

The Clarion-Ledger

SPECIAL SECTION

A FLOOD OF DEVELOPMENT

IN HARM'S WAY

■ LAKELAND DRIVE: Easter Flood of 1979



File photo/The Clarion-Ledger

By Bruce Reid/The Clarion-Ledger

Jackson's Easter Flood of 1979 should have been a watery wake-up call for those building in the flood plain. In many ways, though, the Pearl River's power has been ignored or forgotten.

In the 20 years since the flood swamped the greater Jackson area like never before, hundreds of new homes and businesses have been put in harm's way.

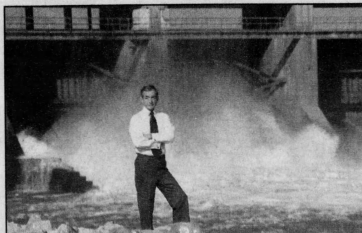
Damage from a similar flood today would be even greater. The question now: Will it take another big flood before the lesson is learned?

■ LAKELAND DRIVE: Present day



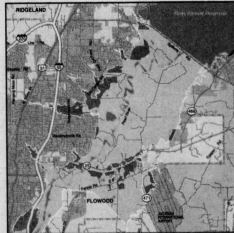
J.D. Schwalm/The Clarion-Ledger

INSIDE



The devastation of 1979's Easter Flood is a lesson for Jackson today, say former mayor Dale Danks and others.

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Metropolitan growth has spread into the potential path of future flooding.

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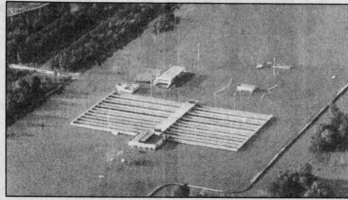
The Pearl is an urban river full of wildlife, including ringed sawback turtles, and its course should be respected, say biologists.

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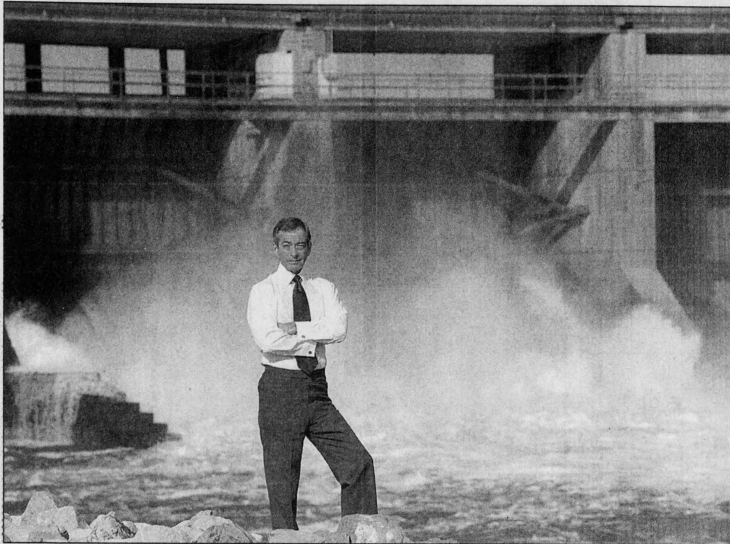
IN HARM'S WAY

Innocence washes away in flood of '79

The sewage treatment plant serving the Jackson area was swamped during the Easter Flood of 1979. As a result, the plant pumped raw waste into the Pearl River and into the floodwaters. The plant is vulnerable to a similar flood today.



File Photo: The Clarion-Ledger



Former Jackson Mayor Dale Danks, photographed recently, had his hands full when floodwaters pushing down the Pearl River began to wreak havoc on the city in 1979. The river's rise was difficult to predict. The Ross Barnett Reservoir, its spillway shown in the background, wasn't designed to contain flooding.

J.D. Schwalm/The Clarion-Ledger



File Photo: The Clarion-Ledger

In 1979, floodwaters covered I-55 at Fortification Street.



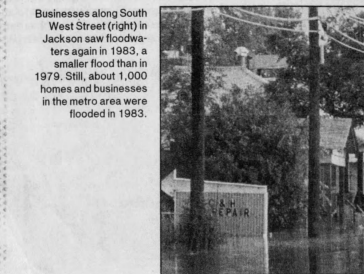
File Photo: The Clarion-Ledger

Parchman prisoners filled sandbags downtown in 1979.



File Photo: The Clarion-Ledger

Butch Cochran of Vicksburg paddles a boat on Lamar Street in 1979.



File Photo: The Clarion-Ledger

Businesses along South West Street (right) in Jackson saw floodwaters again in 1983, a smaller flood than in 1979. Still, about 1,000 homes and businesses in the metro area were flooded in 1983.

By Bruce Reid
Clarion-Ledger Staff Writer

It had to happen. A predictable natural event, a Pearl River flood at Jackson, would turn uglier than anyone could imagine.

The pot had been simmering for more than a century. It began reaching the boiling point after the post-war baby boom had taken hold, as the city began to grow outward from its core.

All the while, more and more people were moving closer to the river, often to buy their first homes and start raising families.

How could so few of them know what was so inevitable? "In the back of your mind, you say, 'It can't happen to me or it won't happen to me,'" said Thomas Cochran. The resident of Sedgwick Drive in northeast Jackson still is paying off the \$35,000 he borrowed in a federal disaster loan to rebuild after the Easter Flood of 1979.

Some of them didn't even know where the river was — and that their homes were in the path of its perennial swell across what were once dense forests that extended for two miles to natural bluffs.

Flooding was nothing new in Jackson. Big floods had hit the city in 1902 and 1961. Downtown was literally built on top of Town Creek, a Pearl River tributary that regularly would swamp parts of the business district. More than a dozen other tributaries laced through the burgeoning metropolitan region.

A new reservoir had been built just before the 1961 flood, but it was never designed to provide much flood control; water levels were kept high all year to supply drinking water and provide recreation.

A partial levee system, completed by federal engineers in 1968, had further constricted the river's natural spread, increasing water levels in unprotected areas.

The U.S. Army Corps of Engineers had recognized the danger of the region's unregulated flood plain development, according to one federal report. Still, in the early 1970s, the corps asked Congress for permission to build another upstream dam and anticipated future flood plain development to help justify it.

The dam wasn't built, but risky development continued, especially in places such as northeast Jackson and along Lakealand Drive.

In 1979, the ugliness came swiftly. It was Good Friday, no less, April 13, Easter was two days away.

Nearly 20 inches of rain had fallen upstream near Louisville, and it was barreling on the capital.

Jackson already had been pummeled by rain and wind. Low-lying areas were seeing flash floods.

About 2 p.m. that Friday, Dale Danks, Jackson's young mayor, got a call at home from his emergency chief. Danks had worked out and was shaving. People from the Corps of Engineers had called a meeting about imminent flooding on the Pearl.

"I said, 'Why?' The sun was shining and it was a beautiful day. ... I had never experienced a flood in my life and I had a lot of other problems to deal with."

Some of Danks' constituents were in disbelief, too. "The initial reaction of the public was that we were overreacting," Danks said.

When it set in, the news slammed the city like a two-by-four across the face.

The river would rise more quickly than federal hydrologists could predict. It would reach 43.28 feet by April 17, or more than 15 feet above flood stage.

