Minnesota Bridge Collapse: Lessons Learned

TRAINING SYNOPSIS
NOVEMBER 30, 2007

MIPT
SITUATION ANALYSIS

August 1, 2007 at 6:05 p.m., during evening rush hour, the main spans of the 8 (eight) lane I-35W Mississippi Bridge collapsed. The 1,907 feet steel truss arch bridge was one of the most heavily traveled pieces of Interstate in Minnesota, carrying 140,000 vehicles daily. The bridge had received a “structurally deficient” classification from the federal government in prior years.

Note: “Structurally deficient” does not indicate a lack of safety. At the time of the collapse, construction was underway on the bridge providing only two lanes of travel.

INCIDENT COMMAND

Incident Command was implemented immediately with the first arriving units on the scene. The command structure expanded with the arrival of higher-ranking officers among the agencies that were at the Fire Command post on the 10th Ave Bridge. The Minneapolis Police operated effectively, but somewhat independently for the first few hours.

Unified Command was implemented in phases, with some agencies on board within 20 minutes and others joining the unified command efforts throughout the evening. By the next morning, Unified Command was consolidated near the Red Cross building where the Police initially set up their command post right after the incident occurred. After the first 24 hour operational period, the Police Chief took over as the Unified Commander from Fire.

Incident Statistics

- 190 people were traveling on the bridge at the time of the collapse
- 13 people died
- 12 victims on the bridge were dead on arrival
- 1 person transported to the hospital died en route
- All but one person who was triaged and transported at the scene survived
- No responders sustained significant injury during the incident
- Rescue work on the bridge saved everyone that could be saved in the first 1 ½ hours

DISASTER RESPONSE AT THE I-35W BRIDGE COLLAPSE: THE FIRE & EMERGENCY MANAGEMENT PERSPECTIVE

Fire Chief Jim Clack, Minneapolis Fire Department

Likened to the “fog of war”, major incidents begin with a fog of information. Incidents most often begin with a crackle across a dispatcher’s radio, followed by the flood of information. The rescue and recovery efforts at the I-35W Bridge Collapse site are widely considered a model of effective emergency response and a way to parse through that “fog”.

Chief Clack identified the immediate incident priorities as the following:

- Collapsed structure that was still moving (civilians and responders were in danger)
- Gain accountability (lessons learned from Oklahoma City bombing) once the situation stabilized regroup and send only properly trained personnel back to site
- Extrication of drivers from river
- Potential crime scene
- Potential hazardous material in railcar
- Downed power lines/ car fires on scene/ difficulty accessing area due to debris
EMERGENCY OPERATIONS CENTER
An EOC was set up and operational within 15 minutes of the collapse. Unified Incident Command was established based on basic NIMS (National Incident Management System). Assigning a finance person to the EOC for documentation within one hour of the incident became highly beneficial for record keeping.

DEVELOPING RELATIONSHIPS
Clack credits an already existing working relationship between agencies as a vital link to the successful immediate response and recovery phase. Outlying communities stepped in with units to fill stations left empty by those responding to the bridge collapse. This incident created what could have been a multi-jurisdictional nightmare; however Clack reports no “control” issues arising.

COMMUNICATIONS
First responders in the Minneapolis area had in place an upgraded 800 MHz communication system. The advantages of the system was it established dozens of talk groups to overcome the cross traffic, and over 100,000 “push-to-talk” came into the system. However, it also posed a challenge because all of the traffic had to be monitored.

Cellphone service was overwhelmed with the number of calls. Clack suggests looking into alternative forms of communication such as text messaging to inform responders. Engage systems already in place which can assist in easing caller overflow, for example the 2-1-1 system in Oklahoma (or 3-1-1 system in Minneapolis).

