a means to compensate for wetland impacts was selected. This decision was supported by the results of the WET-II analyses completed for the wetlands impacted by the proposed project; that is, the use of stormwater ponds allowed for replacement of the wetlands primary functions (i.e., water treatment and attenuation) while minimizing right-of-way costs.

9.0 WET-II ANALYSIS

WET-II Analyses - In order to determine the qualitative value of wetlands proposed for impact, the Wetlands Evaluation Technique (WET-II) was performed on five wetlands representative of the seven wetland sites which will be impacted by the proposed project. WET-II evaluates functions and values in terms of social significance (value of a wetland to society), effectiveness (capability of a wetland to perform a function), and opportunity (the opportunity of a wetland to perform a function to its level of capability). Utilizing WET-II, wetlands proposed for impact were analyzed to determine their value with respect to hydrologic (e.g. floodflow alteration), wildlife (e.g. wildlife diversity/abundance), and social (e.g. recreation)

functions. The wetlands used in these analyses were Sites 3 (Palustrine Emergent), 5 (Palustrine Forested), and Sites 10, 11, and 14 (Palustrine Unconsolidated Bottom).

Results of the WET-II analyses indicated that the primary functions performed by the wetlands proposed for impact were water quality treatment and/or water quantity attenuation. Wildlife and social functions for all sites analyzed ranked low or moderate. This was anticipated due to the type and location of the areas proposed for impact.

As discussed above, wetlands proposed for impact are comprised of man-made stormwater ponds (Sites 3, 10 and 13) and remnant wetland areas isolated or segmented by previous construction (Sites 5, 11, 14 and 15). Because of this, these areas are dominated by early successional vegetation and/or are heavily impacted. As a result, the ability of wildlife to utilize them is limited. In addition, wetlands of this type provide little to no recreational value and are not unique to the area (i.e. social significance).

Stormwater retention and/or detention ponds will be constructed to offset the loss of water quality treatment resulting from the proposed roadway expansion. The creation of these ponds should replace the values which were found to be high or moderate by the WET-II model.

APPENDIX

WET-II ANALYSIS EVALUATION RESULTS

Summary of Evaluation Results for "TISCIS3"

	Social Significance	Effectiveness	Opportunity
Ground Water Recharge	M	U	*
Ground Water Discharge	M	L	*
Floodflow Alteration	M	H	H
Sediment Stabilization	M	M	*
Sediment/Toxicant Retention	M	H	H
Nutrient Removal/Transformation	M	H	M
Production Export	*	L	*
Wildlife Diversity/Abundance	M	*	*
Wildlife D/A Breeding	*	L	*
Wildlife D/A Migration	*	L	*
Wildlife D/A Wintering	*	L	*
Aquatic Diversity/Abundance	M	L	*
Uniqueness/Heritage	M	*	*
Recreation	L	*	*

Note: "H" = High, "M" = Moderate, "L" = Low, "U" = Uncertain, and
 "*"s identify conditions where functions and values are not evaluated.

WET Answer Dataset for "TIOE103"

s1	- n	6.2	- n	12Be(w)	- n	13Ba(d)	- n
s2	- n	7	- y	12Be(d)	- n	13Bb(x)	- n
s3	- n	8.1	- n	12C(x)	- n	13Bb(w)	- n
s4	- n	8.2	- y	12C(w)	- n	13Bb(d)	- n
s5	- n	8.3	- n	12C(d)	- n	13Bc(x)	- n
s6	- n	8.4	- n	12Ca(x)	- n	13Bc(w)	- n
s7	- n	9.1	- y	12Ca(w)	- n	13Bc(d)	- n
s8	- n	9.2	- n	12Ca(d)	- n	13Bd(x)	- n
s9	- n	9.3	- i	12Cb(x)	- n	13Bd(w)	- n
s10	- n	10A	- y	12Cb(w)	- n	13Bd(d)	- n
s11	- n	10B	- n	12Cb(d)	- n	13Be(x)	- n
s12	- n	10C	- n	12Cc(x)	- n	13Be(w)	- n
s13	- n	10D	- n	12Cc(w)	- n	13Be(d)	- n
s14	- n	10E	- n	12Cc(d)	- n	13C(x)	- n
s15	- n	10F	- n	12Cd(x)	- n	13C(w)	- n
s16	- n	11(x)	- n	12Cd(w)	- n	13C(d)	- n
s17	- n	11(w)	- n	12Cd(d)	- n	13Ca(x)	- n
s18	- i	11(d)	- n	12D(x)	- y	13Ca(w)	- n
s19	- n	12A(x)	- n	12D(w)	- y	13Ca(d)	- n
s20	- n	12A(w)	- n	12D(d)	- y	13Cb(x)	- n
s21	- n	12A(d)	- n	12Da(x)	- y	13Cb(w)	- n
s22	- n	12Aa(x)	- n	12Da(w)	- y	13Cb(d)	- n
s23	- n	12Aa(w)	- n	12Da(d)	- y	13Cc(x)	- n
s24	- n	12Aa(d)	- n	12Db(x)	- n	13Cc(w)	- n
s25	- n	12Ab(x)	- n	12Db(w)	- n	13Cc(d)	- n
s26	- n	12Ab(w)	- n	12Db(d)	- n	13Cd(x)	- n
s27	- n	12Ab(d)	- n	12E(x)	- n	13Cd(w)	- n
s28	- n	12Ac(x)	- n	12E(w)	- n	13Cd(d)	- n
s29	- y	12Ac(w)	- n	12E(d)	- n	13D(x)	- n
s30	- y	12Ac(d)	- n	13A(x)	- n	13D(w)	- n
s31	- y	12Ad(x)	- n	13A(w)	- n	13D(d)	- n
1.1	- n	12Ad(w)	- n	13A(d)	- n	13Da(x)	- n
1.2	- y	12Ad(d)	- n	13Aa(x)	- n	13Da(w)	- n
1.3	- n	12Ae(x)	- n	13Aa(w)	- n	13Da(d)	- n
2.1.1	- y	12Ae(w)	- n	13Aa(d)	- n	13Db(x)	- n
2.1.2	- n	12Ae(d)	- n	13Ab(x)	- n	13Db(w)	- n
2.1.3	- n	12B(x)	- n	13Ab(w)	- n	13Db(d)	- n
2.2.1	- i	12B(w)	- n	13Ab(d)	- n	13E(x)	- n
2.2.2	- i	12B(d)	- n	13Ac(x)	- n	13E(w)	- n
3.1	- y	12Ba(x)	- n	13Ac(w)	- n	13E(d)	- n
3.2	- n	12Ba(w)	- n	13Ac(d)	- n	14.1(x)	- n
3.3	- y	12Ba(d)	- n	13Ad(x)	- n	14.1(w)	- n
4.1	- y	12Bb(x)	- n	13Ad(w)	- n	14.1(d)	- n
4.2A	- y	12Bb(w)	- n	13Ad(d)	- n	14.2(x)	- n
4.2B	- n	12Bb(d)	- n	13Ae(x)	- n	14.2(w)	- n
4.2C	- n	12Bc(x)	- n	13Ae(w)	- n	14.2(d)	- n
4.2D	- n	12Bc(w)	- n	13Ae(d)	- n	15.1A	- y
5.1.1	- n	12Bc(d)	- n	13B(x)	- n	15.1B	- n
5.1.2	- n	12Bd(x)	- n	13B(w)	- n	15.1C	- n
5.2	- n	12Bd(w)	- n	13B(d)	- n	15.2	- i
blank	- u	12Bd(d)	- n	13Ba(x)	- n	16A(x)	- y
6.1	- n	12Be(x)	- n	13Ba(w)	- n	16A(w)	- y

