

CHAPTER XIV
FORT WAYNE, INDIANA

Background

The city of Fort Wayne is the second largest city in Indiana, with a population of approximately 172,000. The city is located at the confluence of three rivers: the St. Marys, the St. Joseph, and the Maumee. The St. Marys flows into the city from the south, and the St. Joseph flows into the city from the north. These two rivers meet in the downtown section of the city, forming the Maumee River, which flows in an easterly direction out of the city. The St. Marys and the St. Joseph drain two entirely different watersheds and, therefore, their flows are independent of each other.

Owing to an extensive network of dikes and levees, the city can usually withstand the floodwaters of either the St. Marys or the St. Joseph rivers. Because each river is in a different watershed, each river peaks at different times, allowing the Maumee to carry the water out of the city. When temperatures and precipitation combine to deliver peak flows to both rivers simultaneously, the Maumee cannot handle the load. The resulting floods often reach disastrous proportions.

The city of Fort Wayne has a long history of floods. Between 1829 and the winter of 1982, the city had 24 damaging floods. The most damaging flood in the city's history was in 1913, when the Maumee River crested at 26.1 feet. Floods in 1959 and 1978 resulted in Presidential Disaster Declarations. It is interesting to note that while the 1913 flood of record produced a peak flow of 34,000 cubic feet per second (cfs), causing the Maumee to crest at 26.1 feet, the flood of 1982 produced a peak flow of 27,000 cfs, causing the Maumee to crest at 25.9 feet. The city has a major flood on the average of once every six

years, but city officials think there are floods at more frequent intervals.

Description of Disaster

The flooding disaster of 1982 began on Friday, March 12, when the rivers started to rise; it did not end until Sunday, March 21, when the last of 9,000 evacuees returned to their homes. The flood waters of March can be traced in part to a record snowfall in Fort Wayne during the winter months; the snowfall exceeded 70 inches and caused several snow emergencies. The snow, combined with unseasonably warm temperatures in the watersheds of both the St. Marys and the St. Joseph rivers, set the stage for what has since become known in Fort Wayne as the "Great Flood of '82."

Extent of Damage

The Great Flood of '82 was the second most damaging and the most costly flood in Fort Wayne's history. Nearly 20% of the city was flooded, causing damages of almost \$50 million. Flood-related costs include the cost of emergency operations, damage in the primary impact area, and damage in the secondary impact area. The cost of emergency operations for flood fighting totalled more than \$4.7 million.

The total cost for all public and private flood damage, as well as related expenses, was estimated at over \$45 million. Public property damage, which includes public and city utilities in the primary impact area, totalled over \$7 million. The cost of flood-related damage outside the flooded area was almost \$2 million. In addition to these high costs, 9,000 persons had to be evacuated from their homes during the course of the emergency. About 35,000 people voluntarily participated in the flood fighting activities as "sandbaggers" and support personnel.

As great as the costs and impacts were for the city and its residents, the disaster could have been much worse. If two strategic dikes had failed, thousands more people would have to have been evacuated and the cost of flood damage would have been an additional \$27 million. The city was almost divided into six "islands," and it came close to losing its water supply. City officials and citizens realize that flooding is likely in the future.

Because Fort Wayne was in the midst of a severe economic downturn, the 1982 flood and its attendant expenses increased the city's financial and personnel difficulties. Bond revenues will have to be used to pay the local share of some federal disaster recovery grants, as well as for several million dollars in street repairs. In addition, a number of capital improvements will be delayed (or cancelled) in order to give precedence to mitigation activities. A sizable number of layoffs have occurred and more are expected.

In contrast to negative financial consequences to the city and its residents, there were some positive aspects to the flood. After an extremely hard winter with record snowfalls, the city's fight against the flood of '82 appears to have raised the community's spirits. The flood also diverted the community's attention from its serious economic situation, reflected in an 11.4% unemployment rate and possible plant closings. The flood of '82 also brought the city of Fort Wayne national media exposure, including many pictures of President Reagan (wearing hip boots) assisting with the sandbagging efforts. The city capitalized on this publicity by running an advertising campaign to attract new businesses. The theme of the campaign was "Fort Wayne, the City that Saved Itself."

