Just back from South Vietnam, General Morris arrived in Omaha, Nebraska, with his wife to assume command of the Missouri River Division in June 1970.

On the military construction side, the area was even larger. It included 11 states and served more major commands than any other division. We had the Strategic Air Command in Omaha, the Military Airlift Command at Scott Air Force Base outside of St. Louis, the North American Air Defense Command [NORAD] at Cheyenne Mountain near Colorado Springs, the Air Force Academy of course, plus a large number of air bases and airfields that had considerable MRD work on them. The Army side included Fort Leonard Wood, Fort Carson, Fort Riley, Fort Leavenworth, numerous ammunition manufacturing plants, and finally, Rocky Mountain Arsenal, which stands alone as a separate problem, which we'll have to discuss. All in all, the Missouri River Division had a full plate of military clients as well as the environmental program, which impacted on both the civil works and military missions although, in the early 1970s the former to a much greater degree.

So my earlier thoughts that the Missouri River Division wasn't all that busy soon vanished with the understanding that if we did nothing else except bring the procedures and the policies within MRD in line with the Chief of Engineers' environmental objectives, it would be a full assignment.

We had two districts, Omaha District with Colonel Pat Pendergast as district engineer and the Kansas City District with Colonel Andy Anderson, both outstanding district engineers. Each was

placed properly in his job. Also, each was an excellent supporter of the need to adjust the Corps' approach to problem-solving based upon the new environmental policy act. While different, each in his own way was a very strong and decisive district engineer.

As before, I set objectives for the division, and through the division to the districts. That was a procedure I'd adopted years before. In this case, our primary single objective was to implement NEPA. First, however, we had to restore morale and confidence in the district personnel. Next, we had to clean up the projects in the public works program which were taking small amounts of the annual appropriations just to keep them active when prospects of their ever being accomplished were minimal. With a limited program, we needed to concentrate the small amount of funds where project approval and construction were reasonable. So we had those three things-the environment, the internal operation of the division, and the policing up of the civil works program while attending to our military customers' needs.

On the environment, I think the true depth of our problem is evidenced by a story concerning my division and the secretary, Ms. Helen Pierson. Helen had been the secretary to General Pick first in Omaha and later in Washington. She had returned to Omaha after his term as Chief of Engineers. She remained on duty in the federal government as the secretary to a succession of division engineers assigned to MRD. She had seen the Corps from the highest position, and I felt that if anyone had a reason to be proud of what we were doing, it would be Helen Pierson. She was an outstanding secretary and an exceptional helper to me.

In discussions with her, I found that she didn't talk about her job out of the office with her friends because of the adverse criticism the Corps was getting. Once I asked her what she thought about the Corps, what was the discussion around town, and she said, "Well, I don't talk about it." That to me was a fairly good clue that we had problems. I don't think Missouri River was having any more trouble than anyone else. I just think it was the impact of the public outcry against the kind of work the Corps was doing, the tremendous workload that came out of the National Environmental Policy Act, and just a feeling of frustration and uncertainty as to what was going to happen to the traditional Corps work.

So we started an active program of projecting the positive aspects of the Corps' past and the work it was currently doing. A by-product of that was a gimmick which expressed a certain amount of my philosophy about the Corps. I began to look for a slogan to which everyone could relate and hang onto. Out of this came the "The Corps Cares" idea.

Interestingly, I had come up with two slogans, "The Corps Gives a Dam" and "The Corps Cares." I asked Pat Pendergast one day to take a look at those and tell me what he thought. He said, "Well, I like 'The Corps Gives a Damn' but you can't use it because now is not a good time to mention dams even if spelled differently," and so he said, "Take 'The Corps Cares."' Which we did.

The public affairs officer was Harry Dolphin, and I asked him to get some buttons. Harry looked into the matter and came back with a report that he could get buttons for 10 cents apiece. I bought 250 of them, $25 for 250 buttons. At a meeting of division employees, plus the two district engineers and their principal staff people, I was wearing one of the "The Corps Cares" buttons. I reviewed the history of the Corps and the Missouri River Division, how much we'd done for the economy and the people, and why we should be proud of our work. I then challenged everyone to help me figure out what was expected of us and then how to do it.

Afterwards, a couple of people asked me where I'd gotten the button and where they could get one. I said, "You can have one if you promise to wear it." So I passed out among the division people a couple of hundred, and I gave Pat Pendergast 25 and Anderson 25 for their folks. Shortly after that, General Clarke had a division engineers conference in Washington where I wore one

of these buttons. The next thing I knew, Frank Camm, division engineer in San Francisco, wanted to know where he could get them. I put up a sign-up list and the button took off. For several years after that, Harry Dolphin was the "The Corps Cares" button procurer. The only thing was everybody had to pay for them. I do believe we must have distributed 5,000 "The Corps Cares" buttons in the first six months or so. In fact, the idea became so popular that General Clarke made it the theme of one of his engineer dinners.

It seemed to make a difference, frankly. I know that was not the only reason, but it was a contributor to what became a different attitude around the Missouri River Division and perhaps throughout the Corps. I know we got a lot of publicity—I knew we'd made it when it became the subject of cartoons, particularly by our artist friend over in Arkansas, whoever he was. You remember that guy? All the fat generals and everything?

Q: George Fisher.

A: He put a "The Corps Cares" button on a fat general. I wasn't so fat in those days so I was sure it wasn't me, but nevertheless, that "The Corps Cares" button came early and it stayed long and I think created an interesting phenomenon. We had a little trouble with the Pentagon, wearing it on a uniform, but we could adjust to that, of course.

Besides the "The Corps Cares" idea, I thought it'd be a good idea to do some internal decoration, and we set up in the hallway of the division office an exhibit from each of the two districts. Kansas City made an excellent piece. So did Omaha, for that matter, with pictures and so forth. We had a third area with prominent previous division engineers including Generals Pick and Sturgis-two Chiefs of Engineers. The visits by the U.S. presidents to the Missouri River Division was displayed because every president beginning with Franklin D. Roosevelt had been there at that time except President [Richard] Nixon, and he came later.

We started publishing news items. As for public civic activities, the Corps of Engineers became active in the College World Series of baseball played in Omaha each year. I pledged the Corps would double its previous year's contribution. That wasn't too hard because they'd only given about $100 the year before, but we did well enough to be a community leader and were recognized in the paper.

In the meantime, I'd asked the newspaper publisher if he would put somebody on our beat. I knew we were doing a lot of things that deserved some public attention, so Mr. Anderson, of the *Omaha Tribune*, gave us an excellent supportive reporter. As a result, we began to get more news in the paper.

Mayor Leahy was very active. We joined with him to make public areas available for parks and recreation. So all in all, it was sort of a revitalization of what had been, for many, many years, a very close relationship between the Corps team in Omaha and the public, and not only in Omaha but also in Kansas City.