AIDING THE MEDIA
Suggested areas for agencies handling a large influx of media:
• Protect those who serve as PIO’s (have a system in place to rotate personnel to limit burnout)
• Provide rotation for 9-1-1 dispatchers (often overwhelmed with media calls as well as citizen and responder traffic)
• Ensure all speaking to the media are providing a consistent message- conduct a briefing for the PIO’s

SINCE THE BRIDGE COLLAPSE
No responder to the bridge collapse can stress enough the importance of conducting a number of “hotwashes” to identify critical areas of weakness and develop corrective plans. A new EOC is being constructed along with a new fire training center for the city of Minneapolis.

CRITICAL TO SUCCESS
- Existing Relationships
- Communication System
- All Agencies Training Together

OTHER NOTEWORTHY ITEMS
- Minneapolis has wi-fi coverage throughout the city
- US Coast Guard will provide funding for cameras along the river to assist in river security from the new EOC
- DHS creating after action report to be disseminated to cities
- Coordinated a fire employee assistance program to help those with Post Traumatic Stress Disorder (PTSD)
Although he did not minimize the tragedy that took place on August 1, 2007 in Minneapolis, Minnesota, Deputy Chief Rob Allen said the bridge collapse of 35W allowed the police department to finally use what they had been training for in law enforcement. He said while answering the call of the tragedy was exciting in a way, it was also a challenge that provided the police department with many lessons learned.

Before he began, Allen noted there were several jurisdictions involved in the incident because of the location, the river, the park surrounding the river and the nearby college campus. In the first 24 hours, 74 different agencies were involved with the bridge collapse, including Minnesota State Patrol, Minneapolis Police Department, the county sheriff, Minnesota Parks Police, the University of Minnesota Police and Burlington North Santa Fe Police. Overall, Allen said the Minneapolis Police Department had very little primary jurisdiction.

When the call came to Allen, he initially was unsure of the magnitude of the event he was responding. What he heard over his radio were calls from other jurisdictions and he followed other first responders to the scene. Upon arrival, Allen was told the scene did not require more rescuers, but needed more management.

Although fire command had set up their post on the 10th Avenue Bridge, Allen opted for a different area, knowing they could not block the nearest bridge that allowed the river to be crossed. Allen inquired whether any incident command had been established yet, and when he received confirmation that it had not, he set up the command in the parking lot behind the American Red Cross and began serving as the incident commander.

Allen’s first responsibilities included determining what happened and setting up a perimeter, which ended up including approximately a two and one-half mile radius from the bridge. One of the first lessons learned came when Allen realized that a security perimeter was needed around the command post, to not only keep out media, but also well intending citizens and other first responders that were prohibiting the work from getting done.

Another action Allen took when the cause of the bridge collapse was still unsure was what he called “tactical mingling.” Essentially, he took plainclothes officers and put them within the large crowd of civilians that had gathered in order to determine if anyone within the crowd was involved, if there were any suspicious people or threats and to ensure that no one within the crowd would cause any additional problems.

Media management also proved to be a challenging task, according to Allen. He said, overall, he feels they managed the media well by ensuring they did not see any chaos that may be going on behind the lines. They also ensured that the media was unable to see any of the recovered bodies.

Allen did say that first responders should be prepared to answer questions from the media that may not be related to the event at hand. He said many reporters attempted to make a connection to the bridge
collapse and Hurricane Katrina, which he felt was inappropriate to the situation. Allen also noted that a few ambitious reporters were escorted off the site and that may be another issue that will need to be addressed.

**Identifying all of the parties** involved in the bridge collapse also proved to be a challenge. Initially, there was a list of 1,200 people that were reported as missing. Some of the reports came from out-of-state relatives, while others came from people who were speaking to the person stuck in traffic on the bridge during the collapse. The list was prioritized based on the call and within 48 hours, the list was narrowed down to eight, each one found later to be a casualty and eventually recovered.

A family assistance center was also set up to help maintain rumor control and to allow family members to get information about their family members first. Because of the family assistance center and the control of the information, no family had to hear about the loss of their loved one through the media.