WET Answer Dataset for "TISE163"

16A(d) - y	31.3(x) - y	36.1.1(x) - y	43B(d) - n
16B(x) - n	31.3(w) - y	36.1.1(w) - y	43C(x) - n
16B(w) - n	31.3(d) - y	36.1.1(d) - y	43C(w) - n
16B(d) - n	31.4(x) - i	36.1.2(x) - n	43C(d) - n
16C(x) - n	31.4(w) - i	36.1.2(w) - n	43D(x) - n
16C(w) - n	31.4(d) - i	36.1.2(d) - n	43D(w) - n
16C(d) - n	31.5(x) - n	36.2.1(x) - y	43D(d) - n
17 - n	31.5(w) - n	36.2.1(w) - y	43E(x) - n
18 - n	31.5(d) - n	36.2.1(d) - y	43E(w) - n
19.1A - n	31.6A(x) - n	36.2.2(x) - y	43E(d) - n
19.1B - n	31.6A(w) - n	36.2.2(w) - y	43F(x) - n
19.2 - n	31.6A(d) - n	36.2.2(d) - y	43F(w) - n
19.3 - n	31.6B(x) - y	36.2.3(x) - n	43F(d) - n
20.1 - n	31.6B(w) - y	36.2.3(w) - n	43G(x) - n
20.2 - i	31.6B(d) - y	36.2.3(d) - n	43G(w) - n
21A - n	31.6C(x) - n	37 - n	43G(d) - n
21B - y	31.6C(w) - n	38.1 - n	43H(x) - y
21C - n	31.6C(d) - n	38.2 - n	43H(w) - y
21D - n	31.6D(x) - n	38.3 - n	43H(d) - y
21E - n	31.6D(w) - n	38.4 - n	43I(x) - n
22.1.1 - n	31.6D(d) - n	38.5 - n	43I(w) - n
22.1.2 - i	31.6E(x) - n	38.6 - n	43I(d) - n
22.2 - n	31.6E(w) - n	38.7 - n	44A(x) - n
22.3 - n	31.6E(d) - n	38.8 - i	44A(w) - n
23 - n	32A - y	39 - n	44A(d) - n
24.1 - i	32B - n	40.1 - n	44B(x) - n
24.2 - n	32C - n	40.2 - y	44B(w) - n
24.3 - n	32D - n	41.1 - i	44B(d) - n
24.4 - n	32E - n	41.2 - i	44C(x) - n
24.5 - n	32F - n	42.1.1(x) - y	44C(w) - n
25.1 - y	32G - n	42.1.1(w) - y	44C(d) - n
25.2A - n	32H - n	42.1.1(d) - y	44D(x) - n
25.2B - y	32I - n	42.1.2(x) - n	44D(w) - n
25.3 - n	32J - n	42.1.2(w) - n	44D(d) - n
26.1 - n	32K - n	42.1.2(d) - n	44E(x) - n
26.2 - i	33A - y	42.1.3(x) - n	44E(w) - n
26.3 - n	33B - n	42.1.3(w) - n	44E(d) - n
27.1 - y	33C - n	42.1.3(d) - n	44F(x) - n
27.2 - n	33D - n	42.2.1(x) - n	44F(w) - n
27.3 - y	33E - n	42.2.1(w) - n	44F(d) - n
28 - n	33F - n	42.2.1(d) - n	44G(x) - n
29.1 - n	33G - n	42.2.2(x) - n	44G(w) - n
29.2 - y	33H - n	42.2.2(w) - n	44G(d) - n
30(x) - y	33I - n	42.2.2(d) - n	44H(x) - y
30(w) - y	33J - n	42.2.3(x) - n	44H(w) - y
30(d) - y	33K - n	42.2.3(w) - n	44H(d) - y
31.1(x) - n	34.1 - n	42.2.3(d) - n	44I(x) - n
31.1(w) - n	34.2 - n	43A(x) - n	44I(w) - n
31.1(d) - n	34.3.1 - n	43A(w) - n	44I(d) - n
31.2(x) - n	34.3.2 - i	43A(d) - n	45A - y
31.2(w) - n	35.1 - n	43B(x) - n	45B - n
31.2(d) - n	35.2 - i	43B(w) - n	45C - n

WET Answer Dataset for "TISE163"

45D - n	48B(w) - n	49.2(x) - n	55.3 - u
45E - n	48B(d) - n	49.2(w) - n	55.4 - u
45F - n	48C(x) - n	49.2(d) - n	56.1 - u
45G - n	48C(w) - n	49.3(x) - n	56.2 - u
46A(x) - y	48C(d) - n	49.3(w) - n	57.1 - u
46A(w) - y	48D(x) - n	49.3(d) - n	57.2 - u
46A(d) - y	48D(w) - n	50(x) - n	58 - u
46B(x) - n	48D(d) - n	50(w) - n	59.1 - u
46B(w) - n	48E(x) - n	50(d) - n	59.2 - u
46B(d) - n	48E(w) - n	51.1 - u	60 - u
46C(x) - n	48E(d) - n	51.2 - u	61 - u
46C(w) - n	48F(x) - n	52.1 - u	62 - u
46C(d) - n	48F(w) - n	52.2 - u	63.1 - u
47A - y	48F(d) - n	53.1 - u	63.2 - u
47B - n	49.1.1(x) - n	53.2 - u	64 - u
47C - n	49.1.1(w) - n	54(x) - u	CR - 2
48A(x) - y	49.1.1(d) - n	54(w) - u	1 - n
48A(w) - y	49.1.2(x) - n	54(d) - u	2 - n
48A(d) - y	49.1.2(w) - n	55.1 - u	3 - n
48B(x) - n	49.1.2(d) - n	55.2 - u	4 - n

Summary of Evaluation Results for "TISE135"

	Social Significance	Effectiveness	Opportunity
Ground Water Recharge	M	U	+
Ground Water Discharge	M	L	+
Floodflow Alteration	M	H	H
Sediment Stabilization	M	L	+
Sediment/Toxicant Retention	M	L	H
Nutrient Removal/Transformation	M	M	M
Production Export	+	M	+
Wildlife Diversity/Abundance	M	+	+
Wildlife D/A Breeding	+	L	+
Wildlife D/A Migration	+	L	+
Wildlife D/A Wintering	+	L	+
Aquatic Diversity/Abundance	M	L	+
Uniqueness/Heritage	M	+	+
Recreation	L	+	+

Note: "H" = High, "M" = Moderate, "L" = Low, "U" = Uncertain, and
 "+"s identify conditions where functions and values are not evaluated.

