POND SITING REPORT

East Selmon PD&E Study
From I-4 Connector to US 301

Hillsborough County

Tampa Hillsborough Expressway Authority (THEA)
Project No.: P-01619

Prepared for:
Tampa Hillsborough Expressway Authority
1104 E. Twiggs Street, Suite 300
Tampa, Fl 33602

Submitted By:

3111 W. Dr. MLK Jr. Blvd., Suite 375
Tampa, Fl 33607

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Signature Page

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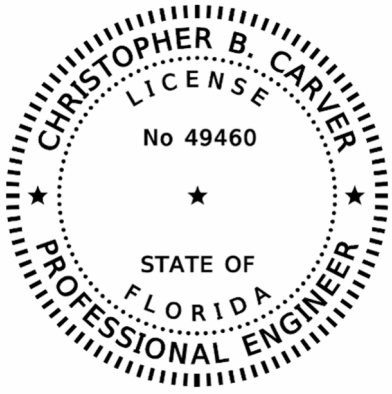

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Prepared By:

3301 W. Dr. MLK Jr. Blvd., Suite 375
Tampa, Fl 33607
Vendor No. 65-0271367

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Executive Summary

The Tampa Hillsborough Expressway Authority (THEA) is performing a Project Development and Environment (PD&E) study of the Lee Roy Selmon Expressway (Selmon), a 6.90-mile expressway that runs through an area just east of downtown Tampa. WGI has been contracted to evaluate the Stormwater Management Facility (Pond) needs for the Build Alternative in the PD&E study. The proposed improvements include a single lane expansion in both the westbound and eastbound directions, as well as slip ramps to connect to the reversible lanes.

This study starts on the west side of N. 26th Street and ends at US 301. The project is located in Sections 16, 17 and 20 through 25, Township 29 South, Range 19 East and Sections 29 and 30, Township 29 South, Range 20 East. The project location is shown on **Figure 1 Project Location Map in Appendix A**. The roadway improvements are shown on **Concept Maps with Typical Sections in Appendix A. Drainage Basin Maps are shown in Appendix B.** The stormwater management requirements from these improvements will be met within the existing Right-of-Way.

The project is on the National Vertical Datum of 1988 (N.A.V.D. 88). Conversion from the National Geodetic Vertical Datum of 1929 (NGVD 29) is shown in the following equation as needed.

Elevation NAVD 88 = Elevation NGVD 29 – 0.86’.

1. Introduction

The Tampa Hillsborough Expressway Authority (THEA) is performing a Project Development and Environment (PD&E) study of the Lee Roy Selmon Expressway (Selmon), a 6.90-mile expressway that runs through an area just east of downtown Tampa. WGI has been contracted to evaluate the Stormwater Management Facility (Pond) needs for the Build Alternative in the PD&E study to determine if pond modifications or additional ponds are needed and if they can be provided in the existing Right-of-Way. The proposed improvements include a single lane expansion in both the westbound and eastbound directions, as well as slip ramps to connect to the reversible lanes.

2. Project Description

This study starts on the west side of N. 26th Street and ends on the west side of I-75. The project is located in Hillsborough County and in Sections 16, 17 and 20 through 25, Township 29 South, Range 19 East and Sections 29 and 30, Township 29 South, Range 20 East. The project location is shown on **Figure 1 Project Location Map in Appendix A**. The roadway improvements are shown on **Concept Maps with Typical Sections in Appendix A. Drainage Basin Maps are shown in Appendix B.** The stormwater management requirements from these improvements will be met within the existing Right-of-Way.

The project is on the National Vertical Datum of 1988 (N.A.V.D. 88). Conversion from the National Geodetic Vertical Datum of 1929 is shown in the following equation as needed.

Elevation NAVD 88 = Elevation NGVD 29 – 0.86'.

3. Data Collection

- Florida Department of Transportation (FDOT) Drainage Manual, January 2023.
- FDOT Drainage Design Guide, January 2023.
- FDOT PD&E Manual, January 14, 2019.
- The Southwest Florida Water Management District (SWFWMD) Environmental Resource Permit (ERP) Applicant's Handbook, Volume II, June 1, 2018.
- FDOT Design Manual (FDM), January 2023
- Federal Emergency Management Agency (FEMA) Firmettes created August 2023.