There were also concerns about maintaining the **security of the evidence** and moving anything that may help to understand why the bridge collapsed, including cars. For security of the evidence, recovery efforts required fire to do the actual rescuing, a police officer to ensure that evidence was not tampered or manipulated and medical personnel to assess the injury of the victim being rescued. The Federal Bureau of Investigation (FBI) evidence response team was also on scene to assist in this matter.

The security of the remaining bridge also provided concern for law enforcement and the divers attempting to recover victims. “We wouldn’t allow anybody near the collapse structure while [the divers] were in the water,” Allen said.

Allen said the success of the event came because they went to school to study those who have done this before them. In fact, he said 80 percent of the incident management he learned was from the April 19, 1995 Oklahoma City bombing. Other lessons learned in preparation were from events such as the Webbers Falls bridge collapse, September 11, 2001 and Hurricane Katrina.

### Medical Response to a Major Freeway Bridge Collapse

**John L. Hick, MD, Associate Medical Director, EMS Services at Hennepin County Medical Center, Medical Director-Minnesota Task Force One (MN TF-1)**

According to Dr. John L. Hick, the Minneapolis bridge collapse proved to never be a complete disaster for the medical community because of extensive planning by regional medical responders.

The medical responders that came on scene at the bridge collapse all followed a **one page incident response plan** that is shared in common with the 24 EMS agencies in a seven county area. The plan, which took a couple of years to put together, made a huge difference in the response, Hick said. “That, I think, was one of the absolute keys to this all working out,” he explained.

Other factors that helped keep the number of casualties low, Hick added, was the good weather, the fact that traffic was at a stand still preventing any forward motion, the lane closures that cut the number of vehicles on the bridge in half and the number of hospitals in close proximity to the bridge.
At the scene, Hick said the medical response was organized with two staging areas, one on the north and one on the south side of the river, and four sectors of operations. There was difficulty accessing the victims on the north side, so many of the ambulatory victims self-referred to the nearest hospital. The biggest difficulty for on-the-scene responders, Hick said, was directing the number of “walking wounded” and well-meaning civilians that were helpful in the early rescue phase but increased confusion and hazards after the first 15 minutes.

A number of physicians showed up on the scene to assist with the victims, but Hick said basic life support and back boards transfers to ambulances were the priorities rather than on-scene medical care. Due to EMS difficulties accessing the North downstream sector, about 10 victims, Hick added, were loaded into the backs of pickups on backboards with fire and EMS personnel to get them to the hospital.

One of the biggest issues for the medical response was communication. Hick said only 25 percent of the victims were communicated by radio to be tallied while many other EMS crews notified hospitals via cellular calls. Because of this, Hick said that policy will be changed so that all EMS transports are communicated over radio to assure accountability.

Good information on the number of victims was not given to local hospitals, Hick added. He said some hospitals cleared areas for victims and took actions that did not make sense, such as clearing operating rooms at non-trauma hospitals because an influx of patients was expected that never arrived. A good rule of thumb, he explained, was to open up 25 percent occupancy in each department if a hospital is unsure of the number of victims they may be receiving.

Patient tracking also did not work well, Hick added. He explained that they lost track of ambulances, especially mutual aid. Better staging may have helped the issue, Hick said. Coordinating patient lists proved to be troublesome, as well as disseminating them to those who requested them. When tracking patients in hospitals, Hick also suggested going back to the basics rather than depending on electronic medical records technology that may or may not work.

There was also difficulty in contacting those medical personnel that were needed at the hospitals. Hick said there was no good system to contact the nurses and each one had to be called individually. He also added that there was a problem with the group page for the surgeons and it was never activated.

Other improvements that need to be made, Hick added, include more training on the phone systems, buffing up the paging systems and replacing the Internet system voice recognition that did not work properly.

Hick said if the disaster had been two-, three- or even five-fold bigger, the medical community would have had many more difficult lessons to learn. “This was never a disaster. It may have been a structural disaster, but it was never a medical disaster,” he said.