WET Answer Dataset for "L13F1C5"

s1 - n	6.2 - n	12Be(w) - n	13Ga(d) - n
s2 - n	7 - i	12Be(d) - n	13Bb(x) - n
s3 - n	8.1 - n	12C(x) - n	13Bb(w) - n
s4 - n	8.2 - n	12C(w) - n	13Bb(d) - n
s5 - n	8.3 - n	12C(d) - n	13Bc(x) - n
s6 - n	8.4 - y	12Ca(x) - n	13Bc(w) - n
s7 - n	9.1 - y	12Ca(w) - n	13Bc(d) - n
s8 - n	9.2 - n	12Ca(d) - n	13Bd(x) - n
s9 - n	9.3 - n	12Cb(x) - n	13Bd(w) - n
s10 - n	10A - n	12Cb(w) - n	13Bd(d) - n
s11 - n	10B - y	12Cb(d) - n	13Be(x) - n
s12 - n	10C - n	12Cc(x) - n	13Be(w) - n
s13 - n	10D - n	12Cc(w) - n	13Be(d) - n
s14 - n	10E - n	12Cc(d) - n	13C(x) - n
s15 - n	10F - n	12Cd(x) - n	13C(w) - n
s16 - n	11(x) - n	12Cd(w) - n	13C(d) - n
s17 - n	11(w) - n	12Cd(d) - n	13Ca(x) - n
s18 - i	11(d) - n	12D(x) - n	13Ca(w) - n
s19 - n	12A(x) - y	12D(w) - n	13Ca(d) - n
s20 - n	12A(w) - y	12D(d) - n	13Cb(x) - n
s21 - n	12A(d) - y	12Da(x) - n	13Cb(w) - n
s22 - i	12Aa(x) - n	12Da(w) - n	13Cb(d) - n
s23 - n	12Aa(w) - n	12Da(d) - n	13Cc(x) - n
s24 - n	12Aa(d) - n	12Db(x) - n	13Cc(w) - n
s25 - n	12Ab(x) - n	12Db(w) - n	13Cc(d) - n
s26 - n	12Ab(w) - n	12Db(d) - n	13Cd(x) - n
s27 - n	12Ab(d) - n	12E(x) - n	13Cd(w) - n
s28 - n	12Ac(x) - n	12E(w) - n	13Cd(d) - n
s29 - y	12Ac(w) - n	12E(d) - n	13D(x) - y
s30 - y	12Ac(d) - n	13A(x) - y	13D(w) - y
s31 - y	12Ad(x) - n	13A(w) - y	13D(d) - y
1.1 - n	12Ad(w) - n	13A(d) - y	13Da(x) - y
1.2 - y	12Ad(d) - n	13Aa(x) - n	13Da(w) - y
1.3 - n	12Ae(x) - y	13Aa(w) - n	13Da(d) - y
2.1.1 - y	12Ae(w) - y	13Aa(d) - n	13Db(x) - n
2.1.2 - n	12Ae(d) - y	13Ab(x) - n	13Db(w) - n
2.1.3 - n	12B(x) - n	13Ab(w) - n	13Db(d) - n
2.2.1 - y	12B(w) - n	13Ab(d) - n	13E(x) - n
2.2.2 - n	12B(d) - n	13Ac(x) - n	13E(w) - n
3.1 - y	12Ba(x) - n	13Ac(w) - n	13E(d) - n
3.2 - n	12Ba(w) - n	13Ac(d) - n	14.1(x) - n
3.3 - y	12Ba(d) - n	13Ad(x) - n	14.1(w) - n
4.1 - y	12Bb(x) - n	13Ad(w) - n	14.1(d) - n
4.2A - y	12Bb(w) - n	13Ad(d) - n	14.2(x) - n
4.2B - n	12Bb(d) - n	13Ae(x) - y	14.2(w) - n
4.2C - n	12Bc(x) - n	13Ae(w) - y	14.2(d) - n
4.2D - n	12Bc(w) - n	13Ae(d) - y	15.1A - n
5.1.1 - y	12Bc(d) - n	13B(x) - n	15.1B - y
5.1.2 - n	12Bd(x) - n	13B(w) - n	15.1C - n
5.2 - n	12Bd(w) - n	13B(d) - n	15.2 - n
blank - u	12Bd(d) - n	13Ba(x) - n	16A(x) - n
6.1 - n	12Be(x) - n	13Ba(w) - n	16A(w) - n

WFT Answer Dataset for "TISE105"

16A(d) - n	31.3(x) - y	36.1.1(x) - n	43B(d) - n
16B(x) - y	31.3(w) - y	36.1.1(w) - n	43C(x) - n
16B(w) - y	31.3(d) - y	36.1.1(d) - n	43C(w) - n
16B(d) - y	31.4(x) - i	36.1.2(x) - n	43C(d) - n
16C(x) - n	31.4(w) - i	36.1.2(w) - n	43D(x) - n
16C(w) - n	31.4(d) - i	36.1.2(d) - n	43D(w) - n
16C(d) - n	31.5(x) - n	36.2.1(x) - n	43D(d) - n
17 - n	31.5(w) - n	36.2.1(w) - n	43E(x) - y
18 - n	31.5(d) - n	36.2.1(d) - n	43E(w) - y
19.1A - y	31.6A(x) - n	36.2.2(x) - n	43E(d) - y
19.1B - n	31.6A(w) - n	36.2.2(w) - n	43F(x) - n
19.2 - n	31.6A(d) - n	36.2.2(d) - n	43F(w) - n
19.3 - n	31.6B(x) - n	36.2.3(x) - n	43F(d) - n
20.1 - n	31.6B(w) - n	36.2.3(w) - n	43G(x) - n
20.2 - n	31.6B(d) - n	36.2.3(d) - n	43G(w) - n
21A - n	31.6C(x) - n	37 - n	43G(d) - n
21B - y	31.6C(w) - n	38.1 - n	43H(x) - n
21C - n	31.6C(d) - n	38.2 - n	43H(w) - n
21D - n	31.6D(x) - n	38.3 - y	43H(d) - n
21E - n	31.6D(w) - n	38.4 - n	43I(x) - n
22.1.1 - n	31.6D(d) - n	38.5 - n	43I(w) - n
22.1.2 - n	31.6E(x) - y	38.6 - n	43I(d) - n
22.2 - n	31.6E(w) - y	38.7 - n	44A(x) - n
22.3 - n	31.6E(d) - y	38.8 - i	44A(w) - n
23 - n	32A - n	39 - y	44A(d) - n
24.1 - i	32B - n	40.1 - n	44B(x) - n
24.2 - n	32C - n	40.2 - y	44B(w) - n
24.3 - n	32D - y	41.1 - y	44B(d) - n
24.4 - n	32E - n	41.2 - n	44C(x) - n
24.5 - n	32F - n	42.1.1(x) - y	44C(w) - n
25.1 - y	32G - n	42.1.1(w) - y	44C(d) - n
25.2A - n	32H - n	42.1.1(d) - y	44D(x) - y
25.2B - y	32I - n	42.1.2(x) - n	44D(w) - y
25.3 - n	32J - n	42.1.2(w) - n	44D(d) - y
26.1 - n	32K - n	42.1.2(d) - n	44E(x) - y
26.2 - i	33A - y	42.1.3(x) - n	44E(w) - y
26.3 - i	33B - n	42.1.3(w) - n	44E(d) - y
27.1 - y	33C - n	42.1.3(d) - n	44F(x) - y
27.2 - n	33D - n	42.2.1(x) - y	44F(w) - y
27.3 - y	33E - n	42.2.1(w) - y	44F(d) - y
28 - n	33F - n	42.2.1(d) - y	44G(x) - n
29.1 - n	33G - n	42.2.2(x) - n	44G(w) - n
29.2 - y	33H - n	42.2.2(w) - n	44G(d) - n
30(x) - y	33I - n	42.2.2(d) - n	44H(x) - n
30(w) - y	33J - n	42.2.3(x) - n	44H(w) - n
30(d) - y	33K - n	42.2.3(w) - n	44H(d) - n
31.1(x) - y	34.1 - n	42.2.3(d) - n	44I(x) - n
31.1(w) - y	34.2 - n	43A(x) - n	44I(w) - n
31.1(d) - y	34.3.1 - n	43A(w) - n	44I(d) - n
31.2(x) - y	34.3.2 - i	43A(d) - n	45A - n
31.2(w) - y	35.1 - n	43B(x) - n	45B - y
31.2(d) - y	35.2 - i	43B(w) - n	45C - n

