

LOCATION HYDRAULICS TECHNICAL MEMORANDUM

Gibson Drive Project Development and Environment Study

From Fern Hill Drive to US 301
Hillsborough County
WPI Segment No. 450438-1
ETDM Number: 14493

December 2023

The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being, or have been, carried out by FDOT pursuant to 23 U.S.C. § 327 and a Memorandum of Understanding dated May 26, 2022 and executed by FHWA and FDOT.

The Florida Department of Transportation (FDOT) District Seven, in coordination with Hillsborough County, is conducting a Project Development and Environment (PD&E) study along Gibson Drive from Fern Hill Drive to U.S. Highway 301 (US 301) in Hillsborough County. A project location map is shown in **Figure 1**. The objective of the PD&E study is to assist the Florida Department of Transportation's (FDOT) Office of Environmental Management (OEM) in reaching a decision on the type, location, and conceptual design of the proposed improvements for the widening of Gibson Drive, including stormwater management facility (SMF) and floodplain compensation (FPC) sites. This study documents the need for the improvements as well as the procedures utilized to develop and evaluate various improvements, including elements such as proposed typical sections, preliminary horizontal alignments, and intersection enhancements. The existing and proposed typical sections are shown in **Figure 2** and **Figure 3**, respectively.

The PD&E study satisfies all applicable requirements, including the National Environmental Policy Act (NEPA), to qualify for federal-aid funding of subsequent development phases (design, right of way acquisition, and construction). This project was screened through the FDOT's Efficient Transportation Decision Making (ETDM) process as ETDM Project No. 14493. The ETDM Programming Screen Summary Report was published on October 27, 2022, containing comments from the Environmental Technical Advisory Team (ETAT) on the project's effects on various natural, physical, and social resources. A Type 2 Categorical Exclusion is the class of action for this PD&E study.

This *Location Hydraulics Memorandum* has been prepared to determine if any floodplains will be significantly affected due to the proposed improvements. As stated in the *Pond Siting Report (PSR)*, there is one cross drain located within the study limits that will be extended or replaced. The cross drain is a double 42" RCP located approximately 200-feet east of Kendra Drive. There are no bridges within the study area. The project site has been reviewed by project staff. The following 10 items have been addressed to document that the floodplain encroachments will be minimal.

1. History of Flooding: According to the District Seven Flood Inventory database, there are no historical or currently active flooding complaints within the project area. Hillsborough County was contacted and stated that there have been no historical work requests for flooding along Gibsonton Dr.
2. Longitudinal or Transverse Encroachments: No net encroachment into the floodplain, up to that encompassed by the 100-year event, which will adversely affect conveyance, storage, water quality or adjacent lands, will be allowed. Any required compensating storage shall be equivalently provided between the lowest level of encroachment and the 100-year flood level to allow storage function during all lesser flood events. SWFWMD preference is a cup for cup approach with compensatory storage provided adjacent to or near as possible to the impacts. Most of the possible encroachments into the floodplain are expected to be longitudinal, occurring alongside the roadway. Additionally, there is a potential for a transverse encroachment at the cross drain situated east of Kendra Drive.
3. Avoidance Alternatives: The project area lies predominantly outside of the special flood hazard areas, and the proposed widening will follow the same alignment as the existing highway; therefore, all of the floodplain encroachments will be minimal. There are no Build Alternatives available which would completely avoid any new floodplain encroachment.
4. Emergency Services and Evacuations: Hillsborough County Fire Station No. 12 is located west of I-75 on the north side of Gibsonton Drive. Gibsonton Drive is designated as a Hurricane Evacuation Route. The proposed improvement will enhance emergency response along the corridor.
5. Base Flood Impacts: The project's drainage design will be consistent with FEMA, Hillsborough County, FDOT, and Southwest Florida Water Management District's (SWFWMD) design guidelines. Therefore, no significant changes in base flood elevations or limits will occur.
6. Regulatory Floodway: The project area lies within the Alafia River watershed; however, there are no identified regulatory floodways with the study limits. Therefore, there are no floodway encroachments associated with the proposed improvements.
7. Natural and Beneficial Floodplain Values: Most of the project will be constructed at existing grade. Therefore, no natural and beneficial floodplain values will be significantly affected.
8. Floodplain Consistency and Development: The project is consistent with the Comprehensive Plan for Hillsborough County. The proposed project will not encourage floodplain development due to local (FEMA) floodplain and SWFWMD regulations. The following statement from the *FDOT PD&E Manual Part 2 Chapter 13* is applicable:

It has been determined, through consultation with local, state, and federal water resources and floodplain management agencies that there is no regulatory floodway involvement on the project and that the project will not support base floodplain development that is incompatible with existing floodplain management programs.

