

DRAFT LOCATION HYDRAULIC REPORT

Florida Department of Transportation

District One

S.R. 789 (Longboat Key) PD&E Study

Limits of Project: From North Shore Road to Coquina Park Entrance

Manatee County, Florida

Financial Management Number: 436676-1-22-01

ETDM Number: 14382

Date: February 2026

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 23 U.S.C. § 327 and a Memorandum of Understanding dated May 26, 2022 and executed by the Federal Highway Administration and FDOT.

S.R. 789 (LONGBOAT KEY)
PROJECT DEVELOPMENT AND ENVIRONMENT
(PD&E) STUDY
FROM NORTH SHORE ROAD TO
COQUINA PARK ENTRANCE
FINANCIAL PROJECT ID: 436676-1-22-01
EFFICIENT TRANSPORTATION DECISION MAKING (ETDM) NUMBER: 14382
MANATEE COUNTY, FLORIDA

Draft Location Hydraulic Report

Prepared for:
FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT 1
801 N. Broadway Avenue
Bartow, FL 33830-3809
February 2026

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PROFESSIONAL ENGINEER CERTIFICATE

I hereby certify that I am a registered professional engineer in the State of Florida practicing engineering with Scalar Consultant Group LLC and that I have supervised the preparation of and approved the analysis, findings, opinions, conclusions, and technical advice hereby reported for:

PROJECT: S.R. 789 (Longboat Key) Project Development and Environment (PD&E) Study
Financial Project ID: 436676-1-22-01
Manatee County, Florida

The engineering work represented by this document was performed through the following duly authorized engineering business:

Scalar Consulting Group LLC
2301 Maitland Center Parkway, Suite 200
Maitland, FL 32751
Telephone No.: (407) 868-4094

This Location Hydraulic Report contains engineering information that fulfills the purpose and needs for the S.R. 789 (Longboat Key) Project Development and Environment (PD&E) Study in Manatee County, Florida. I acknowledge that the procedures and references used to develop the results contained in this report are standard for the professional practice of transportation engineering as applied through professional judgment and experience.

Any engineering analysis, documents, conclusions, or recommendations relied upon from other professional sources or provided with responsibility by the client are referenced accordingly in the following report.

This item has been digitally signed and sealed by David A. Bennett on the date adjacent to the seal.



Signature must be verified
on any electronic copies.

SCALAR CONSULTING GROUP LLC
2301 Maitland Center Parkway, Suite 200
Maitland, FL 32751
David A. Bennett, P.E. No 54769

INTRODUCTION

The Florida Department of Transportation (FDOT), District One, is conducting a Project Development and Environment (PD&E) Study to evaluate the reconstruction and/or rehabilitation of Longboat Key bridge (Structure Number 130057) in Manatee County to address structural integrity and operational deficiencies.

The purpose of the Location Hydraulic Report is to document any potential significant impacts to floodplains caused by the Build Alternative. The Build Alternative is on an existing alignment outside of any regulatory floodway. The project's drainage design will follow Florida Department of Transportation (FDOT), Southwest Florida River Water Management District (SWFWMD), and local Federal Emergency Management Agency (FEMA) design standards.

PROJECT DESCRIPTION

Longboat Key is classified as an Urban, Major Collector and consists of a two-lane, undivided typical section between North Shore Road and the entrance to Coquina Park (**See Figure 1 – Project Location Map**). Longboat Key serves as the primary north-south connection from Longboat Key to Bradenton Beach and Anna Maria Island. The bridge crosses Longboat Pass, a navigable waterway. The current bridge is the second bridge that existed at its location. The bridge was originally built in 1957 and was reconstructed in 2005. The main bridge span material is steel-reinforced concrete while the deck type is made of cast-in-place concrete, and the bridge has a movable-bascule span design. The vertical clearance below the bridge is 16.7 feet. The bridge deck width from edge-to-edge is 37.4 feet. It currently has two twelve-foot-wide travel lanes and a five-foot wide sidewalk on both sides. There is a bike lane on each side of the roadway leading up to the bridge. However, there are no shoulders or dedicated bicycle facilities on the bridge itself. The preferred bridge replacement alternative is a high-level fixed bridge. This includes the replacement of the existing Longboat Key Bridge with a 78-foot vertical clearance bascule bridge with 90 feet of horizontal clearance between fenders. The typical section includes: two 11-foot-wide travel lanes, two 8-foot-wide outside shoulders, and 8-foot and 12-foot-wide shared use paths. This alternative is located west of the existing Longboat Key/S.R. 789 bridge alignment. The alternative involves right-of-way acquisition from the north side of the bridge at the Manatee County Marine Rescue Facility (county-owned property). The alternative involves intersection and access management modifications at the north end of the bridge at the Coquina Beach entrance. The study is evaluating the no-build and build alternatives.