WEF Answer Dataset for "TISEIS5"

45D - n	48B(w) - n	49.2(x) - y	55.3 - u
45E - n	48B(d) - n	49.2(w) - y	55.4 - u
45F - n	48C(x) - n	49.2(d) - y	56.1 - u
45G - n	48C(w) - n	49.3(x) - n	56.2 - u
46A(x) - y	48C(d) - n	49.3(w) - n	57.1 - n
46A(w) - y	48D(x) - n	49.3(d) - n	57.2 - u
46A(d) - y	48D(w) - n	50(x) - n	58 - u
46B(x) - n	48D(d) - n	50(w) - n	59.1 - u
46B(w) - n	48E(x) - n	50(d) - n	59.2 - u
46B(d) - n	48E(w) - n	51.1 - u	60 - u
46C(x) - n	48E(d) - n	51.2 - u	61 - u
46C(w) - n	48F(x) - n	52.1 - u	62 - u
46C(d) - n	48F(w) - n	52.2 - u	63.1 - u
47A - n	48F(d) - n	53.1 - u	63.2 - u
47B - y	49.1.1(x) - n	53.2 - u	64 - u
47C - n	49.1.1(w) - n	54(x) - u	68 - 2
48A(x) - y	49.1.1(d) - n	54(w) - u	1 - n
48A(w) - y	49.1.2(x) - n	54(d) - u	2 - n
48A(d) - y	49.1.2(w) - n	55.1 - u	3 - n
48B(x) - n	49.1.2(d) - n	55.2 - u	4 - n

Summary of Evaluation Results for "TIS10"

	Social Significance	Effectiveness	Opportunity
Ground Water Recharge	L	U	*
Ground Water Discharge	L	L	*
Floodflow Alteration	L	H	H
Sediment Stabilization	L	H	*
Sediment/Toxicant Retention	L	M	H
Nutrient Removal/Transformation	L	M	M
Production Export	*	M	*
Wildlife Diversity/Abundance	L	*	*
Wildlife D/A Breeding	*	L	*
Wildlife D/A Migration	*	L	*
Wildlife D/A Wintering	*	L	*
Aquatic Diversity/Abundance	L	L	*
Uniqueness/Heritage	L	*	*
Recreation	L	*	*

Note: "H" = High, "M" = Moderate, "L" = Low, "U" = Uncertain, and
"*"s identify conditions where functions and values are not evaluated.

WET Answer Dataset for "TIS10"

s1 - n	6.2 - n	12Be(w) - n	13Ba(d) - n
s2 - n	7 - y	12Be(d) - n	13Bb(x) - n
s3 - n	8.1 - n	12C(x) - n	13Bb(w) - n
s4 - n	8.2 - n	12C(w) - n	13Bb(d) - n
s5 - n	8.3 - n	12C(d) - n	13Bc(x) - n
s6 - n	8.4 - y	12Ca(x) - n	13Bc(w) - n
s7 - n	9.1 - y	12Ca(w) - n	13Bc(d) - n
s8 - n	9.2 - n	12Ca(d) - n	13Bd(x) - n
s9 - n	9.3 - n	12Cb(x) - n	13Bd(w) - n
s10 - n	10A - y	12Cb(w) - n	13Bd(d) - n
s11 - n	10B - n	12Cc(d) - n	13Be(x) - n
s12 - n	10C - n	12Cc(x) - n	13Be(w) - n
s13 - n	10D - n	12Cc(w) - n	13Be(d) - n
s14 - n	10E - n	12Cc(d) - n	13C(x) - n
s15 - n	10F - n	12Cd(x) - n	13C(w) - n
s16 - n	11(x) - n	12Cd(w) - n	13C(d) - n
s17 - n	11(w) - n	12Cd(d) - n	13Ca(x) - n
s18 - I	11(d) - n	12D(x) - y	13Ca(w) - n
s19 - n	12A(x) - n	12D(w) - y	13Ca(d) - n
s20 - n	12A(w) - n	12D(d) - y	13Cb(x) - n
s21 - n	12A(d) - n	12Da(x) - y	13Cb(w) - n
s22 - n	12Aa(x) - n	12Da(w) - y	13Cb(d) - n
s23 - n	12Aa(w) - n	12Da(d) - y	13Cc(x) - n
s24 - n	12Aa(d) - n	12Db(x) - n	13Cc(w) - n
s25 - n	12Ab(x) - n	12Db(w) - n	13Cc(d) - n
s26 - n	12Ab(w) - n	12Db(d) - n	13Cd(x) - n
s27 - n	12Ab(d) - n	12E(x) - n	13Cd(w) - n
s28 - n	12Ac(x) - n	12E(w) - n	13Cd(d) - n
s29 - Y	12Ac(w) - n	12E(d) - n	13D(x) - y
s30 - Y	12Ac(d) - n	13A(x) - n	13D(w) - y
s31 - Y	12Ad(x) - n	13A(w) - n	13D(d) - y
1.1 - n	12Ad(w) - n	13A(d) - n	13Da(x) - y
1.2 - y	12Ad(d) - n	13Aa(x) - n	13Da(w) - y
1.3 - n	12Ae(x) - n	13Aa(w) - n	13Da(d) - y
2.1.1 - y	12Ae(w) - n	13Aa(d) - n	13Db(x) - n
2.1.2 - n	12Ae(d) - n	13Ab(x) - n	13Db(w) - n
2.1.3 - n	12B(x) - n	13Ab(w) - n	13Db(d) - n
2.2.1 - i	12B(w) - n	13Ab(d) - n	13E(x) - n
2.2.2 - i	12B(d) - n	13Ac(x) - n	13E(w) - n
3.1 - y	12Ba(x) - n	13Ac(w) - n	13E(d) - n
3.2 - n	12Ba(w) - n	13Ac(d) - n	14.1(x) - n
3.3 - n	12Ba(d) - n	13Ad(x) - n	14.1(w) - n
4.1 - y	12Bb(x) - n	13Ad(w) - n	14.1(d) - n
4.2A - y	12Bb(w) - n	13Ad(d) - n	14.2(x) - n
4.2B - n	12Bb(d) - n	13Ae(x) - n	14.2(w) - n
4.2C - n	12Bc(x) - n	13Ae(w) - n	14.2(d) - n
4.2D - n	12Bc(w) - n	13Ae(d) - n	15.1A - y
5.1.1 - y	12Bc(d) - n	13B(x) - n	15.1B - n
5.1.2 - n	12Bd(x) - n	13B(w) - n	15.1C - n
5.2 - n	12Bd(w) - n	13B(d) - n	15.2 - i
blank - u	12Bd(d) - n	13Ba(x) - n	16A(x) - y
6.1 - n	12Be(x) - n	13Ba(w) - n	16A(w) - y

