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REPORT OF THE
COMPTROLLER GENERAL
OF THE UNITED STATES



LM100551

Delayed Redevelopment
Was Reasonable
After Flood Disaster
In West Virginia

Multiagency

This report examines causes for delays in Buffalo Creek Valley redevelopment projects and responds to the question of how project performance was affected by government coordination. It also answers questions raised concerning various other facets of the redevelopment projects. The report concludes that additional coordination on the Buffalo Creek projects would not have greatly shortened the time needed to achieve the goals of redevelopment plans.

DEC. 30. 1976

CEG-77-17



COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

B-167790

The Honorable Ken Hechler
House of Representatives

Dear Mr. Hechler:

As you requested, we are reporting on the Federal coordination of redevelopment in Buffalo Creek Valley, West Virginia, following a flood disaster on February 26, 1972.

This report discusses the progress made in providing housing, a new water and sewer system, a new highway, and housing relocation assistance to valley residents displaced by highway construction.

As directed by your office, we did not obtain agency comments. We did, however, discuss our findings with agency officials at the conclusion of our fieldwork and their views have been considered in appropriate sections of the report.

Sincerely yours,

A handwritten signature in cursive script that reads "James B. Stacks".

Comptroller General
of the United States

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ABBREVIATIONS

GAO General Accounting Office
HUD Department of Housing and Urban Development
EPA Environmental Protection Agency

D I G E S T

On February 26, 1972, a coal-waste dam collapsed in the Buffalo Creek Valley of West Virginia, releasing 132 million gallons of water and waste and flooding 17 mining towns. The flood waters

- killed 125 people,
- destroyed nearly 1,000 homes,
- washed out or damaged 9 miles of highway,
- demolished 12 bridges, and
- covered the valley with black coal sludge.

Damage was estimated at \$50 million.

This devastation created a sense of urgency among Federal, State, and local officials. A plan was prepared to bring the valley up to modern standards for housing, water and sewer systems, and highways. This urgency also contributed to the unrealistic cost estimates and target dates they established for completed work. (See p. 38.)

Although redevelopment of Buffalo Creek Valley has been delayed, the delays appear reasonable because of the extensive work done.

- Substandard housing was replaced with new housing.
- A modern highway was built to replace a narrow, winding road.
- Comprehensive water and sewer systems were built where none had existed.

Additional Federal coordination would not have greatly shortened the time needed for redevelopment.

Temporary recovery began on February 27, 1972, when the President formally declared the valley a national disaster area. Redevelopment planning began in

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May 1972, directed by the Federal Regional Council in Pennsylvania. (See p. 2.)

HOUSING DEVELOPMENT

Problems with sponsors delayed development by about 3 years of the 90-unit Department of Housing and Urban Development rent subsidy housing project. The State agency coordinating the project worked for 20 months with three different sponsors before finding one that could build the project. (See p. 13.)

The first sponsor designed a three-story walkup, which was inconsistent with local preferences for one-story, single-family units. The second sponsor's construction contractor had financial problems and withdrew from the project. The third sponsor proposed four different construction contractors before one technically and financially able was approved. (See p. 15.)

The Builders Emergency Housing Corporation, established by the West Virginia Home Builders Association at the request of the Governor, received no direct Federal funding--but did receive a State grant and a donation from a private charity--to develop model home sites to illustrate the type of homes contractors could build. The corporation assisted in developing 100 homes in the valley. Most of these homes were financed through commercial sources and Small Business Administration disaster loans. (See p. 17.)

The Department of Housing and Urban Development took adequate action to provide disaster victims with temporary housing. In April 1976, 37 families still lived in temporary mobile homes. In February 1976 their trailer park was purchased by a coal company and given to the State. After repairing the park, the State offered to sell park residents lots at prices equal to the cost of these repairs.

Because some families had little or no income, the Department of Housing and Urban Development agreed to sell mobile homes to park residents at nominal prices ranging from \$12 to \$797.

The West Virginia Department of Welfare agreed to provide up to \$500 each for welfare families to purchase lots and trailers. By May 17, 1976, all these families owned their own homes in the park. (See p. 12.)

GAO reviewed the relocation settlement cases for 58 of 353 families; all received payments which compensated them for at least the same quality houses they had before relocation. Families who had lived in substandard housing were given enough money to replace the former houses with decent, safe, and sanitary ones. Some did receive greater payments than others with comparable needs, because State highway personnel inconsistently applied the criteria for computing housing relocation payments. (See p. 20.)

HIGHWAY RECONSTRUCTION

At first, no target dates for completing all highway work were established. On May 31, 1972, the Federal Highway Administration approved State plans for removing debris, restoring minimum passable conditions, and replacing washed-out roadbeds and bridges along the old highway. (See p. 8.)

One section of the new highway was completed in November 1975. The remaining section was started in October 1975 and should be finished in November 1977. The State estimates that the highway will cost about \$23.3 million. (See p. 19.)

Parts of 26 land tracts acquired by the State highway department may no longer be required for the new highway. Some tracts are small parcels which the department purchased to avoid leaving owners with uneconomical remnants, while other tracts are parts of the old highway. State highway officials have agreed to review this land to determine how it can best be used or disposed of. (See p. 24.)

WATER AND SEWAGE SYSTEMS

The water and sewage systems, originally to be completed by the end of 1972 at an estimated

cost of \$6.2 million, now are scheduled to be completed in January 1977 at an estimated cost of \$13.5 million. (See p. 27.)

This delay is due primarily to a lack of (1) comprehensive and reliable data for planning and (2) local leadership. Before the disaster, the valley had no comprehensive water and sewer system and no one to administer such a system. (See p. 27.)

Although allegations had been made that water and sewer pipes had been placed too close to each other, GAO's review did not substantiate this.

Funds and staff appear adequate to complete the project. The project should provide the people in the Buffalo Creek Valley with adequate drinking water and sewage systems. (See p. 33.)

As directed by Congressman Ken Hechler's office, GAO did not obtain agency comments but the findings were discussed with agency officials and their views were considered where appropriate.

CHAPTER 1

INTRODUCTION

As Congressman Ken Hechler requested on December 22, 1975, (see app. I), we reviewed the Federal role in the redevelopment of the Buffalo Creek Valley of West Virginia following the severe flooding caused by a disaster on February 26, 1972.

Congressman Hechler was not satisfied that redevelopment of the valley had proceeded as quickly and effectively as initially planned and was particularly interested in the following problems:

- Housing: Why has the 90-unit rent supplement housing unit announced on May 3, 1974, encountered so many delays? When will it be ready for occupancy and do the rent and income guidelines meet the needs of valley residents? What was being done to assure that residents of the Green Valley Trailer Park, which was scheduled to close on February 28, 1976, would still have shelter after that date? Finally, how is the Builders Emergency Housing Corporation, established to provide housing assistance, helping to meet the housing needs in Buffalo Creek?
- Highway relocation: Was more land condemned and bought for construction of the highway, water, and sewer lines than was actually needed? If so, what plans does the State have for disposing of unneeded land? What procedures were followed in providing relocation assistance to those displaced by the new highway, and did these procedures meet Federal guidelines?
- Water and sewer systems: Have sufficient funds been provided for these systems, and will the local public service district be capable of maintaining them? Is there a factual basis to the allegations concerning waterlines and sewerlines being incorrectly placed or placed too close together and the implied mis-handling of funds outlined in an Environmental Protection Agency (EPA) audit?

Recovery from the disaster was provided in two phases-- disaster or emergency relief and redevelopment. Disaster relief is a temporary relief program during which disaster victims are provided food, water, medical aid, temporary housing, and other essentials of life. During this phase

the community is assisted to clear debris, emergency protective measures are taken to preserve life and property, and public utilities and other facilities are restored.

The redevelopment phase was a planned long-range effort which attempted to return the area and its residents to a better quality of life than they had before the disaster.

THE DISASTER AND TEMPORARY RECOVERY WORK

On February 26, 1972, a coal-waste dam, 250 feet above the valley floor, collapsed and released 132 million gallons of water and waste material. The 10- to 20-foot wall of water and coal debris flooded 17 mining towns on its 15-mile trip down the valley to the Guyandot River at Man, West Virginia.

The flood waters killed 125 people, destroyed nearly 1,000 homes, washed out or damaged 9 miles of highway, demolished 12 bridges, damaged 15 miles of railroad, stripped the entire valley of vegetation, and covered the valley floor with black coal sludge. Damage was estimated at \$50 million.