"In one meeting, I will never forget it, one of the corps members used the term 'wipe out.' I thought my city was going to be wiped out," Danks said. The corps official meant the city might lose its drinking-water system, but it didn't.

The river rose quickly, but not so much that people were trapped. "That's the one thing I'm proud of. I didn't lose a single soul during that flood."

But Jackson, Flowood and other

communities would lose a lot of other things. More than 6,000 people were forced from their homes, and property damage exceeded \$200 million in 1979 dollars, or more than \$400 million today.

No one believed the fairgrounds area of Jackson would flood because a levee had been built nearby. But water flanked the levee, flowed across I-55 and was stopped by the river's natural bluff at Jefferson Street. The coliseum took on 10 feet of water.

The larger levee in Rankin County held, but not by much.

Most of all, people lost their innocence. They could no longer justify their ignorance or indifference to the ways of the river.

The paper had been paid.

Jackson had become a national poster child for bad planning. Gloria Jimenez, President Carter's federal insurance administrator, issued a blunt assessment two weeks after the flood: "I think that the president feels that we are living on a collision course with nature, that we have to plan properly. But we can't afford to continue to expose ourselves and our people to hazards and then try to rescue them afterwards; it doesn't make sense. We lose lives, and we lose property and it costs taxpayers a lot of money."

Jimenez was speaking as part of a panel analyzing the Jackson flood on a national television news show.

Like so many of his neighbors, northeast Jackson resident Bill Denny, now a state legislator, echoed the rude awakening many felt. Few people, including Denny, had flood insurance.

"I'd never heard the terms before used as flood plains. I don't know what that means."

"We're going to get a bigger flood. The new people who have moved into this area, they're going to get hurt like we were in '79."

— Thomas Cochran, a northeast Jackson resident

Residents of older communities in south Jackson were much more accustomed to periodic floods. But the magnitude of the 1979 flood staggered even those who had seen the Pearl rise and fall before.

Floodwater filled Susie Grear's Hightower home to a depth of 8 feet. From higher ground, Grear said, "I could just see the top of the houses above the water. ... It took us about a year to get straightened back out."

Cochran, the northeast Jackson resident, got more than 4 feet of water in the Easter Flood. He was nearly flooded again in May 1983, when the Pearl River inundated about 1,000 homes and businesses in the metro area.

"We're going to get a bigger flood," Cochran said. "The new people who have moved into this area, they're going to get hurt like we were in '79."

Danks, now a private attorney in Jackson, can sit in his Lamar Street office and talk for hours about the flood today.

"It was very strange to me. ... I still dream and have nightmares about it," he said. "You feel so helpless. People were standing at their doorways hoping that the water was not going to get in their homes, and seeing you and begging you to do something. That's what I dream about."

But the misery of flooding hasn't slowed the pace of risky development in Jackson and Flowood. Some people still talk as if they can beat the river.

Lamenting political strife that has stymied a plan to raise and expand levees, Lyle Bates, a Metro-Jackson Chamber of Commerce representative, said during a public hearing in 1996: "We always viewed this as ... all of us trying to join hands and do the best we could to work against nature and the problems we incurred."

Others talk of the futility of totally controlling the river.

"Flooding is a natural act," said Jackson's new mayor, Harvey Johnson Jr. "There's only so much man is able to do to manage that natural act. To try to overwhelm this natural act is beyond us."

Modern floods in Jackson

Dec. 21, 1961

Intense rain during a 14-day period caused flooding on every stream in Mississippi. On Dec. 21, the Pearl River at Jackson reached 37.24

feet, or 9.24 feet above flood stage. About 3,000 people were affected. Nearly 600 homes were flooded.

\$19 million

The view of flooding in 1961 looking north along Gallatin Street in Jackson.



U.S. Army Corps of Engineers Special to The Clarion-Ledger

April 17, 1979

On April 12 and 13, up to 19.6 inches of rain fell in the upper Pearl River basin. By April 17, the river reached 43.28 feet at Jackson, or 15.28

feet above flood stage. Some 1,935 homes and 775 businesses flooded. More than 6,000 people were affected.

\$432 million

Many northeast Jackson homes were flooded to the rafters in 1979 during the largest flood on record.



U.S. Army Corps of Engineers Special to The Clarion-Ledger

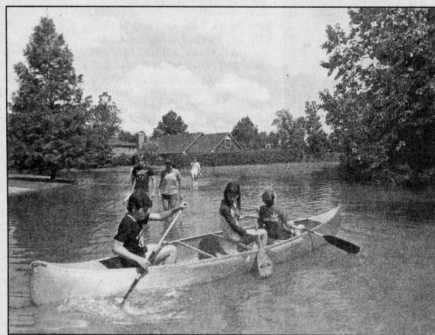
May 25, 1983

In late May, another heavy rain upstream brought a flood to Jackson. The river reached 39.58 in Jackson, or 11.5 feet above flood stage. At its

peak on May 25, more than 700 homes and 280 businesses flooded. About 5,000 people were affected.

\$46 million

Children paddle a canoe in the streets of Jackson's East-over community during the 1983 flood.



File Photo: The Clarion-Ledger

(Damages are in 1999 dollars)

A WARNING

"Jackson, Mississippi... in 1961 experienced a major flood which displaced 3,000 people and inflicted about (19) million dollars in property damage. In 1979, despite completion of a Corps of Engineers flood control project at Jackson, the city experienced displacement of 6,500 people and an estimated (432) million dollars in property damage from a somewhat larger flood. Most of the structures affected in 1979 were built in flood plains subsequent to the 1961 flood. Jackson is typical of urbanizing flood plains throughout the United States, where increasingly property is being developed despite the flood risk. Often such development occurs in the wake of a federal flood control project which creates the illusion that such locations are forever safe from flooding."

— from the legal treatise **Zoning and Land-use Controls, 1996**, published by **Matthew Bender & Co.**



Witt

A CALL FOR CHANGE

"People need to accept the responsibility and consequences of their choice to live in high-risk areas. We should charge people who live in high-risk areas the fair market rates for insurance instead of the lower, subsidized federal flood insurance rates... We need to protect our flood plains, our wetlands that act in nature as sponges that soak up excess rain and floodwaters and not fill them in for redevelopment or development. We must all ask ourselves: 'Should we be rebuilding roads and infrastructure where we know they will be destroyed again?' By rebuilding this infrastructure, are we putting people back in harm's way?"

