

‘Lean Times’ Harm Water Infrastructure

*Jeff Stamper, P.E., is a structural engineer with the St. Louis District of the U.S. Army Corps of Engineers. He was interviewed on June 17 by Marcia Merry Baker, at the Corps public briefing in Washington, D.C., on the newly proposed Corps plan for the “Integrated River Management for the Upper Mississippi River-Illinois Waterway System” (see **Figure 1**)—upgrading 37 locks on the combined 1,200 river-mile system, and doing ecosystem work. The Corps’ “UMR-IWW System Navigation Feasibility Study/Draft Integrated Feasibility Report” was released in May, and is before Congress for urgent consideration. Stamper, an author of parts of the report, has been with the Corps for 16 years, and currently serves as a structural engineering specialist for design and rehabilitation of locks and dams.*

EIR: The amount of authorized, but unfunded, Army Corps projects nationwide, is said to be in the range of \$35 billion—this is from the Corps’ press information site. What does this include?

Stamper: There is a little bit on the operations and maintenance side; but it’s also large projects that are on the books, that are just not funded. They’ve been sitting there stalled. Some of them are being de-authorized, because they are no longer needed. But what the exact figures are on that, I am not certain.

EIR: What is an example of one of those large projects?

Stamper: There’s one right now for coastal Louisiana. It’s a fairly new project, but they don’t have any funding right now. It’s for flood protection, and it’s related to saltwater intrusion too.

On the Upper Mississippi River Comprehensive Plan—that’s out of the St. Louis District—we don’t have any money for that either. So, we’re hoping for more money next year.

EIR: That’s in your District. What is the Comprehensive Plan for?

Stamper: It’s for flood control; it’s levees on the Mississippi and Illinois rivers.

EIR: Most of this \$35 billion then, might pertain to either navigation or flood control, or coastal maintenance?

Stamper: Yes, and some eco-system restoration. It runs the gamut of our major missions. Except emergency response—

FIGURE 1

Locks and Dams on the Upper Mississippi River-Illinois Waterway Navigation System



Source: Army Corps of Engineers.

the purse strings open when there are emergencies. We never have any problem getting money then.

EIR: If the Corps was unleashed, with just getting to work on some of these authorized things, for which, I presume, you have off-the-shelf plans, do you have a ballpark figure for job creation?

Stamper: Oh my! All I can say, is, it would be large. Right now, we’re scaled back. The Pittsburgh District, for example, is going to lay off over 200 people, very, very soon. Within this year.

EIR: How many do they have in Pittsburgh District? (**Figure 2**)