Response Phase

During the winter before the flood, the city had several snow emergencies during which the city's Emergency Operations Center (EOC) was activated. These snow emergencies were cited as good practice for the flood which followed. Also, since everyone expected a spring flood, the city formulated a plan in advance. The Fort Wayne Flood Preparedness Plan, dated February 22, 1982, is comprehensive and practical. The plan describes the staffing of the EOC (which is next to the mayor's office) and sets forth the responsibilities of each city department during a flood emergency. In the early stages of the flood the plan worked well; however, the disaster soon outgrew the plan and on-the-spot group decisions had to be made.

For example, on Tuesday, March 16, sandbagging operations were switched from the city garage to the memorial coliseum. The plan did not envision the need for the 30,000 to 35,000 volunteers that eventually responded to fill and place sandbags. At the height of the flood, local officials feared that the city would be divided into six "islands" by the rising waters. Public safety officials responded to the threat by quickly developing contingency plans to reposition fire and police resources to operate in six locations.

Some of the problems with early response to the flooding were the result of the swift onset and the timing of the flood. The flooding began on Saturday, March 13, 1982, the first nice day of spring, while many people were away from their homes. This made it difficult to contact both city employees and volunteers. The good weather also made it hard for many people to believe that there was a flooding problem.

The U.S. Army Corps of Engineers arrived Saturday with additional sandbags and pumps. Cooperation between the local government and the Corps was characterized as good, but city officials seem to feel that

the Corps was operating under tight legal constraints as to what it could and could not do.

The city's response to the flood reflected its leadership's normal management style, which is characterized by very tight control at the policy level and great discretion at the operational level. Policy issues were decided by the mayor, with advice from a small number of advisors. Tasks were identified by the policy group and department heads, and then assigned to personnel working in interdepartmental teams. For example, when the command staff of the police department identified one of the first problems caused by the flood--traffic congestion and street flooding--they assigned the head of the traffic division to the EOC to direct road closings and the rerouting of traffic.

On Sunday, March 14, the governor declared the city and surrounding Allen County a disaster area. The National Guard responded and assumed responsibility for security in the evacuated areas. The National Guard worked exclusively with the State Police, allowing the city police to concentrate on traffic problems caused by the flood and to maintain service areas of the city (80%) which were not affected. Local police officers were placed on 12-hour shifts.

All the resources of the city were brought into the extended flood fight. The city has approximately 1,800 employees, and when city personnel ran short, contractors were used. The city school system provided transportation for the thousands of volunteers who worked on the dikes. The city's response activities can best be characterized by the mayor's advice to other local officials faced with a similar disaster: "Be flexible; call all agencies **fast**; don't be afraid to spend money." The mayor followed his own advice, and the city survived, but the cost was high. Because of the flood, the severe winter storms,

and the depressed local economy, it was necessary to: 1) issue a \$1.5 million bond in order to raise the 25% match for the public assistance component of the Presidential Disaster Declaration; 2) issue a \$3 million bond to finance street repair; and 3) lay off 70 city utility employees. In addition, the entire capital improvement budget is being reconsidered. All of this took place in a state which has had property tax freeze legislation since 1973, and in a city which is making concessions to keep its major industrial employer while at the same time trying to attract new industry.

Recovery Activities

Recovery activities began before the response phase had ended. In the early part of the response phase, a consultant with disaster experience who was working for the city on an unrelated project advised city officials of some of the recovery and mitigation problems he knew they would face. This convinced the officials that one person should be given lead responsibility for the recovery phase. Since the city did not have anyone on staff with recovery experience, an outside consultant was hired. Four days after President Reagan visited Fort Wayne, the state received a Presidential Disaster Declaration for Allen County. That same day, March 20, the city's recovery consultant arrived.

On March 23, 1982, the mayor's office distributed an internal memo describing a four-phase flood recovery effort. Each phase was assigned to an interdepartmental team. Phase I involved a critique of the city's response to the disaster; Phase II, headed by the recovery consultant, was to deal with public recovery issues, such as the Disaster Survey Reports (DSRs), and relief issues; Phase III was a 30-day effort to produce a local mitigation plan; and Phase IV consisted of a "Flood Festival" to thank the many flood volunteers for their assistance.

