I was driving home from work that evening, just a little past 6 p.m., when several squad cars blazed past my left shoulder. Minutes later at home, my phone rang. "What do you know about bridges?" our new city editor asked.

I flipped on my television and saw where the police had been heading: the carnage of twisted metal, concrete, cars and horrified victims. The Interstate 35W bridge in Minneapolis had collapsed into the Mississippi River.

It was Aug. 1, just hours from deadline. The St. Paul Pioneer Press was facing one of its biggest stories in years, and it was happening in the backyard of the Star Tribune, our much larger competitor next door in Minneapolis. I jumped back in the car.
Without the public records, our first-day stories would have missed a major part of the story.

Pioneer Press reporters and photographers rushed to the scene. One even rode his bicycle, and editors didn’t know he was there until he started filing stories. Editors divvied up duties and made sure all the bases were covered.

Despite the impending deadline and limited resources, editors assigned a core group of people the job of answering “Why did this happen?” and “What can we get that nobody else has?” Their task: find public records, officials and experts to provide some clues.

Two hours later, we had records from the Federal Highway Administration’s National Bridge Inventory database showing that this bridge had been deemed “structurally deficient.” We also uncovered an outside consultant’s report that pointed to numerous problems. At about the same time, the Minnesota governor, in his first statement to the media, said the I-35W bridge had “passed” its most recent inspections.

Without the public records, our first-day stories would have missed a major part of the story.

In the days that followed, the Pioneer Press devoted almost the entire newsroom to covering the bridge collapse. Reporters scoured the scene, tracking down family members of victims and writing compelling stories about the horrific minutes and hours after the collapse.

Back in the office, editors made tough decisions about what to sacrifice to keep a core group of reporters pursuing the more analytical in-depth reporting.

How the Pioneer Press reacted is a useful lesson for other small news organizations covering a major disaster.

The story of the bridge collapse was particularly challenging for the Pioneer Press because two recent rounds of buyouts had slashed the newsroom ranks by more than 30 people. Gone, too, was the newspaper’s investigative team, which had been dismantled a year earlier.

It was also the first major disaster where the paper’s Web site was a significant factor. The need for continuous updates added a new layer of complexity for editors to manage, while the opportunity for audio and video presented a new way to tell the story.

Ultimately, four relatively simple things made it possible for this underdog to keep up with—and sometimes surpass—the bigger competition:

- Filing public records requests immediately and asking for more than just paper records.
- Mining existing databases and using those as leverage to pry open other records.
Assigning one editor to oversee everything bridge-related.
Sacrificing to cover the bigger story.

The first few hours after the collapse could have been unrestrained chaos. Good communication and key decisions pulled it together.

Among the decisions that paid off handsomely was making one assignment editor the “bridge editor.” The second was assigning another editor to focus solely on planning the next day’s coverage. The third was to assign a reporter to rewrite feeds from other reporters and post them immediately to the Web site. Finally, one assignment editor volunteered to shepherd all non-bridge stories.

Mobility and technology

City Hall reporter Tim Nelson is a good example of fast work. He got wind of the collapse as he lit the candles on his 7-year-old daughter’s birthday cake. “Blow ‘em out quick,” he told her, before he grabbed a digital recorder and camera, jumped on his bicycle and headed for the scene. The combination of mobility and technology netted him the only two recorded interviews in the nation with survivors of the collapse.

After pedaling home to upload the audio to the paper’s Web site, Nelson started banging out boiler-plate public records requests to the state Department of Public Safety and local police agencies. But he wasn’t asking only for paper records.

Seven hours later, the first response arrived from the Department of Public Safety: a digital video clip showing the actual collapse, taken by a nearby security camera. It was on the Pioneer Press Web site minutes later and traffic skyrocketed. CNN was the only other media to get the footage. It is the only known videotape or image of the actual collapse.

Without an existing investigative team, editor Thom Fladung had to pick reporters who would answer “Why did it happen?” He says he looked for four qualities: experience using public records, ability to explain complex concepts, skill at tracking down officials and getting them to talk, and ability to work well with others.

The key members ended up being business reporters Jennifer Bjorhus and Christopher Snowbeck, metro reporter Jason Hoppin and me, the paper’s computer-assisted reporting editor. (Coincidentally, two days earlier Hoppin had been interviewing bridge inspectors and engineers about one of St. Paul’s bridges in need of replacement.)

