

Colonel Max R. Janairo, Jr.

Chapter 19

RETURN TO JOHNSTOWN

"I feel a little apprehensive because anyone coming to Johnstown and talking about floods and flooding has a difficult task set for him," said Colonel Max R. Janairo. "It's a little like someone going to Punxsutawney and speaking as an authority on groundhogs."

Colonel Janairo, the Pittsburgh District Engineer, had traveled to Johnstown on March 30, 1977, to speak to the Rotary Club and urge their support for a sound floodplain management program.

"In early February, when I was invited to talk to you, the primary area of concern was the impending flood everyone was talking about," the Colonel continued. "This past severe winter had us primed with a potential for one of the worst flooding situations ever. But a few combinations clicked off just right and we're out of the jam posed by the severe icing and snowmelt."

January of 1977 had been the coldest month of record in the Pittsburgh Engineer District. About 450 miles of the Allegheny and 225 miles of the Monongahela and their major tributaries had been blocked by ice up to two feet thick. Navigation had slowed and stopped. Snow had accumulated in the upper Allegheny basin to an average depth of thirty-five inches, and the upper Monongahela basin had an average snow depth of sixteen inches. The potential was great for flooding of disastrous proportions in the headwaters district when the snow melted and the ice broke.

In early February, at the request of the Federal Disaster Assistance Administration (FDAA), the Pittsburgh District had mobilized for snow removal. Basically, the job was to open roads through drifts into isolated communities where supplies of food and fuel were dwindling and life was threatened. The District sent twenty-eight engineers to snow-buried communities in Pennsylvania and Ohio to help people survive the snow

and cold. By February 16, a total of 202 contracts for snow removal had been awarded.

While the snow removal work was underway, the District had braced for the spring thaw and the expected flooding. Sandbags were stockpiled and distributed to towns where the flood threat was greatest. Ten engineers went to critical areas in the Allegheny River basin to furnish technical assistance to communities and to study engineering solutions to the ice gorge problem. Breaking the ice with explosives, lasers, and hover craft was investigated, and eventually rejected.

Through meetings with community leaders and a media blitz, the District had kept the people of the headwaters district fully informed about the dangerous situation.

The snow began melting and the ice jams began to crunch downriver in late February. An eight-mile ice gorge broke on February 24 on Wheeling Creek. On February 25, ice floes began running down the Allegheny and the ice on the Youghiogheny began to move. The engineers manning the District's Emergency Operations Center became very anxious when the Weather Service predicted a heavy rain for February 26.

The predicted rain luckily passed north and west of Pittsburgh into Canada, ice moved on down the Ohio in a timely manner, serious flooding did not occur, and the headwaters district escaped a major disaster by a slim margin.

By the time Colonel Janairo spoke to the Johnstown Rotary Club at the end of March, trees were budding, the sun occasionally shining, and the worst winter in the history of the Pittsburgh Engineer District had ended. But the Colonel reminded the Rotarians that the Johnstown *Tribune-Democrat* had headlined a February 12 story about the threat of flooding with: "BE READY AND PRAY...AND CLEAR OUT THE BASEMENT." He said that headline was still good advice.

Colonel Janairo reviewed the history of flooding in Johnstown and the record of the Johnstown Flood Protection Project for the Rotary Club. He mentioned that the project had prevented major damages in the city during the floods caused by Tropical Storm HAZEL in October 1954 and Tropical Storm AGNES in June 1972, but warned that many parts of Cambria and Somerset Counties had no protection against flooding.

To counter publicity about flooding in Johnstown, civic leaders had widely advertised their city after 1943 as "Flood Free". Serious flooding had continued, however, outside the area protected by the channel improvement project.

The Pittsburgh Engineer District had completed a Flood Plain Information Study in 1974 for Cambria and Somerset Counties. Graphically illustrated with pictures showing the heights which flood waters could reach on buildings in and near Johnstown, the report provided a vivid description of the type and scope of damages that could be expected in the city. Engineers, however, could not predict just how soon such a flood would occur.

Colonel Janairo urged the Rotarians to support a program to regulate development in flood prone areas. "Johnstown has passed into a new area as far as flood planning is concerned," he continued. "The task now is not devising new protection for the city,

but regulating encroachment on the floodplain and in the areas of unavoidable flooding. The Corps of Engineers stands ready to assist you."

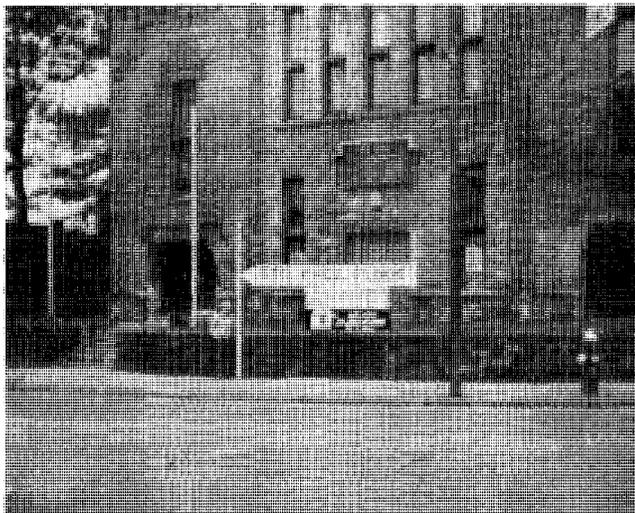
It Was the Strangest Thing Many people in Johnstown were enjoying the 1977 All-Star Baseball Game on television during the evening of July 19. At least, the National League fans were--the Nationals won 7 to 5. Some noticed that rain began while they were watching the game and were pleased; it had been a hot, dry summer. Drizzle continued until late evening, but fans who watched the news after the game heard no flood warning. Most switched off their sets and retired for the night.