The city administration took a very active role in the Disaster Assistance Centers (DACs). Seventy city employees were detailed to work at the DACs. Two identical centers were set up in the same building to reduce waiting time. Interviews with victims at the DACs often included the participation of local mental health workers.

In addition to participating in the DACs, the city set up a non-profit foundation to distribute the flood relief money which had been contributed by many individuals and organizations. The city was able to anticipate the need for this foundation through information provided by its Citizens' Advocate Office.

During emergencies, the Citizens' Advocate Office and the Office of Civil Defense share the responsibility for managing the EOC. The Citizens' Advocate Office also responds to non-emergency requests for assistance.

Fort Wayne Flood '82, Inc. was created on March 21, 1982 as a non-profit foundation to receive monetary and material donations for flood victims. The fund was managed by a board of directors representing the community. Flood victims could apply for grants of up to \$250 by completing a simple application form. Grant applicants had to meet three requirements: 1) live in a flooded area of Fort Wayne or Allen county; 2) either own and live in their own home in the flooded area or rent a house, apartment, or trailer (absentee landlords were not eligible); and 3) apply for \$250 or less. As of June 4, 1982, Fort Wayne Flood '82, Inc. had received approximately \$300,000 and had distributed \$235,617 directly to individuals. Eighty-three percent of all applicants received grants. About 1,240 awards were made to individuals, with the average grant amounting to \$190. The remaining funds will be distributed to non-profit organizations that spent money in the flood fighting effort or lost equipment as a result of the flood.

Mitigation Measures

Local mitigation planning was initiated as Phase III of the four phase recovery process described earlier. The Flood Protection Planning Team was mainly an in-house team composed of 12 members from key departments representing a variety of professional perspectives and skills. The team's planning process also involved state and federal officials, Allen County engineers, and private consultants under contract to the city. The Indiana Department of Natural Resources provided computer analysis of solution elements, and the U.S. Army Corps of Engineers aided in the development of the alternative solutions summarized below. Overall, the team was charged with identifying land use development and flood prevention alternatives and selecting a specific strategy to prevent recurrence.

A parallel but more restricted task was undertaken by the Interagency Hazard Mitigation Team (HMT). Members of these teams were appointed by the regional FEMA Director following the disaster declaration. The HMT is composed of federal agency representatives and representatives of state and local governments. Several members of the Fort Wayne Phase III Team also were members of the HMT. While the activities of the two teams were similar, their perspectives and goals were different. Beginning with the initial joint meetings, efforts were made to integrate both sets of recommendations in order to produce consistent, sequenced mitigation and flood protection options. Drafts of the HMT report were evaluated by the representatives on that team from the State of Indiana and the City of Fort Wayne to insure consistency with the flood protection plan subsequently produced by the Fort Wayne Phase III Team. That team maintained coordination with the federal agency members of the HMT.

The Flood Protection Planning Team

For the Phase III Team, the complexity of the mitigation planning task and the 30-day completion schedule established by the mayor required an intense team effort and a major reallocation of duties for all team members. Much of the early work was directed at developing an accurate data base for use in preparing the mitigation and flood protection alternatives. A detailed field study provided data on flooded and potentially flooded areas. The team emphasized the development of flood protection alternative solutions for the **potential** impact of the 1982 flood, thereby broadening its frame of reference and demonstrating commitment to long-term solutions to the flooding problem. A variety of technical, economic, environmental and other criteria were used by the team both in developing and selecting alternative solutions. As will be explained, these solutions were in part based on the Hazard Mitigation Team Report.

The Hazard Mitigation Team Report

The HMT focused on the problems and opportunities of specific neighborhoods in providing a framework for flood hazard mitigation during the reconstruction phase. This strategy was chosen in order to 1) utilize the Mitigation Team's recommendations, 2) avoid duplication of efforts vis-a-vis the Phase II Team, and 3) help bridge the gap between whatever long-term alternatives were developed and the shorter-term flood protection needs in Fort Wayne.

The HMT developed its recommendations and presented them in the form of three distinct strategies, based on working assumptions about the flood potential in three different areas. The three strategies are as follows:

- 1) Offer 100-year protection without the need for flood fighting. Elements in this package emphasized short-term structural measures and focused on the Pemberton

area, which was the focal point of the massive sandbagging effort described earlier.