The strategy came at a cost. Removing two of the best reporters from the business team was a huge sacrifice that meant the business section couldn’t cover some stories in the days that followed. The metro desk was incapacitated because everyone was covering the collapse, so the paper dramatically cut back on stories zoned to specific areas for several days and few non-bridge stories made it into the paper.

Fladung says having the investigative angles was worth any sacrifice, even if that meant sending fewer people to the scene or giving up other stories.

“That allowed us to spin it more forward, which was crucial,” Fladung said. “And it informed our reporting along the way so it wasn’t all emotion.”

Rapid inspection

The National Bridge Inventory database was indispensable to unlocking the I-35W bridge’s inspection history, as well as understanding how bridges in the U.S. are categorized and prioritized for badly needed funding for repairs. Fast access to the database enabled us to jump on these central questions immediately.

The first thing I did that night was try to find a home or cell phone number for Jeff Porter, the current Database Library director, so I could get the data. He quickly posted the database to the FTP server for us to download. (For more information on the bridge data, see an article by Jeff Porter on p. 23.) I knew about the database and had experience working with it from my days as IRRE and NICAR Database Library administrator. Despite that prior experience, I was still petrified to work with it on a tight deadline.

Less than two hours after the bridge plunged into the Mississippi, I had the data and knew the results of the 2005 inspection, the most recent report in the database. Business reporter Snowbeck and I were furiously learning new terms such as “structurally deficient” and “fracture critical.”

Finding officials to help interpret it all, however, proved impossible that first night. No one was answering their phones, and phone numbers were hard to find even with the plethora of public records that we had at our fingertips, including driver’s license and voter registration data, LexisNexis and property records. A reporter banged on the front door of one state bridge inspector whose home address we found; he didn’t answer.

At about 8:30 p.m., after some intensive Web research, Snowbeck unearthed a very recent University of Minnesota engineering report on the bridge. The 80-page report noted problems on the bridge but concluded that it didn’t require immediate replacement. The report foreshadowed many other inspection reports to come. All identified problems but stopped short of calling for immediate replacement.

Data in the big picture

Our first story, published immediately that night on the Web, raised more questions than it answered. But the information we found about the bridge’s inspection history opened several doors in the coming days.

Specifically, it gave us leverage to pry loose copies of the recent inspection reports from the Minnesota Department of Transportation. Eventually they created a Web site with PDFs of all inspections, outside reports, construction drawings and other information about the bridge: www.dot.state.mn.us/i35wbridge/index.html.

The National Bridge Inventory database was indispensable to unlocking the I-35W bridge’s inspection history, as well as understanding how bridges in the U.S. are categorized and prioritized for badly needed funding for repairs. Fast access to the database enabled us to jump on these central questions immediately.

Several more significant stories came from the bridge database that first week. For one, I mined the inventory to show the strange history of the bridge’s “sufficiency rating”—the overall condition rating assigned by the Federal Highway Administration, the arm of the U.S. Transportation Department responsible for rating bridges, maintaining the National Bridge Inventory and distributing money for replacement and rehabilitation.

In 1994, federal bridge authorities assigned the span a 46.5 rating out of 100. Eight years later in 2002, the rating rose to 50—the rating it had when it collapsed—despite the fact that the bridge hadn’t undergone any major rehabilitation work in that time. The higher rating of 50 likely made the bridge ineligible for replacement funding.

We also used the database to give readers an overview of the health of bridges throughout the state. Due to lack of time, we focused on the ones our readers would care most about: the handful of bridges in St. Paul that were listed as structurally deficient and also fracture critical.

We may never truly know the full effect that the extra digging had on our overall reporting. Readers sent plenty of e-mails indicating they appreciated it, and at least one reader who complimented our coverage the Sunday after the collapse even used our favorite phrase: “I didn’t see any of this in the Minneapolis paper.”

Mary Jo Webster is the computer-assisted reporting editor at the St. Paul Pioneer Press, where she works on daily and long-term stories, develops interactive Web applications and provides CAR training for reporters and editors.
was wrapping up a story out of federal court about 6:10 p.m. on Aug. 1 when a reporter ran back into the newsroom and breathlessly announced that a bridge on Interstate 35W had collapsed into the Mississippi River.

I looked out the window and saw a plume of smoke. Moments later, the sirens started. I began typing faster, knowing what lay ahead.
I had not worked with the Federal Highway Administration’s National Bridge Inventory database since 1994, when I discovered its complexity and shortcomings while working at the St. Paul Pioneer Press. Minnesota is known for taking good care of its bridges, and that’s what I had found in the data. As usual, we were above average, and I aborted the story I’d been planning. Five years later, when I became the Star Tribune’s computer-assisted reporting editor, I decided against buying the bridge data again. That turned out to be penny-wise and pound-foolish.