WET Answer Dataset for "TIS10"

16A(d) - y	31.3(x) - y	36.1.1(x) - n	43B(d) - n
16B(x) - n	31.3(w) - y	36.1.1(w) - n	43C(x) - n
16B(w) - n	31.3(d) - y	36.1.1(d) - n	43C(w) - n
16B(d) - n	31.4(x) - i	36.1.2(x) - n	43C(d) - n
16C(x) - n	31.4(w) - i	36.1.2(w) - n	43D(x) - n
16C(w) - n	31.4(d) - i	36.1.2(d) - n	43D(w) - n
16C(d) - n	31.5(x) - n	36.2.1(x) - n	43D(d) - n
17 - n	31.5(w) - n	36.2.1(w) - n	43E(x) - n
18 - n	31.5(d) - n	36.2.1(d) - n	43E(w) - n
19.1A - n	31.6A(x) - n	36.2.2(x) - n	43E(d) - n
19.1B - n	31.6A(w) - n	36.2.2(w) - n	43F(x) - n
19.2 - n	31.6A(d) - n	36.2.2(d) - n	43F(w) - n
19.3 - i	31.6B(x) - n	36.2.3(x) - n	43F(d) - n
20.1 - n	31.6B(w) - n	36.2.3(w) - n	43G(x) - n
20.2 - n	31.6B(d) - n	36.2.3(d) - n	43G(w) - n
21A - n	31.6C(x) - y	37 - n	43G(d) - n
21B - y	31.6C(w) - y	38.1 - n	43H(x) - y
21C - n	31.6C(d) - y	38.2 - n	43H(w) - y
21D - n	31.6D(x) - n	38.3 - y	43H(d) - y
21E - n	31.6D(w) - n	38.4 - n	43I(x) - n
22.1.1 - y	31.6D(d) - n	38.5 - n	43I(w) - n
22.1.2 - i	31.6E(x) - n	38.6 - n	43I(d) - n
22.2 - n	31.6E(w) - n	38.7 - n	44A(x) - n
22.3 - n	31.6E(d) - n	38.8 - i	44A(w) - n
23 - n	32A - y	39 - n	44A(d) - n
24.1 - i	32B - n	40.1 - n	44B(x) - n
24.2 - n	32C - n	40.2 - y	44B(w) - n
24.3 - n	32D - n	41.1 - i	44B(d) - n
24.4 - n	32E - n	41.2 - i	44C(x) - n
24.5 - n	32F - n	42.1.1(x) - y	44C(w) - n
25.1 - y	32G - n	42.1.1(w) - y	44C(d) - n
25.2A - n	32H - n	42.1.1(d) - y	44D(x) - y
25.2B - y	32I - n	42.1.2(x) - n	44D(w) - y
25.3 - n	32J - n	42.1.2(w) - n	44D(d) - y
26.1 - n	32K - n	42.1.2(d) - n	44E(x) - n
26.2 - i	33A - y	42.1.3(x) - n	44E(w) - n
26.3 - i	33B - n	42.1.3(w) - n	44E(d) - n
27.1 - y	33C - n	42.1.3(d) - n	44F(x) - n
27.2 - n	33D - n	42.2.1(x) - y	44F(w) - n
27.3 - y	33E - n	42.2.1(w) - y	44F(d) - n
28 - n	33F - n	42.2.1(d) - y	44G(x) - n
29.1 - n	33G - n	42.2.2(x) - n	44G(w) - n
29.2 - y	33H - n	42.2.2(w) - n	44G(d) - n
30(x) - y	33I - n	42.2.2(d) - n	44H(x) - y
30(w) - y	33J - n	42.2.3(x) - n	44H(w) - y
30(d) - y	33K - n	42.2.3(w) - n	44H(d) - y
31.1(x) - n	34.1 - n	42.2.3(d) - n	44I(x) - n
31.1(w) - n	34.2 - n	43A(x) - n	44I(w) - n
31.1(d) - n	34.3.1 - n	43A(w) - n	44I(d) - n
31.2(x) - y	34.3.2 - i	43A(d) - n	45A - y
31.2(w) - y	35.1 - n	43B(x) - n	45B - n
31.2(d) - y	35.2 - i	43B(w) - n	45C - n

WET Answer Dataset for "TIS10"

45D - n	48B(w) - n	49.2(x) - y	55.3 - u
45E - n	48B(d) - n	49.2(w) - y	55.4 - u
45F - n	48C(x) - n	49.2(d) - y	56.1 - u
45G - n	48C(w) - n	49.3(x) - n	56.2 - u
46A(x) - y	48C(d) - n	49.3(w) - n	57.1 - u
46A(w) - y	48D(x) - n	49.3(d) - n	57.2 - u
46A(d) - y	48D(w) - n	50(x) - n	58 - u
46B(x) - n	48D(d) - n	50(w) - n	59.1 - u
46B(w) - n	48E(x) - n	50(d) - n	59.2 - u
46B(d) - n	48E(w) - n	51.1 - u	60 - u
46C(x) - n	48E(d) - n	51.2 - u	61 - u
46C(w) - n	48F(x) - n	52.1 - u	62 - u
46C(d) - n	48F(w) - n	52.2 - u	63.1 - u
47A - y	48F(d) - n	53.1 - u	63.2 - u
47B - n	49.1.1(x) - n	53.2 - u	64 - u
47C - n	49.1.1(w) - n	54(x) - u	CR - 2
48A(x) - y	49.1.1(d) - n	54(w) - u	1 - n
48A(w) - y	49.1.2(x) - n	54(d) - u	2 - n
48A(d) - y	49.1.2(w) - n	55.1 - u	3 - n
48B(x) - n	49.1.2(d) - n	55.2 - u	4 - n

Summary of Evaluation Results for "TIS11"

	Social Significance	Effectiveness	Opportunity
Ground Water Recharge	M	L	*
Ground Water Discharge	M	L	*
Floodflow Alteration	M	M	H
Sediment Stabilization	M	H	*
Sediment/Toxicant Retention	M	M	H
Nutrient Removal/Transformation	M	M	M
Production Export	*	M	*
Wildlife Diversity/Abundance	M	*	*
Wildlife D/A Breeding	*	M	*
Wildlife D/A Migration	*	L	*
Wildlife D/A Wintering	*	M	*
Aquatic Diversity/Abundance	M	L	*
Uniqueness/Heritage	M	*	*
Recreation	L	*	*

Note: "H" = High, "M" = Moderate, "L" = Low, "U" = Uncertain, and
 "*"s identify conditions where functions and values are not evaluated.