9. **Floodplain/FIRM**: The project is located within FEMA FIRM Panel 12057C0502J dated October 7, 2021. The FEMA flood zones are shown in **Figure 4**. Hillsborough County also maintains a watershed model of the Alafia River, with the most recent revision dated March 31, 2020. This model is anticipated to be adopted by FEMA, and therefore should be considered in the determination of potential floodplain encroachment. A map of the Hillsborough County watershed model base flood inundation boundaries within the project area is attached as **Figure 5**. As stated in the *PSR*, the project is located primarily within Flood Zone X, which is outside of the 100-year flood inundation boundary, and partly within Flood Zone A, which consists of low-lying areas that are in close proximity to lakes, ponds, and other large bodies of water and are a special flood hazard area inundated by 100-year flooding with undetermined base flood elevations.
10. **Risk Assessment**: Based on the evaluation of anticipated improvements, the applicable floodplain statement according to the *FDOT PD&E Manual Part 2 Chapter 13* is Statement 4- PROJECTS ON EXISTING ALIGNMENT INVOLVING REPLACEMENT OF EXISTING DRAINAGE STRUCTURES WITH NO RECORD OF DRAINAGE PROBLEMS:

The proposed structure will perform hydraulically in a manner equal to or greater than the existing structure, and backwater surface elevations are not expected to increase. Thus, there will be no significant adverse impacts on natural and beneficial floodplain values. There will be no significant change in flood risk, and there will not be a significant change in the potential for interruption or termination of emergency service or emergency evacuation routes. Therefore, it has been determined that this encroachment is not significant.