We also visited the governors of the states to discuss their water resource problems, and also we visited the commanders of major military installations. So there was a resurgence of customer interest. I think that plus the "The Corps Cares" thing seemed to turn Omaha into a more dynamic activity. We had some outstanding people in the division and in the district. Omaha District was a strong district and well directed by Pat Pendergast. Omaha was one of the five districts at that time that had military construction. In fact, Omaha had the largest military construction program. Pat Pendergast used to call it the "Super District." Well, it was in many ways. Yet Baltimore, Fort Worth and Mobile were also heavy hitters in those days. Omaha may have had the biggest budget. Kansas City did civil works only.

So far we have covered the first six months or so, a period of effort to get ourselves in a position of confidence to take on the issues before us. There were many.

In spite of the National Environmental Policy Act and everything else, the Missouri River continued to be cantankerous. The controls on it, the reservoirs behind the six dams from Gavins Point up to Fort Peck, did a magnificent job in flood control, hydroelectric power production, and water for irrigation. There were constant problems of local flooding, of getting overdue projects on line, and as mentioned, there was a shortage of funds to do all those things.

Gus Karabatsos was the chief of Planning in Missouri River Division. We discussed how to handle some 110 planning projects for which there was just piddling amounts of money each year. Consequently, no project had enough money to do much. So Gus came up with a program which I called "Put Your Money on the Winners," or "Get Rid of the Dogs." When we started into it, it seemed simple, but we soon realized that these bread-and-butter projects for the members of Congress were important to be kept alive to satisfy their local constituencies.

We were successful in the long run to clean out many projects with no future. Congress several years later took care of the problem on a national basis by passing legislation that dropped inactive projects. I believe our effort in MRD, while painful and tedious, set the pattern. Fortunately, most of our governors and congressional people were supportive because they could see that on a statewide basis they'd be better off having a couple of projects sufficiently funded to produce a needed project as opposed to 15 or 20 so lightly funded that no project planning was completed. That may not seem like a big program, but it was a ground breaker.

The environmental impact statement problem became quite serious because we needed to have one for every project. Our priorities were to start with those projects ready to begin construction, followed by those already under construction, and finally those in operation.

A few projects became landmark-one was Truman Dam. Truman had a potential downstream problem with the paddlefish, an endangered species. Since we had not had time to finish an environmental impact statement, the project was about to be stopped. I was in Manning Seltzer's office, the general counsel of the Corps, when I learned of the stoppage. Manning said we had to have an environmental impact statement or the project was going to be enjoined and stopped. I asked the district engineer to put his best people together in a room and work until they got the thing done. By today's standards, the results would be considered a poor job, but in those days, with the lack of experience and guidance on what made a good EIS [environmental impact statement], he was able to meet the requirement and keep that project going.

Others were stopped for a time, and some of them ultimately were never built because of an inability to satisfy the environmental problem or criticism. The operation of the Missouri River system itself was a complex environmental problem. So the environmental movement, if it did nothing else, kept our planners and our engineers rather busy, catching up with the requirements of the law.

At the same time that was happening, we were discovering some environmental situations which would ultimately require attention in our operations. The bald eagle is an American treasure, of course, and it was an endangered species. Fort Randall Dam's area downstream from the spillway and its stilling basin became an attractive location for the eagles. So we spent a lot of time on the eagle problem. The black-footed ferret was an endangered species and it existed in the Dakotas. We had to attend to that problem.

One day I received a call from our resident engineer in the Rocky Mountain office, which was really under the Omaha District but the district engineer wasn't available. The resident engineer said that two ducks had been found dead on the pond that morning at Rocky Mountain Arsenal.

Well, that did not seem to be a sensational item, and at that time I really didn't appreciate the importance of it. I hope I didn't act too dumb, but it turned out that was the beginning of the Rocky Mountain Arsenal story, which is still going on to some extent. The reason the ducks died was because of migration of hazardous groundwater.

Public meetings became a real challenge for our district engineers. They would try to explain the advantages and the disadvantages of certain flood control projects, such as the one at Boulder and in conjunction with the construction of Chatfield Dam near Omaha. At the same time, we were putting together the project for Bear Creek Dam near Denver. All of those projects came under very careful environmental review.

Through all this, the Corps was slowly but surely changing its way of doing business. Probably the most important thing that happened to the Corps in the environmental program was General Clarke's vision in requiring that we integrate environmental considerations at every point, every step in the decision-making process. That set the Corps apart and later proved to be, I suppose, the single most important organizational concept that was implemented during the early 1970s. The alternative was to have an environmental review committee to review the planning or engineering when finished to see how the effort fit the environmental criteria. General Clarke's idea was to have everybody, at each step along the way, take the environment into consideration, and as a consequence, we put together better projects.

Q: What about the division's military construction work?

A: Rock Island Arsenal was a military project of course. Also, on the military side, we were converting all of our oil-fired heating systems to coal. Very shortly thereafter, for environmental reasons, we put them all back like they were. During my period at Omaha, the oil shortage was the big item.

Another item of major construction throughout the area was either upgrading or retiring each of the ammunition plants. There were 11 ammunition plants throughout the Missouri River Division area. There were serious hazardous materials by-products which had to be attended.

There was also a big program at NORAD: classified work inside the mountain. The Air Force Academy was still being developed-physically, that is. Besides Rocky Mountain, the military did not escape the environmental attention, either. At Fort Carson, for example, there were several environmental protests. Fort Leavenworth and Fort Riley seemed to be relatively quiet.

From the construction standpoint, the big item was housing and barracks. We were trying to provide better housing for our soldiers, and it was during those days that General Danny Raymond, who was chief of Military Construction, came up with the idea of buying off-the-shelf housing rather than designing it ourselves. That was a fine move which led to better housing at less cost for our troops. So the housing program became rather active throughout this period.

Fort Leonard Wood was emerging from the World War II temporary type of construction into a permanent post. General George Walker was commanding general at Fort Leonard Wood.

Q: What about the urban studies? Weren't they part of your time in MRD?

A: One other important civil works event was the birth of the urban studies program in the MRD. Senator [Roman] Hruska, the senior senator from Nebraska, asked me one day if the Corps could help the cities manage the money they were getting from various federal agencies and put it into a sort of a comprehensive development plan.

I thought about it, told Senator Hruska that the Corps could help, but I thought we'd have some difficulty if funds of another federal agency were diverted to the Corps. On the other hand, I

thought that we could be very helpful to the cities in coordinating and integrating the planning of the city from all these various aspects-utilities and flood control, water supply, programs of interest to the Corps, plus transportation and utilities and items which other federal agencies might be financing. So with the cooperation of the city fathers, we began a joint planning group with the other federal agencies and the city. Together, under Corps direction the first "urban studies" was developed. Over the next five or six years we did the same for many cities throughout the United States.

That turned out to be a very important program. The decline in the new project planning workload, as a result of the environmental interest and the lack of interest in pushing for marginal projects, generated a capability among our planning staff. So this urban studies program not only provided valuable assistance to our cities but it did allow us to put our best planners to work on a new mission. The results provided to the communities a product they would not be able to develop themselves. The amount of money which went into the urban studies program was significant.