National Weather Service meteorologists at Pittsburgh had begun tracking heavy thunderstorms moving from Lake Erie toward the southeast during the afternoon of July 19. Precipitation was intense but scattered. The meteorologists became concerned when their radar showed the storm system had stalled over Johnstown and the rains had persisted.

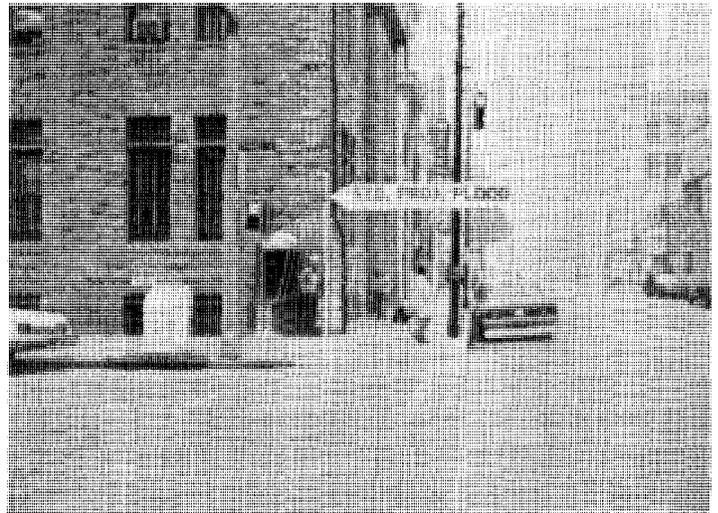
"It was like a conveyor belt," one private meteorologist said, "with thunderstorms developing on the northwest sector of the radar screen, moving to the southeast, stalling against a blocking high pressure center, and dumping their contents along the crest of the Appalachians."

Pittsburgh Engineer District Flood Plain Information Study

Johnstown Flood Museum



Johnstown City Hall



“It was the strangest thing,” said a man who was marooned in a Johnstown motel. “It started to rain at 9:00 P.M. and it was the hardest constant rain I have ever seen. It rained until 4:00 A.M. in the morning. There was solid thunder and lightning the whole time. It seems like the city was being bombed--like London in World Was II.”

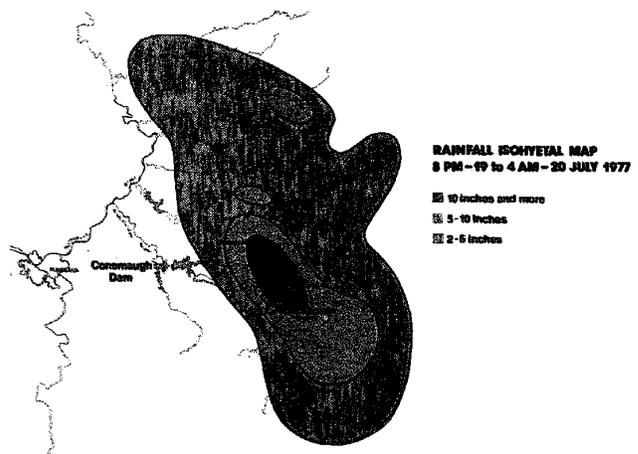
An official of the Pennsylvania Department of Environmental Resources said it was the worst rainstorm of which he had ever heard. “It just kept on raining and raining. I don’t think we’ve ever had a rainstorm like it.”

Intense July storms and floods are not rare in western Pennsylvania. Records were set by floods in July 1874, July 1888, and July 1942. Smethport at the head of the Allegheny River received an estimated thirty-five inches of rain in fifteen hours in July 1942, a record for the United States. Still, Johnstown had never had a storm of the intensity of that of July 1977 since the settlement of the Conemaugh River Basin.

More than twelve inches of rain fell on Johnstown in eight hours on the night of July 19-20, 1977. The runoff caused flooding of all types except tidal in the Johnstown vicinity, generating flood flows that far surpassed previous records in the Conemaugh Basin and resulting in the failure of seven dams.

The Flood A Civil Preparedness official at Johnstown said: “We are getting flooded by streams that I never heard of!” Innocuous brooks had become high velocity torrents that gouged out streambeds, carving the mountain sides as a plow cuts a new field. Those streams washed rocks, boulders, trees, homes and vehicles down the mountain sides into communities on the hill sides and in the floodplains.

Flood debris lodged against culverts, bridges, and other structures, damming streamflow, causing backwater flooding and sewer backup, and diverting the flow down highways and streets. When the structures gave way or the streams gouged a new channel, the debris moved on to ram another structure and repeated the process. Over thirty railroad



cars were washed into the Little Conemaugh River and some were carried two miles downstream where they lodged under a railroad bridge crossing the Conemaugh River.

Debris, mud, and water dashed into Johnstown. At the Point, where Stony Creek and the Little Conemaugh River form the Conemaugh River, the flood ran up to six feet deep in the business district. It inundated every riverside community along the Conemaugh below Johnstown until it reached Conemaugh Dam, 44.5 miles downstream.

“This flood came from the top down” said Johnstown Mayor Herbert Pfuhl. “It was not a flood of river water, it was a flood of rain water. It was runoff.”

The flood began along the crest of the ridge dividing the Conemaugh and Mahoning Creek watersheds from the Susquehanna River Basin. Major flood damages occurred in eight Pennsylvania Counties: in Somerset, Westmoreland, Cambria, Indiana, and Jefferson Counties west of the Appalachian divide, and in Clearfield, Blair, and Bedford counties east of the divide.