- 2) Offer 100-year protection with flood fighting. In some damaged areas, the team chose a combination of nonstructural, short-term mitigation measures, including floodproofing, limited acquisition and relocation, technical assistance and training, and purchase of flood insurance. Limited structural measures were also included.
- 3) Reduce the effect of flooding in those neighborhoods where 100-year protection is not possible in the near future. These elements emphasized floodproofing by homeowners, the purchase of the flooded Michael-Ross area, and review of potential relocation of several businesses out of the vulnerable central business district area known as the Thumb.

As shown on the following summary of the HMT's recommendations from the April 5, 1982, report many of the mitigation measures are short-term, nonstructural, and expensive.

The HMT employed both economic and technical criteria in developing the proposed measures; it recognized the need to be realistic because of the long history of development in the flood plain as well as the estimated high cost of extensive structural and nonstructural solutions (e.g., large-scale relocation). One major nonstructural measure was endorsed. This endorsement was contingent upon the development of a comprehensive, long-term flood protection program by the city of Fort Wayne.

The Fort Wayne-Allen County Flood Protection Plan

In its planning process, the Phase III Team intended to develop a full range of alternative flood protection solutions. It was recognized that a number of the solutions would be considered infeasible or unacceptable. The alternatives that were developed ranged from wholly nonstructural to those emphasizing long-term major structural mitigation measures. The nine alternatives that ultimately were identified by the team included diversion, evacuation of the flood plain, floodproofing,

channelization, diking, and impoundment. The team thought that it was essential to develop solutions that would offer protection in the longer term, as well as for the interim period. In addition, the proposed solution had to be financially realistic and acceptable to the community.

Two sets of criteria were employed in developing and selecting alternative solutions. The technical criteria consisted of engineering standards, regulations, and guidelines, based in part on current plans and studies. A second, broader set of criteria was employed to evaluate the various alternatives and to propose a single solution. These criteria include:

- technical feasibility
- monetary cost
- effectiveness and reliability in reducing flood damage
- energy and resource use
- public acceptance
- implementation capability
- impact on the natural environment
- social and economic impact

The development of the nine strongest alternative solutions involved extensive discussions among local engineers, planners and other team members. The team then conducted public hearings on the proposed solutions and subsequently used citizen comments to help refine the alternatives and to reduce the number to be further considered.

After the first public hearing, the team refined some of the solutions and removed others from further consideration. Each of the solutions seriously considered contained some element of a diversion approach to mitigating future floods, i.e., a viable comprehensive solution must include the diversion of some portion of the St. Marys River 100-year floodwaters around key parts of the city of Fort Wayne.

A refined version of Alternative 4 was selected as the best comprehensive flood protection solution, because its multi-faceted

approach incorporated the short-term mitigation measures recommended by the Hazard Mitigation Team, a variety of the stronger concepts and features of other alternatives (acquisition-relocation, dike and levee improvements, internal drainage improvements), and the most acceptable of the key long-term measures (40% diversion of the St. Marys 100-year floodwaters).

Alternative 4 Implementation Issues.

The proposed implementation strategy for the proposed flood protection solution is considered by Fort Wayne officials to be both optimistic and realistic. An initial trip to Washington, DC by a delegation from Fort Wayne, the other local jurisdictions affected by the 1982 flood, and the state of Indiana set the tone for subsequent implementation efforts. The first trip, early in April 1982, was made prior to the completion of the flood protection plan and the adoption of Alternative 4. Its purpose was to discuss damages and to explore potential mitigation and long-term recovery options that could be supported in Washington both by members of Congress and key federal agency officials. The trip was successful because it publicized the magnitude of Fort Wayne's disaster and the need for mitigation and recovery assistance.

After the flood protection plan was completed (and Alternative 4 was selected), another delegation traveled to Washington to present the plan and to demonstrate local initiative in developing viable mitigation solutions. The plan had been endorsed and accepted by the various local governments and key state officials, along with a number of regional federal agency officials. On August 26, 1982, FEMA approved two mitigation projects for 75/25% funding in Fort Wayne. One project will protect the Fort Wayne wastewater treatment plant from flooding through the construction of floodwalls and an earthen berm. The second project

will prevent flooding in two buildings on the Purdue University, Fort Wayne Campus. Gate valves will be installed in the storm and sanitary sewer lines outside of the buildings. Closing of these valves during flooding incidents will prevent damage to mechanical equipment located in the basement of the library and student union buildings.