— **James Lee Witt, Federal Emergency Management Agency director, from a 1998 speech to the National Press Club.**

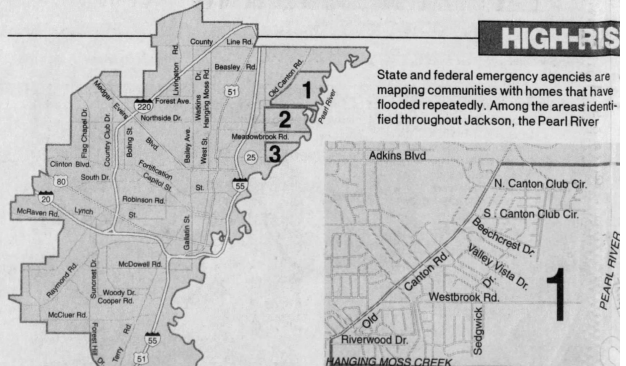
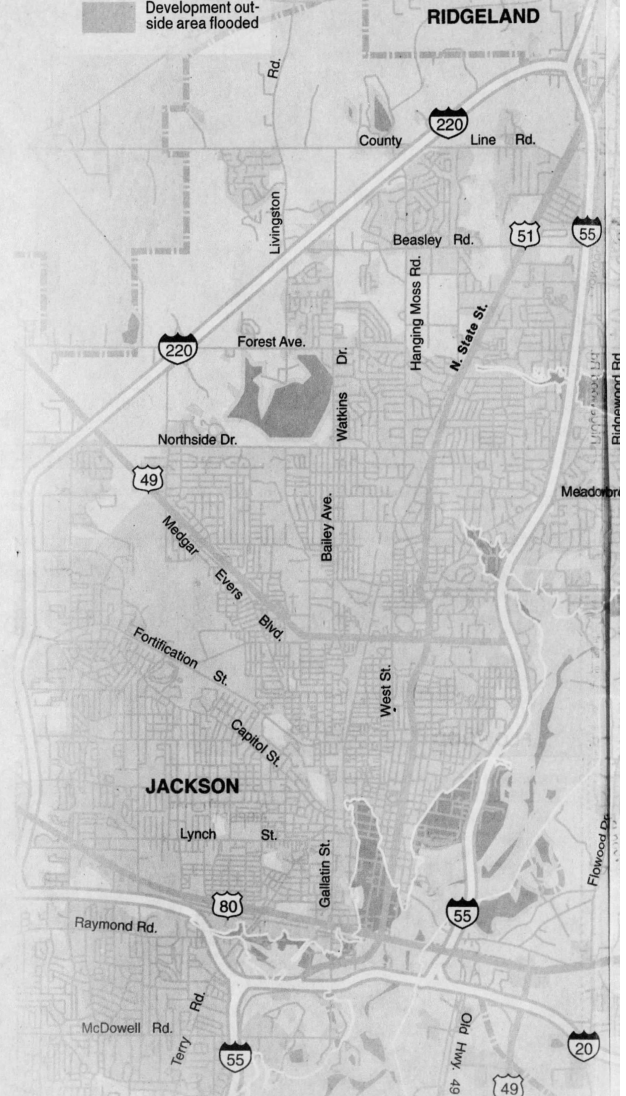
IN HARM'S WAY

The map below shows the urbanization of metropolitan Jackson — homes, businesses, schools, and the like — as it exists today. It also depicts the area inundated by the region's largest recorded flood of the Pearl River, in April 1979, and where the flood would be today if it were taken to reduce flood risk by development with...

Compiled by B

LEGEND

- Area flooded in April 1979
- New and existing development in area flooded
- Development outside area flooded

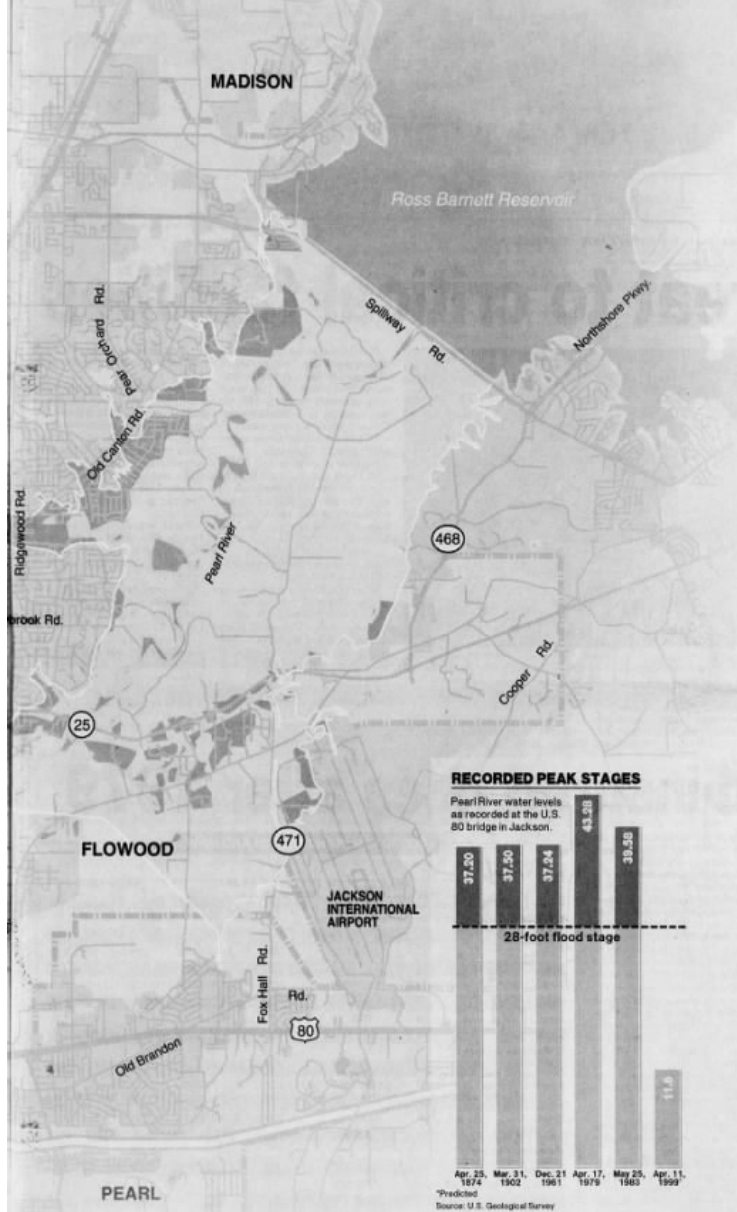


RM'S WAY

in relation to development. While some measures have been taken since the 1979 and 1983 floods, the ensuing 20 years have been marked more by inaction than by progress. Experts predict a flood of a similar magnitude in the next 20 years.

Today, many more homes and businesses are covered by flood insurance. In Jackson, Flowood and Richland, there are 5,555 policies offering \$541.2 million in coverage.

By Bruce Reid; Graphics by Godfrey Jones

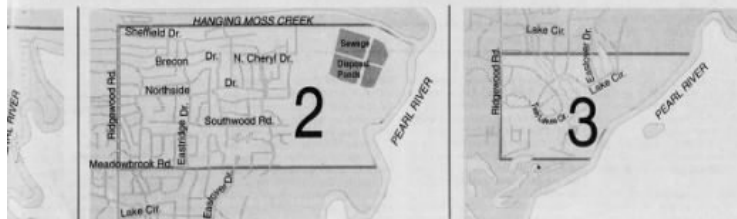


RISK ZONES IN JACKSON

Flooded homes in three areas, shown below, in 1979 and 1983. Flood-prone communities, or those with the greatest numbers of "repetitive loss" structures with two or more

insurance payments in any 10-year period, are being identified across the country so money can be spent buying, relocating or elevating dwellings. With help from a federal

grant, Jackson has started a \$57,000 study of possible flood-reduction measures. One measure may be making sure that homeowners in high-risk areas have flood insurance.