Now we had a bridge in the water, and I desperately hoped that the paper’s current CAR editor, Glenn Howatt, had the data. Unfortunately, he was on vacation and could not be reached. I searched through some CDs on his desk, but the bridge data weren’t among them.

The newsroom jumped into action almost immediately. Reporters and editors who’d gone home returned to work without prompting. Management pulled everyone together and announced their plans. We’d be adding pages, but the deadlines would be tight.

After discussing what I remembered about the National Bridge Inventory database with reporters Paul McEnroe and Tony Kennedy, they pressed me to find the ratings on the collapsed structure, known as Minnesota Bridge #9340. I found an Internet search engine for the database at www.nationalbridges.com. But I soon discovered that it has some bugs; no matter what I tried, it returned ratings on the wrong bridge. The owner of the site could not be reached that night.

Enter Jeff Porter, Database Library Director for IRE and NICAR.

At 8:33 p.m., Porter sent out a brief note on the IRE ListServ reminding reporters around the country that the organization had infrastructure resources, including data on bridges. I left voicemail and e-mail messages: “Can you run the condition report on NIB ID Number 9340?” I pleaded.

“Will you shoot the record on that one right away.” Porter responded by e-mail about 30 minutes later.

Just before 9 p.m., I had the data in hand and turned in a front-page story about the bridge’s "structurally deficient" rating.

I am wary of deadline reporting based on unfamiliar and unverified databases, so I kept the story conservative and simple. I knew that we’d be digging much deeper in the ensuing weeks and months.

Database savvy

The next day, with an assist from Ron Nixon, a former IRE training director now at The New York Times, I obtained the bridge data from the National Recording and Coding Guide for the data.

I reasoned that readers would want to know not only about the bridge that collapsed but also about similar bridges that they must cross. I decided to create a list of bridges on major roadways that were rated similar to or worse than Bridge 9340—in other words, bridges that rated both structurally deficient and 50 or lower in the sufficiency index, the number that indicates that a bridge is eligible for replacement funds.

Bridge 9340 also was labeled “fracture critical,” meaning that it was designed in such a way that a single failure could lead to a catastrophic collapse of a span or the entire structure. I did not restrict my queries to that type of bridge when I produced the list of the state’s worst bridges. I figured that readers would want to know whether a large chunk of a bridge could fall away as they were driving across it, regardless of whether the entire span might collapse.

Meanwhile, reporter David Shaffer worked on an in-depth story about fracture-critical bridges in Minnesota. I pulled the data to help flesh it out.

The governor and the Minnesota Department of Transportation tried to put the best face possible on the state’s bridge maintenance practices. When discussing the state’s structurally deficient bridges, for instance, they only cited data from bridges on the National Highway System, which makes the state look better by excluding a large number of sub-par bridges on other roadways. We used the numbers for all roadways in our stories.

As the story developed, I monitored the IRE and NICAR ListServs to see what others were doing. This story struck a note nationally, and many reporters did excellent work. A number had worked with the bridge data in the past, and the messages were filled with cautionary notes and good ideas.

Among my favorites: Mark Houser of the Pittsburgh Tribune-Review said he was using the “Structure Evaluation” field—in addition to structural ratings for deck, substructure and superstructure—when he did his analysis. The field contained pithy definitions, including “basically intolerable,” which made it easier for readers to grasp, he said.

I ran all of my queries to include Structure Evaluation and found that Houser was right. MnDOT officials groused that they’d never heard of a bridge rating described as basically intolerable. But we were able to point to the definition on page 45 of the Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation’s Bridges.

Of course, we didn’t just rely on computerized data for our reporting. I filed a public records request the day after the bridge collapse for every scrap of paper and electronic digit I could imagine on the bridge. I knew from extensive reporting
sniffing out contracts

McEnroe and Kennedy did excellent work early on by prying loose a consulting contract from MnDOT. The San Francisco-based engineering firm URS Corp. had recommended shoring up the bridge with steel plates. Upon further review, MnDOT decided to conduct further inspections, a process interrupted by the collapse.