Recovery work

Disaster recovery work began immediately. On the morning following the disaster, the President formally declared Buffalo Creek Valley a national disaster area and the Office of Emergency Preparedness (now the Federal Disaster Assistance Administration) began coordinating the disaster relief assistance of 17 Federal agencies. Within 24 hours of the disaster, over 800 National Guardsmen and 90 State troopers and local law enforcement officers were engaged in rescue and recovery operations.

The primary Federal agencies participating in the relief work included the Corps of Engineers; the Small Business Administration; the Internal Revenue Service; the General Services Administration; the Environmental Protection Agency; and the Departments of Labor, Transportation, Agriculture, Housing and Urban Development (HUD), and Health, Education and Welfare. Private organizations, including the American Red Cross, the Seventh Day Adventists, the Salvation Army, and the Mennonite Disaster Service, provided food, clothes, and medical services to disaster victims.

The Corps of Engineers was in charge of temporary recovery work under the direction of the Office of Emergency Preparedness. Within 3 months the Corps had removed 300,000

cubic yards of debris, repaired 18 miles of road to a passable condition, erected eight temporary bridges, and constructed temporary water and sewer systems.

The Corps, HUD, and the State jointly provided temporary housing for the disaster victims. Most of the housing in the area had been destroyed or badly damaged, so the Corps prepared nearly 600 mobile home sites on State-provided land, and HUD purchased and set up mobile homes for the flood victims. By May 17, 1972, HUD had provided mobile homes to temporarily house 509 of the 609 families that were eventually housed at mobile home sites. The Small Business Administration accepted 581 home and business loan applications during the initial disaster recovery period which ended in May 1972. At that time the work shifted to the long-range redevelopment phase which is discussed in chapter 2.

SCOPE OF REVIEW

Our review concentrated on the Federal agencies involved with the long-range redevelopment of Buffalo Creek Valley. We analyzed the adequacy of funding and compared and evaluated estimated and actual cost for the water and sewer systems. We determined reasons for delays in completing redevelopment work on the housing and water and sewer systems. We also reviewed and evaluated the relocation assistance provided residents displaced by the highway project and identified and assessed the need for land parcels acquired by the West Virginia State Department of Highways. We examined Federal agencies' policies, procedures, records, and reports and interviewed officials of the following organizations active in the redevelopment program.

- Department of Housing and Urban Development.
- Environmental Protection Agency.
- Federal Highway Administration.
- Federal Regional Council--region III (site location).
- Small Business Administration.
- Farmers Home Administration.
- West Virginia Office of Federal/State Relations.
- West Virginia Department of Highways.
- West Virginia Housing Development Fund.

--Builders Emergency Housing Corporation.

--Buffalo Creek Public Service District.

--Logan County, West Virginia Health Department.

--Howard, Needles, Tammen, and Bergendoff, Inc., a
private architectural and engineering firm.

CHAPTER 2

REDEVELOPMENT PLANNING

Redevelopment planning began on May 17, 1972, when the President announced that the Federal Regional Council for region III located in Philadelphia, Pennsylvania, would replace the Office of Emergency Preparedness as the Federal leader in the Buffalo Creek Valley redevelopment. The Council, whose purpose was to coordinate long-range recovery assistance of participating Federal agencies, was composed of the Departments of Labor; Health, Education and Welfare; Housing and Urban Development; Transportation; the Office of Economic Opportunity; the Law Enforcement Assistance Administration; and the Environmental Protection Agency. An Office of Management and Budget representative was also authorized to participate in the Council's work.

The Council established a Federal Agency Task Force on Planning and assigned a Federal coordinator to work with State officials in developing and implementing a comprehensive redevelopment plan.

PRELIMINARY PLANNING

In May 1972 the Governor of West Virginia sent the Council a list of goals and objectives designed for "permanent rehabilitation" of the valley. In order of priority, the Governor's plan included (1) water and sewer systems, (2) roads and bridges, (3) housing, (4) sanitation, (5) education, (6) recreation, (7) public safety, (8) transportation, (9) health care, and (10) economic and job development.

On May 30, 1972, the Council developed the following specific planning actions to meet the Governor's priorities:

- Evaluate the State's May 8, 1972, proposed highway plan to ascertain (1) whether highway realignment can provide adequate flood control, (2) how many homes will be relocated, and (3) whether the highway complements the proposed housing cluster concept.
- Estimate the cost and identify the funding sources for the proposed water and sewer systems.
- Assess housing market needs by identifying (1) the number of people to be housed in each cluster, (2) the type and density of housing, and (3) existing housing which required rehabilitation loans.

--Acquire land for residential housing.

--Acquire highway right-of-way.

The Council's work program anticipated that construction would begin by June 30, 1972, on the permanent housing and water and sewer systems and by July 30, 1972, on the highway.

THE BUFFALO CREEK VALLEY REDEVELOPMENT PLAN

The State, working with the Council, completed the first draft of the redevelopment plan in July 1972. A public hearing on the plan's concepts was held August 10, 1972, and the plan was published on February 20, 1973.

The redevelopment plan was intended to provide a broad overview and serve as a foundation for long-range recovery. Detailed planning on each project, along with engineering designs and specifications was to be done at a later date.

Permanent housing plans

Damage surveys of the valley showed that nearly 1,000 homes were destroyed and that most of the remaining 834 houses were in need of repair or replacement. According to the plan, 80 of these houses would be removed in connection with new highway construction.

On June 30, 1972, the Federal Task Force on Planning proposed the following interim housing plans:

- Develop three housing clusters at designated locations in the valley.
- Solicit applications to obtain a sponsor for the proposed housing projects with the West Virginia Housing Development Fund as possible temporary sponsor for one project.
- Solicit proposals from the West Virginia Home Builders Association to build new housing in the valley.
- Build a model home project to display the various types of homes local builders could provide.

In December 1972 the Task Force discarded the housing cluster plan. The disaster victims disliked the idea of living in densely populated areas and preferred to return to their original homesites. In addition, an incorporated community that had the necessary authority to purchase land for

urban renewal and housing projects was needed and there was no such community in the Buffalo Creek Valley.

The redevelopment plan identified a potential need for 500 to 700 housing units in the valley. The plan suggested various single and multifamily housing projects available through HUD programs designed to assist and promote housing construction by private investors. The State selected the West Virginia Home Builders Association and the Builders Emergency Housing Corporation to act as agents for (1) soliciting and reviewing proposals from developers, (2) overseeing the quality of construction, (3) implementing a public education program, and (4) coordinating and securing financing for buyers.

In January 1973 the President declared a moratorium on HUD-funded subsidized housing projects. The Governor of West Virginia requested a waiver of the moratorium in March 1973 but funding for HUD housing programs providing mortgage insurance and rent subsidies was not reinstated until June 1973.

During August 1973 the State contacted several organizations about their interest in developing a HUD-supported housing project. The West Virginia Housing Development Fund, a quasi-State organization established to finance housing development in the State, agreed to coordinate the development of a 90-unit subsidized project.

Highway plans

State Route 16 was a narrow road which extended about 15 miles from the town of Man to the town of Saunders, West Virginia. The road was approximately 16 feet wide with 2- to 3-foot shoulders. The road was crooked, its right-of-way varied in width, and it had 12 bridges, some with only 1 lane. The flood destroyed some sections of the road, damaged others, and all the bridges were either washed out or badly damaged.

Early in the 1960s, the State Department of Highways included State Route 16 as part of its Federal Aid Secondary "Trunk" System, designed to connect this road with other State routes leading into Beckley, West Virginia. Following the flood, the Governor declared the valley a disaster area, noting that the severity and size of the catastrophe warranted help from the Federal Government. The State told the Federal Highway Administration that it would request 100 percent emergency relief funds to rebuild the highway. On March 3, 1972, the Federal Highway Administrator told the Governor that the Federal Highway Administration agreed with the emergency proclamation and that it would fund the entire project.

On May 8, 1972, the State submitted a three-stage program for repairing the road. Emergency repairs, to be made by the Corps of Engineers, included removing debris and restoring the roadway to minimum passable conditions and intermediate repairs to replace the washed-out roadway and bridges, providing a road suitable for use by the general public. The permanent repairs would provide a highway with two 12-foot lanes and 8-foot shoulders meeting the minimum secondary standards established by the American Association of State Highway Offices. The roadbed would be elevated to make it safe from flooding and compatible with land use plans concerning housing clusters, and the right-of-way would be straightened where possible. The State estimated that emergency and intermediate repairs would cost about \$1.7 million and permanent repairs about \$11.5 million.

