

## ICA proves commitment to incident response

*There is no other service that ICA takes more seriously than incident response. ICA regularly demonstrates a proven track record of successful incident response. ICA is there—24/7/365—and has received many accolades from both the Department and the Florida Highway Patrol. ICA makes the same commitment to the District 7 Asset Management Project.*

—From the ICA District 7 Incident Response Plan

On the night of March 28, 2007, ICA had a dramatic opportunity to demonstrate just how solid our commitment really is when a tragic tanker truck accident turned a portion of the I-375 spur leading to downtown St. Petersburg into a fiery inferno.

The I-375 exit off of Southbound Florida I-275 is an unusual left side exit that requires travelers to make an alert decision and slow down to negotiate a sweeping 1200 ft. long ramp—crossing over northbound I-275 and a city equipment yard—that terminates in downtown St. Petersburg. Built in 1977, the I-375 spur carries over 11,000 vehicles a day and is one of two links to downtown.

Constructed of numerous spans of 85 ft. long, side-by-side AASHTO Type IV concrete beams with a concrete deck and expandable sealant joints, it has eleven spans and carries two lanes with shoulders.

### Driver makes tragic mistake

At 10:48 PM, a tanker truck bound for Sarasota on I-275 south, and transporting a full load of diesel fuel, mistakenly entered the I-375 exit lane and lost control when reaching the curve of the ramp. The truck struck the right barrier wall, rolled over and came to rest on the left shoulder where it exploded into flames killing the driver. With 12,000 gallons of diesel fuel pouring onto and below the roadway, fire raged for over 2 hours above and below the bridge. Fuel also leaked into the stormwater system blowing off manhole covers and injuring one policeman. The fire was so hot that it burned through a foot of concrete down to the steel reinforcing in some places. It also melted the expansion joints allowing burning fuel to rain down on the city maintenance yard below destroying many pieces of maintenance equipment.

### ICA is on the scene

Within 10 minutes of the accident, ICA was on-site. Along with law enforcement and city staff, ICA crews set up MOT (maintenance of traffic) closing all roads within one mile of the accident. ICA immediately notified Volkert & Associates Inc., our bridge inspection partners, to be poised to do initial damage assessment as soon as safety allowed. After

42 fire units battled the flames and smoke for over two hours, pumping foam on the bridge deck and columns and into the stormwater system, the fires were finally extinguished. The tanker's environmental consultants responded to address the stormwater system and place turbidity barriers, or "booms," in nearby Booker Creek to control environmental damage. Bridge collapse was a first concern but Volkert's initial structural assessment determined that it was safe to reopen I-275 and safe to remove the tanker from the bridge. A detour directing motorists to the nearby I-175 ramp was put in place and ICA coordinated with the city to use space in their yard to stage equipment and materials.

### The aftermath

The morning after the incident saw the removal of the burnt tanker from the bridge and pressure washing of the charred areas of bridge columns, deck and underside in preparation for inspection and damage assessment. ICA also met with multiple contractors who had been called out to begin discussing plans for repair. The contractors would have 17 hours in which to prepare and submit bids for the repair and reconstruction. By the following day Johnson Brothers had been selected to do the work and was given notice to proceed. They mobilized labor, equipment, and materials immediately and began demolition the next morning.

The detailed damage assessment revealed serious damage to concrete elements of the bridge requiring full replacement of one 87 ft. long span and partial replacement of four others. Repair plans would include:

- Replacement of 11 concrete AASHTO beams
- Replacement and restoration of multiple spans of deck
- Surface repair to ramp support columns damaged from waterfalls of burning fuel
- Replacement of several spans of barrier walls
- Replacement of in-bridge drainage system which had melted and collapsed
- Repair of badly damaged stormwater culvert

*continued*



## Case study continued...



- Repair of charred sign panels attached to bridge
- Cleanup of charring and soot throughout damaged areas
- Other numerous miscellaneous concrete repairs

ICA anticipated repairs to last until May 1 and committed to District 7 to meet this date.

### From first steps to last detail

By April 2, Volkert had prepared and submitted final bridge repair plans to FDOT whose engineers reviewed and approved them. Johnson Brothers had the demolition well underway, and the plan for repair was in motion using two 12-hour shifts—15 workers per shift—7 days a week with a goal to be “open to traffic” in 26 days. Volkert & Associates would be doing CEI throughout the process.

Demolition took six days to complete but pier work began on April 4 as well as form work which would be ongoing. By April 10, all of the eleven new beams had been delivered and installed and the pouring of the new deck was underway. Three days later, the site clean-up within the city yard under the bridge was complete and all demolition material had been removed from the area and recycled. By April 20 the concrete barrier walls had been poured and painted, roadway striped and marked, and the deck cleaned and cleared of equipment.

On Saturday, April 21 at 4:00 pm, the I-375 spur reopened nine days ahead of schedule.

Still left to complete was a new drain system that had to be designed to be installed on the outside of the columns. This and other miscellaneous repairs on the bridge underside would be completed within the next two weeks from the ground without any impact on traffic.

### Challenges met

The repair challenges for ICA’s team of managers, engineers and subcontractors were significant and varied. They included maintenance of a 24/7 work schedule, design changes on the fly, and coordination of multiple subcontractors in a tight space on a tight schedule. An enormous 300-ton crane had to be brought in under special police escort from Orlando on a Sunday and operated in very tight conditions. Parts and equipment had to come from as far away as Texas and Washington. Barrier wall painting and sign cleaning over I-275 was managed with

a nighttime “rolling roadblock” conducted by five FHP troopers. A day and a half were lost due to bad weather and the project was constantly under the microscope of the local media in helicopters.

But there were many fortunate events. As tragic as it was, the accident involved only a single vehicle. Mainline I-275 was not damaged and the I-175 detour was not a major inconvenience to travelers. In fact the closure had no effect on St. Pete’s Grand Prix weekend which was two days after the accident. Very little fuel ended up in Booker Creek as most of it burned off quickly and the creek was dry at the time. The City of St. Petersburg Fire Department was of great assistance with bridge clean-off and the city was extremely gracious in allowing ICA and Johnson Bros. to “move in” to their yard for over a month. The considerable construction materials needed were available quickly.

### Promise kept

ICA’s handling of this incident with immediate response, rapid mobilization and timely restoration of traffic to the roadway demonstrated that solid commitment made to the Department. ICA’s established partnerships with subcontractors and the City of St. Petersburg created effective teamwork throughout the project which in turn made an early completion possible. Total repair cost was \$2,300,000, completed in 21 days, with an estimated 10,000 man-hours. There were 105,000 pounds of rebar used, 550 cubic yards of concrete poured and not one personnel injury.

*“On behalf of the Florida Department of Transportation, I am expressing thanks for the extraordinary efforts your company performed in replacing the I-375 and Liscata bridges that were damaged as a result of accidents recently. Your leadership and around the clock dedication resulted in the I-375 bridge being reopened 25 days after the incident and nine days earlier than projected. The service to the public cannot be recognized enough...While there are many people to thank, I specifically want to mention David Novakoski and Ernie Molina for their roles.”*

—Donald J. Skelton, PE, District 7 Secretary