Reporter Pat Doyle and I figured that the documents in MnDOT’s possession would tell only part of the story though. Like many government agencies, MnDOT has been downsizing for years and relied more and more on contractors. But we knew that state professional service contracts are supposed to include clauses that make the work product subject to the state’s public records law, known as the Data Practices Act. So we demanded that MnDOT compel the firm to produce its records for inspection, too.

Meanwhile, we discovered that fracture-critical bridges must undergo yearly, in-depth inspections in addition to the annual routine inspections that flow into the National Bridge Inventory. So a group of reporters began poring through the in-depth inspection reports on the I-35W bridge. These reports run up to 50 pages and contain some vivid descriptions and photographs. They’re chapters in a story about what the inspectors knew about the bridge’s gradual deterioration. Most recently, we obtained the inspectors’ notes from the last partial bridge inspection this spring.

Our reporting about this disaster continues and will occupy us for some time to come. But we’ve already learned (or reinforced) some valuable lessons that will be useful to anyone covering infrastructure stories in the future, whether they deal with roads, bridges, dams, shipping ports, airports or railways.

Tips for infrastructure coverage
- Readers are deeply interested in these issues. They’ll reward your stories with thanks and, more importantly, tips.
- Few people can master all of the databases that exist on infrastructure. But reporters and/or CAR

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editors should know that the government has been collecting data on the nation’s infrastructure for decades. For a good primer on what other reporters have found useful, check IRE and NICAR Database Library at www.ire.org/datalibrary. Be forewarned that while some of these datasets are rich, they also can be complex. Never state more in a story than you know for sure!

• Look on the NICAR and IRE Listservs. The wheat-to-chaff ratio on these lists skews strongly toward wheat. Reach out to colleagues who have worked with the data before. They will save you hours of frustration and help you avoid having to write corrections.
• Go beyond the data. The reports underlying these databases are often rich in detail. There’s no substitute for a damning note scrawled in the margin of some government document.
• Seek the data from multiple sources. When MnDOT has stalled on giving us data, we’ve occasionally found it at the Department of Administration, which oversees contracting in Minnesota. Similarly, an e-mail request that turns up nothing at one agency might produce results from the senders or recipients, proving that someone at the first agency had deleted public information.

Use agency payroll databases to develop contact lists. And make sure when you update the payroll data to archive the old data. This way you can find both current and former employees. The current workers will have more active knowledge, but those who left may be more likely to talk or to direct you to key documents.

• Don’t neglect scholarly works. A great deal of research has been done on infrastructure. Try http://scholar.google.com to “stand on the shoulders of giants.”
• Go after nongovernmental sources. Many consultants will be reluctant to talk on the record, but you just might find some concerned engineers, truck drivers, aggregate suppliers, chemical producers, lawyers or others who will let loose.
• Expand your concept of public data to include voice recordings, video, photographs, sonar readings and anything else you can think of. These media can put you and your readers inside the room where the decisions were made.

Dan Browning covers federal government for the Star Tribune. He has a special interest in computer-assisted reporting (CAR), having served as the Star Tribune’s CAR editor from 1998 to 2001. He has won numerous reporting awards for his investigative work and stories on racial issues, public affairs, health, spot news and military affairs.
BRIDGE DATA

FEDERAL BRIDGE DATABASE HAS ITS OWN STRUCTURAL ISSUES

By Jeff Porter

IRE and NICAR Database Library Director

It started with a recording on Aug. 1. After a family function, I came home around 8:30 p.m. to an urgent answering machine message from a colleague seeking National Bridge Inventory data.

About 6:05 p.m. that evening, a bridge over I-35W in Minneapolis had suddenly collapsed with vehicles falling into the Mississippi River. Thirteen people died and many more were injured.

In 48 hours, the IRE and NICAR Database Library provided more than 150 news organizations with the National Bridge Inventory. Over the next few days, that number grew to 200. The term "structurally deficient" was all over print, on the air and online, in stories comparing local bridges and generating serious questions.

The database, obtained by IRE and NICAR since 1995, allows journalists to check bridge inspection records. Each bridge inspection also results in a sufficiency rating — in essence, a grade for each bridge. Other key elements include the status of the superstructure, or above-the-road parts of the bridge; the deck, or part of the bridge that carries traffic; and the substructure, or parts of the bridge supporting the deck.

Other important pieces of information in the database include the number of cars the bridge carries on average; the year it was built; estimates of repair cost; the state, county and city it is located in; and the last inspection record.

With so much information — and with the assistance of the Database Library and IRE Resource Center, plus our NICAR-L Listserv — journalists started reporting on the status of local bridges shortly after the catastrophe. In the days following, millions of drivers who travel on America's bridges became far more informed about the fragile state, in some cases, of the country's infrastructure.