In agreeing to this innovative action, the Associate Director used the following standard:

Public facilities in the 100-year floodplain damaged by a major disaster shall be protected against anticipated flooding damage by flood hazard mitigation measures, but only where the proposed measures meet the following four conditions:

1. The measures must be judged effective in substantially alleviating or eliminating recurrence of flooding damage done to the public facility by the major disaster.
2. The measures must be feasible from the standpoint of sound engineering and construction practices.
3. The measures must be cost-effective; further, they must be more cost-effective than any alternative measures which would be eligible as disaster-proofing. In any event, the cost of the measures shall not exceed a small percentage of the eligible project (DSR) costs approved by FEMA unless approved by the Associate Director under unusual circumstances on a case-by-case basis.
4. The measures must be consistent with applicable NFIP standards (44 CFR, page 59, LT seq.), Floodplain Management Regulations (44 CFR, Par 9), and (where applicable) environmental considerations (44 CFR, Part 10).

Proposed projects will be reviewed on a case-by-case basis by the Associate Director of FEMA's State and Local Programs and Support, for compliance with the above conditions.

Fort Wayne officials have initiated the 18-month implementation plan, which includes 12 key tasks for accomplishing flood protection under Alternative 4. These tasks include:

- upgrading flood-fighting capability
- obtaining plan approval and adoption

- establishing a new organization to control flooding
- creating an interim organization
- conducting preliminary design work (revised cost/technical estimates)
- improving levees to original condition
- installing backwater gates (to prevent sewer system damage)
- repairing sewers and pumping stations
- performing river dredging
- performing ditch cleaning
- acquiring land
- planning the Trier Ditch cut-off (the 40% diversion)
- raising existing dikes
- limited construction of new dikes

Several of the steps in the implementation plan were assessed by Fort Wayne officials as being relatively straightforward and non-problematic. Other steps, however, could pose major stumbling-blocks to the effort. The officials stressed the integrated nature of the plan, and that all elements are necessary to achieve the level and immediacy of flood protection required to insure the safety of Fort Wayne and the affected areas nearby. Perhaps the most serious problem is in bringing certain dikes and levees to original pre-flood conditions, employing bentonite trenches in especially vulnerable locations. This action had been recommended by the Detroit office of the U.S. Army Corps of Engineers following an extensive survey of the area. Even though the establishment of stable dikes is critical to the integrated flood protection plan, a difference in interpretation over the permissibility of the recommended bentonite treatment between the Detroit CJE district office and the Chicago COE regional office had not been resolved at the time of this writing.

A number of other implementation steps could prove difficult, including obtaining plan approval by the public and adoption by the City Council, and establishing a new organization--possibly a conservancy type special district--to administer the flood protection effort. Despite possible difficulties, the city of Fort Wayne already has assigned a variety of implementation responsibilities to local departments.

To complement these internal efforts and to assist in the resource procurement and marketing of its ambitious flood protection program, the city not only has shifted its internal staff resources, but has retained the services of the recovery consultant mentioned earlier and the consulting engineer who was instrumental in the earlier response and recovery phases. These actions are consistent with the basic operating policy of Fort Wayne.

Interviewers' Perceptions

Fort Wayne developed an ambitious and aggressive plan of action to mitigate the effects of any future flooding and to help its citizens recover from the Great Flood of '82. Given its history of flooding, however, it is surprising that so few of the elements of the current flood protection plan have been implemented. One reason for this failure to adopt long-term mitigative measures in the past was identified by the Phase III Team as "complacency."

After the 1978 flood, as was true after earlier floods, no real effort was made to find an overall long-term solution to the flooding problem. Instead, existing protective structures were restored to their previous condition. A variety of attitudinal, political, and management factors seem to account for the apparent change in direction following the 1982 flood. The administration in the city was highly sensitive to

the political and other ramifications of its actions. Given the administration's philosophy and the past failures to effectively mitigate floods, in 1982 the local public leaders emerged with an unusual, perhaps unique, approach to all phases of disaster management. All phases of emergency management were directed and coordinated by a top level policy group. Independent actions by line agencies were discouraged. Also, existing local government priorities were modified to permit major shifts in duties for key personnel for significant periods of time. Where the needed expertise was not available in-house, experienced consultants were hired, notably for the longer-term recovery efforts.