The Federal Highway Administration approved the State program on May 31, 1972, for emergency and intermediate repairs. However, of the amount requested for permanent repairs, only \$267,000 was approved for preliminary engineering studies. The State was instructed to submit separate plans showing the estimated cost of construction and right-of-way acquisition for permanent reconstruction, after it held public hearings, prepared an environmental impact statement, and determined the number of individuals that would be displaced by the highway.

The State's original plan for permanent work called for a 12-mile highway divided into two rights-of-way and construction sections: section I from Man to Amherstdale and section II from Amherstdale to Pardee (see app. II). The length of construction for section I was shortened because of protests from local residents in the area from Man to Crown at a public meeting. The design change reduced the number of residential relocations by about 50 percent (from 81 to 42), modified section I to extend from Crown to Amherstdale, and called for resurfacing the road from Man to Crown.

Target dates were not established for all highway work. As soon as plans could be drawn, a contract was to be awarded and a completion date set.

Water and sewer systems plans

Before the disaster, there was no comprehensive water or sewer system in the valley. The sewage disposal system consisted of on-lot septic tanks, outdoor privies, and direct discharges into Buffalo Creek. Nearly half of the valley residents received water from one of the five separate water

systems owned and operated by the Cashion Water Works, Inc.; the rest received water from privately owned wells or from small cooperatives. The primary source for most of these systems was surface water collected in abandoned mines.

Because there were no adequate facilities, except the emergency systems the Corps installed to serve the temporary mobile home sites, complete new systems were needed to permit permanent resettlement. The Economic Development Administration contracted with Michael Baker, Jr., Inc., consulting engineers, for a preliminary engineering report to include (1) determination of design criteria, (2) estimated construction and operating costs, and (3) recommendations for water and sewer facilities. This July 1972 report recommended comprehensive water and sewage facilities for the valley. The proposed water system would use well water sources from three separate and distinct water systems to service the three planned communities. The sewer system would have its central sewage treatment facility in the Kistler area.

Because of its demonstrated expertise during the disaster and its general familiarity with the valley, the Governor of West Virginia asked the Corps of Engineers in June 1972 to coordinate the design and construction of water and sewer systems. The State and the Federal Regional Council agreed to fund the Corps' work. In August 1972 the Corps selected the architect-engineering firm of Howard, Needles, Tammen, and Bergendoff to provide basic engineering services, and preliminary studies were made.

These studies anticipated incorporating the emergency water and sewer systems previously installed by the Corps and called for separate water and sewer systems for each of the three proposed housing clusters. On the basis of these studies, the Corps estimated that the water system would cost about \$2 million and that the sewer collection system and treatment plants would cost about \$4.3 million.

In October 1972 the engineering firm submitted the Waste Water Treatment Study for Buffalo Creek Valley and the Sewage Collection System Report. The Corps did not authorize a full engineering study for the water system because all allocated Federal funds had been obligated and the newly formed Buffalo Creek Public Service District was to assume responsibility for the water and sewer projects. The district assumed this responsibility in January 1973 and employed the same engineering firm to complete the engineering master plan begun under the Corps' contract and to provide all engineering services during project construction.

Early in 1973 the engineering firm modified its original plans because of the impracticality of the housing cluster concept. Following the general guidelines of the Buffalo Creek Valley redevelopment plan, the firm proposed a regional sewer system, running the entire length of the valley and including the town of Man "as a customer" of the district. The wastewater treatment plant would be located below Man on the Guyandot River and operate at or above a secondary treatment level.

There are two basic stages in the treatment of wastes, the primary and secondary stage. In the primary treatment stage solids are allowed to settle and are removed from the water. The secondary stage uses biological processes to purify the wastewater further. The secondary stage removes up to 90 percent of the organic matter by making use of the bacteria in it. Disinfection by chlorination is customarily the final stage of secondary treatment.

The engineering firm estimated the gravity flow, regional collection system would cost about \$4.6 million and the treatment plant about \$1.2 million, for a total sewer project cost of about \$5.8 million.

Man was included in the proposed sewer system because EPA would authorize only one secondary treatment plant in this area. Man's sewer system operated at a primary treatment level, which EPA contended was inadequate because the Federal Water Pollution Control Act amendments of 1972, 33 U.S.C. 1311.(b)(1)(B) (Supp. V 1975) required secondary treatment for all municipal-type discharges by July 1, 1977. At the request of town officials, the revised Water Supply System Report, submitted in June 1973, also included Man in the regional water system.

The proposed water system anticipated developing an adequate well field, which would parallel the temporary water lines laid earlier by the Corps, to supply the entire valley. A single treatment plant was to be constructed with aeration, filtration, and chlorination facilities necessary to meet the State Board of Health requirements for potable public water supplies. The engineering firm estimated the cost of the new water transmission and distribution systems at \$2.3 million, the water treatment plant at \$643,500, and the wells at \$60,000, for a total water project cost of about \$3 million.

CHAPTER 3

HOUSING REDEVELOPMENT

Because no temporary housing was available in the Buffalo Creek Valley, the State, the Corps of Engineers, and the Department of Housing and Urban Development, through a coordinated effort, established 13 trailer parks and provided mobile homes for over 600 families. By February 1976 only 37 1/ families remained in temporary housing at the Green Valley Trailer Park (9 of these families were victims of other disasters). This park was later purchased and turned over to the State, thus providing permanent housing to the victims remaining in temporary housing.

Although a need for federally subsidized low-income housing was identified as early as February 1973, construction of a 90-unit project did not begin until January 1976, almost 3 years later. Delays occurred because of problems in

- developing a suitable project,
- locating a suitable site, and
- finding a qualified sponsor and construction contractor.

The Builders Emergency Housing Corporation--a nonprofit corporation--was organized to encourage home development and provide housing assistance throughout the valley. Through its efforts approximately 100 homes were built in the valley by private developers.

Although it has taken over 4 years to locate permanent housing for everyone dislocated by the disaster, the conversion of the Green Valley Trailer Park, the efforts of the Builders Emergency Housing Corporation, and the anticipated completion of the 90-unit housing project in December 1976 should solve the problem of providing permanent housing to those dislocated.

GREEN VALLEY TRAILER PARK

Shortly after the disaster on March 1, 1972, the State acquired a 2-year lease with an option for a third year on the Green Valley Trailer Park. The 23-acre park was 1 of 13 mobile home parks HUD established. The third-year option was

1/ Four other families from the Buffalo Creek Valley disaster resided in temporary housing at two other mobile home sites.

exercised , and the State negotiated a fourth year on the lease which expired on February 29, 1976.

As of February 11, 1976, 85 families were living in mobile homes in the park. Of these families, 37 were renting HUD trailers while attempting to locate permanent housing and the remaining 48 families were permanently housed in HUD trailers which they had purchased as their permanent homes.

According to a February 1976 HUD survey of the 37 families renting HUD trailers at the park, 18 were low-income families with annual incomes between \$1,488 and \$3,373 from welfare, black lung, or unemployment benefits and 2 families were supported by relatives. These 20 families did not have sufficient income to purchase a lot and mobile home or some other form of permanent housing.

Correspondence between the State and the landowners' attorneys showed that the State requested the fourth year lease to provide adequate time for the residents to move from the park. In September 1975 the attorneys requested the State to notify people occupying the mobile homes that they would have to vacate the park on or before February 29, 1976. As the termination date approached, the landowners continued to tell the State that residents would have to vacate because they were unwilling to extend the lease beyond February 29, 1976.

The temporary housing issue for the 37 families was solved in part when the Pittston Company, owner of the dam which collapsed and caused the disaster, purchased the Green Valley Trailer Park on February 28, 1976, for a reported \$500,000. They gave the park to the State which intends to sell the land to the park residents.

The West Virginia Housing Development Fund, acting as agent for the State, met with park residents on March 18, 1976, to determine the manner in which the property would be transferred to the residents. The record of the meeting showed that it was agreed the fund would repair streets and the bridge and sewage treatment system, survey the site and divide it into lots, and establish an escrow account to maintain the sewage treatment plant. Costs incurred by the fund would be prorated to the lots and would become the lot sales price. The fund expects to offer two lot sizes--5,000 and 7,000 square feet. The estimated selling prices of the lots is \$750 and \$1,050, respectively.

Residents were expected to pay a fee of \$30 a month, per lot, while the repair work was being completed. This money

would be used to help pay for some of the improvements and to provide a working fund for the local homeowners association.

In April 1976 HUD offered to sell the 37 families still in temporary housing the trailers they were using for the equivalent of 1 year's rent. Rents were based on the families' ability to pay, and the rents established ranged from \$1.00 to \$66.45 a month. The West Virginia Department of Welfare agreed to provide up to \$500 for a welfare family to purchase a lot and trailer.