Terms bring about flood of confusion

The terms used to describe floods and flood risks often are misunderstood with dangerous consequences. The following definitions address some of the most commonly used terms:

FLOOD PLAIN: A land area susceptible to being inundated by water from any source. In a natural river valley, it is the area between the waterway's bluffs. In Jackson, the higher ground west of the state fairgrounds is a bluff along the Pearl River. The area east of the bluff is part of the natural flood plain.

100-YEAR FLOOD PLAIN: An area within a waterway's natural flood plain. It covers an area that has a one in 100 chance of being inundated in any year, even two years in a row. This large flood also has a 27 percent chance of occurring over the life of a 30-year mortgage. The 100-year flood plain is constantly changing, as land use is altered. This area was created to help federal officials identify high-risk zones where flood insurance is mandatory for newer construction or loans. The 100-year flood sometimes is referred to as the base flood, and new structures typically must be built above that elevation. The 1979 flood in Jackson was considered a 200-year flood, or one of the magnitude that has a one in 200 chance of occurring any year.

FLOODWAY: The channel of a waterway and adjacent land typically reserved to allow a large flood to pass. In flood plain regulation, this area is generally not considered appropriate for the location of homes or businesses.

NATIONAL FLOOD INSURANCE PROGRAM: A federal program created in 1968 in response to the rising cost to taxpayers of disaster relief and the increasing amount of flood damage. The program, which was amended by Congress in 1994, offers federally backed flood insurance in communities that adopt and enforce flood plain management ordinances to reduce future flood damage. While the program has had successes, taxpayer-funded disaster assistance continues to rise. Generally, less than 30 percent of flood-prone properties in a given area carry flood insurance. Across the country, about 35 percent of insured properties receive government subsidized rates that are about 38 percent of actuarial rates — because they were built before a community joined the program.

REPETITIVE LOSS STRUCTURE: A property, such as a home, that has been damaged by floods two or more times in any 10-year period. The Federal Insurance Administration defines such a property as one receiving more than \$1,000 in flood damage two or more times during any 10-year period. Government agencies are in the process of identifying these properties to see which ones should be removed or protected from floods.

STRUCTURAL FLOOD PLAIN MANAGEMENT: The typical way federal agencies have attempted to reduce flooding. These measures include using levees, dams, flood walls and river dredging. The structures are expensive to build and maintain and can promote more risky development.

NON-STRUCTURAL FLOOD PLAIN MANAGEMENT: Measures such as reserving or restoring wetlands or other areas to absorb floods harmlessly, flood insurance, flood-proofing of dwellings.

Sources: Mississippi Emergency Management Agency, National Wildlife Federation, American Rivers, Federal Emergency Management Agency



TO LEARN MORE:

- Call the Federal Emergency Management Agency's flood insurance information hotline: 1-800-427-4661.
- View FEMA's Web site, which contains information on the National Flood Insurance Program and other topics: www.fema.gov.
- View the Mississippi Emergency Management Agency's Web site, which has information on reducing losses from floods and other topics: www.mema.org.
- View the Web site of the Association of State Floodplain Managers, which has numerous links to related sites: www.floods.org.
- View the U.S. Army Corps of Engineers' Vicksburg District Web site, which has information on river stages and other topics: www.mvk.usace.army.mil.

TO TRACK A PEARL RIVER FLOOD

- View the U.S. Geological Survey's water resources Web site: <http://ms.water.usgs.gov>. Go to the link for the Pearl River Basin Flood Tracking System, which provides real-time information on flood stages recorded for Jackson and throughout the Pearl River basin.

HOW WE PREPARED THE MAP:

Most of the map's features were prepared using computer-generated information. The base map was formed by newly available aerial photographs, called Digital Orthophoto Quadrangles, produced by the U.S. Geological Survey. The photos of the Jackson region were taken in 1996. To map the urbanization, we used a statewide land cover map prepared by a number of government agencies from satellite images taken in June 1993. The mapping effort was organized by the Mississippi Automated Resource Information System, or MARIS, the state clearinghouse for digital mapping and remote sensing. Then we used the aerial photos to note more recent development. To depict the 1979 flood, we used computer information prepared by the U.S. Army Corps of Engineers and the Geological Survey. Most of the map's components were supplied by MARIS. To learn more about MARIS, see its Web site at www.maris.state.ms.us.

IN HARM'S WAY



Riverside Hospital, now called Charter Behavioral Health System, and Woman's Hospital both flooded in 1979 and are at risk today.

Flood still threat to critical facilities

By Bruce Reid
Clarion-Ledger Staff Writer

College students worked alongside prisoners night and day during Jackson's big flood. Tensions were high at times, like one night when a train momentarily blocked the only road from the region's sewage plant, threatening to trap crews laying sandbags to protect the facility.

As the Pearl River rose for five days to its highest level on record, boats replaced cars as a means of travel on some downtown streets.

Emergency crews waged brutal flood fights 20 years ago.

The crews won some battles, like saving the substation that provides most of the electricity to downtown Jackson. They lost others, such as one to keep the sewage plant from dumping untreated waste into the river.

In large part, many of the region's critical facilities are just as vulnerable today to a major flood.

Damage to buildings and other property owned by the city of Jackson and state government was extensive, possibly as much as \$100 million in 1979 dollars, or nearly half the total damages of the flood.

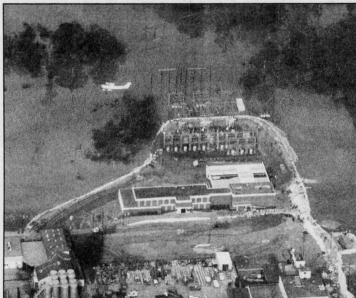
"The biggest thing would be the loss of major thoroughfares," said Larry Fisher, emergency operations chief for Hinds County. In 1979, inundation of portions of I-55 and Lakeland Drive made them temporarily impassable.

Rankin County has three hospitals off Lakeland Drive. Both Woman's Hospital and what was then called Riverside Hospital took on water. Riverside, now called Charter Behavioral Health System, had as much as 5 feet of water. River Oaks Hospital was built in 1981. The building was constructed on fill to raise it partly out of harm's way.

But access to all three hospitals could be diminished or cut off by another major flood.

Flowood Mayor Gary Rhoads recently asked if a small levee could be built to protect the hospitals. But Rhoads acknowledged that such a project probably would be impractical, because it would mean a bigger flood for neighboring properties. "We'd be putting water on somebody else," he said.

Emergency officials say they would expect to have another fight to save



The longest and most dramatic battle against the 1979 flood was waged at Mississippi Power and Light Co.'s Jefferson Street substation. Prisoners from Parchman stacked thousands of sandbags to create a 10-foot levee.

the Jefferson Street substation. During the flood, 700 prisoners, college students, utility workers and

others worked nonstop to erect a sandbag levee around the substation.

O.C. White, an Entergy engineer who helped in the flood-protection effort, said he hoped federal hydrologists and other officials could more accurately predict flood levels and times today — to allow more time to respond to rising water.

"We would monitor the situation a little closer," White said.

Another substation near Lakeland Drive and Ridgewood Road now is protected by a concrete flood wall. Two other substations, in the northeastern and southern sections of Jackson, probably would be taken off line, but White said the utility still would be able to meet power demands. "We think we'd be able to handle the load."

The Savanna Street sewage plant, which serves the entire region, began discharging untreated waste on April 14, 1979, a day after the big flood began and several days before the river crested at 43.28 feet, or more than 15 feet above flood stage.

