

Starting a Difficult Conversation

by William Nickas, Precast/Prestressed Concrete Institute, and Gregg Freeby, American Segmental Bridge Institute

On November 12, 2019, the National Transportation Safety Board (NTSB) released its final report on the Florida International University (FIU) pedestrian bridge collapse that occurred in 2018.¹ Reflecting on that report, we find ourselves asking, “How do we open needed discussions and share lessons from the tragedy for our industry as a whole?” It is time to break the ice and begin that process so we can move our industry forward.

Key NTSB Findings and Recommendations

In all, the final NTSB report includes 30 findings and 11 recommendations. Table 1 shows the number of recommendations targeted to various parties.

Table 1. NTSB Recommendations Issued Following the FIU Bridge Collapse

Focus of Recommendation	No. of Items
Federal Highway Administration	1
American Association of State Highway Officials	3
Florida Department of Transportation	5
Designer	2
Total	11

Notably for our industry as a whole, the NTSB stated that the Federal Highway Administration (FHWA) must help the American Association of State Highway and Transportation Officials (AASHTO) address the “requirement that concrete bridge structures be designed with reasonable estimates for interface shear demand, the cohesion and friction contributions to interface shear capacity, and the clamping force across the interface shear surface.” Additionally, the three NTSB recommendations issued to AASHTO were to revise language in the *AASHTO LRFD Bridge Design Specifications* to improve:

- Concrete interface shear provisions
- Discussion of redundancy in the design of concrete structures

- Discussion of redundancy in the *LRFD Guide Specifications for the Design of Pedestrian Bridges*, with emphasis on uncommon structures

Finding a Way Forward

A dear friend wrote to William one week after the collapse and shared, “The biggest issue to me has always been that an isolated failure gets seen by the public as a system-wide problem.” Although we are calling for industry-wide reflection, conversation, and action, it is important to note that the FIU pedestrian bridge was recognized throughout the NTSB hearings and the final report to be a unique structure. While the report does not directly state this, we believe the industry can feel confident that our traditional prestressed (pretensioned and post-tensioned) concrete I-, T-, and U-beams and box-section bridges that use basic structural beam theorems and rely on embedded, codified principles are working as intended.

The Florida Department of Transportation (FDOT) issued the following statement in October 2019 after an NTSB public meeting about the FIU tragedy:²

“The events surrounding the FIU bridge collapse are absolutely heartbreaking for both the families and loved ones of the victims, but also for the community and state,” said FDOT Secretary Kevin J. Thibault, P.E. “The Department has and will continue to cooperate fully with the NTSB as part of this process and has already implemented many of the improvements discussed today. I remain committed to ensuring that all NTSB recommendations are followed so a tragedy like this never happens again in Florida.”

We all must share this commitment. To address the 30 findings and 11 recommendations in the NTSB report, we must responsibly educate and retrain our existing workforce. We will also need to continue to attract qualified and experienced workers in both the design and construction areas. People are hard to find now, and the qualified labor shortage is only going to get worse. We will need to identify new approaches to recruit and retain the best people.

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Cover

The Terwillegar Park Footbridge over the North Saskatchewan River. Photo: Stantec.

Ad Sales

Jim Oestmann

Phone: (847) 924-5497

Fax: (847) 389-6781 • joestmann@arlpub.com

Reprints

lisa scacco • lscacco@pci.org

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Former FDOT Secretary Ben Watts (under whom William served while at FDOT) once said, "It takes a very long time to fill the public's reservoir of goodwill as it relates to infrastructure, but that reservoir can empty overnight. The public paints us all, engineers and contractors, with the same broad brush when an unfortunate incident occurs." In this issue of *ASPIRE*®, Leon Grant shares his perspective on how engineers in Canada have learned from another tragic bridge construction incident that occurred more than a century ago to embrace their professional responsibilities and demonstrate to the public that they deserve its goodwill.

As we close this editorial, we want to remind every engineer and every firm out there that each and every project has the potential to harm or boost our industry's public reputation. In future editorials, we will dive into other aspects of the NTSB findings with an eye toward lessons we all should learn.

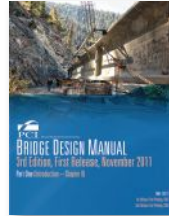
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1. National Transportation Safety Board (NTSB). 2019. *Pedestrian Bridge Collapse Over SW 8th Street, Miami, Florida, March 15, 2018*. Highway Accident Report NTSB/HAR-19/02 PB2019-101363. Washington, DC. <https://www.ntsb.gov/investigations/AccidentReports/Reports/HAR1902.pdf>.
2. Florida Department of Transportation. 2019. FDOT Statement on Today's NTSB Meeting; October 22, 2019 [press release]. Tallahassee, FL.



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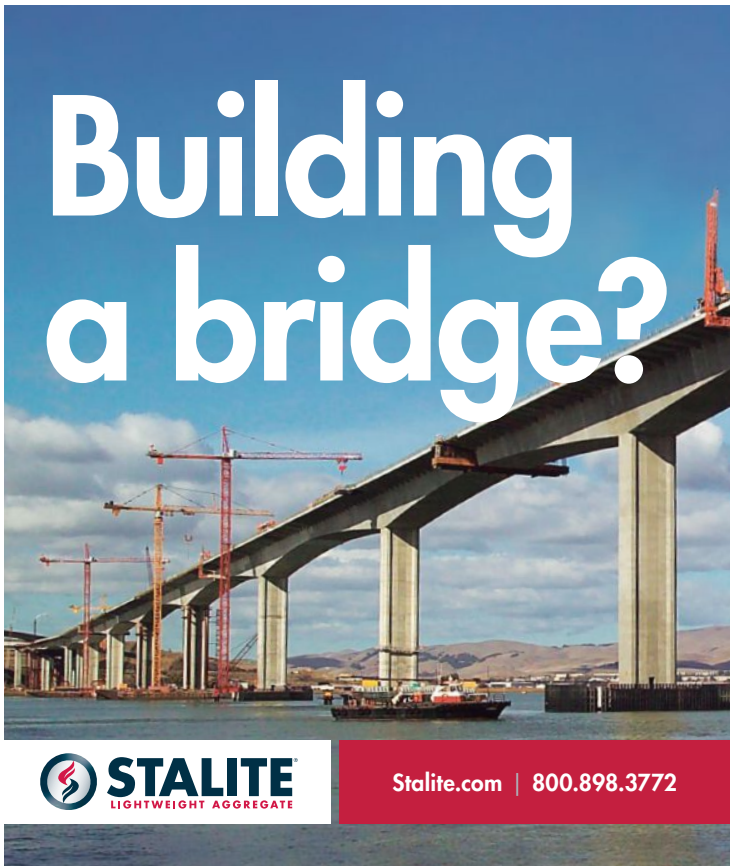
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