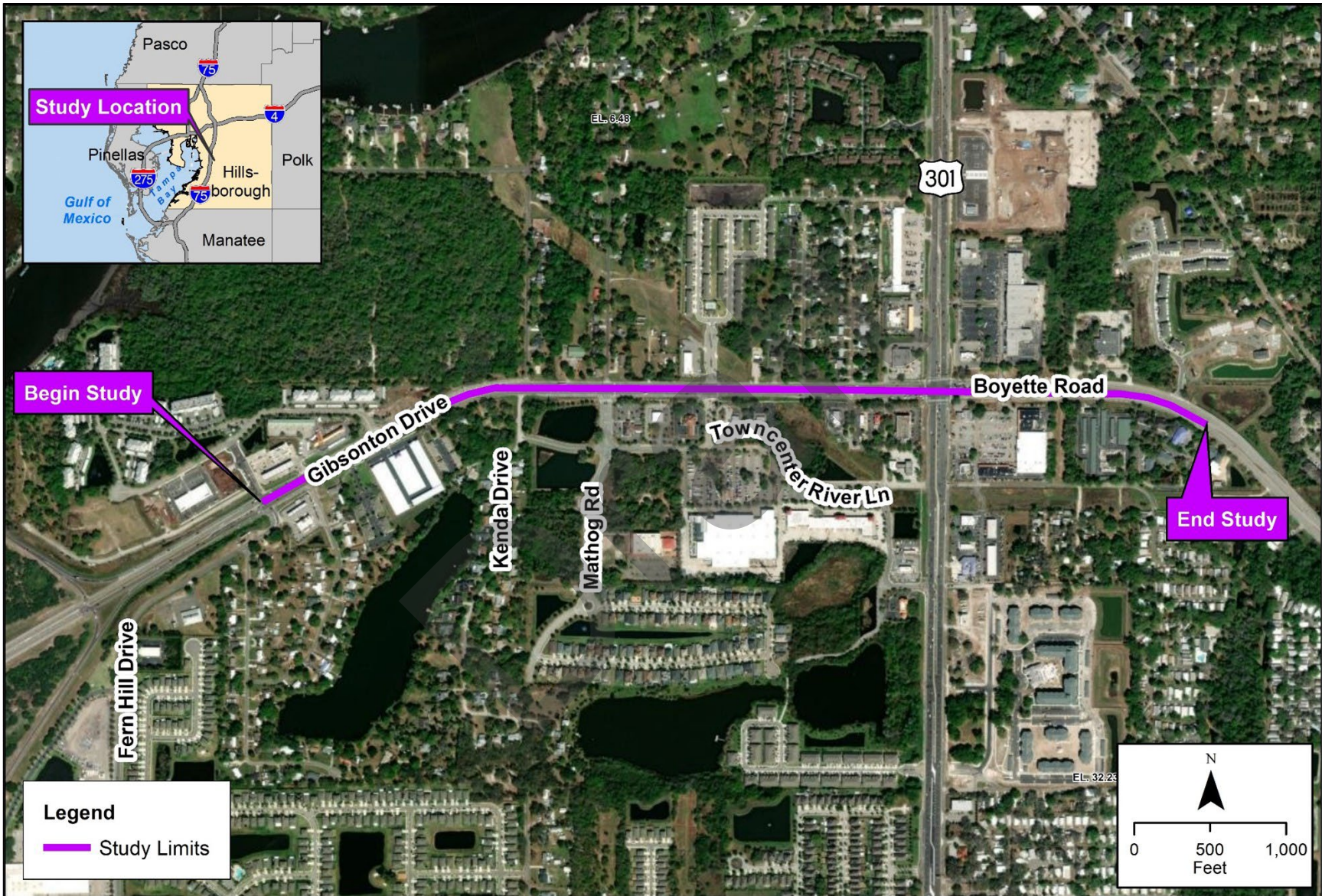


Figure 1 - Project Location Map

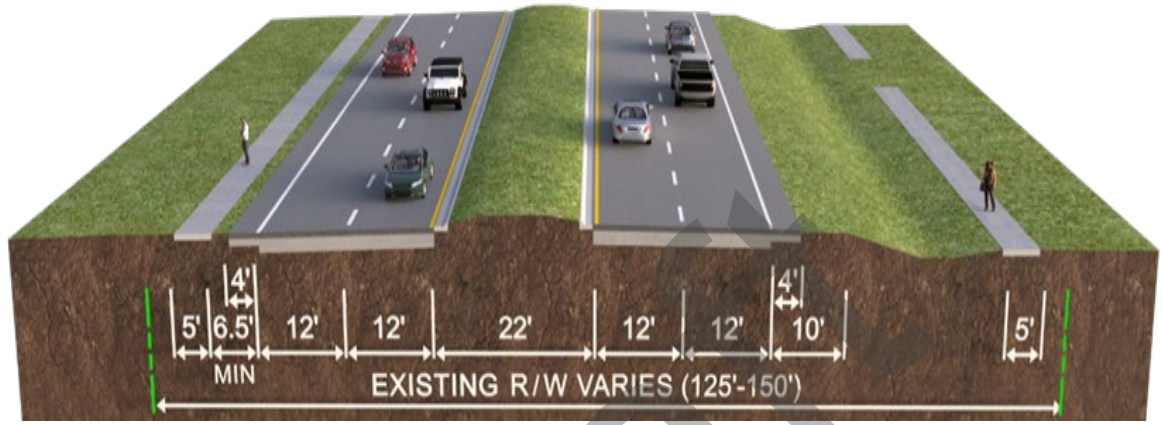


Figure 2 - Existing Typical Section

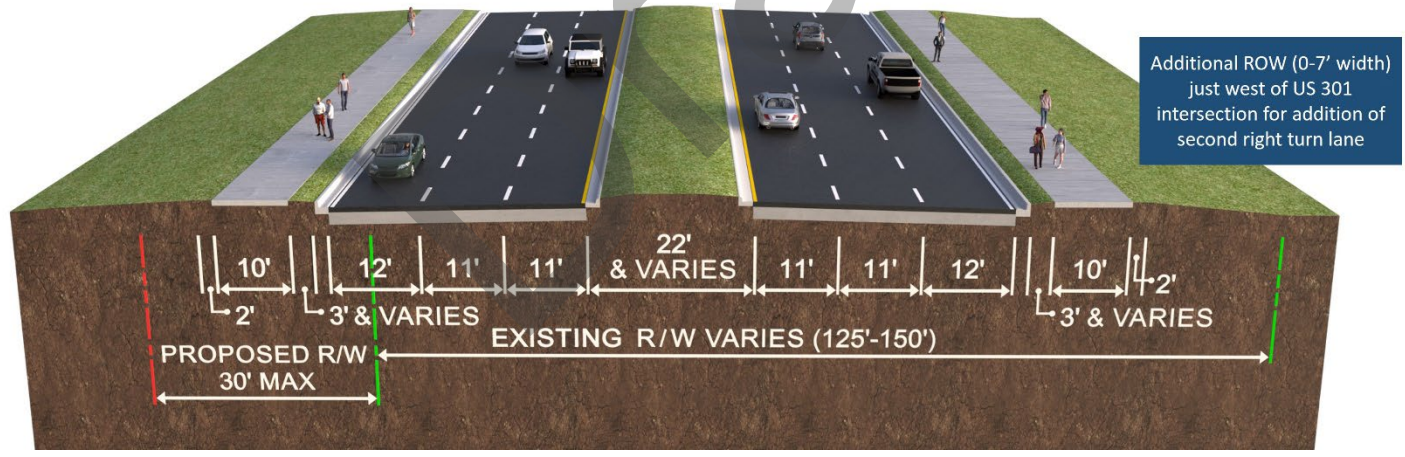


Figure 3 - Proposed Typical Section



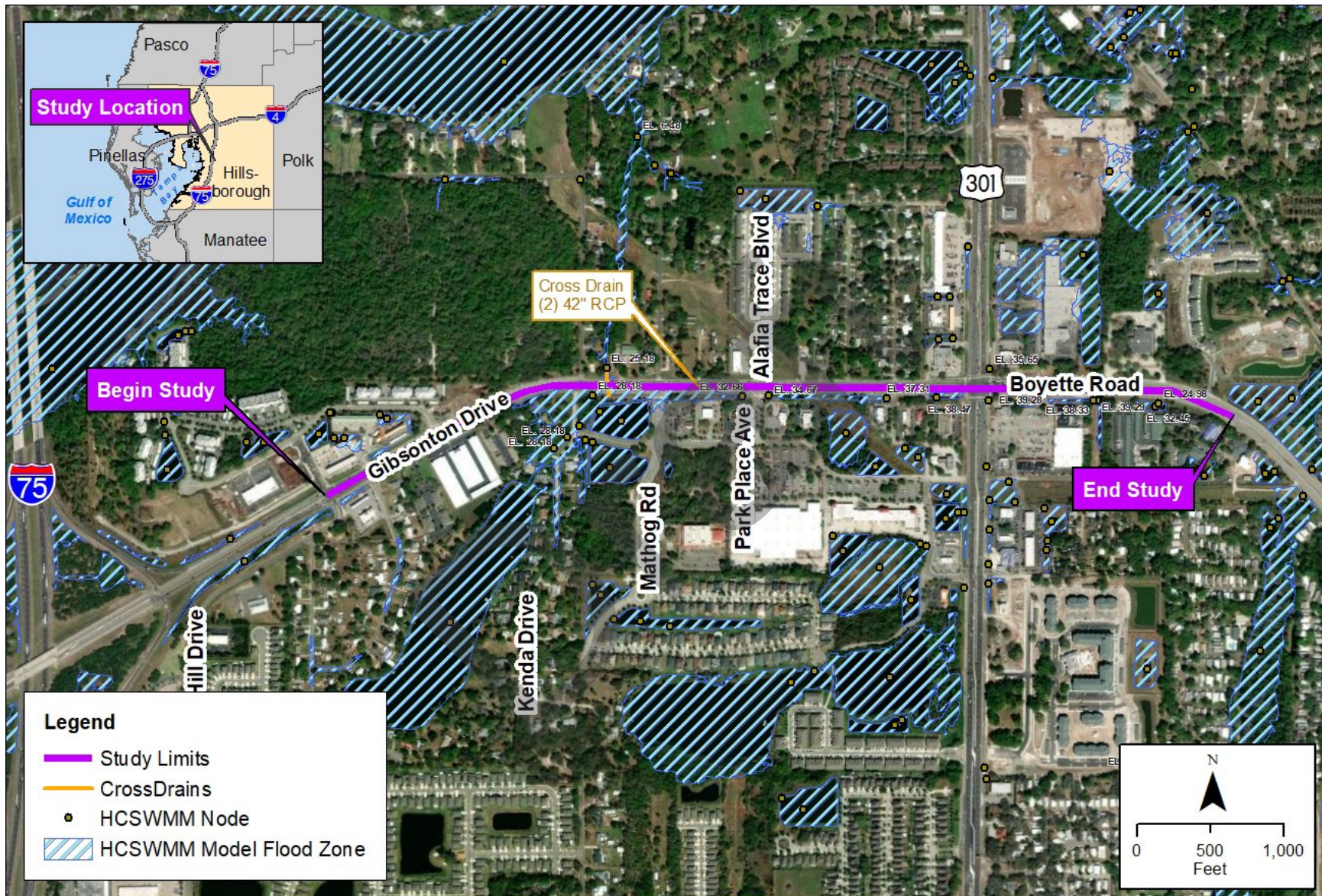


Figure 5 - Hillsborough County Watershed Model Flood Zone Map

Draft

FEMA Flood Insurance Rate Map



FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT
THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT [HTTPS://MSC.FEMA.GOV](https://MSC.FEMA.GOV)

	Without Base Flood Elevation (BFE) Zone A, V, A99
	With BFE or Depth Zone AE, AO, AH, VE, AR
	Regulatory Floodway
	0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