So that was a new Corpswide mission that came out of a question presented to me by Senator Hruska, one that I think carried with it a great advantage to the Corps.

Q: Let me go back and ask you a couple of follow-up questions here if I could. Did the Rocky Mountain Arsenal problem become a big one while you were there, or was this one of the first signs of trouble?

A: That was the first sign of trouble. Actually, we did have a chemical demil project. We built a special furnace to bum small chemical munitions. The chemical demil furnace was already in the works. It wasn't a result of the ducks, but the best answer to your question is that was really the forerunner of what later proved to be a major problem.

The environmental activist community was really centered pretty much around the Denver, Colorado, area. There probably were others, but Denver was, at least, in the forefront. Without any doubt about it, after we got over the first trauma of the National Environmental Policy Act, the Missouri River Division became very serious about doing a good job with the environmental opportunities. We took a lot of heat. I'm sure everyone else did, but we seemed to be the center of the movement. The public hearings were complicated. I think that those two districts and the division as a whole really "got with the program" as CSM Santacrose would have said. Fontenella Park, across the river from Omaha, was a program initiative with environmental phases. The man who ran it had collected data on the development and history of the Missouri River Basin, the river itself. I asked to put an exhibit out there, in which we would show the geological structure. We did it. It was a good public education item and a good public relations item for the Corps,,

At Fort Peck in Montana we had an excellent project engineer-Don Beckman. He was a self-made archeologist who collected skeletons of dinosaurs and other prehistoric animals from the reservoir area. He developed a little museum in the project visitors gallery.

Q: They're still finding things out there?

A: Still finding things out there.

Q: I think while you were there, there was some movement or transition in the Missouri Basin Association volunteer organizations—state, local, federal officials.

A: That would refer to the Water Resources Congress [WRC]. In 1970 there was the Mississippi Valley Association and the River and Harbor Congress. They were combined at a meeting in February of 1971 at the Hilton Hotel on Lake Shore Drive in Chicago. I remember it very well

because the bus from the airport broke down. I had to walk the last mile or so to the hotel in terribly cold weather.

Mike Cassidy, WRC executive director, presided over the meeting which voted to combine the two into the Water Resources Congress.

The local organizations' effectiveness had begun to wane. The Arkansas Basin Development Association, the Missouri Arkansas Basin Association, the Arkansas Basin Association, and others, had all begun to weaken by 197 1.

One other event is worth mentioning. I said earlier that we'd had all the presidents out there except President Nixon.

Q: Yes.

A: Kansas City District built Rathbum Dam in Centerville, Kansas. The local sponsoring group were wonderful people with enough political influence to get President Nixon to the dedication. Kansas City District under Colonel Andy Anderson worked with local support and put on a very relaxed affair. I remember telling Andy to get President Nixon to wear a "The Corps Cares" button while he was there. He responded that I should do it.

"No, it's your show, you're the district engineer, so you figure out how you're going to do it."

I told him I'd given President Johnson the treatment down in Eufaula years ago, and I thought it was only right that he should take care of President Nixon. He gave President Nixon the button. So a "The Corps Cares" button got at least as far as the White House. A lot of people at the ceremony were wearing them. That was a nice affair. The picture of President Nixon went on the wall with the rest of the presidents.

Q: What about relations with EPA [Environmental Protection Agency] or with the regional offices?

A: Oh, that is a good point. EPA was authorized in the National Environmental Policy Act but it took time to implement. Mr. [William] Ruckelshaus was the first administrator of EPA. I went to Kansas City to a meeting that he had called of all of his people. They invited affiliated groups to witness a video setting out EPA's goals, et cetera. I was impressed with how well the video and meeting were put together. That was the real beginning of EPA, to my knowledge.

Now, the man placed in charge of EPA's Kansas City region was a fellow named Jerry Svore. Jerry was a public health officer from Texas, and he and I had worked together quite a bit when I was in Tulsa and also on a few problems in the Missouri Basin.

Nationwide, a coolness existed from the start between the Corps and EPA. I think it was more EPA than the Corps, although I don't want to get into that issue too much. The Corps offered its help, yet there was some hesitancy on both sides early on. As you know, this conversion of the Corps to support EPA's environmental program didn't happen overnight. It wasn't like turning on a light switch or anything. So there were tensions.

Svore and I prepared and followed a memorandum of agreement on how we would operate. It worked out fine in the Missouri River area. There were no problems between the Corps and EPA in our area. We sent our plan back to Washington thinking it was good enough to become sort of a national guide. I think it got through the Corps okay, but it never saw the light of day elsewhere. It's been so long I don't recall the details, but basically it listed the areas where each of us had our own responsibilities with no overlap, and then it listed the areas where we would probably run up against each other and how we were going to go about handling them. It worked out very well because of the plan and the personalities of the individuals in the MRD area.

Q: Were there any problems with recreation while you were there?

A: Yes. We were building parks along the Missouri River for recreation. Also, all our lakes provided recreation facilities. People in the area were great outdoors people. We weren't really building many new dams. Much of the additional recreation related to new items at old projects or improving facilities at existing items. I don't recall it being nearly as big an issue as it had been in Tulsa. Of course, whenever we fluctuated reservoir levels, we heard about it from recreationists.

Land use was getting to be a greater problem than recreation. The shoreline at those big reservoirs up in the Dakotas were difficult to police. Besides, Indian land borders the shore for many miles. We didn't have a tight control over it, and we were having trouble with people infringing on the public part of the project-fencing off segments, building, et cetera.

Q: Did you continue to push value engineering?

A: Yes. Value engineering was a Corps policy by 1970, so it was not a priority leadership challenge in the Missouri River Division during 1970 to 1972 in view of the environmental issues and all that was going on. In many ways, you know, the value engineering concept applies to the environmental analysis. The value you're evaluating is the environment, not necessarily costs.

Q: You mentioned project operations. Is this an area where mitigation became a factor?

A: Mitigation initially became an operating procedure. To explain, as a result of the environmental program, we re-evaluated every project to see if we should operate it differently. For example, we were concerned about drawdown and also releasing water downstream during certain spawning seasons. After we had re-evaluated operations on all projects in the Missouri River Division, surprisingly little change had to be made. We did make whatever changes were necessary to mitigate adverse operational impacts.

Q: Just a couple of quick questions. The housing construction you were talking about, this is military construction public housing?

A: Military housing. In the civil areas, I wanted to provide in the remote sites a house for the resident engineer and one other operations person, i.e., two houses. That program fell on bad times. We were successful on a couple of the projects, but basically I think the program went the other direction. We had to get rid of them and let the people live in communities and commute. To answer your question, all the housing that I was speaking of before was military family housing.

Q: Military. Mostly Air Force?

A: No. Not mostly, but a lot. During that period the Army adopted a standard design for barracks. We built new barracks on both Army and Air Force facilities.

