

# LOCATION HYDRAULICS MEMORANDUM (LHM) UPDATE

**Florida Department of Transportation**

**District 7**

**I-275 (SR 93) Design Change Re-evaluation**

**Project Development and Environment Study  
from south of 54th Avenue South to north of 4th Street North**

**Pinellas County, Florida**

Work Program Item Segment Number: 424501-1

ETDM Project Number: 12556

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The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being, or have been, carried out by the Florida Department of Transportation (FDOT) pursuant to Title 23, Section 327 of the United States Code (23 U.S.C. § 327) and a Memorandum of Understanding dated December 14, 2016, and executed by FHWA and FDOT.

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# 1 Introduction

## 1.1 Project Description

The Florida Department of Transportation (FDOT), District Seven is conducting a Design Change Re-evaluation to evaluate and document proposed changes to the originally approved Type II Categorical Exclusion (CE) and subsequent Re-evaluation for I-275 (SR 93) from south of 54th Avenue South to north of 4th Street North in Pinellas County, Florida. A Project Development and Environment (PD&E) study was conducted for the 16.3-mile corridor to analyze the need for operational improvements and evaluate the location, conceptual design, and social, economic, and environmental effects of any proposed improvements. Following a Public Hearing held on September 29, 2015, FHWA approved the Type II CE for this project on July 15, 2016.

Following approval of the Type II CE, FDOT performed a Design Change Re-evaluation in 2017 to evaluate a change to the approved Typical Section of Segment C (from Dr. MLK, Jr. Boulevard to north of 4th Street North). The 2017 Re-evaluation assessed the repurposing of one of the two approved express lanes to accommodate the provision of three general use through lanes, one auxiliary lane, and one express lane in each direction for this segment of the study corridor. The 2017 Design Change Re-evaluation was approved by FDOT on April 26, 2017.

FDOT is currently conducting another Design Change Re-evaluation to assess impacts of accommodating improvements for a second express lane in Segment C and the addition of two express lanes in Segment B from north of I-375 to south of Gandy Boulevard. These proposed improvements would tie-in with planned improvements to the Howard Frankland Bridge (FPID 422904-2 and 422904-4). This re-evaluation also analyzes replacing the I-275 ramp bridges on 4th Street North over Big Island Gap.

The current re-evaluation also analyzes replacing the I-275 ramp bridges on 4th Street North over Big Island Gap, providing trail connections from the Howard Frankland Bridge to 4th Street North and Ulmerton Road, and ramp connection modifications at the Gandy Boulevard and Gateway Expressway interchange areas. To meet drainage and stormwater requirements, pond sites will be needed to accommodate new impervious surface due to widening to accommodate express lanes. Several of these new pond site locations will be outside of the existing right of way.

## 1.2 Purpose and Need

The purpose of this project is to provide for operational improvements that maximize capacity within the I-275 corridor, improve lane continuity, and connect I-275 within Pinellas County to the future network of express lanes planned for the Tampa Bay Region. Improvements are needed within the I-275 corridor to help improve existing traffic congestion, enhance safety, and better accommodate future travel demands associated with projected growth in employment and population. The addition of express lanes is included in the Pinellas County Metropolitan Planning Organization (MPO) 2040 Long Range Transportation Plan (LRTP).

I-275 is a vital link in the local and regional transportation network and serves as a critical evacuation route. As a major north-south corridor through Pinellas County, I-275 links the Tampa Bay Region with the remainder of the state and the nation supporting commerce, trade, and tourism. Preserving the

operational integrity and regional functionality of I-275 is critical to the mobility and economy of the Tampa Bay Region.

### 1.3 Description of the Design Change

The current Design Change Re-evaluation includes a typical section change to extend two buffer separated express lanes in both directions from I-375 to north of 4th Street North, as well as a 12-ft wide outside shoulder to accommodate bus-on-shoulder operations from I-375 to Gandy Boulevard. This concept supersedes the 2017 Design Change Re-evaluation concept. The current Design Change Re-evaluation also includes trail connections from the Howard Frankland Bridge to 4th Street North and Ulmerton Road. To accommodate the new trail connection, the 4th Street North bridge over Big Island Gap will undergo either widening or reconstruction.