Fort Wayne's usual management approach emphasizes teams, flexibility, and problem-solving. The same approach characterized Fort Wayne's efforts throughout the 1982 flood emergency. Some of the flood response and recovery results to date appear significantly different from those often found in similar disaster settings, primarily due to the management approach of the local public leaders. Although inconclusive at the time of writing, these results may be instructive to other communities. They are summarized as follows:

- 1) The flexible team approach enhanced effective policy direction and strengthened decision making in all emergency phases.
- 2) This management approach is politically acceptable, and it is perceived locally to be effective, because it permits the citizens to see clearly that the government is using its own resources to the fullest extent in their behalf.
- 3) The approach is results-oriented. The teams for each phase developed measurable goals and target dates for accomplishing them. At least one team was involved in a critique of the response phase in an effort to improve future emergency operations.

Use of the team approach for Phase III accelerated the mitigation effort--the city decreased the length of time

needed to establish mitigation goals and initiate efforts to obtain outside funding.

Also, the approach allowed the local administration to capitalize on the community and political impacts created by the response efforts, particularly by the successful attempt to demonstrate local initiative.

- 4) The management approach used by Fort Wayne may increase the likelihood of effective change and community betterment. By activating separate teams with overlapping schedules, the administration effectively reduced the time between response, mitigation, and recovery efforts, thereby preventing the "vacuum" that often occurs in postdisaster settings.

The momentum produced by Fort Wayne's innovative approach may improve its mitigation and recovery chances. However, if the implementation of mitigation plans is limited by lack of financial resources, the recovery process may be less comprehensive and take longer than planned. Despite the difficulties facing Fort Wayne, there appears to be a steadfast commitment to implementation of the proposed flood protection plan. The mayor and other local officials obviously have shown strong initiative.

Update on the Recovery of Fort Wayne, Indiana

About 18 months after the flood, and almost one year after the initial site visit, the project staff returned to Fort Wayne for a second look at the city's progress. The project team wanted to see how the implementation of Ft. Wayne's unusually ambitious mitigation program had proceeded.

The 18-month milestone turned out to be especially appropriate for two reasons: 1) 18 months is the usual period FEMA allows for the completion of approved projects for public facilities repair and restoration; and 2) 18 months was the remaining time in the mayor's term of office, hence the period for which he could make commitments. Mayor Winfield Moses was re-elected in November, 1983. Consequently, it is

expected that the city's flood protection and mitigation implementation efforts will continue as planned.

Recovery Activities

About two months into the recovery period, the special assistant to the mayor and the consultant assigned to the recovery planning effort gradually phased out of recovery activities and into other projects. the City Controller--who serves not only as financial manager, but also as emergency management coordinator--gradually reduced his involvement in disaster-related activities as the months went by.

Yet, at the 18-month point, the city's planning director and public works director still were significantly involved in flood recovery activities. Both said their workload had not yet returned to pre-flood status.

In the aftermath of the disaster, the local public officials quickly determined their priorities for reconstruction, recovery, and mitigation and then made plans to implement them. In the short-term, the city had a Flood Protection Plan and also an 18-month Work Plan for flood recovery projects. A copy of the major projects in that plan, with notations about completion by the time of the second visit, is appended as Attachment A. The city had made substantial progress in completing the scheduled projects by the time of the second visit.

For the longer-term, the city outlined its Flood Hazard Mitigation Plan for the years 1984-88. (The "White Paper #3B," issued by the mayor in September, 1983, is briefly outlined in Attachment B.) One of the proposed items in the city's Flood Hazard Mitigation Plan is the formation of a Conservancy District (CD), according to the procedures required under Indiana state law. The CD is a special taxing district whose responsibilities include flood protection for Fort Wayne and surrounding areas. Since the watershed areas cover almost the entire

county, the city's boundaries are too narrow for the flood protection measures needed in the long run. The CD also would allow for the maintenance of dikes, other structures, and green space in perpetuity. It could do so via its taxing power (e.g., \$.20 per \$100 of assessed value), escrow tax, and sale of bonds.