Q: That's in anticipation of the all-volunteer Army or is it—

A: Well, let's see, could that be true or not? I don't think so. I think it was too early. Instead of just a bare-bones barracks we gave the soldiers two or three to a room, in little clusters with reception or lounge areas. The barracks were much different and we had problems at first, unique things such as locks. Every soldier had to have a key. Of course they took the keys with them when they moved. I remember General Rogers saying some people did nothing but make keys all the time. I think that's almost true.

Q: It sounds like quite a bit of the work was for the Air Force.

A: I'd say 60 percent of all types of construction was Air Force. Leonard Wood was a big program, but most of the Army posts were fairly mature—Leavenworth and Riley. There were projects at each of those but nothing significant. Mostly housing.

The Army ammunition plant program was big. Also, we were building the only Sentinel site at Langdon, North Dakota. That complex project was being managed out of Huntsville. General Rip Young was in charge and George Rebh was his deputy. They had the responsibility for the technical requirements and MRD had to do some of the contract management. It was a little bit awkward but we worked it out okay. Similarly with the ammunition plants, rehabilitation.

Q: Just one follow-up. This may have happened more at the district level, but in response to NEPA, did the internal organization of Corps offices change? Did it bring in more specialists from different areas?

A: Yes, we salted them with geologists and environmental people. We changed or supplemented the disciplines. That's how it was done. That's the point I was trying to make before.

The Missouri River Division job turned out to be a very exciting assignment. A turning point in many Corps activities might have evolved from the way the Missouri River adjusted its staff and applied its capabilities to new environmental requirements. I don't want to overstate it. I guess any division engineer would have felt the same way, but that's the way I feel about it. The assignment proved invaluable in dealing with what lay ahead.

Q: What impact did the MRD assignment have on your career?

A: It served as an excellent method of reshaping my thinking from the combat situation in Vietnam and all that entailed, into the reality of the environmental program in the United States, which was an infant when I arrived in Omaha. Much of the entire tour there was consumed, more or less, by trying to get up to speed on what the National Environmental Policy Act really meant-not only in the civil works program but also in the military program, which included cleaning up ammunition plants, converting heating systems at major installations, and the normal construction.

To digress a moment, Mr. Wendell Johnson had been the chief engineer in the Omaha District and later the Missouri River Division. Wendell Johnson ultimately came to Washington. He was a truly outstanding engineer, not only for the Corps but for the country.

As I was heading to Omaha, Wendell said, "Here are a couple of people that you might want to meet." One was Chuck Durham of HDR [Henderson, Durham and Richardson]. That was a very good association. Another was Leo Daly, Sr. Both fit into some later events. For example, a few years later Durham wanted someone to help with their big project at Jidda Air Base over in Saudi Arabia, so he wanted to know about Pendergast. I told him if he wanted somebody to put out on the end of the line that would do what he was told to do but didn't need a lot of supervision, it'd be Pendergast. If he wanted to bring him into the office, that'd be another matter. So he hired Pendergast.

Back to Daly. Later on, Leo Daly had the big job in Saudi Arabia to design the National Guard headquarters. Mr. Daly nominated me as an honorary member of the American Institute of Architects. Then there was Peter Kewitt, founder of Kewitt Construction and just an outstanding person. As in Tulsa, I met a lot of people who were very nice to me and our family and have remained associates over the years.

I loved the country, the area. There aren't many things in the Corps any more impressive than the six dams on the Missouri River. I remember telling Pat Pendergast about Clark Hill Dam in

Savannah District until he said, “You haven’t seen any dams yet. Wait'l1 you see these.” He was right. Fort Peck is special. You know, it was a make-work job by President Roosevelt-30,000 people worked out there. A theater ran night and day for like five years. Today, billboards of early movie actors--Clark Gable and Myrna Loy-remain on display. The small lodge is very interesting also.

General and Mrs. Morris at a banquet in Omaha in March 1972.

Gerry was able to travel with me quite a bit, and she worked at helping me with the job. She deserves a lot of credit. She was heavily involved with the engineer wives activities and we became very close to the civilian staff.

Soon after arriving I needed a chief of engineering, so I searched the Corps and discovered Lloyd Duscha. A graduate of the University of Minnesota, he had worked on Garrison Dam earlier. At that time, he was in Philadelphia District working for Colonel Jimmy Johnson, who later became Deputy Chief of Engineers. I called Duscha and he wasn’t all that thrilled about moving. Lloyd never did like to move, I guess, but he came, and that was good for me.

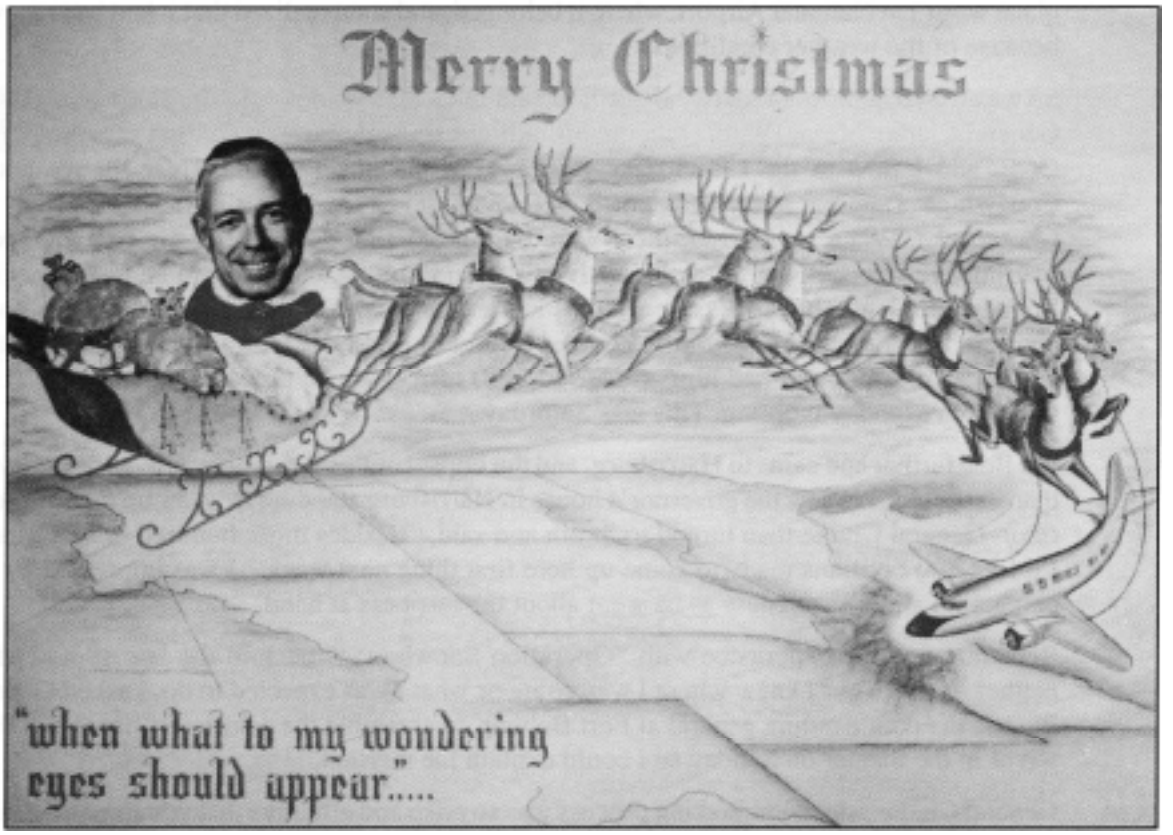
I had an excellent deputy, Jim Fuller. He retired from that job later and went to work for Chuck Durham at HDR. He and his wife Norma have become an active part of Omaha and are still there. He was from Wyoming.