	Future Conditions 1% Annual Chance Flood Hazard Zone X
	Area with Reduced Flood Risk due to Levee See Notes. Zone X
	Area with Flood Risk due to Levee Zone D
	Area of Minimal Flood Hazard Zone X
	Area of Undetermined Flood Hazard Zone D
	Channel, Culvert, or Storm Sewer
	Levee, Dike, or Floodwall
	Cross Sections with 1% Annual Chance Water Surface Elevation
	Coastal Transect
	Coastal Transect Baseline
	Profile Baseline
	Hydrographic Feature
	Base Flood Elevation Line (BFE)
	Limit of Study
	Jurisdiction Boundary

NOTES TO USERS

For information and questions about this Flood Insurance Rate Map (FIRM), available products associated with this FIRM, including historic versions, the current map date for each FIRM panel, how to order products, or the National Flood Insurance Program (NFIP) in general, please call the FEMA Mapping and Insurance Exchange at 1-877-FEMA-MAP (1-877-336-2827) or visit the FEMA Flood Map Service Center website at <https://msc.fema.gov>. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website.

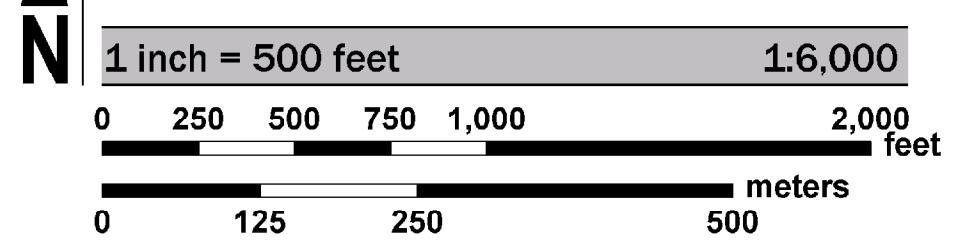
Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM index. These may be ordered directly from the Flood Map Service Center at the number listed above.

For community and countywide map dates refer to the Flood Insurance Study Report for this jurisdiction. To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

