James Boni
Lake Champlain Bridge Project Manager, New York State Department. of Transportation
Interviewed by Mountain Lake PBS on July 12, 2011

"As Project Manager, it wasn't critical that I understand the detailed construction of the bridge but it was good to have the general civil engineering background to understand how structures are built and how they're maintained over the years and some of the deterioration that's associated with that. In terms of the public, I understood that the public felt greatly about this bridge. They were very close to it. It was a vital link to the two states and I knew the day I took over the project that it was going to be a very interesting project but also a very challenging project just because of many of those reasons.

Early ties to the bridge

As a child my family often came up to Bulwagga Bay which is the Bay adjacent to the bridge to camp and as a child I remember you know when I was six or eight years old, seeing the bridge off in the distance and especially at night when it was lit up. I could remember seeing it, sitting out next to the campfire, seeing it out in the distance. And my grandfather had a boat and we'd always go out fishing and we'd go up close to the bridge and I was always amazed by the size and complexity of it and you know it's part of the reason, things like that are part of the reasons why I chose this field of work, just because those types of things interest me.

The fact that I had ties to the bridge isn't well known actually. A lot of the design team knows about that and my counterparts in Vermont are aware of it but it not something that I really shared with the public per se but maybe it will come through on some of this commemoration effort.

The biggest challenge so far on this project has probably been all the coordination associated with it. Communication has been key throughout the process - communication with the public; communication with the states, between the resource agencies that we're dealing with to get permits for. But that's really been the biggest challenge on the project and you know, we've been very successful in that luckily and you know there's nothing like being in crisis mode, when you close a bridge, the people, people step up and you have to get things done and it really worked out well. The collaboration between the states and all the other agencies has been tremendous.

Inspection raised concerns

The bridge got an inspection in the spring of 2009. Out of that inspection, we found 24 structural flags associated with deterioration. We immediately in the summer of 2009 got out and began making repairs to the super structure to address all those flags, along with any other minor items that we could take care of while we were

there. So, you know, we were making a lot of repairs in the summer and then come fall 2009, some of our inspectors were riding a boat out to inspect some of the repair work and noticed deterioration in the piers, essentially up to 18inches had deteriorated off the pier, and this [inspection]occurred after the water dropped in the fall. So, yes, what we did is we felt there was an issue here, a potentially large-scale issue. We did some testing. We took some cores, tested the concrete, and noticed that there was some significant cracking in the piers. Our consultant HNTB was onboard to do a lot of the analyzing and we made a joint decision with the state of Vermont to close the bridge suddenly on October 16, 2009.

Well, from the point that we closed the bridge, obviously the initial reaction was that of chaos. It was a bit chaotic around here. We were getting a lot of bad press. We were trying to figure out ways to deal with the emergency situation, how can we get people across the lake temporarily? We got a lot of mass transit options established with park and ride lots and things of that nature and then we really opened up to the public.

At the end of October we had two public meetings where hundreds of people attended. We essentially let the people vent about the bridge closing and we offered the mass transit options in the short term. We also explained that the ferries up and down the lake were going to be subsidized by the two states so that at least people could get across for free even though, we understood that there would be lines and things of that nature but we provided, we tried to be proactive and provide some other options for folks to cross.

And then what we really did, that's when we did a lot of the analysis with the bridge. We did an underwater inspection, we saw significant cracking up to 10 feet below the water and that's what really drove us to the point that you know, our decision was a good one. We're all on the same page, this was a good thing that we did this and then HNTB, our consultant wrapped up their safety analysis report, which basically suggested that the bridge be demolished. Once we digested that a little bit and discussed it with Vermont and FHWA and others we accepted that and we agreed that were at a point where the risk is just too high. We can't put workers at risk to rehab a bridge that's in this condition and we pulled the trigger and told the public that we were going to demolish the bridge and build a new bridge in the same location and also build temporary ferry facilities.

NYSDOT typically inspects [bridge] foundations, piers, every five years. The last time the underwater inspection was done was in 2005, so we were scheduled to have it done in 2010. The deterioration that we saw, the only reason we saw it was because we were out here making repairs to the steel and also because the lake waters had receded so much. The rate of the deterioration went in an exponential fashion over the year prior. So at the last inspection in 2005, there was only about five inches of concrete that was deteriorated which isn't critical structural concrete. There's typically a cover concrete, which can essentially disappear without it

affecting the structure itself. But in 2009, we noticed 18 inches, so it went in an exponential fashion and we were very concerned with it continuing at that rate.