The media devoted most of its attention to the damages at Johnstown, but damages north of Johnstown were proportionately as great, though affecting fewer people. The northern edge of the storm system caused damages in Sandy Lick Creek Basin near Reynoldsville and Brookville. Big Run, Sykesville, Sportsburg, and unprotected areas in the Upper Mahoning Creek Basin experienced significant damages. The local flood protection project in Big Run was overtopped, but the Punxsutawney project performed satisfactorily and prevented some \$1.8 million in damages. Water along the upper reaches of Crooked Creek reached a stage 2.5 feet higher than 1972 floods of record, and several small towns were inundated.

Flood depths along Blacklick Creek and its major tributary Two Lick Creek were formidable. Homer City, Clymer, Nanty Glo, Vintondale, Dilltown, and Josephine on Blacklick Creek and its tributaries suffered very heavy damages. The estimated flow of Blacklick Creek at Josephine on July 20 reached 55,000 cubic feet per second, more than *double* the previous maximum recorded in June 1972.

Damages Near Johnstown At Portage in the Little Conemaugh River Basin upstream of Johnstown, flood water and debris took out several bridges, lodging against others with low clearance to dam part of the flow and flood parts of Portage to

a depth of four feet. Wilmore was flooded by the North Branch of the Little Conemaugh to a five foot depth.

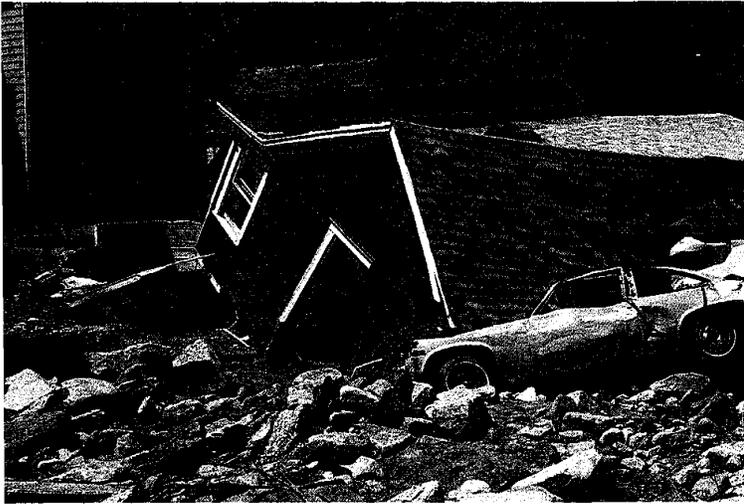
On South Fork of the Little Conemaugh, which flows through the gap in the dam that failed in 1889, water averaged 3.5 feet deep in Sidman, tearing away buildings located nearest the stream. More than half the homes at Creslo were flooded and a bridge destroyed. Debris collected against bridges near St. Michael, diverting flow into nearby towns. Swift currents carried automobiles down river.

Further south, in the Stony Creek Basin, Little Paint Creek, which drops 880 feet in its short course, flooded Elkton and a coal mine, sending automobiles and steel mine cars spinning down into the Village of Scalp Level. Homes and a church there were ripped asunder and at least three lives taken. A state-built flood protection project at Windber on main Paint Creek was overwhelmed, and the water ran seven feet deep in Windber, tearing out a major railroad bridge and inundating homes and businesses.

Heavy damages also occurred at Seanor and Hillsboro on Shade Creek and at communities clustered along the main stem of Stony Creek as it snakes to and through Johnstown.

Just after daybreak on July 20, the Little Conemaugh River and Stony Creek at their mouths surged to flows greatly exceeding the records set in 1936. But many parts of Johnstown were already under water when the record flows from the Little Conemaugh and Stony Creek arrived. Streams such as Peggys Run, Sams Run, Solomon Run, and Laurel Run, that plunge precipitously off the hillsides into Johnstown and its suburbs, had become killers.

Peggys Run, which drains a watershed of no more than six square miles, was little more than five feet wide where it cascaded down into Franklin Borough and the Little Conemaugh River on the Johnstown northside. On the morning of July 20, it washed out a gorge fifty to sixty feet wide in places,



Solomon Run Valley

demolished a small dam near its mouth, and rushed into a steel plant and homes located far enough up the hillside to be safe from Little Conemaugh River floods.

There was no record that Sams Run, which falls about 1,000 feet in its course through the Lorain, Geistown, Stonycreek, and Moxham communities clustered on the Johnstown east side, had ever before left its banks. Twelve inches of rain in eight hours changed that.

Sams Run picked up debris and slammed it against bridges and culverts damming its own course. Each time, its flow moved down nearby streets, inundating and washing out houses until pressures increased and the flood bypassed the bridges, releasing the debris to strike the next bridge downstream until Sams Run had cleared a path to Stony Creek.

Solomon Run, a four-mile long stream that falls about a thousand feet to its mouth in Hornerstown, was also a quiet little run that had never flooded. Its valley had filled with homes, schools, businesses, and apartments. It became a river on July 20, tearing away all in its path. It cut out half of the road fill of State Route 56 leading into Johnstown, destroyed countless homes along Solomon Street, and sliced off parts of houses and apartment buildings.

One family marooned that night in their home in Solomon Run, watched the stream carry screaming people in floating automobiles to their deaths. They saw fires break out in homes across the street where the fire department could do nothing, and they concluded they were witnessing the end of the world.



Laurel Run Dam

On Laurel Run in West Taylor Township on the Johnstown west side, the flood flow was augmented by the failure of a water supply dam containing 101 million gallons of water. Rainfall over Laurel Run that night totalled 11.87 inches, greater than the previous record for an entire month--June 1972 during AGNES. Laurel Run Dam failed without warning about 3:00 A.M. on July 20, sending water cascading through Pole Hollow and destroying about 80% of the homes in the Village of Tanneryville. Forty-one people lost their lives.