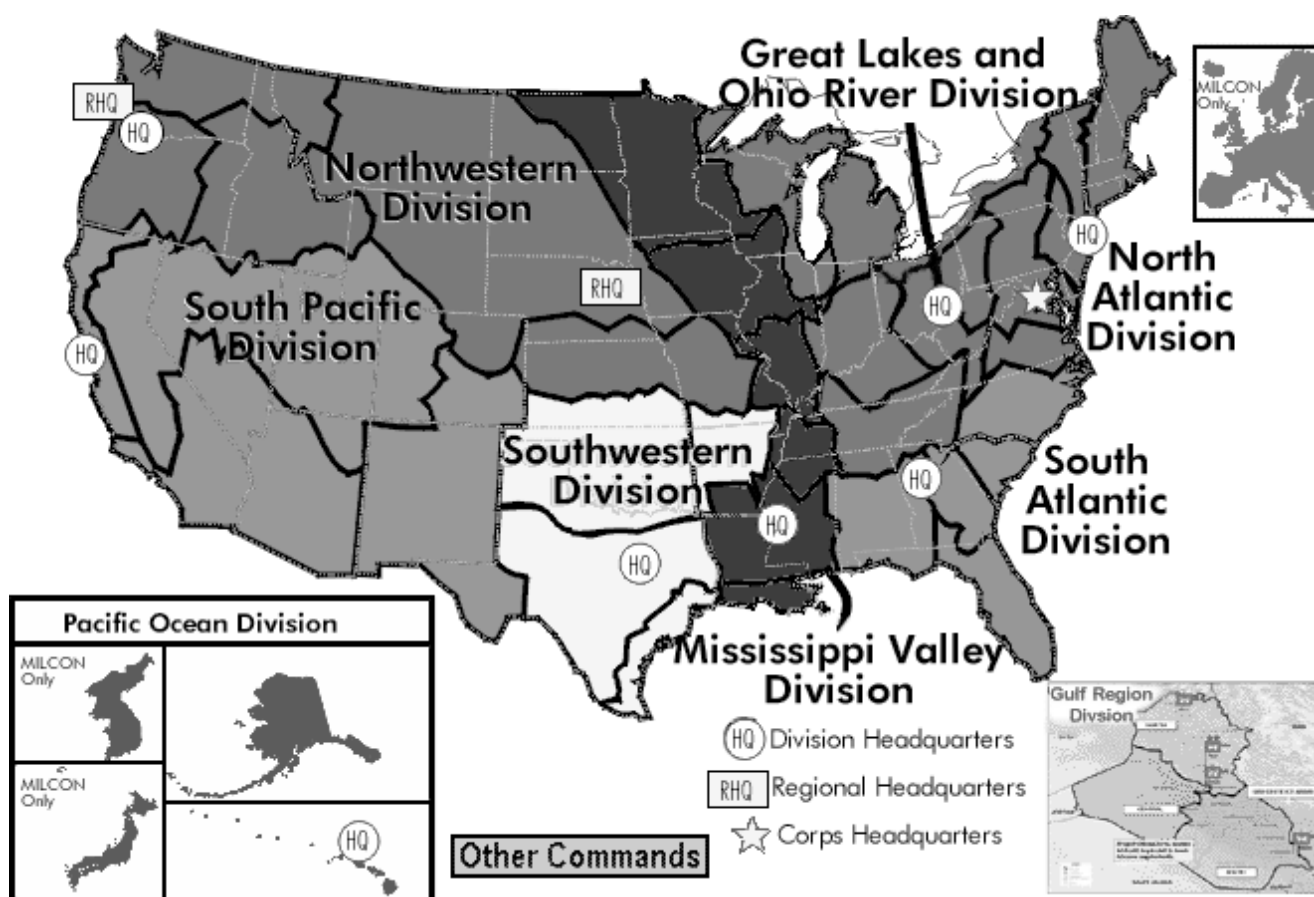
Stamper: I’m going to guess that their District is between 700 and 1,000.

EIR: The Pittsburgh District covers the Upper Ohio River? And the Louisville District is the Lower Ohio.

Stamper: They cover the Allegheny, the Monongahela, and the Point [at the confluence of these two rivers, at Pittsburgh, where the Ohio starts], on down. There have 24 locks and dams, so a lot of that is operations staff, to operate these locks. What they’re going to do to survive, I really don’t know, but

FIGURE 2

U.S. Army Corps of Engineers Divisions and Districts



Source: Army Corps of Engineers.

they're making some pretty hard cuts—some pretty hard decisions.

EIR: And this is representative?

Stamper: Some districts are very tight. Louisville is doing okay; Huntington is. They're all waiting for next year's appropriations to see how long they can survive. Some of the budget problems are due to the war; some of it's due to, I guess, opinions that the Administration and Congress have about what they can fund, what they can't fund.

But, to answer your question: If the Corps were to be unleashed, we would have to ramp up as an organization to get enough people—to either let contracts, to do this work in-house, or hire engineering firms; that type of thing.

EIR: So, you'd be burning the midnight oil, trying to figure out how to carry through your new proposal—

Stamper: Yes. For this job—the Upper Mississippi—we'd be burning the midnight oil, just to do this. This is a big job.

EIR: So, in a way, it's emblematic. If you could move on this job, it's moralizing—

Stamper: Yes, for the entire Mississippi Valley: We would have to gather all of our human resources from St. Paul, Rock Island, St. Louis, possibly the Pittsburgh District, New Orleans District, to get this job done—and hire outside help, such as engineering firms. So, there's an enormous amount of work.

EIR: It would be terrific to see. All the engineering colleges in the country would get a new lease on life!

Stamper: Yes, they would. In fact, just last night, at the St. Louis public meeting, one of the engineering firms that I'm familiar with was there, representing people in the area. Some of their folks are down to a 21-hour work week.

They do *all* kinds of work, throughout the country. And they even have some international work. But, they don't have enough to keep their staff working. So, instead of laying off, they scale numerous individuals back, roughly to 21 hours.

This is the third or fourth week; it's a fairly recent thing. But, to survive on half your pay for a month, is very difficult. They blamed it on transportation bills being held up. Same type of thing—infrastructure bills being held up.