Bridge safety has long been a staple in computer-assisted reporting, and Minnesota's own bridge problems were common knowledge. In 1994, for example, the Post-Bulletin of Rochester, Minn., reported that deteriorating bridges were not being repaired and replaced fast enough, forcing some counties to restrict or close bridges while they waited for money needed for repairs. At the time, the newspaper reported, the cost of addressing the problems would have been $184 million.

But past and present bridge problems aren't confined to Minnesota. In 1999, for example, KOMU-Columbia, Mo., used the database to identify deteriorating Missouri bridges, including large chunks of concrete falling onto interstate traffic lanes. The state was so behind, reported Mark Greenblatt, now an investigative reporter at KHOU-Houston, that it would take 49 years to fix the problem with the funding level at the time — even though an average bridge has a lifespan of 50 years.

And between 2000 and 2002, media report after media report from Boston to Portland, Ore., and from Paducah, Ky., to Camarillo, Calif., showed the problems of the nation's bridges. In a two-part series in 2003, The Cincinnati Enquirer dissected a long, heavily traveled interstate bridge that didn't meet federal safety standards and outlined the problems entailed in fixing or replacing it.

The stories written about the country's bridges before and after the I-35W bridge collapse are based on a database with its own quirks.

One quirk is terminology. Because the database was created by engineers, much of its terminology is quite technical. Journalists' work began revolting around terms such as "structurally deficient" and "sufficiency rating." The first is a designation by the Federal Highway Administration to describe bridges that have major deterioration, cracks or other deficiencies in their structural components, including decks, girders or foundations. A sufficiency rating is more complex — a calculation based on the status of the bridge's key components.

Its purpose is to help determine if the bridge should be placed on a list for repair or replacement. According to the agency's Web site, "The National Bridge Inventory will be used for preparing the selection list of bridges both on and off federal-aid highways. Highway bridges considered structurally deficient or functionally obsolete and with a sufficiency rating of 80 or less will be used for the selection list. Those bridges appearing on the list with a sufficiency rating of less than 50 will be eligible for replacement or rehabilitation while those with a sufficiency rating of 80 or less will be eligible for rehabilitation." (www.fhwa.dot.gov/legregs/directives/fgas/06500sup.htm).

Another quirk: timing. Most bridges aren't inspected every year. The latest available database, from early 2007, includes thousands of bridge inspection records prior to 2006, and even for 2006 the bulk are based on inspections from early that year. That means, of course, that the bridge might have been repaired or even replaced since the last recorded inspection. While overall statistics are one thing, it is always advisable to check further records on any specific bridge you intend to highlight.

Another potential problem: counting bridges. Ignore an easy-to-miss data field called "record type," and you'll potentially miscount bridges. The database contains two kinds of records: "on" and "under." What's the difference? An "on" record is what you'd normally think of as a bridge — the road is "on" the bridge. There is also an inspection record for each instance a road goes "under" the bridge. If a record is an "on" type, the record type field shows a "1." Otherwise, it's an "under" record. So any overlap would have at least two records — for the road that goes "on" the bridge and the one that goes "under" it. The "on" record typically is the one to look for; often, critical fields are not filled in when it's an "under" record. As in any database, the National Bridge Inventory contains human errors. For example, in 2003 the agency stopped releasing latitude and longitude, citing national security. That decision was reversed in 2007, but in two states the format of those fields did not follow the federal instructions in the Recording and Coding Guide. The guide notes that the latitude and longitude are to be recorded as degrees, minutes and seconds, but in two instances — Iowa in 2006 and Michigan in 2007 — the data files include decimal-degree values. Use the wrong method and you've misplaced thousands of bridges. So NICAR treated those states' latitude and longitude differently.

With the just-updated version of the National Bridge Inventory available through NICAR, journalists have a resource for quick-hit bridge status stories or more long-term projects. The NICAR version of the database includes story ideas, warnings and suggestions, and archival data back to 1994. As many states respond to the 35W bridge collapse with promises of more bridge inspections and repair, journalists can mine the database for story after story.

Jeff Porter is director of the IRE and NICAR Database Library and has served as an instructor at the Missouri School of Journalism. Since 2001, he has provided ready-to-use government databases to hundreds of journalists. He helps lead computer-assisted reporting boot camps for journalists and has spoken during journalism training events across the United States and in China, England and South Korea.

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