The Gateway Expressway interchange area will also be modified under this re-evaluation. Ramps located to the south of the Gateway area will carry drivers from northbound I-275 Express Lanes to Gateway Expressway, as well as carry drivers from the Gateway Expressway to southbound I-275 Express Lanes. In addition, access to southbound I-275 from the Gandy Boulevard interchange will be modified by connecting the westbound-to-southbound loop on ramp and the eastbound-to-southbound on ramp into a frontage road system that provides one entry point onto southbound I-275. Finally, additional drainage and stormwater requirements, such as pond sites, will be needed to accommodate the new impervious surface due to the express lane widening. Several of these new pond site locations will be outside of the existing right of way.

### 1.4 Purpose of this Report

The Location Hydraulics Memorandum (LHM) (March 2015) was prepared as a component of the PD&E Study. The purpose of the LHM is to assess highway encroachment impacts within the 100-year (base) floodplains and any regulatory floodways that are associated with the proposed action. This memorandum is in compliance with the FDOT's Project Development and Environmental (PD&E) Manual, Part 2, Chapter 13; Executive Order 11988 "Floodplain Management", USDOT Order 5650.2, "Floodplain Management and Protection", and Federal-Aid Policy Guide 23 CFR 650A; Council on Environmental Quality Regulations for Implementing the Procedural Provision of the National Environmental Policy Act; and 23 Code of Federal Regulations 771.

This Location Hydraulics Memorandum (LHM) \*Update\* has been prepared as part of the Design Change Re-evaluation to assess highway encroachment impacts within the 100-year (base) floodplains and any regulatory floodways that are associated with the addition of two express lanes in Segment B from north of I-375 to south of Gandy Boulevard.

