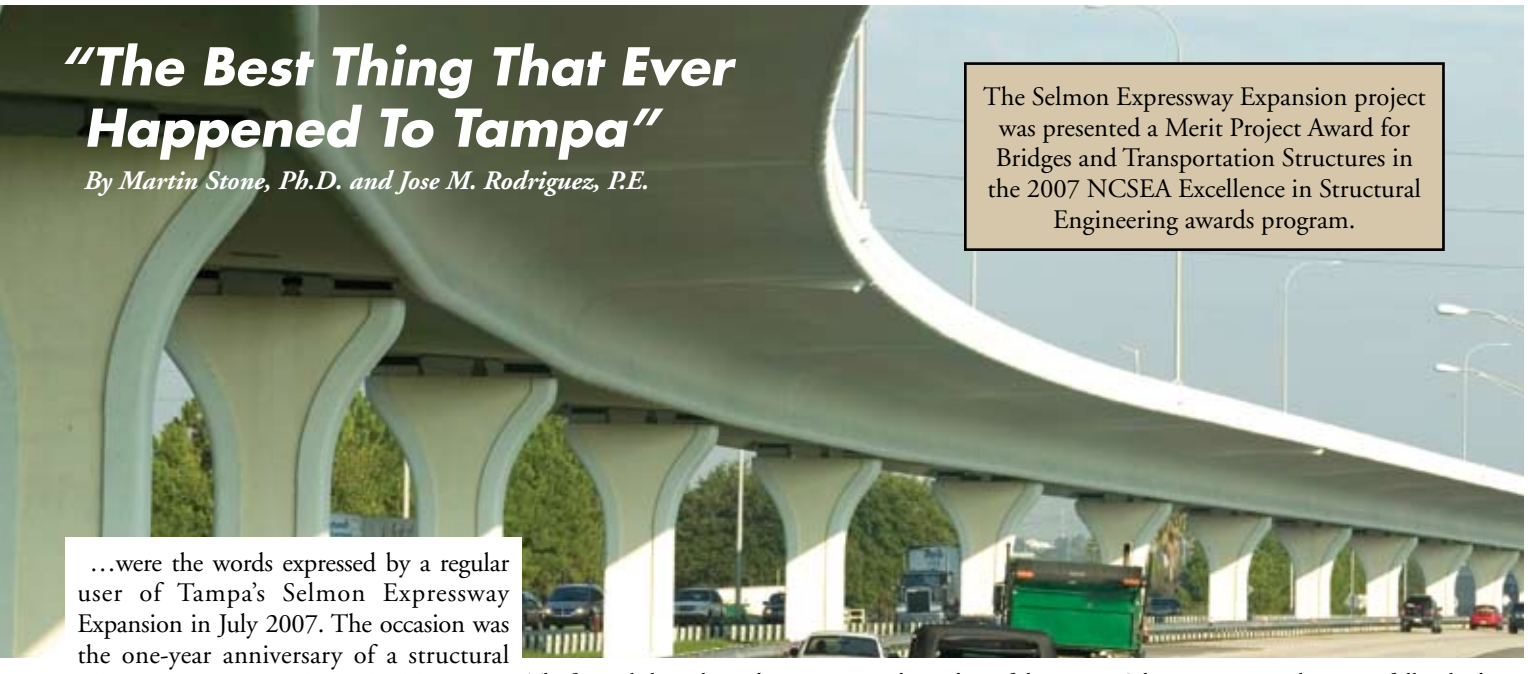
"The Best Thing That Ever Happened To Tampa"

By Martin Stone, Ph.D. and Jose M. Rodriguez, P.E.

The Selmon Expressway Expansion project was presented a Merit Project Award for Bridges and Transportation Structures in the 2007 NCSEA Excellence in Structural Engineering awards program.

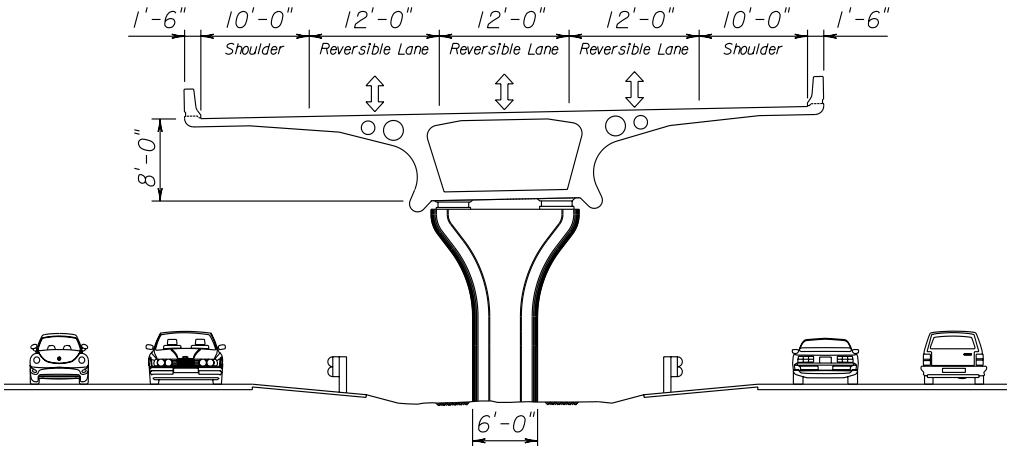


The five mile long elevated expressway in the median of the existing Selmon Expressway has successfully solved commuter congestion in Tampa.