I had to buy the division a new airplane. We ran a contest to name it. Everybody was involved and selected the name “EMARDEE.”

When I went to the Missouri River Division I did not realize that my next assignment would be director of Civil Works, of course. I think General Clarke may have had that in mind because he told me early in my tour in MRD that he was thinking that I might fill that job when General Koisch left it. That’s the way it turned out and may have been the biggest impact of MRD on my career. While at MRD, I started testifying before the committees of Congress and became familiar with the members of the committees and the staff people that I’d be dealing with later.

My promotion to major general occurred while I was in the Missouri River Division-a very simple ceremony in my office attended by Gerry and our son John plus Jim Fuller and a few others.

So in hindsight, the environmental program, “The Corps Cares” endeavor, urban studies program, staff changes and training in MRD, hearings, promotion to the proper grade, made moving to Civil Works a reasonable next step, let’s say.



Christmas card designed by the Missouri River Division staff about the new division airplane, 1971.

Director of Civil Works

Q: So in the spring of **1972 you** became director of Civil Works in the Corps headquarters. How did you feel about getting that assignment?

A: There were other well qualified generals, of course, who might have gotten the job, but I was pleased it was me. I had expected that assignment would be the culmination of my career. I had a deep interest in the military program and regretted leaving it. Even so, my background suited me also for the civil public works activities, and we were very happy to get the assignment. Gerry and I still had the home in Arlington which we'd acquired when we came from the Military Academy some years earlier, so there was no problem with a place to live. We arrived in the Washington area in late May 1972. Our arrival was recognized by Speaker Carl Albert, whom I had known when district engineer in Tulsa. He hosted a small reception for Gerry and me in the speaker's office. The entire Oklahoma delegation attended. A real honor and a very nice affair.

I'm not sure of the exact date we reported to OCE, but I am sure I'd only been director of Civil Works a couple of days when Agnes tore up the Susquehanna Valley and made my introduction to the civil works program rather quick, abrupt, and impressive. My recollection is that on Friday, 23 June 1972, a very severe storm passed through Washington with forecasts of damage and flooding farther north. It was raining cats and dogs in D.C. My basement was flooding, and I received a call from General Clarke saying he wanted me to be at the Andrews Air Base to take a flight up to the Susquehanna River early Saturday morning. I remember wondering why his

plane wasn't at National Airport, where it belonged, and soon realized that it had been moved because of the weather conditions.

So we arrived at the plane early, about 7:30, and immediately took off. The storm had passed. General Clarke, Major [Walter] Smith, his military assistant, several civilian personnel from OCE, and I flew to the Chesapeake Bay and up the Susquehanna River till we got to Conawingo Dam in Maryland, north of Havre de Grace near the headwaters of the Chesapeake. When we arrived, there were barrels floating down the river. The water was pouring over the spillway, and obviously upstream flooding was going to be rather serious. I remember General Clarke saying, "This is pretty bad. We'd better start doing something about it." So he had Major Smith contact Colonel Lee Little, who was handling military personnel in OCE, and had him arrange for 150 officers to be prepared to move up to the flood area Monday morning. This was Saturday A.M.

We flew farther and came to Harrisburg, and the impact of this flooding was even more severe than expected. We saw the governor's house in Harrisburg standing in water up to the second floor. General Clarke then turned to Smith and said, "Besides those hundred or so officers, I'd like 500 civilians ready to come up here first thing next week." I was impressed by his perception and decisiveness as he went about the business at hand.

Remembering my experience with "Operation Snowbound" back in the late 1940s, when neither my wife nor I knew where I was going or what I was expected to do, I asked General Ploger, the commanding general at Fort Belvoir, to assemble the selected officers and their wives in the theater on Sunday so I could explain the mission.

General Clarke's decision-making process was so crisp and effective that you have to wonder why we have had so many major problems with storms like Hugo and Andrew. In the early 1970s we didn't have FEMA, the Federal Emergency Management Agency. The Office of Emergency Preparedness headed by General George Lincoln was the responsible federal agency. Lincoln, a retired Corps of Engineers officer and outstanding political scientist, was appointed to this position by President Nixon.

General Lincoln and General Clarke had known each other quite well, and Lincoln authorized General Clarke to do whatever was necessary. General Lincoln asked to be kept apprised and also, if there were any major decisions, that he be briefed on them in advance. Well, with that kind of authority, the Chief was able to move briskly to handle the Agnes event.

I do recall that before landing in Wilkes-Barre, we knew we would find trouble. When we entered the terminal, Congressman Daniel Flood had already set up a field office for his congressional district, and he was getting people's names and giving them encouragement. As soon as he saw General Clarke walk in, he called for a large number of typhoid fever shots. Of course, we weren't prepared to get the serum or really what to do with the problem. My recollection is we said, "Yes, Sir," and proceeded with trying to get the overall situation organized. The serum did arrive promptly.

Now, Agnes turned out to be quite a management effort. Baltimore District normally would be responsible for this, but Colonel Lou Prentiss, district engineer, had so much to do that we couldn't ask him to take on this problem as well. It required a lot of attention and a field office. General [Richard] Groves, the division engineer of North Atlantic Division, suggested that we set up a provisional district. General Clarke agreed and the Susquehanna District soon became operative. Colonel John McElhenny became district engineer.

As I recall, officers and civilians arrived as requested. Local retired personnel who were aware of the problem volunteered to help, and they were used. Contracting arrangements were

set up immediately in public buildings around Wilkes-Barre. The district engineer was announced and became the center for activities, relieving Prentiss. The activation order indicated that the district would be deactivated when the problem had subsided.

There's no need to go into all the ramifications of what we did in conjunction with Agnes except to highlight some lessons learned that are still proving to be quite valuable.

First off, we needed to understand that the flooding problem in Harrisburg, Wilkes-Barre, and in that stretch of the Susquehanna River was aggravated because of subsidence of levees which had been built over coal mines; therefore, the levees were not as high as when built. That was point one.

Point two was that the levees were built before the dams that stored the excess water were in place, therefore the levees, even had they been at the proper design height, would have been overtopped. So it was pretty clear that the levees gave the people a false sense of security.

A policy review reaffirmed that if you're going to put in a levee system, you better put the upstream control structures in at the same time or first. Of course, those dams were built immediately after Agnes.