A HUD official told us that by May 17, 1976, all these families had purchased a mobile home from HUD and a lot from the West Virginia Housing Development Fund.

DELAYS IN DEVELOPING HUD
RENT-SUBSIDY HOUSING PROJECT

A need for federally subsidized low-income housing was identified in the February 1973 Buffalo Creek Valley redevelopment plan which estimated that at least 230 valley families would qualify for such assistance. However, construction of a 90-unit rent subsidy housing project under section 221(d)(3) of the Housing Act of 1961, Public Law 87-70, as amended 12 U.S.C. 1715.1(d)(3) (Supp. V 1975), did not begin until January 1976, almost 3 years later, and is scheduled for completion in December 1976. Project construction was plagued by the following problems:

1. Developing a project acceptable to Buffalo Creek Valley residents.
2. Locating a suitable construction site.
3. Obtaining both a qualified sponsor and construction contractor.

HUD's section 221(d)(3) housing program provides rent subsidies for qualified low-income persons. HUD officials said that a disaster project such as the one in the valley is given funding priority. The procedures for developing a HUD 221(d)(3) project are:

- A sponsor interested in developing a specific project applies to HUD.
- HUD studies marketability and feasibility of the project and if the project is acceptable, HUD issues a letter directing the sponsor to develop project plans.

- The sponsor develops detailed plans with cost estimates and suggests a contractor to build the project.
- HUD reviews the plans to make sure the project will provide safe and sanitary housing. If so, HUD issues the sponsor a firm commitment to insure the mortgage and to provide rent subsidies.
- The sponsor prepares an up-to-date project cost estimate and furnishes financial data on itself and the construction firm that will build it.
- HUD reviews the cost estimates and financial data and if these data meet HUD requirements, HUD proceeds with initial closing and authorizes construction to begin.
- HUD monitors construction and reviews project costs to establish monthly rents and corresponding subsidies, as well as the mortgage to be insured.

When HUD accepts the project, a final closing is held and the project is ready for occupancy.

According to HUD records, the West Virginia Housing Development Fund worked with three sponsors before it found one capable of developing the project. The following schedule shows the three sponsors' efforts to develop the project.

<u>Processing steps</u>	<u>Date action taken with sponsor</u>		
	<u>A</u>	<u>B</u>	<u>C</u>
Application from sponsor	12-17-73	3-18-74	(a)
Feasibility letter from HUD	(b)	4-24-74	(a)
Application for firm commitment from sponsor	-	8- 8-74	6- 9-75
Firm commitment from HUD	-	11- 5-74	9-25-75
Initial closing--construction authorized	-	(c)	12-16-75
Construction begun	-	-	1-14-76
Construction completed	-	-	(d)

- a/ Sponsor C assumed project as planned and the feasibility phase was bypassed.
- b/ Sponsor A withdrew on March 13, 1974.
- c/ Sponsor B withdrew on June 9, 1975.
- d/ Scheduled completion is December 14, 1976.

In December 1973 the fund received a proposal to build a three-story walkup housing project designed to take advantage of the limited land available. On January 3, 1974, HUD told the sponsor that its plan was unacceptable and suggested a one- and two-story building designed to better suit the anticipated market for elderly retirees requiring rent supplement assistance.

In February 1974 the fund outlined a 90-unit project of 55 one-bedroom, 25 two-bedroom, and 10 three-bedroom apartments and began soliciting a sponsor to develop the project. A second sponsor applied to HUD for a feasibility determination on March 13, 1974.

HUD reviewed this application and issued a feasibility letter on April 24, 1974, directing the sponsor to submit detailed plans by July 23, 1974. A 15-day extension was granted because the sponsor had difficulties in finding a suitable building site.

On August 8, 1974, the sponsor gave HUD its detailed plans and requested HUD's commitment to insure the project and provide rental subsidies.

On September 26, 1974, HUD advised the fund that four items were needed from the sponsor, including a revised site plan to correct a right-of-way between the highway and the project, a highway entry permit for each of the three sites, cost breakdown data, and a current financial statement from the sponsor. HUD received this data and issued a firm commitment on November 5, 1974, to insure the mortgage and fund the rent subsidies. HUD allowed the sponsor an additional 90 days, or until February 5, 1975, to finalize its plan for carrying out construction of the proposed project.

On January 30, 1975, the fund requested additional time for the sponsor to obtain clear title to one of the three proposed construction sites. The sponsor obtained clear title to the construction site on April 15, 1975.

During the title clearance delay, the proposed building contractor encountered financial difficulties and withdrew from the project. On June 9, 1975, the fund terminated the second sponsor as a project developer because it had been unable to locate an acceptable builder, and on June 9, 1975, the fund proposed a third sponsor for the project. After reviewing this sponsor's proposed plan, HUD issued a firm commitment on September 25, 1975, to insure and provide rental subsidies for the project.

The third sponsor proposed four building contractors between June 9 and November 25, 1975, before HUD accepted one as having the experience and financial capabilities necessary for building the project.

On December 16, 1975, the third sponsor received authorization from HUD and the fund to start construction. Weather delayed the start of construction until January 14, 1976. The project is scheduled for completion in December 1976.

Project occupancy

The sponsor anticipates accepting applications for occupancy of the units late in 1976.

Under HUD procedures, disaster victims or those families displaced by Federal Government actions will be given first priority for initial occupancy. To qualify for rent subsidies, the occupants must meet the HUD November 1975 family income guidelines shown below:

<u>Number of persons in family</u>	<u>Maximum adjusted annual income</u>
1	\$4,000
2	4,400
3	4,800
4	5,200
5	5,500
6	5,800
7	6,100
8	6,400
9	6,600
10	6,800

Under HUD guidelines, adjusted annual income is the total family income, less income from minors and a \$300 deduction for each minor dependent. In addition, eligible tenants may not have assets over \$2,000, except those over age 62 who may have assets of up to \$5,000.

HUD can provide up to 70 percent of the rent for eligible occupants. The following table indicates the project's estimated monthly rents, the maximum HUD subsidy, and the minimum rent that eligible occupants will be required to pay.

<u>Size</u>	<u>Estimated monthly rent</u>	<u>Maximum HUD rent subsidy</u>	<u>Minimum rent for eligible occupants</u>
One bedroom	\$270.84	\$189.59	\$ 81.25
Two bedroom	297.93	208.55	89.38
Three bedroom	350.68	245.48	105.20

Estimated monthly rent is based on the nearly \$2 million cost estimate to build the project, interest expense on 90 percent of the estimated cost, a 6-percent rate-of-return on the sponsor's capital investment, and a sinking fund to maintain the project.

Eligible rent subsidy tenants must pay at least 25 percent of their income toward rent. For example, a family of three in a two-bedroom unit with an adjusted income of \$400 a month will pay \$100 a month. A similar family with an adjusted income of only \$200 a month would pay the \$89.38 minimum rent.

An October 5, 1973, fund housing market analysis states that the residents of Buffalo Creek traditionally have spent only about 10 percent of their income for housing.

HUD officials told us they were aware of the low amount that residents had paid for housing; however, they said that because of the severe housing shortage in the area, rental charges should not pose a problem in renting the units.

BUILDERS EMERGENCY HOUSING CORPORATION
INVOLVEMENT WITH HOUSING

On June 16, 1972, the Governor of West Virginia requested the West Virginia Home Builders Association to assist in providing housing in the valley. On October 3, 1972, the Builders Emergency Housing Corporation was organized as a nonprofit corporation to provide such housing assistance. West Virginia and the corporation agreed to build a model-home project to illustrate the type of homes that contractors could build. The corporation was to manage a housing subdivision developed for families displaced by the highway project. Such housing (referred to as last resort housing) may be provided by a Federal agency under 42 U.S.C. 4626 (1970) when highway construction cannot proceed because comparable replacement sale or rental housing is unavailable.

On October 12, 1972, the State and the Builders Emergency Housing Corporation entered into an agreement whereby the State provided a \$114,000 grant to develop a model-home site and provide technical assistance to people buying new homes. A private charity also donated \$25,000 to this project.

The Corporation purchased and developed a site at Robinette, an area in the valley on which 4 home builders built 14 model homes. Through the corporation the builders later sold the model homes for \$20,600 to \$22,900 each.

A corporation official estimated that about 100 additional homes were built in the valley by these 4 builders. He said that nearly all the homes were financed through commercial sources with downpayment funds coming from coal company damage settlements and Small Business Administration disaster loans. Also we noted that the Farmers Home Administration loaned money to five families who built homes in the valley.

