PASSERO
engineering architecture

335 S. Legacy Trail, Suite B-102
St. Augustine, FL 32092
904.757.6106 | passero.com

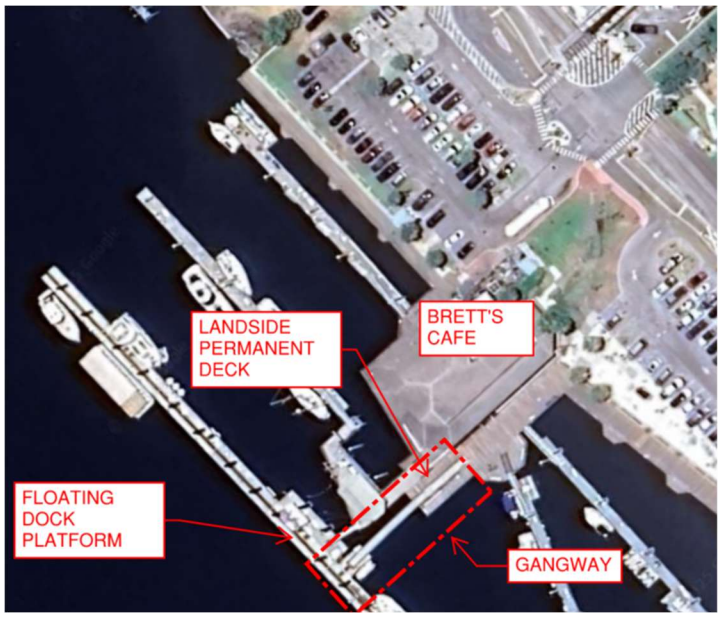
July 23, 2025

Attn: Glenn Akramoff
Capital Project Manager
City of Fernandina Beach
204 Ash Street
Fernandina Beach, Florida 32034

Re: Preliminary Findings – Fernandina Beach Marina – ADA Accessible Gangway Failure

Dear Glenn,

Thank you for engaging Passero's structural engineering team to perform a preliminary assessment of the ADA accessible gangway failure at the City of Fernandina Beach (the Owner) marina, near Brett's Waterway Café. It is our understanding that the gangway is used as a primary ADA entrance to and egress from the floating dock at the marina. The gangway is permanently affixed to the land-side deck structure that is directly adjacent to the Brett's Waterway Café. The gangway failed on the night of July 4, 2025, after patrons of the marina were exiting the floating dock area via the 80-foot span gangway. Passero staff visited the site on July 7, 2025, to review the existing conditions, the gangway both in and out of water, and to take photographs. This letter contains our Preliminary Findings on the matter.



Gangway Site Location

Our review of the existing gangway structure was performed with the following Owner provided information and applicable code and design references:

Owner Provided Information:

- Gangway Structural Calculations, Dated 5/18/2019 by Gary Greene Engineers, Engineer of Record (EOR)
- Crescent Abutment Approach Ramp Design Drawings, Dated 4/11/2018, signed and sealed by Gary Greene, PE 5/20/2019
- Fernandina Beach Southern Attenuator Replacement Drawings, Engineering Professionals, Inc., Dated 5/22/2019
- Initial Incident Photos provided by City Staff, Dated July 4, 2025
- Ring Camera Video Footage from Marina, Dated July 4, 2025

Applicable Codes and Standards:

- 2017 Florida Building Code – 6th Edition (IBC 2015 with Amendments)
- ASCE 7-10: Minimum Design Loads for Buildings and Other Structures
- ASCE Manual and Report of Engineering Practice (MOP) No. 50: Planning and Design Guidelines for Small Craft Harbors, 3rd Edition

Visual Observations:

Our visual observations are limited to site reconnaissance (above ground/water) and video footage from the night of the event and the following business day, Monday July 7, 2025.

Our observations from the night of the failure are via video footage capturing from beginning to end of the gangway failure. We reviewed this footage in slow motion as well as normal playback speed. The gangway was being utilized as a primary egress pathway from the outermost floating dock platform to the landside permanent deck. It is unclear from video footage the exact number of people on the gangway at the time of failure; however, by estimation, there appeared to be between 50 and 100 people. At reduced playback speed, prior to failure it appears the gangway made sounds of distress, movement of the handrail/gangway truss top chord was noticeable, then a sudden drop of the gangway to the water below. By visual observations, it appears the failure can be at least partially attributed to an overstress of the gangway. The root cause of failure has not been determined via visual observations.