We acquired trailers and built trailer communities for the people who'd been displaced. That was a big project and a lot of money went into it. This priority work began at once while we were starting to do the cleanup work for which contracts were issued promptly and expeditiously.

We built several large trailer communities, and they were fine except the residents did not know each other. Also, the post office didn't know how to find them. Further, there were no stores around, so we generated a community with no support structure. The American people proved rather versatile and were able to cope with these disadvantages.

In time we proposed, as an alternate, to give the people a limited amount of money to fix their own houses. The Office of Emergency Preparedness had to approve this plan.

A related idea was to erect trailers in people's back yards when possible so they could live in these trailers while their homes were repaired, et cetera. Those were relatively important changes. In some cases we probably couldn't have put the trailers in the back yard because the yards were full of mud, trees, junk, and everything, and some of the houses were just terrible inside.

Another invaluable action was the frequent visits by key personnel to families and to see what was happening. General Clarke was there several times. I was there even more often, and General Groves more than me.

I'll never forget, we went into one house where the first floor was covered with mud, and the lady came out and threw her arms around General Clarke and said, "I'm so glad to meet you, we were in such terrible shape, but your people came and moved us upstairs. My husband had had a heart attack, and he's now in bed." It was really a sad story. So nothing would do but she wanted General Clarke to go up and see her husband so he could thank us for what had been done.

So Agnes was an abrupt indoctrination into the hazards of the Civil Works Directorate. I know the Corps received some criticism, but when you think back through the reaction and the Corps' response to human problems, you have to be proud. You wonder if the new system is any better.

I think FEMA had to happen, simply because there were so many things that needed to be done that were beyond the authority of the Chief of Engineers. It was a stretch, to take public works money and use it, even though the law said you could use public funds which had been appropriated for other purposes to reduce loss of life and hazards-I don't recall the exact wording. That was the intent of it, but it's quite a stretch to get from there to supplying homes and that sort of thing and the cleanup.

Agnes was a major event. In the years that followed we had several more, major disasters. Our experience with Agnes provided the needed confidence to make decisions later.

Q: Let me ask a couple of follow-on Agnes questions. Several of the things that you mentioned-trailers and things like that-have become sort of standard procedures for FEMA now.

A: Yes.

Q: I guess the Office of Emergency Preparedness was small enough of an agency without a large budget so that it really couldn't do that sort of thing.

A: The Corps did it. We built these trailer parks. When Agnes was over, the trailers were stored for future use. The experiences in Agnes laid the groundwork for much of the present response to hurricanes. Tornadoes, earthquakes generate different circumstances. Where you have a lot of water, Agnes was a proving ground for much of the current activities, just like you said.

Q: Were there any other federal agencies that played nearly as large a role as the Corps did, or was the Corps sort of the lead of the agencies?

A: No, not federal. At the same time, state agencies, the utility companies, the highway people, and the state health department were involved. The response and the cleanup, the re-establishment of normal life among the individuals was basically a Corps activity.

Q: Just one quick follow-up while we're on this. Were there any problems in closing the Susquehanna District?

A: No. We closed it as planned. There was some pressure to keep it, but there was no reason to keep it. There was nothing for it to do. We didn't give it any mission other than the emergency work.

Q: That's sometimes cited as the last Corps district to be closed. That's a little bit of an anomaly.

A: Well, it is the last one to be closed, but it was also the last to be opened, and it was always intended to be closed.

Q: I did wonder if there was some pressure to keep it open.

A: Some people wanted to keep it open. Closing it down got to be a little tedious because of the mechanics of closing it. General Groves didn't want to close it until he got all of the bills paid and all that cleaned up. At OCE we selected a certain day. I don't remember what the date was, but once all the players accepted the date to fold flag, that was the end of it.

Q: Agnes was an unusual event. What about the more routine business of civil works?

A: Now to the more day-to-day type business of the director of Civil Works. Agnes was a fast start for a new three-year tour and proved to be good conditioning for the rest of my assignment because things never seemed to slow down after that.

I hadn't been in Civil Works very long before I realized that my style of operating would be somewhat different from my predecessor's. I prepared a memorandum in some detail outlining how I thought we should operate. Basically, I sought a team spirit where everybody worked together to resolve problems quickly and with good judgment. That document was satisfactory to the need and did serve as a touchstone for the rest of my tour in Civil Works and later.

I came from Omaha with a belief that the people who knew the Corps liked the Corps. I think we had pretty well proven that if we could just get the word out and say the right things, the public understanding and acceptance of the Corps could be vastly improved. Well, that was a belief which I tried to instill during my term as director of Civil Works. We worked hard getting the word to the public by communicating in various ways and putting a good, solid, professional face on our work in the public arena. The same requirements had to apply in dealing with the powers that be in Washington outside the Corps of Engineers where our problems were as severe as with the public.

Q: Who was on your staff in Civil Works?

A: The deputy director of Civil Works initially was General Ken Cooper, but he left soon after my arrival. He was replaced by General James Kelly, a brand new brigadier. Kelly was very smart, made a wonderful impression, and was very decisive and courageous. He was an excellent deputy for me. He saw to the implementation of programs already in place and also new programs as they came along. I took responsibility for dealing with the Congress and the Executive Branch of the government, and particularly the new Secretary of the Army for Civil Works.

We had a third person in the office, Colonel Howard Sergeant, the executive. He was responsible for the day-to-day operation of the office and was assisted by Lieutenant Colonel Ernie Edgar and also Tom Hicklin. Jeanine Huffman, who later became the Chief of Engineers' secretary, was the director's secretary. The civilian staff was outstanding.

I soon learned that the best head in the place for dealing with new problems, and particularly with the legislative problems, was Joe Tofani, whom I had known since Tulsa days. He's very strong minded, of good character, and quick to arrive at a good answer to tough problems. He loved the Corps, he understood the Corps, and I soon learned to talk to Joe on any problem of a policy nature. That relationship continued for the remainder of his assignment with the Corps. Few people were as highly respected among their peers and their associates as Joe Tofani. He was a tremendous asset as an adviser to the director of Civil Works. I'm sure he was to all directors. He certainly was to me.

I don't mean to pass by the other excellent people we had. [Irv] Reisler, [Alex] Swaiko, [Homer] Willis, [Mark] Gurney, [Bory] Steinberg and many, many others were key members of the Civil Works team. We had some folks from the Secretary of the Army's office working with us at the time. Steve Dola still is in the office of the Chief of Engineers as a representative of the Assistant Secretary of the Army for Civil Works. Dr. [Ed] Dickey came while I was there.

I should mention the training program of young officers. Again, Tofani was the key in developing them into outstanding public servants, either in the Army or outside. I can think of several that he trained that went on to be important players elsewhere in the government. Mike Toohey, Tom Donnelly, and Jim Smith all left the Army for civilian careers and served the country well as congressional committee staff persons. There are others.

I could never have been effective as the director of Civil Works without such outstanding help.