A 1996 report by the U.S. Army Corps of Engineers estimated that repairs to the plant from a recurrence of a 1979-type flood would cost about \$20 million.

Clean drinking water continued to flow throughout the region in 1979.

Telephone service was only minimally affected 20 years ago, thanks to BellSouth's efforts to protect its central office in downtown Jackson. Now, the risk is even less. Some critical equipment has been moved to higher floors of the central office, and underground cables in the city have been protected from flooding, said Larry Johnson of BellSouth.

Public schools in Jackson and Rankin were not flooded in 1979, but McLeod Elementary in northeast Jackson was isolated by flood waters.

Two large private schools, Jackson Academy in northeast Jackson and Jackson Preparatory School off Lakeland Drive, were flooded in 1979. Newer buildings at both campuses have been built higher on fill, but older buildings still would be at risk in a major flood.

"We just hope and pray it doesn't happen again," said Bill McGee, Jackson Prep's headmaster. "We make sure our flood insurance is paid up."

Number of flood insured rises after 1979

By Bruce Reid
Clarion-Ledger Staff Writer

The television commercials run night after night, it seems, showing flooded homeowners finding out too late they have no flood insurance.

But few people are listening or caring, because fewer than 30 percent of flood-prone homes and businesses in American communities carry flood insurance today. Jackson is not much different.

James Lee Witt, director of the Federal Emergency Management Agency, has taken to the airwaves to increase flood insurance participation. In Jackson, FEMA records show that slightly fewer than half — 170 of 343 — of the capital city's most flood-prone properties carry flood insurance.

The insurance participation for low- to moderate-risk properties probably is less, experts said, though no figures are available.

Only after the largest floods that are declared disasters by the president does the federal government offer disaster assistance, mostly low-interest loans.

"For the most part, people are on their own unless they have flood insurance," said Mark Stevens, a FEMA spokesman in Washington.

For floods after 1984, a family without flood insurance is eligible for federal disaster aid once. If the family does not have insurance and there is a subsequent flood, the aid won't be available, Stevens said.

Throughout the Jackson area, the number of flood insurance policies has increased more than sevenfold since the region's largest flood, which began April 13, 1979, 20 years ago Tuesday.

In Jackson, the policy count has risen from 816 on Dec. 31, 1978, to 5,156 today, FEMA records show.

For some people, one flood without insurance was enough. Accountant Paul Breazale had no flood insurance when his north-end Jackson home on Sheffield Drive took on three feet of water in 1979. As a result, he had to pay \$215 a month for 15 years to pay off a government loan.

"All of a sudden I had two mortgages," Breazale said.

Others still are paying off loans from the 1979 flood.

About \$23.36 million in coverage was in force in Jackson in 1978; about \$63.2 million in coverage is in force today.

Still, the policies today may represent only 30 percent of the flood-prone structures, if the national average is any guide.

Jackson has 343 properties considered to be the most prone to flooding, which FEMA classifies as "repetitive loss" structures. The classification means each property has received two or more payments from the National Flood Insurance Program in any 10-year period.

In northeast Jackson, that typically means the homes were flooded in 1979 and 1983. Some of Jackson's repetitive loss properties are in other parts of the city and affected by tributary flooding or flash flooding not related to the Pearl River.

Insurance coverage for repetitive loss properties throughout Mississippi is even lower than in Jackson. Of 2,844 such properties in the state, 870, or about 30 percent, currently carry insurance.

State and federal officials say there are several reasons so many repetitive loss properties don't have insurance, even though they did at one time. People may have dropped their policies, or they may have changed owners, and banks or lending institutions did not require the new owners to have insurance.

State officials are conducting a detailed study of all the repetitive loss properties in the state to make sure the FEMA figures are accurate.

Much of the attention about flood risks is focused on the 100-year flood plain, an area that has a one-in-100 chance of being inundated in any year. But roughly 30 percent of flood insurance claims come from outside the 100-year flood plain.

The 100-year flood plain is designated by federal insurance officials

to help in setting rates. Rates are higher within the 100-year flood plain, where the risk is greater.

Although most communities use the designated 100-year flood plain in land-use planning, FEMA maps of the areas often are outdated and do not accurately reflect local water flows, said Mike Armstrong, FEMA's associate director for mitigation. He said it would cost \$800 million and take eight years to re-map all areas of the country.

Since risk often extends beyond the 100-year flood plain, relatively cheap flood insurance is recommended. "Anybody, if their community participates in the flood insurance program, can buy flood insurance," said Bob Boteler, hazard mitigation chief for the Mississippi Emergency Management Agency.

Average flood insurance premiums across the country are slightly more than \$400 a year.

All communities in the metropolitan region participate in the flood insurance program.

Until recently, Jackson Realtor Terri Wissel lived on Sedgewick Drive in northeast Jackson, in a home that flooded in 1979. She said the community was re-mapped in 1995, and the Sedgewick Drive home then was outside the 100-year flood plain. Now flood insurance is not required, although the house probably is just as susceptible to flooding of the same magnitude.

Still, Wissel said she thinks the flood risk in northeast Jackson has been exaggerated. The 1979 flood "was a freak occurrence," she said.

Since 1973, FEMA has told banks offering federally backed mortgages to require flood insurance along with new loans if properties are within the 100-year flood plain. That mandate was strengthened in 1994 amendments to the flood insurance program.

But no mandates exist outside the 100-year flood plain, and residents often are not aware of flood risks.

"If they don't have to have it, they don't worry about it," Barry McMaster, president of Laurelwood Homeowners Association,

FLOOD INSURANCE: THEN AND NOW						
Community	1978		1999		1978-1999	
	Number of policies	Coverage	Number of policies	Coverage	Claims	Amount paid
■ Hinds County						
Bolton	na	na	2	\$73,600	0	\$0
Clinton	27	\$826,000	48	\$3,469,000	26	\$100,919
Edwards	na	na	1	\$93,000	0	\$0
Hinds County*	34	\$859,000	250	\$18,857,600	128	\$1,176,469
Jackson	816	\$23,358,000	5,156	\$463,210,800	2,897	\$38,327,385
Terry	2	\$39,000	7	\$326,100	19	\$131,612
Total	879	\$25,082,000	5,464	\$485,829,900	3,070	\$39,736,386
■ Madison County						
Canton	42	\$774,000	109	\$5,717,900	405	\$1,813,909
Madison (city)	40	\$1,340,000	127	\$15,602,800	100	\$300,300
Madison County*	15	\$417,000	158	\$18,482,100	165	\$1,195,720
Ridgeland	39	\$731,000	208	\$20,292,700	25	\$168,050
Total	136	\$3,262,000	602	\$60,095,500	695	\$3,277,979
■ Rankin County						
Brandon	11	\$289,000	72	\$8,362,600	26	\$56,822
Florence	1	\$25,000	14	\$1,221,900	10	\$52,818
Flowood	3	\$180,000	318	\$68,612,700	99	\$1,301,625
Pearl	45	\$1,175,000	459	\$27,582,500	131	\$371,603
Pearl River Valley Water Supply District	na	na	100	\$17,418,100	1	\$0
Pelulahatchie	na	na	5	\$214,500	1	\$5,000
Puckett	na	na	1	\$61,800	0	\$0
Rankin County*	15	\$429,000	257	\$29,154,500	131	\$1,197,560
Richland	na	na	81	\$11,368,900	29	\$249,880
Total	75	\$2,098,000	1,307	\$161,995,500	428	\$3,264,308
■ Total tri-county area 1,090 \$30,442,000 7,373 \$707,920,900 4,193 \$46,276,673						
* Unincorporated areas						
Source: Federal Emergency Management Agency						

Harold Gater/The Clarion-Ledger

said of flood insurance outside the 100-year flood plain. Laurelwood, a Rankin County community of about 400 homes, is on the eastern edge of the area flooded in 1979.