Technical Observations:

Our technical observations are limited to design and construction documentation provided, as well as pertinent code, standards and guides in effect at the time of design and construction. with a review of the Project Contract Documents and associated shop drawings from the construction phase.

The Florida Building Code (FBC) has been used in this review as governing the design and construction of the gangway per *FBC Section 101.2 - Scope, "The provisions of this code shall apply to the construction… of every… structure or any appurtenances connected or attached to such buildings or structures."* Further, the gangway was constructed to be ADA accessible, which is a requirement of the FBC. By way of reference in FBC Chapter 35, ASCE 7-10 is a governing structural document for this structure. While not specifically referenced by the FBC or ASCE 7, ASCE Manual and Report of Engineering Practice: Planning and Design Guidelines for Small Craft Harbors, is an industry standard guide used by coastal and marine engineers, designers and port authorities. This was referenced during our technical review.

We initially reviewed the basic load assumptions, geometrical configuration and type of structural system used for this construction. The following is a live load comparison of the original design and multiple applicable or industry standard design references:

EOR Structural Gangway Calculations	Live Load	50 psf
FBC 2017, Table 1607.1 – Live Loads	Live Load:	
	Stairs and Exits	100 psf
	Walkways and Elevated Platforms ***(other than exit ways)***	60 psf
ASCE 7-10, Table 4-1 – Live Loads	Live Load:	
	Stairs and Exit ways	100 psf
	Walkways and Elevated Platforms ***(other than exit ways)***	60 psf
ASCE MOP 50, Gangways, Page 260	Live Load:	
	Standard	50 psf
	Where assembly is likely to occur	75-100 psf

The EOR gangway calculations appear to utilize the ASCE MOP 50 recommended standard live load of 50 psf, but do not consider whether assembly would occur on the gangway, though no specific reference was made to this guide in the calculations. Based on the applicability of the FBC to this structure, it appears that a live load of 60 psf could be used if the gangway were not an exit way, but 100 psf should be used if it were an exit way.

Conclusion:

It is our professional opinion that the gangway should be assumed a public exit way as it is permanently affixed to an existing land-side structure offering ADA accessible access to and from a floating platform offering public access to and from the marina waterfront. It is the only exit way off the floating dock platform that is ADA accessible. There is a shorter and much steeper non-ADA accessible ramp directly adjacent to the gangway, thus both gangway and ramp are assumed as primary exit ways. Per FBC Chapter 10 and Table 1607.1, the gangway functions are a primary accessible means of egress from a public-use floating dock. Therefore, the 100 psf live load requirement for 'stairs and exit ways' is applicable.

The failure of the gangway is likely attributed to, in part or wholly, the disparity between the actual live load placed on the structure at the time of failure on July 4, 2025, the EOR assumed live load and the code required live load. The gangway was likely loaded upwards of 200%, or greater, beyond that which it was originally designed to support. What it was designed to support is less than what the code-required live load was at the time of design and construction. Due to this disparity, we discontinued our review of the gangway structural calculations. There could be other underlying and contributing factors attributed to the failure that have not been investigated at this time, including but not limited to material degradation, fabrication quality, and support anchorage (see **Limitations of Services**).

Based on the extent of failure, it appears the entire gangway structure, attachments to the approach ramp and floating dock structure, and utilities supported along the underside of the gangway will require full replacement. Adjacent structures (approach ramp, adjacent non-ADA accessible ramp, etc…) that have not yet failed should be assessed as to whether they can withstand 100 psf exit way uniform load requirements. Such a replacement is to be in full compliance with the 2023 Florida Building Code, or the building code in effect at the time of replacement.

Limitations:

The findings and opinions presented in this letter are **preliminary in nature** and based on a **limited scope of services** performed to date. No detailed structural analysis, material testing, or subsurface investigation was

conducted as part of this initial assessment. Our observations were limited to visual assessment and available documentation provided to us as of the date of this report.

This letter was prepared solely for the informational use of the City of Fernandina Beach and should not be construed as a definitive cause report or used as expert testimony without written authorization and further investigation. This letter is not intended to be a comprehensive evaluation of all potential causes or contributing factors to the failure. Additional investigation—including but not limited to a full structural analysis, further review of loading conditions, metallurgical testing, and review of design and fabrication records—may be required to fully determine the root cause and extent of the failure.

Our conclusions are based on professional judgment and the information available at the time of our review. This document should not be relied upon for repair design, litigation, or risk allocation without further investigation and analysis.

If you have any questions, or would like any additional information, please do not hesitate to call me at 585-760-8529.

Sincerely,

Patrick J. Williams, PE, SE
Vice President | Structural Engineering