One of the first challenges after Agnes was to replace the chief of engineering. Joe Caldwell, who had been the head of engineering in the Mississippi River Commission, retired about the time I arrived in Civil Works. It turned out I had to fill this position twice while I was director of Civil Works. The first selection was Homer Willis. Homer came also from the Lower Mississippi Valley Division, LMVD. We were always very pleased, very happy with his work.

After Homer retired, I was successful in getting Lloyd Duscha, whom you may recall I had brought to Omaha. I'd been working on Lloyd before, and he said he didn't want to leave Omaha. When the job came open again, I went back to him, and he finally took it. I asked why he didn't take it the first time. He said, "You didn't try hard enough," which I thought was humorous. I had finally tried enough. I think history will prove that was a good choice.

We always had excellent people in Civil Works. Besides those mentioned already, Ken Murdock, Gene Lawhun, and Lew Blakey left the Chief's office to take senior jobs in the field so that they could return to the top responsible spots in Civil Works. The challenges that the directorate as a whole faced from 1972 to 1975 probably were as intense as any period. I should point out that the senior civilian in the Public Affairs Office by this time was Locklin Mouton, who had been with me in Tulsa. That was fortunate because we understood each other.

Q: What major problem areas did you encounter as director of Civil Works?

A: The whole period was laced with the environmental matters. The public perceived a lack of clear policy in the Corps on where to go or how to get there. We were challenged on a lot of legislation that we'd been using for years, like the modernization of the facilities on the Ohio River. Out of that came the Lock and Dam 26 issue. Some public works projects were being stopped, such as the Cross-Florida Barge Canal, as we were trying very hard to understand and survive the legal implications of the National Environmental Policy Act.

At the same time, the Office of Management and Budget [OMB] and others were proposing to the president of the United States that the function of the Chief of Engineers in the civil works arena be placed under the Department of the Interior, the Bureau of Reclamation, or be combined along with the Department of Agriculture, the Bureau of Reclamation, et cetera into a super cabinet under Secretary Earl Butz. Normally, the director of Civil Works, rather than the Chief of Engineers, was the spokesperson in dealing with and if necessary, speaking out against such changes. Of course, the risk there is that somebody might get fired. In that case it'd be the director of Civil Works.

Another underlying problem was there had been no public works authorization bill, or omnibus bill, for some years, and many projects which were waiting their turn were standing in the wings, and probably would not be put into an authorization bill until the National Environmental Policy Act constraints had been satisfied. Besides, there was not a great deal of enthusiasm to spend because the country was preoccupied with the oil shortage problem.

We had the Bicentennial, which was kind of fun and we'll come to that later, but it was another significant event with which we had to deal. The most significant legislative event besides NEPA was the Federal Water Pollution Control Acts amendments in 1972, called the Muskie bill. It was passed in the Senate without a declining vote, 93-0. Included were a couple of provisions which later became very important-Section 202 and Section 404, et

cetera. All of these attempted to delineate the authorities of the EPA and the Corps. The Corps was given responsibility for managing the permit program.

Q: The first Assistant Secretary of the Army for Civil Works was appointed while you were director of Civil Works, wasn't he?

A: Yes, a factor which would impact all civil and indirectly military activities was the announcement of the first Assistant Secretary of Civil Works, former congressman of California Victor Veysey. He was an engineer and as the first Assistant Secretary of Civil Works laid the groundwork for future assistant secretaries.

The Corps knew how to execute its mission. What we really needed and anticipated from the assistant secretary's office was political help and advice in the legislative process and support in senior levels of the Executive Branch. Secretary Veysey was valuable in those areas, however, he did establish certain operational micro-management procedures which subsequent assistant secretaries expanded upon and I contend became more counterproductive than helpful.

General Clarke asked me, before Mr. Veysey was appointed, what I thought of the idea of an Assistant Secretary of the Army for Civil Works (ASA/CW). I told him that I thought it would be helpful if the assistant secretary dealt with those elements of the government outside of the Corps, particularly legislative. General Clarke was not very enthusiastic, and I surmise that he did not believe that the ASAJCW role as I had enunciated would happen, and further that the assistant secretary would get into the operation of the Corps. Clarke was right. That, to me, is the most serious problem that the Assistant Secretary of the Army for Civil Works presents to the Corps of Engineers.

I don't know today, some 20 years later, how realistic my fear is concerning unnecessary limits on the Chief of Engineers, but my guess also is that the decision-making process in the civil works arena is less flexible than it used to be.

Q: How did OCE and the new ASA/CW work together?

A: As an officer, I had direct association with two ASA/CWs, Victor Veysey and Mike Blumenfeld. Communications with the ASA/CW were my responsibility as the director of Civil Works. As Chief, General Clarke dealt with the Secretary of the Army. General [William] Gribble was emphatically clear that he wanted to continue that arrangement. After all, the Chief's first responsibility is to the Army; and civil works activities, while of great importance, are only one facet of these duties.

Mr. Veysey's principal assistant was Jack Ford, who had been with the Corps for years. He came up through the Corps-very understanding and helpful in establishing the start-up information systems necessary for the Assistant Secretary of the Army for Civil Works to do his job. He wrote me, as director of Civil Works, his ideas on how the directorate could become organizationally and operationally effective in areas of interest to the assistant secretary. I appreciated his instructions but was well aware that a new voice was beginning to call shots in the public works arena.

I developed high regard for Mr. Veysey, and he and I worked well together from my perspective. One of his concerns was that members of the Corps of Engineers were bypassing him in dealing with the Legislative Branch and perhaps with higher elements of the Executive Branch.

On one occasion, Mr. Veysey accused me of influencing the Congress on a specific item of legislation. In that particular case we were innocent, but when I told him so, his reaction was clearly one of disbelief. Well, to me, that was a serious charge because I didn't say one thing when I had done another. I offered to quit.

Mike Blumenfeld replaced Veysey. Mike understood the requirements for the Corps to be a good public service organization. He was not attracted to operations. He was attracted to public understanding. He was a good writer and I think a fine secretary. He retained Jack Ford and the two made a good team.

Blumenfeld handled himself the way we thought his job should be handled, so much so that successor directors of Civil Works found him to be a good sounding board. Then in-house business which ordinarily we would not have shared was discussed openly in the assistant secretary's office.

That was fine, as long as Mike was there. He was replaced by Mr. William Gianelli, another engineer from California. He trumped everything Veysey did and, as I learned, really got into the inner workings of the Corps and slowed down the decision-making process. Mr. Gianelli was a strong secretary and achieved much. He would often bypass the Chief and the division engineers and go directly to a district. This brought the Chief more and more into the picture. As time went on, the Assistant Secretaries of the Army for Civil Works dealt more and more with the Chief of Engineers—a regrettable extension of lines of communication because of the subtle yet adverse impact on the Chief's attention to his other responsibilities.

I followed General Gribble's procedure. Unless major policy implications were involved, I just didn't think I should interfere with the director of Civil Works' business. We worked pretty hard at keeping things in perspective. If all the Assistant Secretaries of the Army for Civil Works had followed the Veysey and Blumenfeld leads, the situation today would have been different, and better.