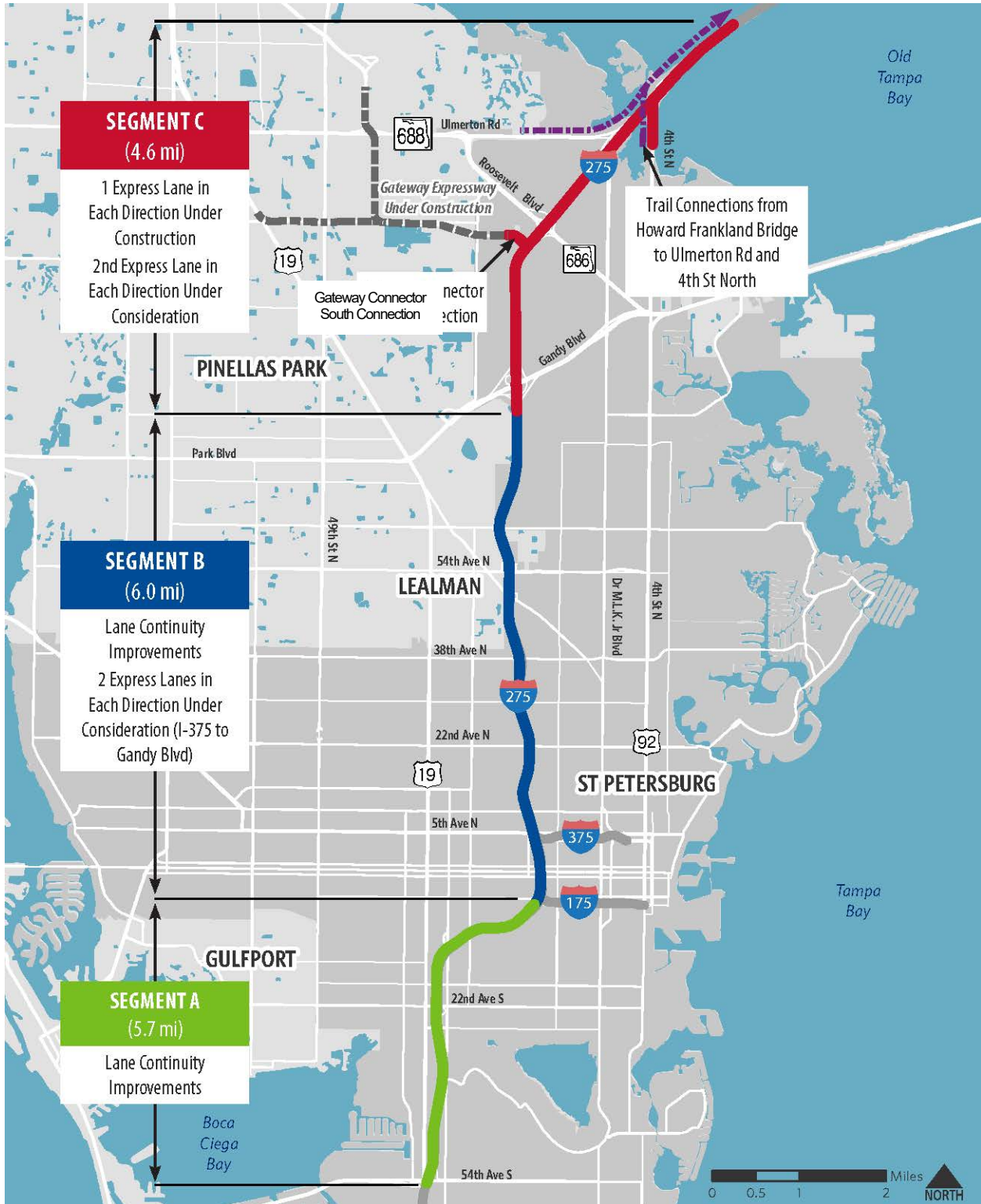


Figure 1.1. Project Location Map

## 2 Floodplains and Floodways

Please refer to Appendix C for the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) showing the limits of the addition of two express lanes being evaluated in the update.

### 2.1 Floodplains

The addition of two express lanes from north of I-375 to south of Gandy Boulevard will increase the impact the 100-year base floodplain in Segment 3-1 [refer to Section 3.1 of the LHM (March 2015)].

Additional impacts have been evaluated as follows:

- Segment 3-1: South of Gandy Boulevard to the Gandy Boulevard Interchange
  - The additional widening of the roadway portion of the project to accommodate the express lanes will add greater embankment fill material upon the base floodplain within the existing right-of-way.
  - Floodplain Impact Locations, identified as F-1, F-2 and F-3 in the LHM (March 2015), are all affected by the addition of the express lanes.

### 2.2 Federal Emergency Management Agency (FEMA) Flood Zones and Regulatory Floodways

Potential floodplain encroachment was evaluated for F-1, F-2 and F-3 discussed above. Cross sections (refer to Appendix B) were used to calculate the additional fill due to the increased widening required to accommodate the express lanes. Refer to Appendix D for floodplain impact maps and Appendix E for estimated floodplain impact calculations. Estimated encroachment volumes are shown in Table 2-1.

**Table 2-1: Estimated Total Floodplain Impacts**

Floodplain Impact	Roadway Fill (ac-ft)	Remarks
F-1	6.14	South of Gandy Interchange NB I-275
F-2	6.34	South of Gandy Interchange SB I-275 & Ramp E
F-3	0.09	Gandy Interchange, Ramp A

Approximately 12.57 acre-feet of floodplain impacts are expected.

Floodplain compensating storage will be provided as required by the SWFWMD and, as a result, no significant changes in base flood elevations or limits will occur. In addition, the encroachments into the floodplain may be decreased (minimized) through adjustment to the typical section in the vicinity of the floodplain impact areas. Minimization and/or avoidance measures will be taken into consideration during the design phase to reduce any impacts to the 100-year floodplain by steepening the side slopes or adding retaining walls, if feasible. Because the proposed roadway widening occurs along the existing alignment, floodplain encroachments are considered minimal.

## 2.3 Risk Assessment

The results of the **\*updated\*** risk assessment performed indicate that the floodplain encroachment level is still considered minimal and described as Category 3.

*“The modifications to drainage structures included in this project will result in an insignificant change in their capacity to carry floodwater. This change will cause minimal increases in flood heights and flood limits. These minimal increases will not result in any significant adverse impacts on the natural and beneficial floodplain values or any significant change in flood risks or damage. There will not be a significant change in the potential for interruption or termination of emergency services or emergency evacuation routes. Therefore, it has been determined that this encroachment is not significant.”*