4. Design Criteria

The pond evaluations, expansions and new swale meet the requirements of the governing agencies, manuals and guidelines listed in Section 3.

The project will require the following permits when it advances to the Design Phase:

- ERP from the SWFWMD.
- Section 404 Permit from the Florida Department of Environmental Protection (FDEP).

The project basins are all open basins that are not Outstanding Florida Waters. The western ponds discharge to McKay Bay, which is located in the northeast part of Tampa Bay and is a tidal water body. Ponds located towards the middle of the project discharge to the lower end of the Tampa Bypass Canal prior to entering Tampa Bay and is also considered tidal. The eastern ponds discharge in the Delaney Creek Basin. Ponds discharging directly to McKay

Bay and the Tampa Bypass Canal do not require attenuation unless they pass through a drainage system that could also affect other upstream areas.

Water quality and quantity evaluations are based on the increased impervious areas. **The Added Impervious Area Maps are shown in Appendix C.**

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- **Water Quality Criteria**

Most of the Ponds use either surplus water quality volumes or have small expansions to existing ponds. Therefore, the design of the Ponds were evaluated using presumptive criteria from the Southwest Florida Water Management District. The existing ponds along the project are either wet detention or detention with effluent filtration.

Section 4.5 Alterations to Existing Public Roadway Project in The SWFWMD ERP Applicant's Handbook, in combination with other rules, allows for treating one-inch of rainfall for wet detention systems and one-half in of rainfall for detention with effluent filtration.

Review of the added pavement areas indicates that they discharge only to wet detention facilities except for a couple of instances where wet detention swales will need to be constructed within the existing Right-of-Way. The ponds using detention with effluent filtration are not used for the added impervious areas.

- **Water Quality Design**

The added impervious areas were measured graphically in CADD and compared to previously permitted treatment volumes. All of the increased and permitted pavement areas are shown in **Table 1 – Impervious Areas** along with their discharge locations and permits used for evaluation. Select information from the historical permits is shown in **Appendix E – Existing Environmental Resource Permits**. Information from ERP 196540.001 was obtained from the Engineering Worksheet. Information from ERP 20690.022 and 21031.008 was obtained from the report narratives.

Table 1 also shows that the ponds using detention with effluent filtration do not have any added impervious areas. These rows will be removed from subsequent tables along with ponds that will not receive any added impervious areas.

Since this is a preliminary analysis for pond evaluation, recovery calculations for orifice sizing, permanent pool calculations and pollutant loading analysis are not included.

Table 1 – Impervious Areas

Pond	Permitted Impervious Area (Ac)	New Additional Impervious Area (Ac)	Total Impervious Area Requiring Treatment (Ac)	Discharges To	Permit
POND E1 Wet Detention	14.010	0.000	14.010	34th Street Canal and then McKay Bay	20690.022
POND E3 Wet Detention	7.020	0.005	7.025	34th Street Canal and then McKay Bay	20690.022
POND 4D Wet Detention	11.300	0.037	11.337	Pipe to ditch to McKay Bay	19654.001
POND G3 Wet Detention	5.950	1.265	7.215	Pipe to McKay Bay	20690.022
POND X Wet Detention	10.400	0.123	10.523	Pipe to McKay Bay	20690.022
POND H1 Wet Detention		1.461	1.461	Pipe to McKay Bay	Permit not found
REL MEDIAN (121-115) Eff. Filtration	1.210	0.000	1.210	Pipe to other systems	19654.001
REL MEDIAN (115-108) Eff. Filtration	1.590	0.000	1.590	Pipe to other systems	19654.001
REL MEDIAN (108-103) Eff. Filtration	1.200	0.000	1.200	Pipe to other systems	19654.001
REL MEDIAN (103-88) Eff. Filtration	4.290	0.000	4.290	Pipe to other systems	19654.001
POND I1 Wet Detention		1.386	1.386	Ditch along US 41 to Tampa Bypass Canal	Permit not found
POND 6 Wet Detention	2.990	1.074	4.064	Ditch along US 41 to Tampa Bypass Canal	19654.001
REL MEDIAN (76-64) Eff. Filtration	2.470	0.000	2.470	Pipe to other systems	19654.001
REL MEDIAN (63-50) Eff. Filtration	3.660	0.000	3.660	Pipe to other systems	19654.001
Treatment Swale 11 (New) Wet Detention	0.000	3.882	3.882	Pipe to Tampa Bypass Canal	None
REL MEDIAN (29-23) Eff. Filtration	2.390	0.000	2.390	Pipe to other systems	19654.001
Toll Plaza Wet Detention	4.080	2.281	6.361	Pipe to Tampa Bypass Canal	19654.001
POND 9AB Wet Detention	1.820	0.506	2.326	Pipe to Tampa Bypass Canal	19654.001
POND 100 Wet Detention	18.08	2.433	20.513	Pipe to Tampa Bypass Canal	
POND 200 Wet Detention	11.990	1.968	13.958	Ditches to De Laney Creek	19654.001
POND 300 Wet Detention	5.350	3.246	8.596	Ditches to De Laney Creek	19654.001
POND 400 Wet Detention	25.460	4.189	29.649	Ditches to De Laney Creek	19654.001
NW/SW BASIN PONDS Wet Detention	12.02	1.708	13.728	Ditches to De Laney Creek	19654.001