EIR: So just the uncertainty is having a big impact. And not just for shippers, who can't take uncertainty about whether barges, rail, or trucks will be able to handle their goods. There's a wider impact now?

Stamper: Yes, especially on the engineering community. And, of course it will have an impact on the construction industry. And those people, as we've been told, when they get paid well, they go out and spend money in the community. They buy stuff at stores, they go buy cars, they go buy trucks. And so, there's a trickle-down effect.

If work isn't pumped into the Midwest—if some of the communities that are really being primed for this work don't get it—they see further economic collapse.

EIR: There was a figure given recently by people concerned with a different part of national water infrastructure, an urban water system expert, who said that for every billion dollars you spend, you might generate 47,500 jobs.

Stamper: That's interesting.

EIR: If you do the math, if you ramp up and try and spend \$35 billion on authorized, but unfunded Corps projects, you end up with 1,700,000 jobs! Naturally, it wouldn't happen, as you implied, overnight. But you would create a tremendous need for skills. And then there's the kind of materiel that you'd be needing for these projects. Could you describe what the bill of materials would involve, that the projects would need? Re-bar, cement?

Stamper: Yes, the suppliers. For this, you would have cement aggregates for concrete; you'd have reinforcing steel, like you mentioned; you'd have structural steel, paint suppliers, electrical wiring. It goes on and on and on.

And, you mentioned that such a project would generate advanced training in the area, for carpenters, laborers, electricians. One fellow quoted that they are upgrading their training program, in anticipation. He was from an electricians' union in Illinois, or maybe Missouri. (Today is our eighth meeting in two weeks, and some reports blend together in my mind.)

EIR: Throughout them, there were strong views on job-creation?

Stamper: Very strong expression. From the Federal and state government representatives—they all strongly support economic investment. And many also will support eco-system investment, some for the same reason: It creates jobs. All of these things end up in jobs. Generate contracts, and that puts construction workers to work. And when they spend their money, the cycle starts.

EIR: A bit more technically, is there anything that you would want to point out to people, in the way of new technologies you would use? *EIR* has covered the Corps' new technique for upgrading the locks and dam on the Monongahela, at Braddock. What's new and interesting for the Upper Mississippi engineering?

Stamper: One of the big challenges is shown here (**Figure 3**). We have the existing lock which still has to remain in service while we're putting in a new lock. The old ones are 600 feet, and the new one will be 1,200. So, while we construct this new one, we have to maintain access to this old lock, the whole time.

And during the Wintertime, we would come in and shut this lock down on occasion, that is, have intermittent shut-downs. But, basically, we're trying to keep it open, for the economic value of that lock. And the transportation savings, by using the river. So, if you were to go in there and shut that, for example, the numbers would get really large.

EIR: Is your proposal, shown in the diagram, entirely new?

Stamper: Like a technological leap? Yes. The end of the structure is a gate module. It's a fairly complicated structure, as far as the doors to the locks, machinery, machinery recesses. We're considering prefabricating it off-site, and floating it into place, and setting it on a prepared foundation. It would be very similar to the Braddock job. Not the same, but similar. Very big. It would be pre-cast concrete. A hollow, concrete shell, with walls that are anywhere from 8-12 inches thick. And essentially, when you're done with the shell, it's pushed into place, and lowered into the water, and then filled with concrete.

EIR: That's good. That's exciting. How does this compare, in your international world of engineering, with work associated with other projects, maybe locks for the famous mega-project—the Three Gorges Dam system?

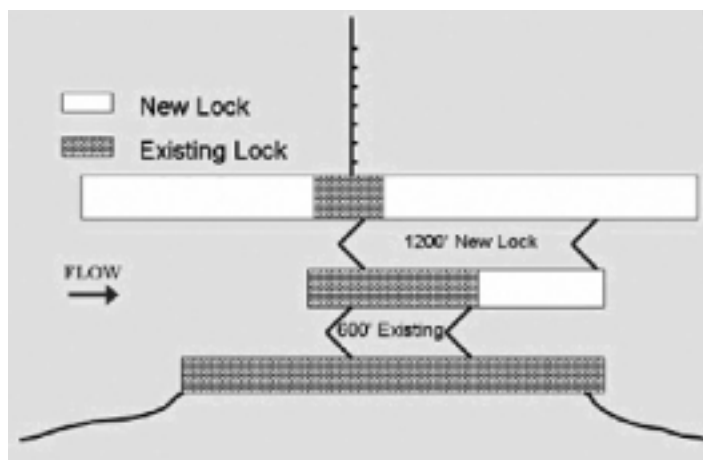
Stamper: This whole pre-cast technology, really comes in from the oil-well industry, for the oil-drilling rigs, and for docking facilities, like in Alaska. In Alaska, your window to construct is very, very small, say roughly three months. So, you prefabricate it somewhere else, and then you float it up there, and let's say it's 50% done, instead of being 2% done.