The CD also makes sense from a political standpoint. In an area where one political party tends to dominate politics in the city and another one in the county, the CD would provide a de-politicized environment where technical expertise and continuity would be likely. The advantages of using a CD for long-term flood protection are that the organization would have an exclusive mandate, cross-jurisdictional powers, and its own budget. With its own taxing and bonding authority, it should be self-sustaining. There are nearly 70 such districts in the state, but the use of one for a long-term solution to flood protection may be unique.

Financial

The controller is not only the city's financial manager, but in effect serves as city manager on occasion. In case of a city-wide emergency, he/she serves as the Emergency Management Coordinator. The controller and his department were used to functioning in non-traditional ways, which provided the flexibility and experience required to handle the flood response and recovery. According to the controller, his two major concerns immediately after the flood were to ensure that needed supplies and materials were made available, and proper record keeping and other details of expenditures were documented, so that outside government assistance and grants would not be complicated or jeopardized. As the recovery continued, he added a third concern: the authorization and documentation of overtime labor.

Given the depressed economic conditions prior to the 1982 flood, the research team was especially interested in how those conditions would affect the recovery. According to the local public officials interviewed at the 18-month mark, neither the local government's financial condition nor the private sector were irreparably harmed by the flood. (An economic analysis was not part of this case study.)

At the time of the second visit, the controller explained that among the financial assets available locally was a special local fund called the Endowment Trust Fund. The Endowment Trust Fund had not been specifically mentioned during the research team's first visit to Ft. Wayne. This fund, which derives its monies from leased city utilities, brings in \$1.5 million of revenue annually. About \$.75 million is unencumbered each year. At the time of the flood, there was \$3-4 million in that fund; consequently, the controller was able to use those monies for response and recovery costs. Also, at the time of the flood, the city was about to issue water and sewer bonds; as a result of the flood, the city increased the total amount of the bond issue by about 10% to bring in additional monies for water and sewer repairs.

DSRs/Record Keeping/Audit

As has been true elsewhere, when key personnel have had previous experience with a federally declared disaster, they can anticipate the documentation and record keeping needed for public assistance from FEMA. In this case, both the city engineer and the controller were experienced and saw to it that the records for the DSRs were correct and in order for the federal auditors.

One city staff member, borrowed from the Economic Development Department, was given the full-time job of implementing the projects authorized in the 18-month period following the federal approval of public facilities repair and restoration. According to the city

officials, this care with record keeping and with tracking the progress of repair projects helped them to convince the FEMA officials to do an early audit and hence allow the flow of federal dollars to the city to proceed ahead of the usual public assistance reimbursement process.

Under this special arrangement, FEMA performed a partial payment audit--the audit was done at the time the public facilities repairs were about 90% completed (although the paperwork was not yet completed). FEMA auditors came in to do the audit and waived the usual prior state audit. FEMA agreed to reimburse the city for 75% of its share of the project, upon completion of the partial audit. The reason cited for this special audit was that despite city officials' efforts to deal with both flood recovery and flood protections, the city was having serious cash flow problems.

Interviewers' Observations

Fort Wayne had an unusually positive relationship with the federal government and with FEMA in particular. The city officials were especially pleased with the efforts of two FEMA staffers--one who was on the Hazard Mitigation Team and the other who was the head of Disaster Assistance in the Chicago Regional Office--because of their willingness to stretch to meet the needs of the flood-stricken community. For its part, the community had to adjust its attitude toward the Army Corps of Engineers, an agency which it had asked not to come into the area again after a major disagreement during the last major flood.

The city's continuing commitment to long-term flood mitigation efforts and to the formation of a special district that could attend to such needs in perpetuity are commendable.