I don't know what else to say about that. Veysey was helpful to the Corps for many major problems under Lock and Dam 26. He required us to do certain things which, from a political standpoint, were right because they gave him the knowledge and leverage.

I have spent a lot of your time on that subject, probably more than we should have, but as the first director to have the Assistant Secretary of the Army for Civil Works, it's probably important to set the groundwork.

If General Clarke asked me today whether I'd like to have one or not, I'm not sure what I'd tell him. I'd like to be able to say, "The intended purpose of the Assistant Secretary of the Army for Civil Works has been fulfilled perfectly." Then we'd all be happy. The nature of the beast is such that if you put an engineer in there, it's not going to happen. Seems to me they can't resist telling the *Chief* how to do his job, and most unfortunately, each new ASA/CW seems only to add to his predecessor's domain over the civil works program and weaken the Chief of Engineers' ability to attend to his primary role of supporting the Army's engineering needs.

Q: The Section 404 program was another new problem confronting the director of Civil Works, wasn't it?

A: I mentioned the Federal Water Pollution Control Act amendments. That, plus NEPA, put us face-to-face with EPA. Ruckelshaus had been followed by Judge Russell Train, who became the administrator. He was later followed by Doug Costle, with whom I had considerable dealings in the late 1970s. The area where we had the most direct interest was implementing the dredge and fill and the regulatory program for permits. This was truly plowing new

ground. As you may recall, I mentioned when I was in Savannah District as deputy district engineer, a couple of hours would take care of the permit applications for the month. Well, we went from a handful of permits to tens of thousands almost instantaneously.

Section 404 referred to "waters of the United States." It didn't say, "dredge *and* fill," it said, "dredge or fill." So the effect of that was to extend in Nebraska alone the miles of streams requiring permits tenfold. How to manage that program was a real challenge. How to tell the public what it meant was a problem. Brigadier General Ken McIntyre became the deputy director of Civil Works and managed these tasks.

He dealt in EPA with Chris Beck and Becky Hamner. Beck until recently was the chairman of one of the largest environmental companies in the United States. Hamner left EPA in 1992 as administrator of water and went to France with an international group. We worked days to draft a plan to implement the law. New regulations were published in the *Federal Register* and public hearings were conducted throughout the country. Ken McIntyre did a tremendous job in a series of public meetings by explaining what this was all about to the people.

Later, while the Corps' leadership was having a meeting out at the Kingman Building, Locke Mouton put out a notice saying every farmer would have to get a permit to plow ground. Lester Edelman, the chief counsel for the House Public Works, called me up and asked, "Jack, have you got a death wish over there?" He considered that was such a startling press release. It may have been startling, but it was sure effective, because soon thereafter the law was amended to exclude certain woodlands and farms.

This mission was such an expansive addition to the Corps' effort that we had difficulty coping. One day-must have been 1974—General Gribble called me and said he just wasn't happy with the 404 program, too many problems. He said it was my responsibility to do something about it. I agreed.

I called Manning Seltzer, the general counsel, and explained that the problem "is not our lack of ability to do things, it's our inability to understand better what we're supposed to do, so you and I need to address this."Manning came up with the brilliant idea of having a national meeting of all the district engineers and to review a series of preplanned case studies over a three-day conference. We did it in New Orleans, Louisiana.

General Heiberg, then Colonel Heiberg, district engineer, arranged for us to use the new Marriott Hotel on Canal Street. The meeting basically turned the Corps around. I say "turned the Corps around." That's a bad way to put it. It educated the Corps. I remember the case studies that came up. We don't need to take time with all of them here, but each was a landmark event.

Al Costanza, district engineer, Wilmington, North Carolina, presented the Bald Head Island issue. An applicant wanted a permit to build a dock to offload some equipment. Costanza concluded he was not going to issue a permit until he learned the use of the equipment. The applicant objected on the belief that all Al was required to do was to permit him to build a dock. Well, this became the "nose of the camel decision" because it turned out that the district did have a right to determine if the use of that dock was going to lead to environmental destruction.

There was the Block M case down in Miami. Years earlier somebody had started a fill on which to put a high-rise condominium as a retirement home. He'd stopped for some reason when the top of the land was just below the water. Later, after NEPA, he applied for a permit to continue the fill so he could erect the retirement home. The permit was denied because a

retirement home didn't have to be on the water. That decision held also and established the principle that a nonwater-essential building should be built someplace else.

After that meeting, the Corps did a much better job. I have to give General Gribble credit for putting on the heat, and I give Manning Seltzer credit for figuring out what to do. Mother Nature didn't seem too pleased, for as we finished our conference, a hurricane came in from off the Gulf and we had to leave quickly.

Q: So this was in 1975?

A: That was-no, I was still director. I'd say 1974, Gribble was the Chief. We should not overlook the fact that General Clarke had initiated the Environment Advisory Board years before, after NEPA was passed. The Environment Advisory Board idea showed superior foresight. The members were strong advocates of environmental management and were not necessarily friends of the Corps. The advisory board met with the Chief and the OCE staff. The director of Civil Works managed this group. Many new and constructive ideas flowed from these gatherings which worked well.

At the same time the members learned what the Corps was about. Some of the strongest supporters of the Corps came from members of that Environmental Advisory Board who began as untrusting, or at least skeptical, people.

The 404 program challenged everybody. The staff requirements were tremendous, as regulatory sections appeared in every district. We got no additional people although we complained to OMB.

Not only did the Corps and EPA have to prosecute the regulations, but we began to define the Corps' and EPA's responsibilities. That's still going on, but in the earlier days, EPA and the Corps people took the broad position that EPA would establish the policy while the Corps would execute it.

Another aspect of this program which I doubt is well understood today was the effect of this law on dredging. Dredging was a dirty word, a four-letter word. Dredging material was always "spoil," it wasn't "material." It was assumed to be polluted before anybody could prove it was or wasn't. General Frank Koisch, more than anyone else, perceived the complexity of this problem and obtained congressional authorization and directed the Dredge Material Study by the Waterways Experimental Station. It started about the time I arrived. Dredge disposal was not just a United States problem. It became an international issue. The studies were able to demonstrate that most dredged material was not polluted, and that which was polluted could be managed.

In the meantime, we went into this tremendously expensive and somewhat unnecessary program of diking off areas into which all the dredged material was placed and not allowed to escape. It was either that or put it upland where it couldn't get back into the water. We even considered such things as filling the strip mines out in Pennsylvania.

We published a little book called *Dredging Is* for *the Birds.* I think we did it in about a week. We selected pictures of birds having a great time on property that was built out of dredge material. Hart Mueller Island, a disposal site in the Chesapeake Bay, had been idled a few years earlier while waiting for the next dredge operation. During that delay this island had become a beautiful marshland full of birds. Then, when we wanted to go back and use it, we were not allowed to do so because now, all of a sudden, it was a wildlife and bird sanctuary.