One strong lad escaped from his collapsed Tanneryville home, grabbed a log and rode the flood some 15 miles down the Run and the Conemaugh River, then swam to safety. His dog was found two days later still perched in a tree 17 feet from the ground. His mother and two sisters perished in the collapse of their home.

If precipitation had been less, or its fall spread over a longer time, the Corps' flood protection project might have spared Johnstown the low land floodplain inundation that occurred, but it could not have prevented the damages caused by such streams as Sams and Solomon Run. Water entered the project channels from all directions. The rivers at the Point rose quickly from a dry weather stage of about a foot to a thirty-five foot stage, cresting at 8:00 A.M. at a flow estimated to be 44% greater than the 1936 flow of record.

The channel project did reduce the flood crest at the Johnstown Point by eleven feet, thereby preventing water from entering the second and third stories of buildings near the Point. The damages that might have occurred if floating debris had impacted



against buildings at second and third stories can be visualized. Property damages would have been unsurpassed and loss of life might have rivaled the 2,209 deaths resulting from the 1889 flood. As it was, the final tally was 77 dead and 10 reported missing.

The preliminary estimate of damages in Johnstown alone was \$117 million, and the estimate of damages that would have occurred without the channel project was about four times those experienced. The Corps' Johnstown project, even overtopped, was therefore credited with preventing an estimated \$325 million in damages.

The Conemaugh River went over its banks for 95% of its length between Johnstown and the head of Conemaugh Lake at Blairsville. It destroyed a major bridge at Huff along with that village. It submerged Robindale, leaving that town merely three blocks of empty shells. It crested at Seward 5.25 feet higher than the 1936 record.

About 100 trailers were lost in mobile home parks at New Florence and Seward. The trailers filled and floated away with families riding the roof tops. Some people climbed from their trailers to refuge in

trees, from which they were rescued hours later by helicopters.

Carrying pieces of frame buildings, wrecked trailers, furnishings, flotsam of every variety, and several bodies, the flood entered Conemaugh Lake and pushed the debris down the lake to hang against the trash boom a few hundred feet upstream of Conemaugh Dam. There the Johnstown flood of 1977 stopped.

Conemaugh Dam held it all, reducing the flood crest on the Kiskiminetas River and preventing about \$16.4 million in damages at riverside communities along the Kiskiminetas below the dam and along the Allegheny River from Natrona to Pittsburgh.

The freak nature of the flood was underlined by data recorded at Conemaugh Dam. The flood rushed into Conemaugh Lake at a peak rate nearly double the previous record, set during AGNES in June 1972. But the flood receded just as quickly, filling the lake to only 64% capacity and not at all taxing the capabilities of the project.

In the basins to the north, adjacent to the Conemaugh Basin, Crooked Creek Lake crested at 19% full and Mahoning Creek Lake filled to 41% of its flood control capacity. No other flood control reservoir in the Pittsburgh Engineer District, not even Loyalhanna Lake, which is just seven miles from Conemaugh Lake, had a significant rise in its pool.

Emergency Operations Not even the people in Johnstown at first recognized the full scope of the disaster. The police and emergency network, located on the first floor of the City Safety Building, was flooded out. The staff of the Johnstown *Tribune-Democrat*, marooned on the second floor of their downtown Johnstown office building without telephone service, put out an issue on the afternoon of July 20 listing only two dead and five missing. No one knew what had happened at Tanneryville on Laurel Run, merely four miles from the central Johnstown business district, for a day after the disaster.

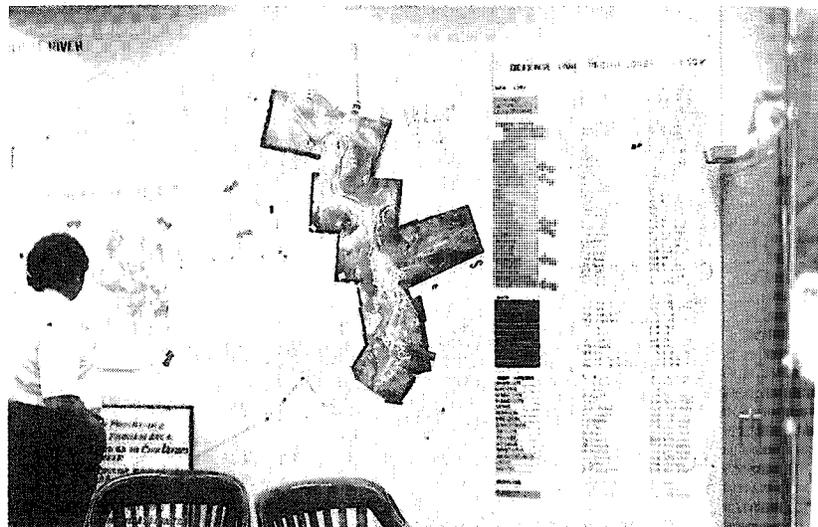
Because communications within the disaster area to the outside were largely disrupted by the floods, the Pittsburgh Engineer District Office had only scattered reports of minor flooding when it opened on the morning of July 20. District Engineer Max Janairo was out of the office on a motor tour of the southern sector of the District, and C. Dayle Miller, the Emergency Operations Planner, was on vacation.

Lieutenant Colonel Paul W. Tomiczek, Deputy District Engineer, and Jacque Minnotte, Chief of Engineering, considering the meager information available, concluded that a disaster had occurred and opened the District Emergency Operations Center at 9:00 A.M. They selected George Cingle, Jr., Chief of Planning, for service as Emergency Coordinator pending the return of Dayle Miller.