Wittel has proposed a wave of changes to the flood insurance program aimed at reducing the number of repeat flood insurance claims on some properties.

The 35,000 repetitive-loss properties across the country are costing the flood insurance program \$200

million a year. Such properties represent only 2 percent of all properties covered by flood insurance, but they account for 38 percent of payments from the program since 1978.

Among Wittel's recommendations is a proposal to remove discounted rates for older policies if owners refuse flood-reduction measures such as a government buy-out, elevation or assistance with relocation of a house.

FEMA also is working with

states and communities to identify areas with the most repetitive loss properties and set priorities for spending federal money to reduce flood damages.

Some of the changes can be made administratively by FEMA; others would require congressional action.

Last month, U.S. Rep. Ken Bentsen, D-Texas, introduced legislation to carry out some of Wittel's initiatives to reduce repeat flood losses.

IN HARM'S WAY Cities still learning from Johnstown, Pa., flood

By Bruce Reid
Clarion-Ledger Staff Writer

More than a century after the deadliest flood in U.S. history, most American cities still are learning from Johnstown's pain.

Johnstown, Pa., where 2,209 people died during a monstrous flash flood in 1889, began moving away from its most flood-prone areas soon after a 35-foot-high wall of water from a burst dam hit the city with the force of Niagara Falls.

The city's major employer then, the Cambria Iron Co., laid out a suburb on a hilltop and built a mechanical "inclined plane" to carry its workers and others to high and dry ground.

Avoidance was the best solution. "That's Johnstown's lesson," said Richard Burkert, director of the Johnstown Area Heritage Association, which operates the Johnstown Flood Museum.

Johnstown still is grappling with floods. The southwestern Pennsylvania city was struck again in 1936. The city chamber of commerce declared Johnstown "flood free" after a federal river-channelization project, but a huge rain and bursting dam swamped the city again in 1977, killing 85 people in the region.

Today, cities across the country, trying to break long cycles of damage and despair, are seeking regional solutions that let rivers spread in less costly ways.

Especially since the Midwest floods on the Mississippi River in 1993, which cost \$10 billion and

damaged 72,000 structures, federal agencies are turning away from a sole reliance on levees, channel dredging and other structural means of engineering rivers into submission — which only place more homes and businesses in harm's way and can create a false sense of security. Instead, they are buying out homes that flood repeatedly, encouraging cities to rein in new flood plain development, restoring wetlands to store floodwaters harmlessly and moving existing levees away from rivers.

"I think the word is reverence. There needs to be an extreme amount of reverence for the flood plain," said Gerald Barber, the immediate past chairman of the National Wildlife Federation and the Madison County tax assessor. The federation, the nation's largest private conservation group, produced an extensive study last July recommending increased government buy-outs and other efforts to reduce flood damage.

"There's been a realization that flood plain management requires us to use all the tools," said Gerry Galloway, an authority on water issues and the Army's top civil engineer in Vicksburg in the late 1970s. After the Midwest floods, Galloway led a White House task force on flood plain management.

Something has to give, Galloway and others say. Federal taxpayers have spent \$140 billion over the last 25 years preparing for and recovering from natural disasters, mostly



Johnstown, Pa., was the site of the deadliest flood in U.S. history.

floods, according to a new report from the Washington-based group American Rivers. In the same period, annual U.S. damages from floods have tripled to \$4.5 billion.

After decades of disagreement over solutions to repeated flooding, a majority of the residents of Napa, Calif., voted last year for a "living river" project, one that involves restoring natural areas for the Napa River to spread. Also, bridges will be raised, some new levees and floodwalls will be built, and flood-tolerant recreation in the flood plain will be encouraged.

"From the White House all the way down, we are looking at non-

structural alternatives wherever we can," said Jason Faneleau, with the U.S. Army Corps of Engineers in Sacramento.

Slightly more than two-thirds of Napa residents voted last year for a half-cent increase in the sales tax to pay about half of the \$156 million cost of the project; the corps pays the rest.

Legislation passed in 1998 gives all communities in the Pearl River basin, including Jackson, the power to establish taxing districts to raise local money for flood-control projects. So far, no one has attempted to form such a district.

Local sponsors now must pay a

minimum of 35 percent plus land acquisition. Flood-control plans considered to be the most progressive in the country, including Napa's, have local taxpayers paying as much as half the cost.

Cities such as Tulsa, Okla., and the Grand Forks, N.D.-East Grand Forks, Minn., region, have pursued aggressive programs to buy out hundreds of flood-prone homes. In a buy-out after a flood, a resident, through a combination of government aid and insurance, typically receives an amount of money equal to the pre-flood market value of his house. Then the resident uses the money to buy another house.

Tulsa also has constructed 23 basins to capture floodwaters and hold them for gradual release. When dry, the basins are used for parks, trails, and ballfields. No habitable structures are allowed.

In addition to buying out more than 1,000 flood-prone structures since a disastrous flood in 1997, the community of Grand Forks and East Grand Forks is moving existing levees back far as 600 feet from the river as they are now.

"It has been contentious, but there is pretty strong regional support," said Lisa Hedin, a federal engineer who is managing a \$350 million flood-control project in Grand Forks.

The current running through modern flood-control plans is a watershed approach, in which local jurisdictions work together to protect existing structures and plan new development over a larger area.

The Portland, Ore., metropolitan area, covering 24 cities and three counties, has one of the most elaborate regional planning schemes, overseen by the country's only elected body of its kind. The body, called simply Metro, last June adopted a plan for protecting urban waterways from further pollution and residents from flooding.

The plan seeks to limit new development in flood plains. "Outright bans on development in the flood plain don't exist," said Mike Houck, an urban naturalist with the Portland Audubon Society. Last month, the Clinton administration listed nine subspecies of salmon and steelhead under the federal Endangered Species Act, a precedent-setting action that could affect a range of human activities, from home pesticide use to home building, in the metropolitan areas around Seattle and Portland. The federal actions "are going to up the ante quite a bit," Houck said.

Johnstown still is battling floods. The federal government plans to spend \$40 million refurbishing concrete-lined channels through the most developed areas and local officials are trying to control flood plain development.

The city now considers its floods a tourist draw. About 40,000 people visit the flood museum each year, and another 60,000 visit the National Park Service's Johnstown Flood National Memorial nearby.

Said Burkert: "Johnstown has sort of embraced its history."



Northeast Jackson residents such as Joe Meyeaux and his wife, Sunny, were flooded in 1979. Residents fear that a development proposed closer to the Pearl River, with a large fence, could worsen flooding.