Corporation officials told us that no Federal funds were used in the model-home project development. Also, they said that the State funds came from a specially established disaster relief fund.

On September 5, 1974, the West Virginia Department of Highways entered into an agreement with the corporation to (1) coordinate planning and developing a last resort housing project for persons relocated because of the new highway, (2) provide housing plans, (3) serve as central contact between relocated persons and the Department of Highways, (4) identify sources of mortgage funds, and (5) monitor home construction quality. The corporation was to receive \$2,755 a month from the State for such services.

At the time of our review, persons relocated because of the highway right-of-way had built only three homes on the last resort housing site. The West Virginia Department of Highways advised us that at some future date it will auction the remaining 48 building lots to the general public since persons relocated because of the highway had expressed no further interest in these building sites.

CHAPTER 4

HIGHWAY RECONSTRUCTION

After the disaster, the Federal Highway Administration approved a three-stage program for replacing State Route 16:

1. Emergency repairs by the Corps--this included removing debris and restoring the roadway to a minimum passable condition.
2. Intermediate repairs--to replace washed-out bridges and roadway providing a road suitable for public use.
3. Permanent repairs--providing a highway meeting the minimum secondary standards established by the American Association of State Highway Offices.

The final section of State Route 16 is currently scheduled for completion in November 1977, at a total cost of \$23.3 million--construction cost, \$16.8 million; right-of-way and relocation cost, \$5.8 million; and engineering cost, \$0.7 million. On May 8, 1972, the State estimated the original construction cost at \$13.2 million. The original cost estimate was exceeded because of increases in construction costs, additional right-of-way land, and greater relocation assistance requirements than originally estimated.

Highway construction, originally estimated to begin in August 1972, was delayed until April 1974, because of several problems. There were problems in acquiring rights-of-way because suitable relocation housing was not available in the valley to allow the project to proceed to the acquisition and construction phase. In addition, Federal Highway Administration approval of location and design plans was delayed because the environmental impact statement on permanent reconstruction was not completed until mid-1973.

The following table shows the dates that construction of each highway section was started and completed.

<u>Permanent reconstruction</u>	<u>Construction</u>		<u>Time frame (months)</u>
	<u>Started</u>	<u>Completed</u>	
Section I	Oct. 75	a/Nov. 77	25
Section II	Apr. 74	Nov. 75	18
Resurfacing	June 75	Sept. 75	3

a/ Estimated.

The State bought a 10.38-mile strip of land down the length of the valley to widen and straighten the existing right-of-way and elevate the roadbed. Relocation assistance was provided to 353 households and 24 businesses displaced by the new highway.

Our review of the procedures followed by the State for 50 homeowners and 8 tenants provided relocation assistance under the Uniform Relocations Assistance and Real Property Acquisition Policies Act of 1970, 42 U.S.C. 4601 et seq. (1970)--hereafter referred to as the "Uniform Relocation Act"--disclosed that the relocated families received payments which compensated them for at least the same quality house they had before relocation. Families who lived in substandard housing before relocation received sufficient money to replace the former house with a decent, safe, and sanitary one. However, we noted instances in which State criteria were inconsistently applied in computing benefits to 17 homeowners. Of the 377 relocated families and businesses, 23 have not yet claimed relocation benefits but the State has contacted all but 1 of the families and told them they were eligible for benefits. The reasons these individuals have not filed a claim are discussed on pages 23 and 24.

The West Virginia State Department of Highways purchased the right-of-way for the new highway with Federal funds. In the process, it acquired title to 26 tracts of land adjacent to the highway, parts of which may not be needed for highway construction. Since level land is scarce, some of these tracts could be combined and used by valley residents as homesites or commercial lots. The State is presently considering the best way to dispose of this land.

RELOCATION ASSISTANCE AND PAYMENT PROCEDURES

The State followed the Uniform Relocation Act which established a uniform policy for fair and equitable treatment of persons displaced by federally assisted programs. In general, the act authorized payments to relocated persons for

- moving expenses,
- rental payments (not to exceed \$4,000 over a 4-year period),
- downpayment (not to exceed \$4,000) on a home for renters, and
- replacement housing payment (not to exceed \$15,000).

If comparable, decent, safe, and sanitary housing is not available, the last resort housing provision of the act removes the above dollar limitations. Because of the shortage of such housing in Buffalo Creek Valley, the above dollar limitations were not applicable in computing payments for relocated Buffalo Creek Valley residents.

Federal guidelines define a comparable replacement dwelling as functionally equivalent and substantially the same as the relocated person's former dwelling in number of rooms, living space, and type of construction. Such housing is normally determined for each family by computing the average price of three comparable houses in the community. Because many of the houses that would qualify as comparable in Buffalo Creek Valley were destroyed in the disaster or were occupied and therefore unavailable, the Federal Highway Administration and the West Virginia State Department of Highways had to establish an equitable way of determining replacement costs. Accordingly, they obtained construction plans which met minimum housing standards from the Farmers Home Administration. Using these plans and construction cost estimates from two local builders, the State developed data on estimated cost per square foot to build three different types of houses.

Replacement Housing Payment Schedule

<u>Model</u>	<u>Total rooms</u>	<u>Bedrooms</u>	<u>Square feet</u>	<u>Cost per square foot</u>
I	4	2	864	\$17.50
II	5	3	960	16.50
III	6	4	1,144	15.25

The relocation appraiser--in accordance with federally approved State guidelines--applied these figures to either the size of the old home or a home which met the minimum requirements for family size, whichever was larger.

For administrative convenience, the Federal Highway Administration and the State established an additional criterion which would help them match relocation claims with one of the three model homes.

--If the former house was within 50 square feet (plus or minus) when compared to the square feet of one of the three models, the relocated person would be paid an amount equivalent to the estimated cost of the corresponding type of model house.

For example, all replacement housing payments for two-bedroom houses from 814 to 914 square feet were to be based on the type I house. The relocation payment would then be computed by multiplying 864 square feet by \$17.50.

The State Highway Department established an additional criterion to help them match relocation claims with one of the three model homes. If the former house was a two-story building, cost of the second floor space was to be computed at 55 percent of the cost per square foot of the first floor.

Additional payments were also allowed for the following extras if they were included in the relocated person's former house: \$5,000 for land and site improvements, \$700 for a carport, \$1,000 for a one-car garage, or \$1,500 for a two-car garage, \$1,000 for central air conditioning, \$500 for a half bath, and \$2,000 for an unfinished basement.

Criteria inconsistently applied

Construction of new State Route 16 displaced 353 families and 24 businesses. To determine if relocation assistance payments were computed uniformly and consistently, we selected and reviewed the relocation settlement cases of 50 homeowners and 8 tenants. In all the cases reviewed, relocated families received payments which compensated them for at least the same quality of house they occupied before they were relocated. Those families who lived in substandard housing before relocation were given the money to replace the former home with a decent, safe, and sanitary house. Eight tenants were paid moving expenses and seven received a downpayment on a new home. One tenant received only a moving payment because he bought property that was ineligible for a replacement housing payment.

In 17 of the 50 homeowner cases, the criteria for computing replacement housing payments were not applied consistent with the remainder of the cases reviewed. The inconsistencies developed because the relocation appraisers exercised allowable discretion in applying established criteria. Moreover, the State's review procedures did not detect the inconsistency in the appraisers' judgements. Consequently, some relocated persons were paid more than others with comparable needs. For example, replacement housing payments for 4 of the 17 cases were computed using fewer rooms than actually existed in the relocatees' old houses. This resulted in a smaller payment than the criteria provided for.

One of the four families lived in a six-room, 1,032-square-foot house. In computing their replacement housing costs, the State used the cost figures of their five-room model II house--\$16.50 per square foot multiplied by the size of the old house for a total of \$17,028. The State's criteria, however, provided that for a six-room house, the model III house costs should have been used--\$15.25 multiplied by 1,144 square feet. Had the criteria been properly applied, the relocated person would have received an additional \$418.

In three other cases, the State did not follow its criteria of computing replacement housing costs on the exact size of one of its three model houses because the relocated person's house was within 50 square feet (plus or minus) of one of the model houses.

For example, one family had a four-room, 888-square-foot house. The State computed replacement costs as follows: \$17.50 x 888 square feet = \$15,540. Because this house was within 50 square feet of the first model house--864 square feet--the correct computation should have been \$17.50 x 864 square feet = \$15,120. This relocatee received \$420 more than he should have had the State applied their criteria consistently. It followed this criteria for five of the cases we reviewed.