The main reasons that we feel that the deterioration occurred was really two-fold. Freeze-thaw conditions, you know some water actually gets into the concrete and as you cycle between freeze and thaw temperatures it can actually deteriorate the concrete. And also, ice abrasion, what happens is the ice you know gets very thick, up to two, three feet thick in this location and with those freeze-thaw cycles, you get ice that's actually moving against the piers and it actually abrades the, it basically scours it away so and the original designer admitted that he didn't consider that because it was a lake and there were no flows of ice in the lake. So those are really the main components in terms of the deterioration as far as we understand it.

Bridge removal carefully controlled

We chose to demolish the bridge in the implosion format because it was controlled. First of all, we didn't want to put workers at risk working under that bridge, disassembling that bridge. The bridge would have to be taken apart, similar to the manner it was put together, member by member, a very slow process, a lot of staging, a lot of temporary supports to do that. The explosive demolition allowed us to get it down the way we wanted it to come down with putting minimal people at risk in terms of being on it while doing the work to prepare it. It also allowed a much simpler method to remove the steel because we were able to get the steel down. In the main channel we demolished it in several segments and we were able to fish those out of the water and as you get back to the approaches, we just took whole approaches down and let mechanical equipment take it apart, once it was in the water. So, time was of the essence because we were designing a new bridge at the same time and we had to make sure all of that steel was out of the water by May or June of 2010 so construction of the new bridge could begin.

This is not a typical tactic that NYSDOT typically takes. You know, we obviously don't like to call an emergency situation and move in this fast pace like this. We prefer much rather to go about it in a typical fashion. Initially, when we were considering options for this project before we closed it, we were going to consider locations up and down the lake for a new bridge and we would look at this site and probably locations south of here because it's narrow. But we were going to look at several locations, so that we could maintain traffic on this bridge while we built another bridge. So, you know we had no idea that we were going to head down that route and have to end up moving so quickly on things.

Tremendous public input

We had an intense public involvement session over a three or four day weekend of public involvement activities, where we met with several different parties, beginning with what are called the consulting parties for the section 106 process.

Those are the historical folks who obviously had a great concern for the old bridge. We also met with the PAC, which is the Public Advisory Committee that we had established years before and we discussed the options, what we were looking at. We had five options on the table at that point, one of them being an arch. But out of those two meetings, they really said, 'there's something missing out of this design. It was a very simple arch and it did very little to honor the lines of the old bridge. So, overnight before we headed into another public meeting the next day, we were able to design essentially, or come up with a schematic of what we called the "network tied arch", which continued the lines below the bridge arch deck of the arch and we felt that that would be very well received and it actually gave us some advantages in terms of constructability, and some disadvantages, I should add to that. But it made the design more complicated and construction maybe more complicated but the public feedback was tremendous when they saw that design, it was the overwhelming favorite It just goes to show with some good public involvement and some thought to that process, you can come out with something really dramatic and widely accepted.

A very large project

Staying on the construction schedule has been a huge challenge. We have tremendous people on that all the time. But, you know, Flatiron [construction company for new bridge] is driven by a pretty good incentive on the project, but again, it's a high profile project, you got a lot of people keeping an eye on things, watching it. We've been fortunate to stay more or less on task. There have been a lot of little construction issues that have come up, including the weather, not to mention the massive flooding this past spring, but we are doing our best to get over those hurdles. And we are on track for a fall opening for this bridge.

This project by far is the largest project that I've been Project Manager for at DOT[New York State Department. of Transportation], and it may very well be the largest that I am ever on. And it's a very large project for the department and even our region. Our region encompasses Green County on up to Essex County, essentially, that eight county area and this…it was a 70 million dollar project and our capital project, our capital program, I should say, is in the order of just over 100 million for the year, so this eats up a lot of money, but you know, the challenges are unique and the opportunities are unique and I can only hope that I have some more interesting projects like this.

I have a 4 ½ year old boy and a 1 ½ year old daughter and I actually plan to bring my son up this summer before construction is complete to camp at the campground, bring my son up because he's very interested. He loves watching the bridge go up, get demolished. He likes watching that and I think it will be neat for him to see what Daddy's been up to and see what a large scale project this really is."