Residents wary of development

By Bruce Reid
Clarion-Ledger Staff Writer

Northeast Jackson residents say the city's resolve to limit risky development in the Pearl River flood plain is facing one of its biggest tests.

Oil man John McGowan, already turned down once in his attempts to develop 140 acres at the east end of Meadowbrook Road, is seeking approval again. McGowan said his project has been changed to eliminate the possibility that nearby homes would be more prone to flooding, but residents such as Joe Meyeaux aren't so sure.

"We see it as a real threat," said Meyeaux.

His house on East Cheryl Drive had nearly 3 feet of water in it during the Easter Flood of 1979.

Sheffield Drive resident Sam Barwell said city officials appear to be disregarding basic principles of Jackson's ordinance limiting building close to the river.

"If the people living near the Pearl River think the city is looking out for their welfare, they're in for a big surprise," said Barwell, whose home flooded in 1979 and 1983, although he was not living there at the time.

"We have no intention to do anything out there that will cause any increase in flooding to our neighbors," said David Russell, operations manager for McGowan's company, McGowan Working Partners.

As part of its participation in the National Flood Insurance Program, Jackson has adopted an ordinance to limit development near the river that could worsen flooding. Filling low areas for home construction can raise

flood waters nearby. Erecting fences, which trap debris and impede drainage, also can worsen flooding.

Both of those situations and more are at issue with McGowan's new plan to build 12 homes and a 31-acre lake surrounded by a 5,000-foot levee and a chain-link fence.

In addition, much of McGowan's site is in the floodway, the area close to the river that typically is kept free of any manmade structures so flood waters can pass.

McGowan has cleared much of his prospective building site and he has drained 25 acres of wetlands without a required federal permit. He is now seeking an after-the-fact permit from the U.S. Army Corps of Engineers.

When the city initially turned down the project in 1996, Lynn Westbrook, a Department of Public Works official, wrote to McGowan that permitting such developments would "defeat the purpose of the city's Flood Plain Management Ordinance. ... The Ordinance is very clear in that it states that floodways must be reserved."

Using heavy-duty pipes, McGowan erected a fence around most of his site in 1996. In the same 1996 letter, Westbrook wrote that because the development had been turned down, a "fence construction that has taken place is now considered an illegal activity" under the flood plain ordinance. The letter also said the fence material must be torn down within three weeks or McGowan would face penalties under the ordinance, which range to \$500 and 90 days in jail for each day of violation.

The fence is still there. The chain-link sections have not yet been attached.

Russell said the city issued the order to remove the fence in error, after it already had issued a permit for the fence construction.

Herman Cooper, the city's new public works director, said he was not aware if the city officially rescinded the order to remove the fence material.

"I know practically it was (rescinded) because it was never enforced," Cooper said.

Despite the earlier ruling based on general concerns about any development at the site, the Public Works Department granted preliminary approval to McGowan's revised plan in February. The approval was not based on the inclusion of a lake, which could affect water levels, even though McGowan's permit request to the corps includes a lake.

"I'm a little confused, too," Cooper said, when asked about the differing plans. "It's not our intention to approve anything that detracts from the flood safety."

Russell said McGowan has offered to re-submit a request to the city that includes a lake.

The Federal Emergency Management Agency still is reviewing McGowan's latest plan, although FEMA authority is limited to overseeing Jackson's administration of its flood plain ordinance. And the corps' review is continuing.

"Our evaluation is not complete," said Martha Cieply, who is reviewing McGowan's wetlands-permit application for the corps in Vicksburg.

Meanwhile, residents such as Meyeaux have asked the corps to hold a public hearing.

Taxpayers to bear brunt of costs

By Bruce Reid
Clarion-Ledger Staff Writer

The federal government used to encourage risky building in flood plains — then rush in with aid after a flood.

The U.S. Army Corps of Engineers would build levees and dams, often at little or no expense to local taxpayers. The Federal Emergency Management Agency would promise disaster grants and loans and unlimited payments from subsidized flood insurance policies.

No more. Residents of the Jackson region ever agree on a comprehensive plan for reducing Pearl River flood damages, they probably will foot the bill for as much as half of implementing it.

The most recently suggested levee plan would cost more than \$130 million. Many newer flood-control plans around the country include acquisition of undeveloped land to store floodwaters harmlessly, so the price could rise.

Communities throughout the Pearl River basin now have the authority to create taxing districts to pay for flood-control projects. Though no one has attempted to establish a district yet, most local leaders expect that property owners in flood-prone areas would be asked to pay more taxes.

Will those benefitting most from new levees or other protection — residents of the flood plain — tax themselves?

"It's a tall order," said state Rep. Bill Denny, R-Jackson, whose former northeast Jackson home was flooded in 1979 and 1983. After the Easter Flood of 1979, Denny's advocacy for flood victims helped launch his political career.

And who decides where to draw the boundary of a taxing district?

People not at risk from flooding would be less likely to want to tax themselves more. "There's not a lot of sympathy outside the flood plain for these people," said Gerald Barber, the Madison County tax assessor and critic of federal flood-control projects. Until recently, Barber was chairman of the National Wildlife Federation, the nation's largest private conservation group.

Many residents living in more flood-prone areas may not be thrilled about new taxes. "There are some folks out there who are willing to gamble" with the prospect of a large flood, said Mike Davis, executive director of the Pearl River Basin Development District, a 15-county agency in the basin that has tried to organize a new flood-control project in Jackson.

Modern flood-control plans considered to be the most effective in the country — in places such as Napa, Calif., Tulsa, Okla., and Grand Forks, N.D. — call for residents to pay from 40 to 50 percent of cost through property or sales taxes. Promoters of Napa's "living river" plan, which seeks to restore the natural values of flood plains, persuade slightly more than the required two-thirds of residents to approve a half-cent increase in the sales tax to raise \$6 million annually for 20 years.

"Today, Congress and the federal administration are much more committed to requiring a greater cost share from communities in order to encourage them to avoid and reduce flood risk on their own."

— David Conrad, National Wildlife Federation

Thanks to a new law enacted last year, Jackson and other localities in the Pearl River basin can establish taxing districts to help for flood-control projects. A local referendum must be held to establish such a district, and three-fifths of registered voters in a district must approve the issuance of bonds in a separate election.

The bonds would be repaid by annual taxes on property within the flood-control district. The most likely scenario would be for the district to cover the most flood-prone property, possibly the area inundated in 1979. This way, people benefiting the most from protection would pay for it.

Proponents of new Jackson levees failed to gain approval of state bond measures in 1995 and 1996 because of opposition from legislators from other counties and elsewhere in the state. "I might as well have been talking to a brick wall," Denny said. The bonds would have been repaid and taxpayers in Hinds and Rankin counties.

Making communities pay more for flood control — rather than the federal government picking up most or all of the tab — is viewed as a critical step to reducing flood damages. Communities will never stop developing in flood plains as long as the federal government pays for their mistakes, said David Conrad, an expert on federal policies on flooding and co-author of 1998 report that recommended increased government buy-outs of flood-prone properties.

"Today, Congress and the federal administration are much more committed to requiring a greater cost share from communities in order to encourage them to avoid and reduce flood risk on their own," said Conrad, who works in Washington for the National Wildlife Federation. "The days of Uncle Sam carrying the vast bulk of the load are basically over."