EIR: So, there's off-site construction, and then you have to get the modules in place and installed, and this all was spurred along from these adverse conditions?

Stamper: Weather conditions and the like; stormy seas. You can picture an oil well, way out in the middle of nowhere. You can see 150 feet of structure above, 700 feet below. So, they fabricate it, like in a ring fashion. And when that sinks down into the water a little bit, they fabricate another section, and that sinks down. So, they fabricate in fairly deep waters. And then, they'll go out and actually bring two pieces together—they have this enormous structure.

FIGURE 3

New Locks To Be Built While Old Locks Are Still in Use



This engineering design shows how the existing 600-foot lock (cross-hatched) would remain in use for river traffic, while the walls of the new lock (toned) chamber, 1,200 feet long, could be constructed alongside. The dam is shown (ticked line).

On the “Discovery” show, there’s a great representation of this. They get push-boats out there, and put it in place; they lower it, sometimes on the seabed, sometimes they remain floating and they’re tied down. That’s where this technology comes from. It’s a proven technology, in other industries.

EIR: Is there one particular center for this technology? Decades ago, Westinghouse had a facility in Jacksonville, Florida, that was working on floating nuclear plants—to construct in the United States and install in Africa. It’s all shut now.

Stamper: There is some expertise in this country, a company based in San Francisco. And they’re working on international projects.

EIR: Your Upper Mississippi improvements program would actually be a launching platform for developing the technologies further?

Stamper: Oh, yes. We’re just going to study that. There’s an option to build it in a pre-fabricated nature, and bring it in, or build it in place. We’d build it nearby, very nearby. There’s a lot of land along the river. So, you could build a levee system, or you could pre-fabricate it on barges.

EIR: What else about the Upper Mississippi project?

Stamper: There are numerous things. I guess the big thing about this is a seven-lock plan. The way Congress has been treating the Corps, is that we ask for so much money, and they give us something less than that.

Now, you can imagine, when in the Wintertime, when you’re building most of this structure, and Congress doesn’t

give enough money, that can extend this project a very long time. Building one lock doesn’t provide much in economic benefit. *You really need to build a system.* So, if they keep with their current practice, of just doling out money in amounts less than what we need, this project will run a long time.

EIR: The timeline of the history of the Upper Mississippi locks and dams shows some outstanding things. Some improvements started in the 1800s, but then, from 1930 to 1939, you built 26 locks!

Stamper: The last one that went online was in ’40, Lock 24.

EIR: So, in nine years, the Corps built 20 locks at least!

Stamper: Nine to ten years. Lock 19 was built before that, it was built in 1916. Then it was upgraded in the ’50s, to a 1,200-foot lock.

EIR: So, from an engineering point of view, today, if we have the same mission-type push for it, you could build them within a few years, if you really revved up?

Stamper: I doubt it—I think they’re more complicated nowadays. There are just a lot more worries now.

And also, the structures they built back then—they did survive well, but we build them better nowadays, so it takes more engineering to accomplish that.

EIR: But, if you had the money to do the whole system, you could do it.

Stamper: We could do it faster. Our current plan now, is 30-some years, for the 12-lock plan. The first, I mentioned, is 7, and then after that, we have checkpoints for Congressional approval to go to the upper five locks, to 14 through 18 on the Mississippi.

Yes, we could always go faster. But, if you plan for that, and ramp up for it, and hire people, and then Congress cuts back, then what do you do with those individuals? So, it’s a risk for the Corps, too. They’ve already demonstrated that they’re not going to fully fund the Corps of Engineers.

EIR: In the last 20 years, you’ve had, what you would say, only “level” funding?

Stamper: On the “Operations and Maintenance” [O&M]—that’s what I like to call it—it’s level funding. It’s barely keeping up with inflation. As structures age, they have more demands. Things break, and we have to work on the items that are of utmost importance, and those are usually related to keeping navigation open.