WET Answer Dataset for "TIS11"

s1 - n	6.2 - n	12Be(w) - n	13Ba(d) - n
s2 - n	7 - y	12Be(d) - n	13Bb(x) - n
s3 - n	8.1 - n	12C(x) - n	13Bb(w) - n
s4 - n	8.2 - n	12C(w) - n	13Bb(d) - n
s5 - n	8.3 - n	12C(d) - n	13Bc(x) - y
s6 - n	8.4 - y	12Ca(x) - n	13Bc(w) - y
s7 - n	9.1 - y	12Ca(w) - n	13Bc(d) - y
s8 - n	9.2 - n	12Ca(d) - n	13Bd(x) - n
s9 - n	9.3 - n	12Cb(x) - n	13Bd(w) - n
s10 - n	10A - n	12Cb(w) - n	13Bd(d) - n
s11 - n	10B - y	12Cb(d) - n	13Be(x) - n
s12 - n	10C - n	12Cc(x) - n	13Be(w) - n
s13 - n	10D - n	12Cc(w) - n	13Be(d) - n
s14 - n	10E - n	12Cc(d) - n	13C(x) - n
s15 - n	10F - n	12Cd(x) - n	13C(w) - n
s16 - n	11(x) - n	12Cd(w) - n	13C(d) - n
s17 - n	11(w) - n	12Cd(d) - n	13Ca(x) - n
s18 - i	11(d) - n	12D(x) - n	13Ca(w) - n
s19 - n	12A(x) - n	12D(w) - n	13Ca(d) - n
s20 - n	12A(w) - n	12D(d) - n	13Cb(x) - n
s21 - n	12A(d) - n	12Da(x) - n	13Cb(w) - n
s22 - i	12Aa(x) - n	12Da(w) - n	13Cb(d) - n
s23 - n	12Aa(w) - n	12Da(d) - n	13Cc(x) - n
s24 - n	12Aa(d) - n	12Db(x) - n	13Cc(w) - n
s25 - n	12Ab(x) - n	12Db(w) - n	13Cc(d) - n
s26 - n	12Ab(w) - n	12Db(d) - n	13Cd(x) - n
s27 - n	12Ab(d) - n	12E(x) - n	13Cd(w) - n
s28 - n	12Ac(x) - n	12E(w) - n	13Cd(d) - n
s29 - y	12Ac(w) - n	12E(d) - n	13D(x) - y
s30 - y	12Ac(d) - n	13A(x) - n	13D(w) - y
s31 - y	12Ad(x) - n	13A(w) - n	13D(d) - y
1.1 - n	12Ad(w) - n	13A(d) - n	13Da(x) - y
1.2 - y	12Ad(d) - n	13Aa(x) - n	13Da(w) - y
1.3 - n	12Ae(x) - n	13Aa(w) - n	13Da(d) - y
2.1.1 - n	12Ae(w) - n	13Aa(d) - n	13Db(x) - n
2.1.2 - n	12Ae(d) - n	13Ab(x) - n	13Db(w) - n
2.1.3 - y	12B(x) - y	13Ab(w) - n	13Db(d) - n
2.2.1 - i	12B(w) - y	13Ab(d) - n	13E(x) - n
2.2.2 - i	12B(d) - y	13Ac(x) - n	13E(w) - n
3.1 - y	12Ba(x) - n	13Ac(w) - n	13E(d) - n
3.2 - n	12Ba(w) - n	13Ac(d) - n	14.1(x) - n
3.3 - n	12Ba(d) - n	13Ad(x) - n	14.1(w) - n
4.1 - y	12Bb(x) - n	13Ad(w) - n	14.1(d) - n
4.2A - y	12Bb(w) - n	13Ad(d) - n	14.2(x) - n
4.2B - n	12Bb(d) - n	13Ae(x) - n	14.2(w) - n
4.2C - n	12Bc(x) - y	13Ae(w) - n	14.2(d) - n
4.2D - n	12Bc(w) - y	13Ae(d) - n	15.1A - y
5.1.1 - y	12Bc(d) - y	13B(x) - y	15.1B - n
5.1.2 - n	12Bd(x) - n	13B(w) - y	15.1C - n
5.2 - n	12Bd(w) - n	13B(d) - y	15.2 - n
blank - u	12Bd(d) - n	13Ba(x) - n	16A(x) - y
6.1 - n	12Be(x) - n	13Ba(w) - n	16A(w) - y

WET Answer Dataset for "TIS11"

16A(d) - y	31.3(x) - y	36.1.1(x) - n	43B(d) - n
16B(x) - n	31.3(w) - y	36.1.1(w) - n	43C(x) - n
16B(w) - n	31.3(d) - y	36.1.1(d) - n	43C(w) - n
16B(d) - n	31.4(x) - i	36.1.2(x) - n	43C(d) - Y
16C(x) - n	31.4(w) - i	36.1.2(w) - n	43D(x) - n
16C(w) - n	31.4(d) - i	36.1.2(d) - n	43D(w) - n
16C(d) - n	31.5(x) - n	36.2.1(x) - n	43D(d) - n
17 - n	31.5(w) - n	36.2.1(w) - n	43E(x) - y
18 - n	31.5(d) - n	36.2.1(d) - n	43E(w) - y
19.1A - y	31.6A(x) - n	36.2.2(x) - n	43E(d) - N
19.1B - n	31.6A(w) - n	36.2.2(w) - n	43F(x) - n
19.2 - n	31.6A(d) - n	36.2.2(d) - n	43F(w) - n
19.3 - n	31.6B(x) - n	36.2.3(x) - n	43F(d) - n
20.1 - n	31.6B(w) - n	36.2.3(w) - n	43G(x) - n
20.2 - n	31.6B(d) - n	36.2.3(d) - n	43G(w) - n
21A - n	31.6C(x) - n	37 - n	43G(d) - n
21B - y	31.6C(w) - n	38.1 - n	43H(x) - n
21C - n	31.6C(d) - n	38.2 - n	43H(w) - n
21D - n	31.6D(x) - y	38.3 - y	43H(d) - n
21E - n	31.6D(w) - y	38.4 - n	43I(x) - n
22.1.1 - y	31.6D(d) - y	38.5 - n	43I(w) - n
22.1.2 - i	31.6E(x) - n	38.6 - n	43I(d) - n
22.2 - n	31.6E(w) - n	38.7 - n	44A(x) - y
22.3 - n	31.6E(d) - n	38.8 - i	44A(w) - y
23 - y	32A - n	39 - n	44A(d) - y
24.1 - i	32B - y	40.1 - n	44B(x) - y
24.2 - n	32C - n	40.2 - y	44B(w) - y
24.3 - n	32D - n	41.1 - i	44B(d) - y
24.4 - n	32E - n	41.2 - i	44C(x) - y
24.5 - n	32F - n	42.1.1(x) - y	44C(w) - y
25.1 - y	32G - n	42.1.1(w) - y	44C(d) - y
25.2A - n	32H - n	42.1.1(d) - y	44D(x) - y
25.2B - y	32I - n	42.1.2(x) - n	44D(w) - y
25.3 - n	32J - n	42.1.2(w) - n	44D(d) - y
26.1 - n	32K - n	42.1.2(d) - n	44E(x) - y
26.2 - i	33A - y	42.1.3(x) - n	44E(w) - y
26.3 - i	33B - n	42.1.3(w) - n	44E(d) - y
27.1 - y	33C - n	42.1.3(d) - n	44F(x) - y
27.2 - n	33D - n	42.2.1(x) - y	44F(w) - y
27.3 - y	33E - n	42.2.1(w) - y	44F(d) - y
28 - n	33F - n	42.2.1(d) - y	44G(x) - y
29.1 - n	33G - n	42.2.2(x) - n	44G(w) - y
29.2 - y	33H - n	42.2.2(w) - n	44G(d) - y
30(x) - y	33I - n	42.2.2(d) - n	44H(x) - y
30(w) - y	33J - n	42.2.3(x) - n	44H(w) - y
30(d) - y	33K - n	42.2.3(w) - n	44H(d) - y
31.1(x) - y	34.1 - n	42.2.3(d) - n	44I(x) - n
31.1(w) - y	34.2 - n	43A(x) - n	44I(w) - n
31.1(d) - y	34.3.1 - n	43A(w) - n	44I(d) - n
31.2(x) - y	34.3.2 - i	43A(d) - n	45A - y
31.2(w) - y	35.1 - n	43B(x) - n	45B - n
31.2(d) - y	35.2 - i	43B(w) - n	45C - n