…were the words expressed by a regular user of Tampa's Selmon Expressway Expansion in July 2007. The occasion was the one-year anniversary of a structural solution to more than double travel capacity in existing right-of-way. In the 25 years since the original at-grade roadway was conceived and delivered, a lot had changed – for the roadway, Tampa area commuters and the Tampa Hillsborough Expressway Authority (THEA), who is responsible for the tollway. Traffic growth from 13.1 million tolling transactions in 1982 to 30.2 million in 2002 had resulted in severe congestion on the four lane at-grade expressway. In 2000, THEA board members recognized the need to address rapid growth in the area that had resulted in reduced speeds of 25 mph, travel time between Brandon and downtown of at least 30 to 40 minutes on a good day, and a failing service level of "F". The THEA board set important goals for environmental, aesthetic, safety and effectiveness of the expansion, while recognizing the need to be affordable and provide end user benefits at reasonable costs. The innovative reversible elevated lanes combine concrete segmental bridges, reversible express lanes, cashless open-road tolling and full electronic controls to benefit the users of the tollway. A revolutionary "six lanes in six feet" elevated structure was constructed in the existing right-of-way, and provides three reversible lanes which move traffic toward Tampa in the morning and are reversed to move traffic out of Tampa to the rapidly growing eastern suburb of Brandon in the afternoon. All of the Boards' goals were achieved and commuters achieved mobility in record time.

Affordably Built

The reversible elevated lanes were constructed at a cost of approximately $20 million per mile, with a 59-foot deck width, for a cost of $65 per square foot (compared with a 2003 Florida statewide average cost of $130 per square foot). The project was self-financed with bonds and a loan from the Florida Transportation Commission who called the project "*…a unique demonstration of innovative ideas, new technology and the beneficial impact of transportation on economic development and urban revitalization*". By July 2008, two years after opening, traffic and toll revenues are 30% above forecast and users pay a modest $1.50 per trip, with all tolls collected electronically. With the structure having single piers just 6 feet wide, the elevated solution neatly fits into the existing median, providing space for future at-grade expansion and no right-of-way was required.



Six lanes of capacity are accommodated in the median of the expressway on piers that are just 6 feet wide, allowing for future at-grade expansion.

Environmentally Friendly

Congestion has been eliminated on the Expressway, along with miles of idling cars emitting exhaust. Building elevated lanes in the median meant that no wetlands were impacted through construction. Stormwater is collected on the elevated lanes and conveyed to retention ponds.

Aesthetics/Community Enhancements

The shape of the precast concrete box girder bridge superstructure provides an aesthetically pleasing view of the underside of the bridge, minimizing the visual impact for those traveling on the at-grade expressway lanes since only half of the structure is visible. The curved superstructure form and the curved, tapering piers created the phrase "sculpture in the sky". At the eastern terminus, in Brandon, scenic landscaping, a winding walking/cycling recreational trail and numerous sites for resting and enjoying the environment are provided, in addition to three miles of new non-toll local roads. In downtown Tampa, where the elevated lanes descend to Meridian Street, the former narrow two-lane roadway in an aging industrial district has given way to a six-lane urban thoroughfare. The gateway includes custom designed urban features, resulting in a visually stimulating environment which has become the center of nearly $1 billion in new residential and commercial development.

Safety for Commuters

Commuter traffic has been separated from local traffic, with truck traffic being restricted to the at-grade lanes of the expressway. With electronic toll collection smoothing the way, traffic on the elevated structure flows steadily at highway speeds. The speed limit is 65 mph; travel time between Brandon and downtown Tampa is cut in half. With ten minute travel times, the elevated lanes operate at a service level of "A". Two years of operation (approximately eight million trips) have resulted in only one low-speed rear end accident at the downtown gateway traffic signal.

Innovation Expands Capacity with Quick Results

The elevated lanes are the world's first installation of reversible, all-electronic express lanes, which has earned the THEA a total of 20 engineering and community based awards, including the International Bridge Tunnel and Turnpike Association's (IBTTA) 2007 President's Award for the most innovative toll transportation project in the world. Open-road tolling with SUNPASS™ has been supplemented with video toll collection to ensure open access to all users, with or without a transponder. A unique video "toll-by-plate" program welcomes casual users of the system by serving as essentially a prepaid license plate account. By providing multiple payment options, motorists can enter and pay later, resulting in an overall increase in net revenues for the Authority.

Using precast concrete segmental bridge technology solved the challenge of constructing economically in congested areas. Precast segments fabricated five miles away at the Port of Tampa were delivered by truck during non-peak traffic hours, and post-tensioned together during peak travel hours with the at-grade lanes fully utilized, keeping traffic flowing. The repetitive span-by-span erection rapidly progressed, completing as much as 2400 linear feet of bridge in one month at the peak of construction.

Customers' Experience Fast Benefits

Free flowing commuter traffic has been achieved – for today and well into the future – with an attractive elevated structure. In addition to more than doubling the capacity in 6 feet of space, the open-road tolling speeds commuter trips as well, while enhancing safety. Daily average commutes have been reduced by as much as 60 minutes, providing commuters with improved qualities of life. Through monitoring of the system at the THEA's new Traffic Management Center, breakdowns are quickly reported to the free "Road Ranger" service and removed before impacting traffic. All of this service for $1.50 a trip – with commuters saying that this just may be the best value going for Tampa commuters!▪

Martin Stone, Ph.D., AICP has, since 1996 been responsible for the planning and development of all new Tampa Hillsborough County Expressway Authority projects, as well as managing the Authority's deployment of advanced electronic tolling systems and ITS traffic controls and the oversight of all Authority urban design efforts. Marty may be reached at ***Marty@Tampa-xway.com****.*

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