The additional treatment volume was calculated for the added impervious area and added to the permitted required treatment volumes minus any permitted surplus treatment volumes. A comparison of these volumes is shown in **Table 2 – Treatment Volumes**. This table shows that more than one-half of the existing ponds have enough surplus treatment volume for the added impervious areas.

The Net Treatment Volume Required is shown and a surplus volume still exists where this is a negative volume.

Expansions are required for the following ponds:

- Pond G3
- Pond H1 *still need historical data*
- Pond I1 *still need historical data*
- Pond 6
- Toll Plaza Ponds
- Pond 9AB
- Pond 200
- Pond 300
- NW/SW Basin Ponds

Table 2 – Treatment Volumes

Pond	Permitted Treatment Volume Required (Ac-Ft)	Permitted Treatment Volume Provided (Ac-Ft)	Permitted Surplus Treatment Volume (Ac-Ft)	Additional Treatment Volume Required (Ac-Ft)	Net Treatment Volume Required (Ac-Ft) *
POND 4D Wet Detention	0.940	1.060	0.120	0.003	-0.117
POND G3 Wet Detention	0.496	0.550	0.054	0.105	0.051
POND X Wet Detention	0.867	0.961	0.094	0.010	-0.084
POND H1 Wet Detention	0.835	0.669	-0.166	0.122	0.288
POND I1 Wet Detention	0.280	0.236	-0.044	0.116	0.160
POND 6 Wet Detention	0.250	0.330	0.080	0.090	0.009
Treatment Swale 11 (New) Wet Detention	Not Applicable	Not Applicable	Not Applicable	0.324	0.324
Toll Plaza Wet Detention	0.044	0.132	0.088	0.190	0.102
POND 9AB Wet Detention	0.077	0.080	0.003	0.042	0.039
POND 100 Wet Detention	1.236	1.507	0.271	0.203	-0.068
POND 200 Wet Detention	1.000	1.000	0.000	0.164	0.164
POND 300 Wet Detention	0.450	0.460	0.010	0.271	0.261
POND 400 Wet Detention	2.120	3.570	1.450	0.349	-1.101
NW/SW BASIN PONDS Wet Detention	0.613	0.626	0.013	0.142	0.129

- = negative value indicates remaining surplus.

- **Water Quantity Criteria**

The ponds that discharge directly to tidal waters do not require attenuation. The 25-year, 24-hour design storm was used to calculate the additional volume for the added pavement areas. The precipitation depth of 8.0-inches was obtained from the SWFWMD rainfall map. This is consistent with previously permitted calculations. These calculations determine the volume by multiplying the new pavement by 8.0-inches and converting to acre-feet. These volumetric calculations are shown in **Appendix E.**

Ponds requiring attenuation analyses are:

- Pond G3
- Pond H1
- Pond 6
- Pond 200
- Pond 300

- **Land Use Data and Topography**

The land uses throughout the project corridor are designated as mostly roadway along the coast with some residential and commercial land uses at the east end of the project.