EXISTING DRAINAGE CONDITIONS

This project is located on S.R. 789, from North Shore Road to the Coquina Park entrance in the Town of Longboat Key and the City of Bradenton Beach, in Manatee County, Florida. It lies within the Southwest Florida Water Management District (SWFWMD) and is part of the Sarasota Bay watershed, with the bay being designated as an Outstanding Florida Water (OFW). The project is bordered by Water Body Identification Number (WBID) 1968B, Sarasota Bay to the North, which is impaired for bacteria, and WBID 1862, Direct Runoff to Bay, which is unimpaired. There is not an adopted Total Maximum Daily Load (TMDL), and the bay is not part of a Basin Management Action Plan (BMAP).

The existing bridge has scuppers which allow for a direct discharge of runoff to the bay. Runoff not captured by the scuppers is conveyed to the bridge approaches. Runoff from the northern approach sheet flows to

the adjacent right-of-way where it infiltrates the ground or eventually makes it to the bay. Runoff from the southern approach is collected in a closed storm sewer system which directly discharges to the bay. Currently there are no roadway stormwater management facilities within the project limits. Conversations with local officials and local residents at the public workshop in March of 2024 as well as discussions with FDOT Maintenance reported no flooding issues within the project limits. Roadway elevations range from The only FEMA floodplain the project crosses is associated with Sarasota Bay, crossing an AE zone (EL 11.0 North American Vertical Datum (NAVD) and a VE zone (El 13.0 NAVD), see **Figure 2 - FEMA Map**. No portions of the project lie within a regulated floodway. There are no existing cross drains per the FDOT Straight Line Diagram (SLD). A site visit was performed in March of 2024 to verify existing drainage conditions as described above.

PROPOSED DRAINAGE CONDITIONS

The existing drainage patterns will be maintained. Scuppers will not be utilized in the Build Alternative. Bridge runoff will be collected with a deck drainage system and at the bridge approaches and conveyed to proposed dry retention facilities. The proposed bridge opening will be hydraulically equivalent to the existing opening resulting in a no-adverse effect on existing water surface elevations and floodplain elevations. This is documented in the project's Bridge Hydraulic Report (BHR).

FLOODPLAIN STATEMENT

The following ten items have been addressed to document that the floodplain encroachments of the Build Alternative will be minimal.

1. History of Flooding: The S.R. 789/Longboat Key Bridge lies within a tidal floodway Zone VE (elevation 13 feet - NAVD 88). Roadway flooding is anticipated with the proposed project for the 100-year storm event; however, bridge overtopping is not.
2. Longitudinal or Transverse Encroachments: Longitudinal and transverse impacts have been avoided and minimized where practical. Detailed floodplain calculations are not required for a tidal floodplain; however, "no adverse effects" will be documented and provided within the Bridge Hydraulic Report (BHR).
3. Avoidance Alternatives: The Build Alternative has been developed minimizing the number of waterway crossings.
4. Emergency Services and Evacuation: The proposed project has no effect on mobility for emergency services and emergency evacuation.
5. Base Flood Impacts: The project will be designed consistently with the current local (FEMA), FDOT, and SWFWMD design guidelines. Therefore, no significant changes in base flood elevation or limits will occur and will be documented within the project's Bridge Hydraulic Report (BHR).
6. Regulatory Floodways: The Build Alternative does not lie within a FEMA regulatory floodway.
7. Natural and Beneficial Floodplain Values: If applicable, the Build Alternative will include appropriately sized cross drains to maintain the natural and beneficial floodplain values.

8. Floodplain Consistency and Development: The proposed project is consistent with the local Comprehensive Plan. The proposed project will not encourage floodplain development due to the local (FEMA) floodplain regulations and water management regulations. See **Appendix** for meeting minutes.
9. Floodplain/FIRM Maps: **Figure 2 - FEMA Map**, is attached showing the FEMA Flood Insurance Rate Maps (FIRMs) for the project area.
10. Risk Assessments: There will be no significant change in flood risk.

CONCLUSION

The ten (10) items included in the FLOODPLAIN STATEMENT have been addressed to document the base floodplain encroachment of the Build Alternative will be minimal without any adverse effects or increase in flood risk.

Therefore, 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 services or emergency evacuation routes. Therefore, it has been determined that this encroachment is not significant.