As a result of its experiences during AGNES, the Pittsburgh District had installed an Emergency Operations Center fully equipped with communications, working space, maps, and graphic wall displays. Maps, necessary gear, and the familiar white hard-hat and red jacket uniform labeled "Emergency Operations" were conveniently stored in the Center for supply of disaster survey teams.

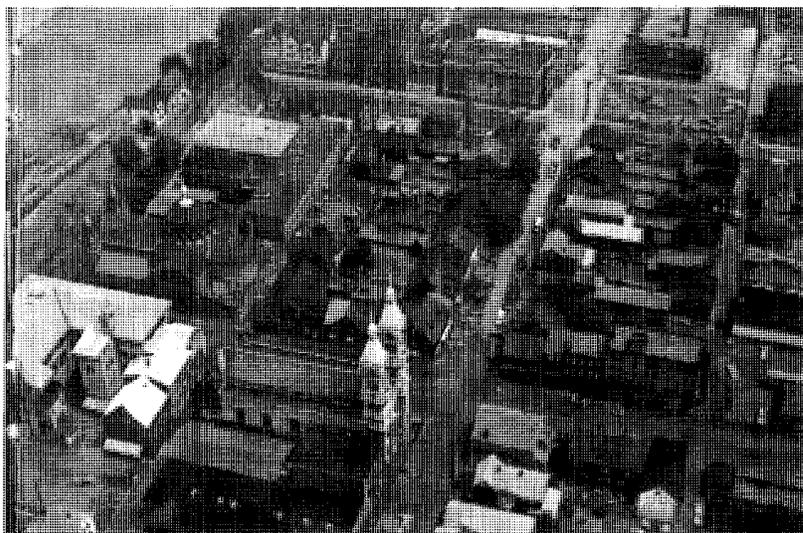
Eugene Armocida, Chief of Hydrology and Hydraulics, sent teams toward the Mahoning Creek, Crooked Creek, and Blacklick Creek Basins, and toward Johnstown to check the extent of flooding and to collect hydrologic data. George Cingle sent Jack Goga and Joe Harchar from Planning Branch for a firsthand look at the Johnstown situation.

When Goga and Harchar arrived outside Johnstown and saw the erosion along the highways, they recognized the seriousness of the situation and located a phone to pass the grim news on to the District office. They then boarded a National Guard truck, went into the city and became involved in the rescue evacuation effort.



Emergency Operations Center - Pittsburgh





Scalp Level

Johnstown



Captain Glenn Lloyd and Paul Yeloushan of the Hydrology and Hydraulics Branch, traveling in a van with high road clearance, drove into Johnstown by State Route 53, negotiating by washouts and over trees and rubble. Water was several feet deep in town. Police, firemen, National Guardsmen, and anyone with a semblance of authority performing rescue work had closed the streets to traffic. Mayor Pfuhl had given the order to shoot looters on sight.

Captain Lloyd's military uniform and the red emergency operations jacket were passports through security check points, however, and the team drove through mud and water to the Public Safety Building, where Captain Lloyd waded in hip boots into the building to meet with the police chief. The police told Captain Lloyd that damages were high, several people had drowned, and the area was without telephone, power, or water service. The team returned to a phone outside Johnstown, informed the District Office a major catastrophe was at hand, and then boarded a rescue helicopter for aerial reconnaissance. Hank Edwardo and Dave Turcsanyi accompanied Mayor Herbert Pfuhl on another helicopter flight to assess damages.

By late afternoon on July 21, the District had 22 people in, or on the way to, the disaster area. Ralph Weise, Jim Mershimer, Frank Bailey, George Gimera, Captain Mike Carr, Barbara Wilson Lengyel, and Joe Butchko opened a field emergency operations office at the Johnstown National Guard Armory.

With communications largely destroyed, the immediate rescue evacuation and body recovery work was handled by volunteers, local officials and National Guard units. The first National Guard unit to arrive at Johnstown from outside the disaster area was the 876th Engineer Battalion of the Pennsylvania National Guard commanded by Colonel Robert Irvin. That unit reached Johnstown near midnight on July 20.

The Army Engineer troops sent to Johnstown in 1889 had aided with street security patrol, debris



Emergency Operations Center - Johnstown

clearance, and construction of temporary bridges to replace those washed out by the flood. The 876th Engineers performed similar work in July 1977, maintaining street patrols, clearing debris from the streets, and finally constructing Bailey Bridges over the Conemaugh River at Huff and over Two Lick Creek at Homer City.

News of the failure of the Laurel Run Dam and preliminary damage estimates made the full scope of the disaster apparent by the morning of July 21. That day, District Engineer Janairo and the Ohio River Division Engineer, General E. R. Heiberg, III, toured the area by helicopter and landed to confer with public officials. Governor Milton Shapp, Senators H. John Heinz and Richard Schweiker flew to Washington with video tapes of the destruction to show the White House staff. President Jimmy Carter quickly declared Cambria, Bedford, Clearfield, Indiana, Jefferson, Somerset, and Westmoreland Counties a Federal Disaster Area. Blair County was added on July 29.

The Pittsburgh District shipped pumps and contracted for delivery of electric wire and plastic pipe for emergency restoration of the Johnstown water supply. Water service was restored, but the supply was contaminated. For more than a month after the flood, potable water was delivered in National Guard tank trucks and plastic bottles.