WET Answer Dataset for "TIS11"

45D - n	48B(w) - n	49.2(x) - y	55.3 - u
45E - n	48B(d) - n	49.2(w) - y	55.4 - u
45F - n	48C(x) - n	49.2(d) - y	56.1 - u
45G - n	48C(w) - n	49.3(x) - n	56.2 - u
46A(x) - y	48C(d) - n	49.3(w) - n	57.1 - u
46A(w) - y	48D(x) - n	49.3(d) - n	57.2 - u
46A(d) - y	48D(w) - n	50(x) - n	58 - u
46B(x) - n	48D(d) - n	50(w) - n	59.1 - u
46B(w) - n	48E(x) - n	50(d) - n	59.2 - u
46B(d) - n	48E(w) - n	51.1 - u	60 - u
46C(x) - n	48E(d) - n	51.2 - u	61 - u
46C(w) - n	48F(x) - n	52.1 - u	62 - u
46C(d) - n	48F(w) - n	52.2 - u	63.1 - u
47A - n	48F(d) - n	53.1 - u	63.2 - u
47B - y	49.1.1(x) - n	53.2 - u	64 - u
47C - n	49.1.1(w) - n	54(x) - u	CR - 2
48A(x) - y	49.1.1(d) - n	54(w) - u	1 - n
48A(w) - y	49.1.2(x) - n	54(d) - u	2 - n
48A(d) - y	49.1.2(w) - n	55.1 - u	3 - n
48B(x) - n	49.1.2(d) - n	55.2 - u	4 - n

Summary of Evaluation Results for "TIS14"

	Social		
	Significance	Effectiveness	Opportunity
Ground Water Recharge	M	U	*
Ground Water Discharge	M	L	*
Floodflow Alteration	M	H	H
Sediment Stabilization	M	M	*
Sediment/Toxicant Retention	M	H	H
Nutrient Removal/Transformation	M	H	L
Production Export	*	L	*
Wildlife Diversity/Abundance	M	*	*
Wildlife D/A Breeding	*	L	*
Wildlife D/A Migration	*	L	*
Wildlife D/A Wintering	*	L	*
Aquatic Diversity/Abundance	M	L	*
Uniqueness/Heritage	M	*	*
Recreation	L	*	*

Note: "H" = High, "M" = Moderate, "L" = Low, "U" = Uncertain, and
"*"s identify conditions where functions and values are not evaluated.

WET Answer Dataset for "TIS14"

s1 - n	6.2 - n	12Be(w) - n	13Ba(d) - n
s2 - n	7 - y	12Be(d) - n	13Bb(x) - n
s3 - n	8.1 - n	12C(x) - n	13Bb(w) - n
s4 - n	8.2 - n	12C(w) - n	13Bb(d) - n
s5 - n	8.3 - n	12C(d) - n	13Bc(x) - n
s6 - n	8.4 - n	12Ca(x) - n	13Bc(w) - n
s7 - n	9.1 - y	12Ca(w) - n	13Bc(d) - n
s8 - n	9.2 - n	12Ca(d) - n	13Bd(x) - n
s9 - n	9.3 - n	12Cb(x) - n	13Bd(w) - n
s10 - n	10A - n	12Cb(w) - n	13Bd(d) - n
s11 - n	10B - y	12Cb(d) - n	13Be(x) - n
s12 - n	10C - n	12Cc(x) - n	13Be(w) - n
s13 - n	10D - n	12Cc(w) - n	13Be(d) - n
s14 - n	10E - n	12Cc(d) - n	13C(x) - n
s15 - n	10F - n	12Cd(x) - n	13C(w) - n
s16 - n	11(x) - n	12Cd(w) - n	13C(d) - n
s17 - n	11(w) - n	12Cd(d) - n	13Ca(x) - n
s18 - i	11(d) - n	12D(x) - y	13Ca(w) - n
s19 - n	12A(x) - n	12D(w) - y	13Ca(d) - n
s20 - n	12A(w) - n	12D(d) - y	13Cb(x) - n
s21 - n	12A(d) - n	12Da(x) - y	13Cb(w) - n
s22 - i	12Aa(x) - n	12Da(w) - y	13Cb(d) - n
s23 - n	12Aa(w) - n	12Da(d) - y	13Cc(x) - n
s24 - n	12Aa(d) - n	12Db(x) - n	13Cc(w) - n
s25 - n	12Ab(x) - n	12Db(w) - n	13Cc(d) - n
s26 - n	12Ab(w) - n	12Db(d) - n	13Cd(x) - n
s27 - n	12Ab(d) - n	12E(x) - n	13Cd(w) - n
s28 - n	12Ac(x) - n	12E(w) - n	13Cd(d) - n
s29 - y	12Ac(w) - n	12E(d) - n	13D(x) - y
s30 - y	12Ac(d) - n	13A(x) - n	13D(w) - y
s31 - y	12Ad(x) - n	13A(w) - n	13D(d) - y
1.1 - n	12Ad(w) - n	13A(d) - n	13Da(x) - y
1.2 - y	12Ad(d) - n	13Aa(x) - n	13Da(w) - y
1.3 - n	12Ae(x) - n	13Aa(w) - n	13Da(d) - y
2.1.1 - y	12Ae(w) - n	13Aa(d) - n	13Db(x) - n
2.1.2 - n	12Ae(d) - n	13Ab(x) - n	13Db(w) - n
2.1.3 - n	12B(x) - n	13Ab(w) - n	13Db(d) - n
2.2.1 - i	12B(w) - n	13Ab(d) - n	13E(x) - n
2.2.2 - i	12B(d) - n	13Ac(x) - n	13E(w) - n
3.1 - y	12Ba(x) - n	13Ac(w) - n	13E(d) - n
3.2 - n	12Ba(w) - n	13Ac(d) - n	14.1(x) - n
3.3 - n	12Ba(d) - n	13Ad(x) - n	14.1(w) - n
4.1 - y	12Bb(x) - n	13Ad(w) - n	14.1(d) - n
4.2A - y	12Bb(w) - n	13Ad(d) - n	14.2(x) - n
4.2B - n	12Bb(d) - n	13Ae(x) - n	14.2(w) - n
4.2C - n	12Bc(x) - n	13Ae(w) - n	14.2(d) - n
4.2D - n	12Bc(w) - n	13Ae(d) - n	15.1A - y
5.1.1 - n	12Bc(d) - n	13B(x) - n	15.1B - n
5.1.2 - n	12Bd(x) - n	13B(w) - n	15.1C - n
5.2 - y	12Bd(w) - n	13B(d) - n	15.2 - i
blank - u	12Bd(d) - n	13Ba(x) - n	16A(x) - y
6.1 - n	12Be(x) - n	13Ba(w) - n	16A(w) - y