The additional criteria was established by the State for administrative convenience. This rule, as applied, did not really make it any more convenient, since it is just as easy to multiply the cost per square foot times the relocatee's actual house size versus the model house sizes. By applying their criteria inconsistently, some relocatees benefited more than others with comparable needs.

Pending relocation assistance payments

As of June 7, 1976, 23 of the 353 families had not received either moving and/or replacement housing payments. A State highway official said one relocatee had not been contacted and informed of his eligibility because they had been unable to locate him.

The remaining families had not received relocation payments because:

- Some did not want to participate.
- Some are about to obtain housing and will receive benefits when they do.

--Legal questions have prevented some from qualifying .
but when these cases are settled they will be
entitled to payments.

--Some have not acquired dwellings meeting minimum
housing standards.

The following chart shows the benefits not paid:

<u>Benefit not paid</u>	<u>Owners</u>	<u>Tenants</u>	<u>Total</u>
Moving and replacement housing payment	9	2	11
Replacement housing payment	9	2	11
Moving	<u>1</u>	<u>0</u>	<u>1</u>
Total	<u>19</u>	<u>4</u>	<u>23</u>

State officials told us they plan to contact these individuals in the near future to determine if the person wants and is qualified for the payments. We were also informed that the Federal Highway Administration will monitor this situation to insure the individuals are fairly treated. The final eligibility date for replacement housing payments is December 31, 1976. We believe the State acted responsibly in informing relocatees of their benefits and how to receive them.

EXCESS RIGHT-OF-WAY LAND

We identified 26 tracts of land acquired by the West Virginia Department of Highways in Buffalo Creek Valley which may no longer be required for highway construction. Some of these tracts are portions of lots which the State purchased to avoid leaving the owner with an uneconomical remnant. Other tracts are part of the old State Route 16 right-of-way which are now no longer needed because of highway modernization. Since level land is scarce in the valley, many of these tracts could be combined and used as homesites or commercial lots.

A State official accompanied us on an inspection of the new highway from Crown to Pardee and reviewed right-of-way plans with us. We identified the following tracts at the locations listed as those not needed for highway construction.

<u>Valley location</u>	<u>Number of land tracts</u>
Section II:	
Robinette	6
Latrobe	1
Crites	2
Stowe	3
Lundale	2
Lorado	4
Pardee	1
Section I:	
Braeholm	3
Amherstdale	1
Riley	<u>3</u>
Total	<u>26</u>

The size of the individual tracts was not readily available. A State representative told us that most of these tracts would have to be surveyed before being disposed of.

State and Federal Highway Administration officials told us State representatives accompanied by a Federal Highway Administration representative would review the areas we identified in section II (Amherstdale to Pardee) to determine if the land was excess but would not review section I (Crown to Amherstdale) until construction was completed. However, three of the areas in this section have already been declared excess.

The review will determine if there are any future needs for the land, such as drainage ditches or maintenance and storage areas. Recommendations from the review will be presented to the State Commissioner of Highways, who is responsible for declaring land excess. For the tracts that are declared excess, he can recommend disposal through (1) abandonment, (2) sale at public auction, (3) lease or trade to any party, or (4) transfer to another State agency.

Under abandonment, title for the excess land reverts to the former owner at no charge. Since a number of these tracts were acquired from the owners as uneconomical remnants they may be too small for practical use.

Excess land sold at public auction is surveyed, appraised, and sold to the highest bidder. Under this disposal method, the State can combine adjacent uneconomical remnants into

larger, more valuable lots. Because of such improvements as the new highway and water and sewer systems, some of the tracts may be sold for more than the State's acquisition cost. Receipts from public sales would be returned to the U.S. Treasury.

The Director of the Right-of-way Division stated that he intends to recommend disposal of excess land through public auction.

CHAPTER 5

WATER AND SEWER PROJECTS

To promote rapid, permanent resettlement of Buffalo Creek Valley, the Governor of West Virginia gave highest redevelopment priority to constructing new water and sewer systems. Initially, it was estimated the systems could be completed by the end of 1972 at a cost of \$6.2 million. As of November 1976, the target date for completing construction of all systems was January 1977, and the estimated cost was almost \$13.5 million.

The original construction timetable and cost estimates were not met because they were based on overly optimistic planning estimates. The assumptions made during the phase I recovery work were that (1) the Corps of Engineers emergency renovation work could be fully used in the new systems and (2) the redevelopment would center around three new communities. Neither of these assumptions proved to be correct.

The January 1973 design and construction schedules for the Buffalo Creek Valley water and sewer projects were not met because (1) local leadership was not available to guide the redevelopment, (2) original plans had to be modified to reflect updated information, (3) construction cost estimates were inadequate and additional funding was not fully available when needed, and (4) various project administration and coordination delays were not anticipated.

STATUS OF WATER AND SEWER PROJECTS

The new water system is currently scheduled for completion in January 1977. Valley residents still receive water from the same sources and distribution systems as at the end of the phase I recovery work. The district now owns and operates the Cashion Water Works and has improved maintenance practices and added new equipment.

As of November 1, 1976, public service district officials estimated that the new sewer system would also be in operation by January 1977. About one-half of the valley residents are still using the temporary sewage treatment plants placed in service by the district between February and April 1976.

Design delays

At the time of the disaster, no local government existed in Buffalo Creek Valley that could direct and coordinate the construction of water and sewer systems. The Buffalo Creek

Public Service District was not created until July 1972 and had no full-time manager until January 1974. During this early critical period, the district did not have sufficient technical knowledge to deal with basic design questions, such as the type of size of system needed. This leadership role was assumed by the district's engineering firm and State and Federal agencies.

Early design work was also frustrated because there was no existing or planned comprehensive water or sewer system for the valley. Plans and specifications were delayed until certain questions, such as rights-of-way and location and extent of rock strata, were answered.

The following schedule compares the January 1973 estimated completion dates for plans and specifications with actual completion dates:

Project Design Schedule

<u>System</u>	<u>Completion of plans and specifications</u>	
	<u>Estimated</u>	<u>Actual</u>
Water:		
Upper valley	4-15-73	
Distribution lines		11-13-73
Transmission lines		6-26-73
Lower valley	5-15-73	
Distribution lines		3-29-74
Transmission lines		10-18-73
Treatment plant	5-15-73	3-27-74
Sewer:		
Upper valley	4-15-73	
Interceptor		5-22-73
Collector		8- 3-73
Lower Valley	6- 5-73	
Interceptor		8- 2-73
Collector		8-10-73
Treatment plant	5-15-73	4-24-73

Most of the design delays occurred in planning the water system. A report on the water system, scheduled for publication in March 1973, was delayed until June 1973 so the State health department could include revised data on estimated consumption rates.

Plans for the water treatment plant were delayed twice; first, because the district's engineering firm could not find a contractor to drill test wells, and next to include a State health department revision increasing the size of some of the plants. These delays extended the completion date of other upper valley plans. The waterlines and sewerlines were to be laid in the same right-of-way acquired by the State for the new highway. The lower valley plans were submitted late because location of the highway right-of-way was changed.

Shortly after construction began, the upper and lower valley sewer collector lines and the lower valley water distribution lines were modified so that additional services could be added.

Construction delays

The major problems preventing the district from completing the Buffalo Creek Valley water and sewer system on time occurred during the project's construction phase. The following schedule compares the January 1973 estimated completion dates for the construction phase of the water and sewer systems with actual completion dates.

Project Construction Schedule

<u>System</u>	<u>Construction completion dates</u>	
	<u>Estimated</u>	<u>Actual</u>
Water:		
Upper valley	10- 1-73	
Distribution lines		8- 1-74
Transmission lines		7- 1-74
Lower valley	3- 1-74	
Distribution lines		8-10-75
Transmission lines		11- 1-74
Treatment plant	12-10-73	a/ 1-31-77
Total water project	3-1-74	a/ 1-31-77
Sewer:		
Upper valley	12- 1-73	
Interceptor		7- 1-74
Collector		7-10-75
Lower Valley	2-20-74	
Interceptor		9- 1-75
Collector		8-10-75
Treatment plant	2-10-74	7-30-76
Total sewer project	2-20-74	a/ 1-31-77

a/ Estimated as of November 1, 1976.

We reviewed each water and sewer construction contract to determine causes for the delays. A description of each contract is included in appendix III. Our analysis showed that the delays were caused by problems in the following areas: funding, coordination, administrative, contractor, and other.

Funding delays

Funding was the main reason for delays in completing the water project, while coordination was the main reason for delays in completing the sewer system.