The Johnstown channel project is one of a handful in the United States which are operated and maintained by the Corps of Engineers. Fortunately, a contracting firm which had recently completed a clearance contract on the project was readily available for debris clearance work. Ralph Weise, with a contractor's representative and men from the Federal Disaster Assistance Administration,

walked up Laurel Run into Tanneryville on July 21 and discussed the emergency with local officials. The contractor was engaged on the spot to open the mouth of Laurel Run and assist in body recovery.

After news of the Laurel Run Dam failure became public, rumors about the safety of other major dams near Johnstown circulated. Oran K. Henderson, Director of the Pennsylvania State Council of Civil Preparedness, requested that the Pittsburgh Engineer District cooperate with Pennsylvania Department of Environmental Resources (PDER) in swift inspection of dams in the vicinity to allay public concern.

Congressman John Murtha of Johnstown made a helicopter available for dam inspections, and Stuart Long of the Pittsburgh District joined the PDER engineer to perform the mission. Aerial inspection followed by ground inspections showed that no major dam in the disaster area was in imminent danger of collapse. Of the sixty-seven dams that were examined, seven had totally failed and four had suffered major damages. Laurel Run Dam was by far the largest of the dams that had failed.

On July 22, the Pittsburgh District relocated its operations center from the National Guard Armory to space in the Greater Johnstown Area Vocational-Technical School building in Richland Township and established a radio communication network. With the arrival of Richard Sanderson, Federal Disaster Assistance Coordinator, and the assignment of missions to the Corps by the FDAA, the emergency operations phase ended and disaster recovery work began.

Moving It Out The first debris clearance work assigned to the Corps was in the devastated Laurel

Run and Solomon Run basins. All of Johnstown was later added to the Corps debris removal job at the request of Mayor Herbert Pfuhl.

Because most of the food and drugs contaminated by the flood or spoiled for lack of refrigeration posed a serious health threat, FDAA directed the Corps to remove those materials to secure disposal sites. The Corps awarded contracts for that work on July 26. Five contractors removed over eight million pounds of contaminated consumables from Johnstown in less than a week.

Robert Conley, Chief of Procurement and Supply Division, Ralph Mucci of the Specifications and Estimates Section, Design Branch, and other specialists joined Ralph Weise in the engineering-inspection staff at Johnstown in drawing up and awarding contracts. They divided Johnstown into sectors, estimated the amount of debris in each sector, and prepared contract specifications and bid packages.

The contract award process was systematized. Bid packages for various sectors were prepared each day. Contractors submitted their proposals each morning and by early afternoon learned who among them was the successful bidder. Contractors appeared at Johnstown from as far away as Louisiana, Alabama, Kentucky, Arkansas, Colorado, but local contractors were given preference. Because the situation was urgent, the contractors were allowed very limited time to begin and complete their jobs. If they did not begin on time and proceed on schedule, their contracts were cancelled and the jobs awarded to other contractors.

"Boulders, cars, trees, you name it, we're moving it out," one Corps inspector told a reporter. Clad in their red and white uniforms, the inspectors spent their days, from dawn to dusk, standing ankle deep in slime and wearing face masks to filter the dust swirling up behind the heavy equipment.

Johnstown became by the end of July a massive traffic jam of emergency vehicles, local traffic, and construction equipment. Bulldozers and front end



loaders scraped several feet of mud and debris from streets and piled it into trucks. They paraded bumper to bumper to the disposal sites.

As soon as the streets were cleared, home owners tossed water damaged furniture out onto the streets for removal, followed by piles of warped paneling and wall plaster, followed by a third debris wave of slime shovelled out of cellars. Contractors cleared the same areas several times.

At the peak on August 5, contractors had 238 personnel and 178 equipment units at work. By the same date, Pittsburgh District had 115 people committed to the recovery mission. Army engineers poured into the area from the District Office and from Corps installations at Nashville, Louisville, Huntington, Savannah, Baltimore, Philadelphia, Mobile, and San Francisco. The District Office was stripped of tables, chairs, typewriters, and equipment to furnish the disaster offices and supply the field personnel with necessary gear.

By mid-August, the District had supervised the removal of approximately 300,000 cubic yards of mud and flood debris in Johnstown alone. At the request of the FDAA, the District also contracted for the demolition and removal of 62 flood damaged buildings.

Under its responsibility for the maintenance of flood protection projects, the District also contracted for clearing the Johnstown project channels of mud and for removal of the mass of debris piled against the trashboom upstream of Conemaugh Dam. By alternately raising and lowering the pool of Conemaugh Lake, the debris at the trashboom was beached for removal by a contractor. Three bodies were recovered from the debris in the trashboom area, and the work proceeded very cautiously.

Housing the Refugees The Department of Housing and Urban Development (HUD) requested the Corps on July 30 to begin the acquisition of real estate and the design and construction of mobile home parks at sites selected by HUD to house some of the nearly 5,000 people forced to evacuate their homes. The public had frequently criticized the Federal Government during previous disaster recovery operations for tardy provision of housing for the homeless, so that work at Johnstown was rushed at a frantic pace to get people quickly out of the refugee centers.