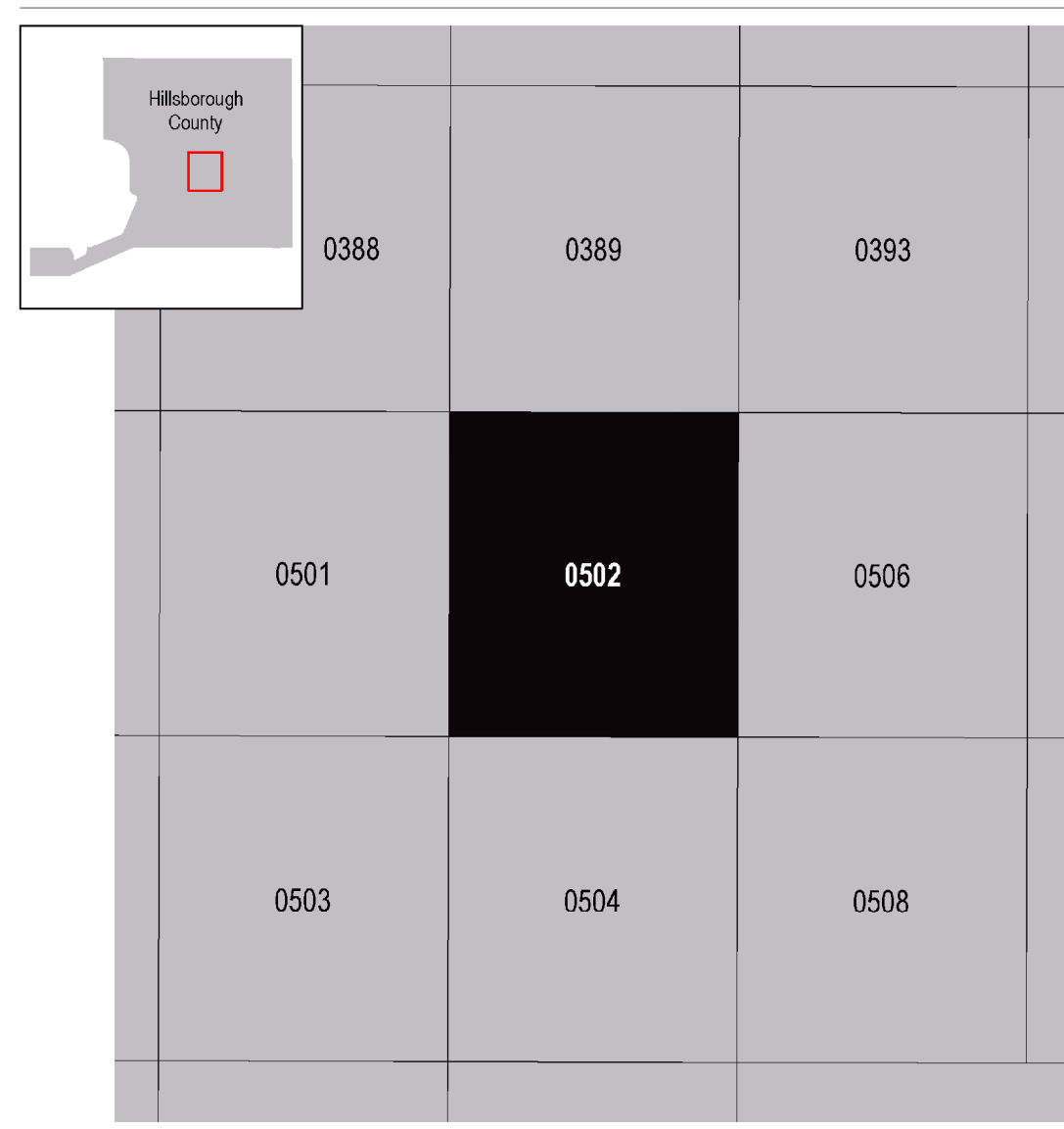
Base map information shown on this FIRM was provided by Hillsborough County, dated 2008 and 2018; the Florida Department of Transportation, dated 2017; the Florida Resources and Environmental Analysis Center, dated 2003; and the U.S. Department of Agriculture, dated 2018.

SCALE

Map Projection: State Plane Transverse Mercator, Florida West Zone 0902; North American Datum 1983; Western Hemisphere; Vertical Datum: NAVD 88



PANEL LOCATOR



**NATIONAL FLOOD INSURANCE PROGRAM
 FLOOD INSURANCE RATE MAP**

HILLSBOROUGH COUNTY,
 and Incorporated Areas
 PANEL 502 OF 801

Community Contains:
 HILLSBOROUGH COUNTY
 NUMBER PANEL SUFFIX
 120112 0502 J

VERSION NUMBER
 2.4.3.5
 MAP NUMBER
 12057C0502J
 MAP REVISED
 OCTOBER 7, 2021