For now, though, deciding how to pay for a project in Jackson is premature.

Residents and leaders of the region are no closer to agreeing on ways to improve flood control than they were 20 years ago, when the Easter Flood, the largest recorded on the Pearl River, forced thousands from their homes and caused millions in property damage.

"To break the logjam in relations along the river, Rhoads said, Jackson metro leaders need to start meeting with residents in south Mississippi "and work up."

Because a major flood hasn't occurred since 1983, a whole generation has never experienced one, Brezeale said.

"People do tend to forget," said Jackson Mayor Harvey Johnson Jr. "Unfortunately, people tend to think about it only at the moment of crisis."

A number of flood-control ideas have surfaced since the 1979 flood — everything from building one or more reservoirs upstream from Jackson to an idea from one resident to dig a canal all the way to Vicksburg to divert flood waters.

One alternative to new levees, construction of "dry dam" upstream near the Shoccoe community, received considerable attention in the 1980s. The proposed Shoccoe Dam would hold water only during a flood, but the necessary ban on development over a large area above the structure proved unpalatable.

The latest plan for new levees, suggested in 1986, is set without its critics locally. Larry Fisher, the Hinds County emergency operations chief, said it was deficient because no pumps were provided to relieve water that could no longer drain to the river. "If a new levee system ever goes in, we've got to have a massive pumping system behind those levees."

If installed, pumps would send water over the levees and back into the river.

Lately, Jackson oil man John McGowan has promoted an idea to make the Pearl through Jackson into a lake by digging a 10-mile channel. Top officials with the Corps of Engineers have firmly rejected the lake idea as unworkable and contrary to federal policies on flood control and environmental protection.

Almost since the construction of Ross Barnett Reservoir nearly 40 years ago — and still today — some people have asked why the reservoir can't provide more flood control. That is a matter of discussion in meetings on flood control this spring.

In response, officials at the Pearl River Basin Development District have produced documents they say confirm that the reservoir never was set up for flood control, which would require the water level to be kept so low it would be in conflict with its main uses for water supply and recreation.

Aside from promoting a new flood-control plan locally, proponents must sell it to residents downstream. Some downstream residents fear increased flooding from new Jackson levees or other measures. And some downstream residents already are upset, blaming operation of the Ross Barnett Reservoir for erosion of land along the river.

"We haven't gone down and sat down at a country store and talked to those people," said Flowwood Mayor Gary Rhoads.

To break the logjam in relations along the river, Rhoads said, Jackson metro leaders need to start meeting with residents in south Mississippi "and work up."

IN HARM'S WAY

URBAN GEM:

The Pearl River



LEFT: A great egret is a common sight on the Pearl River in Jackson, as are other water birds such as great blue herons, wood ducks and double-crested cormorants.

BELOW: Boosters along the Pearl River can see parts of the downtown Jackson skyline, including the Sillers Building, through a veil of trees.



Preservation national trend

Story by
Bruce Reid

Photos by
Barbara Gaunt

The Clarion-Ledger

ON THE PEARL RIVER — A bald eagle rising from its perch on Hanging Moss Creek — above a floating mass of bottles, milk jugs, kids' balls, and other urban trash — framed the picture perfectly. So did the odd-looking paddlefish netted by Jackson's water intake, the pearly white sandbars that harbor nests of the ringed sawback turtle, and walls of maples, hackberries and birches tinged in yellow-green leaves fresh as wet paint on a canvas.

With all the assaults on the Pearl River — a dam to restrict its flow, levees to confine it and tons of sediment to choke it — the capital city's waterway, said to be named for the freshwater pearls once yielded by its large mussel beds, remains a natural gem.

Few urban areas in the Southeast have such a large expanse of bottomland hardwood forest to support wildlife, provide recreation and help ease flooding, federal biologists say.

Urban rivers are getting more respect around the country, and many people think the Pearl should, too.

The trend is moving away from treating rivers as evil forces to be engineered into submission — and toward a realization that their tendencies to meander must be respected.

It's already happening in places such as the Napa River near San Francisco, Calif., Mingo Creek at Tulsa, Okla., and the Red River of the North at Grand Forks, N.D.

The idea is not new but it is increasing in popularity, said Scott Faber, director of flood plain programs for the Washington-based conservation group American Rivers. As early as the 1960s, cities



Roy Weitzell, a biologist with the state Department of Wildlife, Fisheries and Parks, holds a paddlefish netted in the Pearl River in Jackson. The fish, which was quickly returned to the river, was caught as officials from the Mississippi Museum of Natural Science were attempting to collect other species for a new aquarium exhibit depicting aquatic life of the river.



A male ringed sawback turtle basks on a log along the Pearl River in Jackson. The species, classified as threatened by the federal government, exists only in the Pearl River basin in Mississippi and Louisiana. A relatively healthy population remains around Jackson.

such as Boston found ways to preserve wetlands to provide areas for storing floodwaters and cleansing drinking water.

"In many communities, people are realizing their river is their greatest asset," Faber said. Because of difficulties in developing flood plains, river corridors often provide the last places for hiking trails and other amenities, he said.

"We're going to use (the river) a lot in our education programs," fish expert Charles Knight said of the Pearl, as he piloted a boat downstream of the Ross Barnett Reservoir spillway. His employer, the Mississippi Museum of Natural Science, this fall will move into its new \$14 million building perched above the river at LeFleur's Bluff State Park.

Knight, the museum's research coordinator, grew up fishing and

collecting salamanders along the Pearl in Jackson.

"Part of the reason I do what I do is because of my time when I grew up on the river," Knight said. "It had a great influence on my life."

Former Jackson resident Sidney Montgomery remembers many days spent fishing, hiking and otherwise exploring the Pearl River flood plain with his sons. One day in particular in 1976, fishing on his lunch hour near the Fewell water-treatment plant, he caught more than 20 "sea run," or migratory, striped bass. Together, the fish weighed 210 pounds, he estimated.

"I'd catch one every cast," he said. "The place is full of life. There it is downtown and you've got big bucks walking around," said Montgomery, who now works at a private wildlife preserve near Vicksburg.

In addition to an occasional bald eagle, the Pearl also harbors two

species listed as threatened under the Endangered Species Act.

One is the gulf sturgeon, an ancient fish that can weigh hundreds of pounds. They were caught nearly to extinction early in the century, mostly because their eggs could bring good money as caviar. As late as 1942, a sturgeon weighing 340 pounds was caught near Westbrook in northeast Jackson. It was nearly 8 feet long.

In spring 1997 near the Fewell plant, a commercial fisherman caught a sturgeon that measured 4½ feet and weighed more than 100 pounds, Knight said.

"I'm convinced that they come

here still, and it's even possible they spawn up here."

The other threatened species is the ringed sawback turtle, found nowhere else in the world but the Pearl River. The population at Jackson appears relatively healthy, biologists say, but it is constantly under threat, particularly from river projects that reduce logs and snags the turtle needs for basking or sandbars it needs for nesting.

"It's not what it used to be," Knight said. "But it's still a great place."



ABOVE: Charles Knight, research coordinator at the Mississippi Museum of Natural Science, grew up studying the wildlife of the Pearl River.



LEFT: A floating mass of urban litter collects at the mouth of Hanging Moss Creek, a tributary that flows into the Pearl River in northeast Jackson.