Under supervision of Jim Purdy of the District Planning Branch, Corps personnel established a mobile home site office in the East Hills Elementary

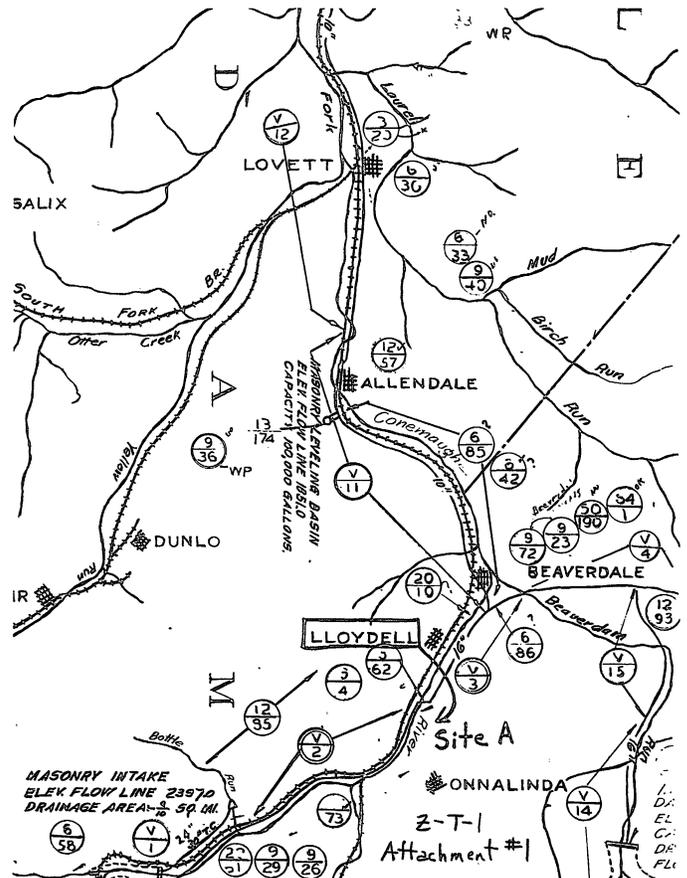
School at Johnstown. Survey teams developed maps and layouts of potential sites even before the real estate was acquired. John Fadool of the Real Estate Division negotiated with land owners for the park sites chosen by HUD, while the designs for trailer pads, utility services, and road layouts were being prepared.

Contracts for the construction for the first mobile home parks were awarded on August 8. They carried stiff penalties for late completion with offsetting bonuses for early delivery. By late August, a steady stream of trailers began moving into place on sites that two weeks before had merely been open fields. At the end of September, contracts had been awarded and most completed for the construction of 18 mobile home parks, with space for 970 trailers. There was little criticism of the Corps mobile housing mission, except from people who did not understand that new water, sewer, and power lines had to be placed underground, in some instances by blasting trenches through rock, before the trailers could be occupied.

Damage Survey Reports At places where direct Federal disaster assistance was not provided, local governments undertook work on their own and requested Federal reimbursement for the costs.



U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT DAMAGE SURVEY REPORT		3. DECLARATION NO. FDDA 537			
FEDERAL DISASTER ASSISTANCE ADMINISTRATION (Use instructions on reverse of this report)		4. INSPECTION DATE 28 Sept. 1977			
1. TO REGION 3 FEDERAL DISASTER ASSISTANCE ADMINISTRATION (FDDA)		5. WORK ACCOMPLISHED BY <input checked="" type="checkbox"/> CONTRACT <input type="checkbox"/> FORCE ACCOUNT			
2. APPLICANT (State Agency, County, City, etc.) Highland Sewer and Water Auth (Cambria Co)		6. PERCENTAGE OF WORK COMPLETED TO DATE 0%			
7. WORK CATEGORY (F.X. Appendix B) PA NO Z-T-1		ITEM NO			
8. DAMAGED FACILITIES (Location, identification and description) Lloydell Intake approximately .6 mi south of Route 869 in Beaverdale, Pa. (Refer to attached map) Site A					
9. DESCRIPTION OF DAMAGE High water deposited debris in the basin. The fill around the left abutment washed out and the spillway apron was undercut.					
10. SCOPE OF PROPOSED WORK Clean the debris out of the reservoir. 120' x 60' x 5' = 1333 cu yds. Fill the left abutment area with good fill material. 30' x 15' x 6' = 100 cu yds. Pour concrete under the spillway apron to form a new foundation. 20' x 5' x 5' = 20 cu yds.					
11. ESTIMATED COST OF PROPOSED WORK					
QUANTITY (a)	UNIT (b)	MATERIAL AND/OR DESCRIPTION (c)	UNIT PRICE (d)	COST (e) (d)(a)	
40	Hrs	Dragline	\$39.00	1,560.00	
40	Hrs	Operator	13.00	520.00	
24	Hrs	D-8 Digger	41.00	984.00	
24	Hrs	Operator	13.00	312.00	
20	C.Y.	Concrete	150.00	3,000.00	
16	Hrs	Chain Saws	2.00	32.00	
100	C.Y.	Fill	2.00	200.00	
16	Hrs	8 1/2 Dump Truck	18.00	288.00	
16	Hrs	Operator	10.00	160.00	
60	Hrs	Labor	8.00	480.00	
12. EXISTING INSURANCE (Type)			AMOUNT	TOTAL	
None			\$	\$ 7,536.00	
13. RECOMMENDATION BY FEDERAL INSPECTOR (Signature Agency date)				Eligible	ATTACHMENTS
Thomas C. Clark OLC 28 Sept 1977				YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	1120 #1
14. CONCURRENCE IN REPORT BY STATE INSPECTOR (Signature Agency date)				YES <input type="checkbox"/> NO <input type="checkbox"/>	Sketch #2
Dennis Shankley D.E.R. 9/28/77				YES <input type="checkbox"/> NO <input type="checkbox"/>	
15. CONCURRENCE IN REPORT BY LOCAL REPRESENTATIVE (Signature Agency date)				YES <input type="checkbox"/> NO <input type="checkbox"/>	
W. J. Clark C.E. 9/28-77				YES <input type="checkbox"/> NO <input type="checkbox"/>	
16. FEDERAL REVIEW (Signature Agency date)				FDDA REVIEW (Initials and date)	
W. J. Clark C.E. 10/11/77					



Typical damage survey report

Federal agencies prepared damage survey reports, estimating the costs of damage repairs and restoration, before the work began and inspected the work after it was completed. The Federal Disaster Assistance Administration assigned the Corps of Engineers responsibility for damage survey reports in several categories on July 25. The Pittsburgh District established a field office for the work on the campus of the State University at Indiana, Pennsylvania, and on July 26 began writing damage survey reports. Armando C. Lardieri headed the damage survey mission, with Wendell Fry serving as field supervisor of the personnel assigned to the task.