Attachment A

FORT WAYNE-ALLEN COUNTY FLOOD PLAN

18 MONTH WORK PROGRAM

	<u>COST ESTIMATE</u>	<u>POTENTIAL FUNDING SOURCE</u>
<u>I. FLOOD FIGHTING</u>		
*A. River Gages	\$ 15,000	U.S. Geological Survey Dept. of Natural Resources City
*B. Flood Emergency Action Plan	N/A	
C. Early Warning System	\$ 90,000	State of Indiana
*D. Floodproofing Program	\$ 10,000	Community Development Block Grant
	\$ 5,000	FEMA
 <u>II. DIKES</u>		
*A. Minor Repairs		
1. Bella Vista	\$ 15,000	City Budget
2. Waynedale Spot Fill	\$ 1,400	City Budget
3. Boat Ramp	\$ 3,000	City Budget
4. Leave Flood-Fighting Fill	N/A	
5. Oswego (North of Vance)	\$ 2,500	City Budget
*B. Repair to Pre-Flood Condition		
1. Pemberton	\$200,000	City Budget/COE
	\$131,000	Public Law 84-99
2. 14 Miscellaneous Sections		
a. Proof Rolling & Repair	\$104,900	Public Law 84-99
b. Tree Removal	\$ 80,000	City Budget
C. Increase Height		
*1. Nebraska (some acquisition)	\$250,000	State of Indiana
	\$400,000	City Budget
*2. Main to Clinton	\$300,000	Park Bond
	\$165,000	City Budget
3. Spy Run/St. Joe	\$600,000	State of Indiana
4. Taylor Street	\$ 90,000	State of Indiana
5. Michigan Avenue	\$ 90,000	State of Indiana
6. Vesey Avenue	\$ 90,000	State of Indiana
*D. New Construction		
1. Lagoon Dike	\$ 52,000	City Utilities
2. Sewer Treatment Plant	\$ 49,200	City Utilities

18 MONTH WORK PROGRAM (cont.)

	<u>COST ESTIMATE</u>	<u>POTENTIAL FUNDING SOURCES</u>
*III. <u>BACKWATER GATES</u>		
A. Spy Run Creek		
B. St. Joe River		
C. St. Marys River	\$ 135,000	City Utilities
D. Maumee River		
E. Fairfield Ditch		
IV. <u>CHANNEL IMPROVEMENTS</u>		
A. Confluence Area	\$ 400,000	State of Indiana
*B. Traders Point (MESA)	\$ 131,000	Park Bond
C. Fairfield Ditch	\$ 200,000	Allen County
D. State Street	\$ 120,000	Allen County
V. <u>ACQUISITION</u>		
*A. Fairmount Place (\$350,000 over 6-year period)	\$ 300,000	Community Development Block Grant
B. Ross-Michael	\$ 190,000	State of Indiana
*C. Rivergreenway	\$ 140,000	State of Indiana
	\$ 93,000	Park Bond
VI. <u>PUMPING STATIONS</u>		
A. Tecumseh and Morton Street and Emergency Pumping Wells	\$ 200,000	State of Indiana
VII. <u>DAMAGE SURVEY REPORTS</u>		
*A. Utilities	\$ 1,334,900	City Utilities
*B. Civil City	\$ 364,200	City Budget
VIII. <u>FEDERAL EMERGENCY MANAGEMENT AGENCY</u>		
	*\$ 5,097,200	FEMA (public assistance)
TOTAL	\$11,309,300	

*Complete or funded

Attachment B

Excerpts From

White Paper 3B
(pp. 2-3)

"Flood Hazard Mitigation 1984-88"
City of Fort Wayne

September 1983

1. Goal Statement

The Fort Wayne community needs a single authorized agency to implement a comprehensive flood control solution. This agency must be relentless and timeless in the pursuit of this long-term objective.

Program

The creation and implementation of a conservancy district.

2. Goal Statement

The Fort Wayne community needs to expedite a long-term flood control solution that will provide the greatest degree of protection to the area's flooding problems.

Program

Congressional appropriations through the U.S. Army Corps of Engineers flood control projects to implement major public works flood control projects like the Trier Ditch diversion channel.

3. Goal Statement

The Fort Wayne community needs to continue its efforts to achieve short-term solutions to the flooding problems that provide some degree of protection immediately.

Program

Develop additional Work Programs to compliment and extend the soon finished 18 Month Work Program.

4. Goal Statement

The Fort Wayne community needs to achieve wise use of flood hazard areas with the context of the built environment.

Program

Review, revise and update the existing floodplain zoning ordinance.