Figure 1 Project Location Map

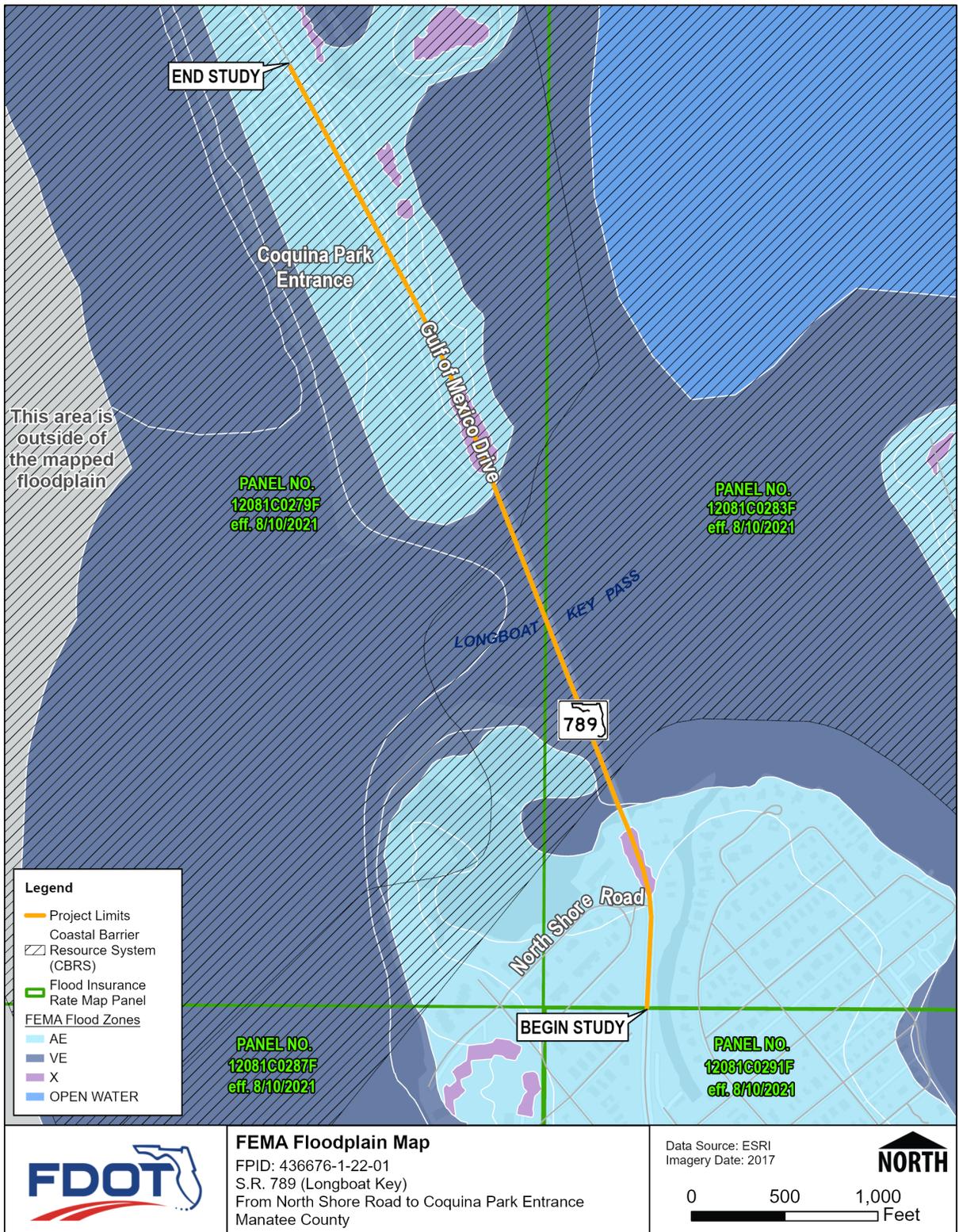


Figure 2 – FEMA Map

APPENDIX

Meeting Minutes

Project: FPID No. 436676-1-22-01
SR 789 (Longboat Key) Bridge Replacement PD&E

Subject: Floodplain Impact Coordination
Meeting

Date and time: July 2, 2025, 10:30AM

Meeting place: TEAMS Meeting **Minutes by:** Scalar Consulting Group Inc.

Present:

- David Bennett – Scalar Consulting Group, Inc.
 - Eileen Panza – Town of Longboat Key
 - Charlie Mopps – Town of Longboat Key
 - Jennifer Fehrs – Town of Longboat Key
 - Allen Parsons – Town of Longboat Key
 - Neal Mazzei – Town of Longboat Key
 - Patty Fige – Town of Longboat Key
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The meeting commenced with Mr. Bennett providing a comprehensive overview of the project, which focuses on a PD&E study to replace the SR 798 Longboat Key Bridge. He also shared the history of the project.

Next, Mr. Bennett discussed the Location Hydraulic Report process, emphasizing the need to document potential floodplain impacts related to the project. He highlighted that the only anticipated impacts are minor and are located at the bridge approaches. These will be mitigated in the proposed dry retention areas. Final impact assessments will be completed during the design phase, with appropriate compensation measures incorporated.

The staff of the Town of Longboat Key noted that they do not foresee any significant floodplain impacts from the project, ensuring that the project aligns with the Town’s floodplain management program.