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16A(d) - y	31.3(x) - n	36.1.1(x) - n	43B(d) - n
16B(x) - n	31.3(w) - n	36.1.1(w) - n	43C(x) - n
16B(w) - n	31.3(d) - n	36.1.1(d) - n	43C(w) - n
16B(d) - n	31.4(x) - i	36.1.2(x) - n	43C(d) - n
16C(x) - n	31.4(w) - i	36.1.2(w) - n	43D(x) - n
16C(w) - n	31.4(d) - i	36.1.2(d) - n	43D(w) - n
16C(d) - n	31.5(x) - y	36.2.1(x) - n	43D(d) - n
17 - n	31.5(w) - y	36.2.1(w) - n	43E(x) - n
18 - n	31.5(d) - y	36.2.1(d) - n	43E(w) - n
19.1A - i	31.6A(x) - n	36.2.2(x) - n	43E(d) - n
19.1B - n	31.6A(w) - n	36.2.2(w) - n	43F(x) - n
19.2 - n	31.6A(d) - n	36.2.2(d) - n	43F(w) - n
19.3 - i	31.6B(x) - n	36.2.3(x) - n	43F(d) - n
20.1 - n	31.6B(w) - n	36.2.3(w) - n	43G(x) - n
20.2 - n	31.6B(d) - n	36.2.3(d) - n	43G(w) - n
21A - n	31.6C(x) - n	37 - n	43G(d) - n
21B - y	31.6C(w) - n	38.1 - n	43H(x) - n
21C - n	31.6C(d) - n	38.2 - n	43H(w) - n
21D - n	31.6D(x) - n	38.3 - y	43H(d) - n
21E - n	31.6D(w) - n	38.4 - n	43I(x) - n
22.1.1 - n	31.6D(d) - n	38.5 - n	43I(w) - n
22.1.2 - i	31.6E(x) - y	38.6 - n	43I(d) - n
22.2 - n	31.6E(w) - y	38.7 - n	44A(x) - y
22.3 - n	31.6E(d) - y	38.8 - i	44A(w) - y
23 - n	32A - n	39 - n	44A(d) - y
24.1 - i	32B - n	40.1 - i	44B(x) - n
24.2 - n	32C - n	40.2 - i	44B(w) - y
24.3 - n	32D - n	41.1 - i	44B(d) - n
24.4 - n	32E - n	41.2 - i	44C(x) - n
24.5 - n	32F - y	42.1.1(x) - y	44C(w) - n
25.1 - y	32G - n	42.1.1(w) - y	44C(d) - n
25.2A - y	32H - n	42.1.1(d) - y	44D(x) - n
25.2B - n	32I - n	42.1.2(x) - n	44D(w) - n
25.3 - n	32J - n	42.1.2(w) - n	44D(d) - n
26.1 - n	32K - n	42.1.2(d) - n	44E(x) - n
26.2 - i	33A - n	42.1.3(x) - n	44E(w) - n
26.3 - i	33B - n	42.1.3(w) - n	44E(d) - n
27.1 - y	33C - n	42.1.3(d) - n	44F(x) - n
27.2 - y	33D - n	42.2.1(x) - n	44F(w) - n
27.3 - n	33E - n	42.2.1(w) - n	44F(d) - n
28 - n	33F - y	42.2.1(d) - n	44G(x) - n
29.1 - n	33G - n	42.2.2(x) - n	44G(w) - n
29.2 - y	33H - n	42.2.2(w) - n	44G(d) - n
30(x) - y	33I - n	42.2.2(d) - n	44H(x) - n
30(w) - y	33J - n	42.2.3(x) - n	44H(w) - n
30(d) - y	33K - n	42.2.3(w) - n	44H(d) - n
31.1(x) - y	34.1 - n	42.2.3(d) - n	44I(x) - n
31.1(w) - y	34.2 - n	43A(x) - y	44I(w) - n
31.1(d) - y	34.3.1 - n	43A(w) - n	44I(d) - n
31.2(x) - n	34.3.2 - i	43A(d) - y	45A - y
31.2(w) - n	35.1 - n	43B(x) - n	45B - n
31.2(d) - n	35.2 - i	43B(w) - y	45C - n

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45D - n	48B(w) - n	49.2(x) - n	55.3 - u
45E - n	48B(d) - n	49.2(w) - n	55.4 - u
45F - n	48C(x) - n	49.2(d) - n	56.1 - u
45G - n	48C(w) - n	49.3(x) - n	56.2 - u
46A(x) - y	48C(d) - n	49.3(w) - n	57.1 - u
46A(w) - y	48D(x) - n	49.3(d) - n	57.2 - u
46A(d) - y	48D(w) - n	50(x) - n	58 - u
46B(x) - n	48D(d) - n	50(w) - n	59.1 - u
46B(w) - n	48E(x) - n	50(d) - n	59.2 - u
46B(d) - n	48E(w) - n	51.1 - u	60 - u
46C(x) - n	48E(d) - n	51.2 - u	61 - u
46C(w) - n	48F(x) - n	52.1 - u	62 - u
46C(d) - n	48F(w) - n	52.2 - u	63.1 - u
47A - y	48F(d) - n	53.1 - u	63.2 - u
47B - n	49.1.1(x) - n	53.2 - u	64 - u
47C - n	49.1.1(w) - n	54(x) - u	CR - 2
48A(x) - y	49.1.1(d) - n	54(w) - u	1 - n
48A(w) - y	49.1.2(x) - n	54(d) - u	2 - n
48A(d) - y	49.1.2(w) - n	55.1 - u	3 - n
48B(x) - n	49.1.2(d) - n	55.2 - u	4 - n