In mid-1974, available grant funds for the water project totaled \$3.9 million, with \$2.65 million allocated for construction costs. These funding levels were inadequate for three reasons. First, the original grant requests were preliminary cost estimates based on feasibility studies prepared by the district's engineering firm rather than on contract-by-contract line item estimates. Second, the feasibility studies incorrectly assumed that the 6-inch transmission line the Corps installed during the emergency recovery work would be incorporated into the new system. A more costly 8-inch line was required for the entire valley because the Corps' line (1) did not meet State health department requirements, (2) was not satisfactory for fire insurance ratings, and (3) did not meet the regional system's pressure and flow requirements. Lastly, original cost estimates did not anticipate the rapid increase in construction prices in late 1973 and 1974. Bidders increased their prices to cover the unknown variables of inflation and delivery times, and contract awards at higher than expected prices quickly exhausted available funds.

When funding became critical in June 1974, the district's engineering firm recommended withholding award of one water contract until additional funds were secured. Eventually, the scope of this contract was modified so that it could be awarded. However, funding for three other contracts was not available and the contracts were not awarded until 1 year after their September 1974 bid-opening date.

Funding was not a major delaying factor for the sewer project because of the district's award procedures. Two contracts were delayed because matching funds for the Environmental Protection Agency grants had not been fully committed. Although one contract was awarded, the official notice to proceed was delayed for 7 months pending availability of State matching funds.

Four entire sewer contracts and part of another were awarded and notice to proceed was given to the contractors before appropriate funding was fully available. If the award of these sewer contracts had been delayed until full funding became available, as was the case for the water project contracts, a combined delay of 1,260 days would have occurred.

Administrative delays

The water and sewer projects did not receive the special handling by participating Federal agencies as had been anticipated. The Federal Regional Council indicated that it would be able to speed up grant processing and bypass or shorten established agency rules and regulations. However, once recovery work was completed and the original grant commitments made, the redevelopment project was given no special priority.

With the exception of one water contract, the administrative delays represent the timelag between the date construction plans were sent to the approving authorities and the date the contractor was officially notified to proceed.

The January 1973 project schedules provided for up to 2 months for administrative processing time. This turnaround time was not met for nearly half of the project's contracts. In the case of one sewer contract, part of the delay occurred because the contractor receiving the original award later withdrew.

One water contract which was intended as the pilot project to show "visual progress" in redeveloping the valley was supposed to begin in October 1972. HUD authorized the contractor to begin work that month, but at that time there was no signed contract, no deed for the land, and no inspection procedures for the construction work. Therefore, construction did not begin until April 1973.

Coordination problems

Lack of coordination between district and State Department of Highways construction activities affected two sewer contracts. Because final right-of-way plans were received late, the contractor for one of these contracts had to relocate 110 linear feet of sewer interceptor and two manholes. The district also held up the construction of the water transmission line called for under one water contract so that a sewer interceptor could be laid at the same time the waterline was laid.

Several delays stemmed from lack of coordination between the district and the town of Man. Two sewer contracts were delayed because the district did not reach early agreement with Man on sewage treatment. In both cases, town officials stopped construction by threatening to arrest the contractor's crew. The delay in one water contract was caused by an open question on whether certain Kistler properties, served by the Man Water Works, would be hooked up to the district's water system.

Several contracts were delayed because necessary services to test the systems were not provided. The storage tank built under one water contract could not be tested for over a year because a waterline to it had not been laid. The tank remained empty and the contract remained open. Two other sewer contracts were delayed because electricity had not been supplied to the temporary wastewater treatment plants installed under these contracts. Without electricity, the plants could not be tested and the contracts could not be closed.

Contractor delays

We noted only three instances where contractors exceeded the established construction period without reasonable justification. In all cases, liquidated damages of \$50 a day were assessed by the district.

Other delays

This category includes such things as late deliveries, material shortages, weather delays, and strikes by the employees of some suppliers. The district's contractor for one water contract was struck by locally hired, nonunion employees because the wage rates, although approved by the Department of Labor, were considered inappropriate for the type of construction in question. By the time the issue was resolved, this contract, which was critical to the entire project, had been delayed 106 days.

In the district's opinion, the January 1977 estimate for completion of the sewer and water systems is attainable. However, as of November 1, 1976, we noted that work on four water and sewer contracts still in progress was running behind schedule. Also, one sewer contract for the "regionalization interceptor" which will disconnect the temporary plants and hook up the valley's interceptor to the permanent wastewater treatment plant, was not awarded until July 1976.

EPA guidelines for building wastewater treatment plants show that sewer project construction is falling within expected time frames. EPA estimates that, following preapplication activities such as hiring an engineering firm, a typical project can take from 3 to 6 years to complete; the Buffalo Creek Valley project should be completed in about 4 years. According to EPA estimates the project construction phase can take from 2 to 4 years; Buffalo Creek Valley construction should take a little over 3 years.

ADEQUACY OF FUNDS

Construction of the Buffalo Creek Valley water and sewer projects has been delayed by the lack of funds at critical points; however, most of these problems appear to have been resolved since \$2.8 million was added to the water project fund and \$186,000 was added to the sewer project fund.

The following table shows the various agencies and the grant amounts each contributed for the water and sewer projects.

<u>Agency</u>	<u>Water</u>	<u>Sewer</u>
Department of Housing and Urban Development	\$4,750,000	\$ -
Economic Development Administration	1,430,000	-
Environmental Protection Agency	-	4,915,720
Appalachian Regional Commission	312,000	327,710
State of West Virginia	-	1,310,870
Buffalo Creek Public Service District	<u>208,000</u>	<u>-</u>
Total	<u>\$6,700,000</u>	<u>a/\$6,554,300</u>

a/ Includes only eligible project costs. The State has committed an additional \$313,495 to cover any ineligible costs.

In June 1974 the district realized that the initial \$3.9-million estimate was insufficient to complete the water project. HUD later approved a request for \$2.8 million additional funds in September 1975 which increased the funds available to \$6.7 million. District officials believe that sufficient funds are now available to complete construction of the water project. We could not determine the funding

status for the total project because information concerning the estimated closeout costs for such items as engineering services and legal and administrative expenses was not available at the district's office. Thus, it appears that sufficient funds are available to complete the water project. At the time of our review, the current estimated total construction cost of \$4,968,429 was \$321,571 less than construction funds available of \$5,290,000. The project was about half completed at the time of our analysis.

Our review of cost data as of March 1, 1976, shows that sufficient funds have been allocated to complete the sewer project. Because certain estimated closeout costs were close to available grant funds, we asked the district's engineering firm to give us their estimate of closeout costs for the total project. They gave us the following information as of March 1, 1976.

	<u>Grant A</u>	<u>Grant B</u>	<u>Ineligible costs</u>	<u>Total</u>
Construction	\$1,230,000	\$4,272,963	\$155,621	\$5,658,584
Engineering	242,000	690,081	58,378	991,305
Legal and administrative	<u>10,165</u>	<u>51,661</u>	<u>68,946</u>	<u>110,772</u>
Total project costs	1,483,011	4,994,705	282,945	6,760,661
Available funds	<u>1,292,200</u>	<u>5,262,100</u>	<u>313,495</u>	<u>6,867,795</u>
Excess or deficit (-)	\$ <u>-190,811</u>	\$ <u>267,395</u>	\$ <u>30,550</u>	\$ <u>107,134</u>

Although the total project appears to be adequately funded, there is a sizable deficit under grant A. To cover this deficit, the district requested an increase for the grant in August 1975. On April 15, 1976, EPA agreed to commit \$186,600 to help cover this deficit. There are no planned increases in either the Appalachian Regional Commission or the State matching funds. The district believes unused State funds from the grant B excess will be sufficient to match the EPA grant increase. Part of this flexibility stems from the receipt of a bid for one sewer contract which was about \$45,000 less than the original engineering estimate.

SEWERLINE AND WATERLINE RELOCATION

We inquired about the alleged relocation of waterlines and sewerlines because of incorrect placement, and we limited our analysis to those lines which were to be incorporated into the new Buffalo Creek Public Service District systems. Lines laid earlier by the Corps of Engineers were not part of the redevelopment but an emergency measure to provide interim service.

We noted only one instance in the contract files where district lines were relaid. In the early stages of construction of one sewer contract, 110 linear feet of sewer interceptor pipe and two manholes were relocated to accommodate right-of-way plans which were received late from the State Department of Highways. Total cost of this relocation was about \$7,000.