- **Natural and Biological Features**

Screening for natural and biological features along with potential contamination will need to be performed during the design phase.

5. Existing & Proposed Conditions

- **Existing Drainage Conditions**

The existing roadway drainage system is comprised of both closed systems comprised of inlets and storm sewer and also open systems where stormwater sheet flows from the roadway into roadside ditches.

- General drainage patterns of the vicinity of the project flow from the north to the south.
- Offsite areas draining towards the roadway are combinations of commercial, industrial and residential with a few wooded and wetland areas.
- All of the basins are open.
- There are no Outstanding Florida Waters along the project.
- There are 22 existing roadway basins with ponds along the project.
- Irregular beginnings and endings of the basins preclude using stations.

- **Proposed Drainage Conditions**

- One two ponds will be introduced within the Right-of-Way.
- Swale 11 is proposed to treat an area that currently does not receive water quality treatment.
- Swle 12 is proposed to treat additional pavement area in the vicinity of the Toll facilities since the Toll ponds cannot accommodate the additional volume..
- These will ultimately discharge to the lower end of the Tampa Bypass Canal which is considered tidal.

6. Floodplain & Environmental Information

The project passes through and lies with FEMA designated 100-year floodplains through a majority of the project. These floodplains are designated AE with a base elevation of 12 from the beginning of the project to S. 78th Street. The project east of S. 78th Street lies outside of floodplains except for a few wetland areas within the Right-of-Way. Impacts to floodplains will be minimal, and it is anticipated that these impacts can be mitigated within the right-of-way with use of walls as needed to remove fill encroachment.

FEMA Firmettes are shown as **Figure 4 in Appendix A** and include the following FEMA panels:

- 1201120359J revised October 7, 2021
- 1201120358J revised October 7, 2021
- 1201120378K revised October 7, 2021
- 1201120386K revised October 7, 2021
- 1201120387J revised September 27, 2013

7. Stormwater Ponds

Additional water quality treatment volume can usually be met by expanding existing ponds while keeping the pond layout within the existing Right-of-Way. Expanding the ponds allows the control elevation to remain unchanged and not affect upstream stages or discharge rates. Swales 11 and 12 are also proposed within the existing Right-of-Way to treat additional runoff from an area that currently does not drain to an existing pond. The pond locations with their expansion limits are shown on the **Drainage Basin Maps in Appendix B.** The required expansion areas were determined by dividing the additional water quality treatment volume by the treatment depths obtained from the existing permits.

Expansion areas required water quality for the ponds are listed below with a description on how the area was achieved Assumed treatment depths are noted where information could not be found in the permits:

• Pond G3 – 0.051 acres (assumed 12-inch depth).	Expand the pond 50-feet to the west.
• Pond H1 – 0.288 acres (assumed 12-inch depth).	Expand pond to the north, east and south sides.
• Pond I1 – 0.160 acres (assumed 12-inch depth).	Expand the pond 280-feet to the east.
• Pond 6 - 0.019 acres.	Expand the pond 4-feet to the north.
• Toll Plaza Ponds – 0.204 acres	Add Swale 12.
• Pond 9AB – 0.049 acres	Extend cells towards each other.
• Pond 200 – 0.080 acres	Expand the pond 10-feet to the east.
• Pond 300 – 0.318 acres	Expand the pond 40-feet to the south.
• NW/SW Basin Ponds – 0.108 acres	Minor re-grading inside SW quadrant pond area.

8. Results

The pond expansions and added swales provide additional water quality treatment volume sufficient to accommodate the added impervious areas. The expansions described in Section 7 also provide sufficient volume at the higher attenuation elevation. Calculations for the additional area required for attenuation volume are shown in **Appendix E – Volumetric Calculations.**

9. Conclusions

Water quality treatment and attenuation for the additional impervious areas for Alternative 1 will be addressed in the existing Right-of-Way by either expanding existing ponds or adding swales.