At the peak of the damage survey work, fifteen Corps personnel, teamed with representatives of the Pennsylvania Department of Environmental Resources, were in the field. They traveled constantly back and forth across the eight county disaster area to help local authorities assess damages, plan repairs and restoration, and identify the work eligible for Federal assistance.

By September 9, when the office at Indiana closed, 771 survey reports had been written for damages totalling \$17.2 million. Personnel working out of the District Office continued to prepare damage survey reports at local request for months after the office at Indiana closed. It was expected that inspection of

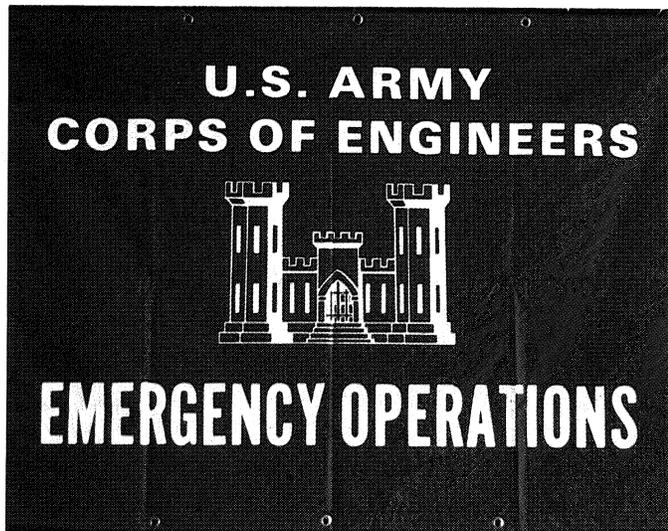
the completed repairs would continue until some time in 1979.

The Corps Cares The public has often criticized the Federal Government and the Corps of Engineers for the slow pace of disaster recovery work. Few complaints of that nature were heard after the Johnstown flood of 1977. Most officials admitted recovery work was running ahead of schedule, and Johnstown mayor, Herbert Pfuhl, announced that the Federal personnel engaged in recovery work were "super, super".

Ralph Weise who headed the Corps office at Johnstown attributed the swift recovery job to the attitude of the emergency operations staff. "I've never been associated with a finer group of people," he said. "I had to actually get nasty with some of them to make them get some rest."

The engineers at Johnstown worked twelve to fifteen hours daily. At night many of them shared quarters with flood refugees on the University of Pittsburgh at Johnstown campus. There they bunked 5 and 6 to an apartment, some on floors in sleeping bags, without potable water, ice, or adequate bathing facilities.

Despite personal discomforts, the Engineers stayed on the job until finished, and they carried out



their mission with compassion. One inspector, for instance, noticed a cabinet filled with china in a Solomon Run apartment building without walls where all else had been destroyed. He took the time to locate the former tenant and helped move the cabinet to safety. It was the only item the lady saved from the flood.

The job did have its lighter moments. One Corps inspector answered a call from a lady who demanded that the Corps come and get the garbage out of her house. He asked if the material was flood debris. "No," the lady responded, "just the sort that comes out of my kitchen every day."

Mrs. Mary Strayer of Johnstown, whose telephone number resembled that of the Corps office, received many calls for the Corps and became a volunteer answering service, relaying calls and important messages. Mrs. Frank Bailey, whose husband worked in the Corps office, purchased a box of chocolates, which the District Engineer personally delivered to Mrs. Strayer along with the thanks of the Corps.

Bleary eyed from lack of sleep and with nerves frayed by the continual pressures to get the job done,



the Army Engineers at Johnstown still managed to maintain a positive attitude. "Our men were good emissaries," recalled Ralph Weise at the end of the disaster mission. "I don't know of one person we had down there that didn't go out of his or her way to prove we mean what we say...the Corps Cares."

The Johnstown Flood Problem The flood of 1977 threw 20,000 people temporarily out of work. Some of that unemployment became permanent. Bethlehem Steel, an employer of about 11,000, declared it would not reopen some of its Johnstown facilities, cutting employment back by 3,500 jobs. The Penn Traffic Department Store in downtown Johnstown did not reopen; another 400 jobs lost.

Bill Glosser announced, however, that the Glosser Department Store would reopen. "What happened here last month," he said, "was a freak; it could have happened anywhere. The flood control walls they built here after 1936 did what they were supposed to do."

Like Glosser, the public in general recognized that the Corps channel improvement project had performed as designed and had simply been overwhelmed by the volume of water entering the channels in too short a period. Jacquie Minnotte of the Pittsburgh District put it in a nutshell: "We control 30 percent and Mother Nature controls 70 percent."

Several people live in Johnstown who have survived the floods of 1889, 1936, 1977, and the lesser floods in between. Daise Heslop was born in 1883 and lost her father and grandmother in the 1889 flood. An unknown rescuer carried her to safety. In 1936 and 1977, she escaped without loss except separation from her family. She said she did not plan to relocate, floods or no floods, because she loved the city.

The axiom in Johnstown in 1977 was that the city is like the steel it produces: the harder it is hammered, the tougher it gets.