So, for example: The gates need painting out here? You can imagine how much work that is to do. We forgo it; we just let ’em go. They rust like crazy. But, it costs several million dollars to paint those gates. So that money is used to keep the lock open, keep it operating, keep people paid to

operate the place. And we forgo things like this.

EIR: So, when it comes to upkeep for what they call our “National Inventory of Dams,” the Corps is responsible for a great number of the important dam sites—whether there’re locks or not—and the Corps doesn’t have the money it needs?

Stamper: The Corps has—I’ve forgotten how many locks and dams; I think it’s around 400. But, as far as the National Inventory and our responsibility, we’re responsible for those 400 locks and dams. And also, lakes, the rivers themselves, and all that. Much of it comes out of the O&M budget. Except when there’s capital improvements, and then we get a different type of appropriation, construction generally. And some of that is cost-shared with the towing industry.

There’s an enormous demand out there, on that O&M budget. And that includes any of our environmental programs, that are funded out of that, too. Those are relatively small, but nevertheless, it’s another demand.

EIR: What’s it like from district to district?

Stamper: I’ve worked for 12 other districts in the Corps of Engineers; while still staying in St. Louis, I do work with them, either in a review capacity, or some design, writing guidance for headquarters. Which is a good thing: You get to see the way other people think; learn a little bit more.

But, if projects like this don’t go through—we have people who don’t have such a global view of things, and jobs will be at risk—just like in the Pittsburgh District. I believe their Monongahela job got cut back—not Braddock, but the rest of that. That’s a three-lock project. I think they call it, “three for two.” They’re actually going to eliminate a project, but I believe that whole thing got scaled back, so they’re going to have to let people go.

And the Midwest may be no different, with the Mississippi Valley—the St. Louis District, the Rock Island District, the St. Paul District. It’s going to be lean times, if something like this were not to go through.

EIR: We’re facing shutdown of locks and dams. There’s the example in the Vicksburg District, where the four-site system on the Ouachita and Black rivers was to be shut this year, for lack of funds.

Stamper: Yes, that’s just the tip of the iceberg.

EIR: The consequence of 20-some years of not having enough funding for upkeep, not just for painting, but for all the real maintenance—

Stamper: Greasing, everything.

EIR: At some stage, you have to do something to the dam and the lock works.

Stamper: You’d have to rehabilitate it, rather than rebuild. The structure itself could be fine. The machinery itself is much more exposed, so if you don’t grease it and protect it, and

monitor all this, and exercise it, it sits; basically, the elements will destroy it.

For Kaskaskia [Illinois], the tentative plan would be to operate the dam to maintain the water level, and to shut down the lock; basically, to mothball it. We wouldn’t decommission it, by any means. You know, some day, we may have to run it again. But we would try and operate the lock and dam—trying to do that with the dam, trying to do that from a remote location. Whether or not that can be feasibly done—

EIR: So, you wouldn’t keep people on the site. You’d send them in once in a while?

Stamper: That’s a possibility. Or, electronically, by satellite. So you’d actually set up cameras, with a guy in our office 80 miles away or whatever it is; he would actually operate the gates, to let the water through or hold the water back, depending on what the flows are in the river.

Some people think there’s some risk associated with that. You can’t hear the machinery, you don’t know if it’s making a sound, like, “We need to shut this down because it’s having a problem.” It’s like driving a car. “Something’s wrong.” Same type of thing.

EIR: Is that being done elsewhere, anywhere in the districts?

Stamper: As far as the locks and dams, very little. But, there are hydropower plants that are remotely operated; there’s nobody there. That technology is in a lot of industries. And we’re just adapting that technology to locks and dams. The ultimate goal would be to have unmanned—

EIR: I’d like to see us approve the Upper Mississippi/Illinois program, and *overman* it!

Stamper: A lot of people feel the same way. It’s frustrating. You know, in ’99, we ramped up for our PED phase—and that’s what we’re all for, to get out of this business [public and Congressional discussions]—the “Planning, Engineering, and Design” phase, where we start our initial detailed studies. Right now, it’s a little less engineering and a lot of economics.

We’ll begin to conduct PED as soon as we get the funding, which we’re hoping is by Oct. 1. That would be our desire. If it’s not going to go, tell us as soon as possible, so the districts can start making other plans. I don’t know what those other plans will be. There are lean times coming up.

★ LAROCHE IN 2004 ★

www.larouchein2004.com

Paid for by LaRouche in 2004.