We noted that much of the 6-inch water transmission line laid by the Corps of Engineers in the emergency relief phase before receiving final highway right-of-way plans was paralleled by the district's 8-inch water transmission line. Although the Corps' emergency facilities were originally intended to be integrated into the new systems, the district's engineers later determined that 6-inch pipe would not meet the new system's minimum pressure and flow requirements. In some instances the Corps' lines interfered with the new highway right-of-way and were relocated to permit continuation of highway construction and water service in the valley. Since these lines were installed before the new highway plans were completed, their relocation was not caused by incorrect placement.

Pipe was frequently uncovered for distributor, collector, or house lateral connections. District contractors, at the expense of the State highway department, also uncovered pipe to locate and repair damage caused by highway contractors. The allegations may have been made because any of these operations could have been interpreted as pipe relocations by an uninformed observer.

We also inquired about the allegation that in some cases waterlines and sewerlines were too close together. We reviewed the water and sewer contract plans and found that they specified a minimum of 10 feet between sewerlines and waterlines, as suggested by appropriate standards. The district engineering firm employed a full-time resident inspector to insure that these plans were followed.

WATER QUALITY

According to Buffalo Creek Public Service District officials, the quality of water provided to Buffalo Creek Valley residents has not greatly improved since the phase I recovery work was completed in mid-1972. Further, local public service district personnel state that there is no way to improve water quality until the public service district's water system, consisting of new water supply sources and modern filtering and chlorinating equipment, is put into service in early 1977. However, we believe that the following developments should be noted.

At the time of the disaster, the Cashion Water Works was the largest water system in the valley. The July 1972 Preliminary Engineering Report by Michael Baker, Jr., Inc., stated that a "reasonable facsimile" of the predisaster system was in operation following the Corps' emergency recovery work. When the public service district purchased the Cashion Water Works in September 1975, only two of the five subsystems had chlorinators and one did not work.

A former Cashion employee told us the system was never fully chlorinated, before or after the disaster. Logan County Health Department personnel said that the Cashion system was poorly maintained with frequent breakdowns of long duration reported to the county health department.

Since the district assumed responsibility for the Cashion system, two full-time maintenance men have been employed and four new chlorinators have been purchased from operating revenues. The district has used Federal grant funds to purchase a backhoe-endloader for repairing buried pipe.

Concerning water quality, the Logan County Health Department maintains information on chlorine residuals and coliform counts. Chlorine residuals indicate that no bacteria are living in the water, and an unacceptable coliform count indicates the presence of this bacteria and the possible presence of disease-causing bacteria. Since the district assumed control of the system, the chlorine residuals and coliform counts for the system as a whole have both improved.

Although county health department officials stated that the current water supply system is not dangerous, they feel the system is unacceptable because it lacks total filtration and chlorination facilities. In the opinion of county officials, however, water quality has improved since the district assumed responsibility because needed equipment has been

bought and overall maintenance has improved. The county has received no complaints of breakdowns since September 1975.

PERSONNEL REQUIREMENTS

The district estimates that one general manager, two secretaries-billing clerks, four plant operators, one maintenance foreman, and two maintenance men will be needed when the new water and sewer systems are fully operational. Because there are no State or Federal standards which detail the number of people needed, the district's engineering firm estimated personnel requirements on the basis of their past experience with water and sewer systems. State requirements concerning the type of training required for plant operators were included as employment criteria. These are estimates of the minimal needs of the district and may be modified at a later date.

According to local public service district officials, all personnel costs will be funded from the district's operating revenues. The West Virginia Public Service Commission has approved an interim, 1-year rate structure for the sewer system; the rate structure for the water system was being prepared at the time of our audit. If the revenues generated by these rate structures fail to cover the district's operating costs, the district can request that the Commission amend the rates based on the first year's operation.

In addition to employing the general manager, the district now employs two secretaries and two maintenance men. The district anticipates no serious problems in obtaining qualified personnel to fill additional future positions.

ENVIRONMENTAL PROTECTION AGENCY AUDIT

On April 11, 1975, EPA released a preliminary draft audit report indicating weaknesses in the local administration of sewage treatment plant construction projects that may have resulted in overpayments. The report summarized 41 audit projects underway in 12 States, including West Virginia. Information on the results of these audits which was contained in an earlier December 1974 draft report had been prematurely released to the public.

The April 1975 report questioned \$130,193 of the eligible project cost for the Buffalo Creek project and criticized the Buffalo Creek Public Service District's administration of engineering service, construction contracts, and its accounting system. However, after several meetings with the district's engineering firm EPA reduced the \$130,193 figure questioned earlier to \$24,129.

CHAPTER 6

CONCLUSIONS

After reviewing and analyzing problems in the Buffalo Creek Valley of West Virginia, damaged extensively by a flood, we concluded that given the unique nature and problems of this area, additional coordination by Federal agencies would not have greatly shortened the time needed to achieve the goals of the Buffalo Creek Valley redevelopment plan.

The devastation of the valley created a justifiable sense of immediacy among concerned Federal, State, and local officials. This sense of immediacy helped in preparing a complete plan to bring the valley to modern, urban standards but also contributed to developing unrealistic cost estimates and establishing impractical timetables.

Because the work undertaken to construct housing, highways, and water and sewage systems was a major construction project, the delays encountered in achieving the planned redevelopment of Buffalo Creek Valley were not unrealistic. Providing new housing to replace substandard "coal camp" dwellings; building a modern highway to replace a narrow, winding road; and constructing comprehensive water and sewer systems where none had previously existed, actually constitutes development of a rural area as opposed to redevelopment.

APPENDIX I

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—PLUS ANY VOLUNTEER
HELP WE CAN GET!

Congress of the United States
House of Representatives
Washington, D.C. 20515

December 22, 1975

APPENDIX I

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Honorable Elmer B. Staats
Comptroller General
General Accounting Office
441 G Street, NW
Washington, D. C. 20548

Dear General Staats:

In March, 1973, I requested a G.A.O. audit of funding and programs for the redevelopment of Buffalo Creek, West Virginia, where a tragic flood on February 26, 1972 took 125 lives and left thousands homeless and extensive property damage.

In April, 1973, I received a preliminary report from G.A.O. and on about May 24, 1973, an oral response was given to some of the questions I raised over the April briefing. I am not satisfied that redevelopment has proceeded as outlined to me, and I am asking that a new investigation be made with particular attention to the following.

1. Housing--90 units of rent supplement housing were announced by the West Virginia Housing Development Fund on May 3, 1974, to be built for Buffalo Creek residents. Why has this project encountered so many delays? When will construction begin and when can the first families move in? What will be the cost of the homes and what income guidelines have been set for the occupants? Do the guidelines meet the needs of the people of Buffalo Creek?

--How is the Builders Emergency Housing Corporation (BEHC) helping to meet the housing needs in Buffalo Creek? How is the Federal funding (ARC) received by BEHC being used? There is a rumored connection between highway relocation

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assistance and the BEHC--that is that relocation applicants are being directed to buy BEHC homes and the amount of relocation assistance often depends on the applicants willingness to build through BEHC. Please investigate.

--Green Valley Trailer Park which houses most of the remaining rented trailers on Buffalo Creek and some trailers which are owner occupied is to be closed on February 28, 1976, according to the owners of the land. What is being done to assure the people living in Green Valley that they will still have shelter after February 28? What preparation is being made for them?

2. Highway relocation--I have heard reports that more land was condemned and bought for construction of the highway, water and sewer lines than was actually used. Is there excess land? If so, what procedure is being used to dispose of the unneeded land? Do the original owners have rights to repurchase their property? Are the prices inflated for this land?

--Many homeowners felt that the decisions made about the amount of relocation assistance were arbitrary. What procedures were followed? Please investigate if Federal guidelines were met.

3. Water and sewer system--In spite of millions in Federal funds being poured in since 1972, the water and sewer systems still seem a long way from completion. Water quality has not improved. Does the Buffalo Creek Public Service District have adequate personnel to upgrade and maintain the system? Is additional funding needed?

-- Rumors are circulating that water and sewer lines, already laid, are being torn up and relaid because of incorrect placement. Some lines were in the way of the highway, in some cases water and sewer lines were too close together. Please investigate to see if there is a factual basis to this rumor.

-- An EPA audit implied some mishandling of these funds (December 13, 1974). What is being done to correct this problem?

Finally, the redevelopment effort on Buffalo Creek seems to lack coordination. I would like G.A.O.'s recommendations about where coordination should take place (Federal, State

of local level), what can be done to rescue this situation now and see that the Bicentennial Year is a meaningful one to the people of Buffalo Creek as the year that redevelopment became a reality, and what recommendations for the future of disaster assistance to prevent a recurrence of the disaster that followed the Buffalo Creek Disaster.

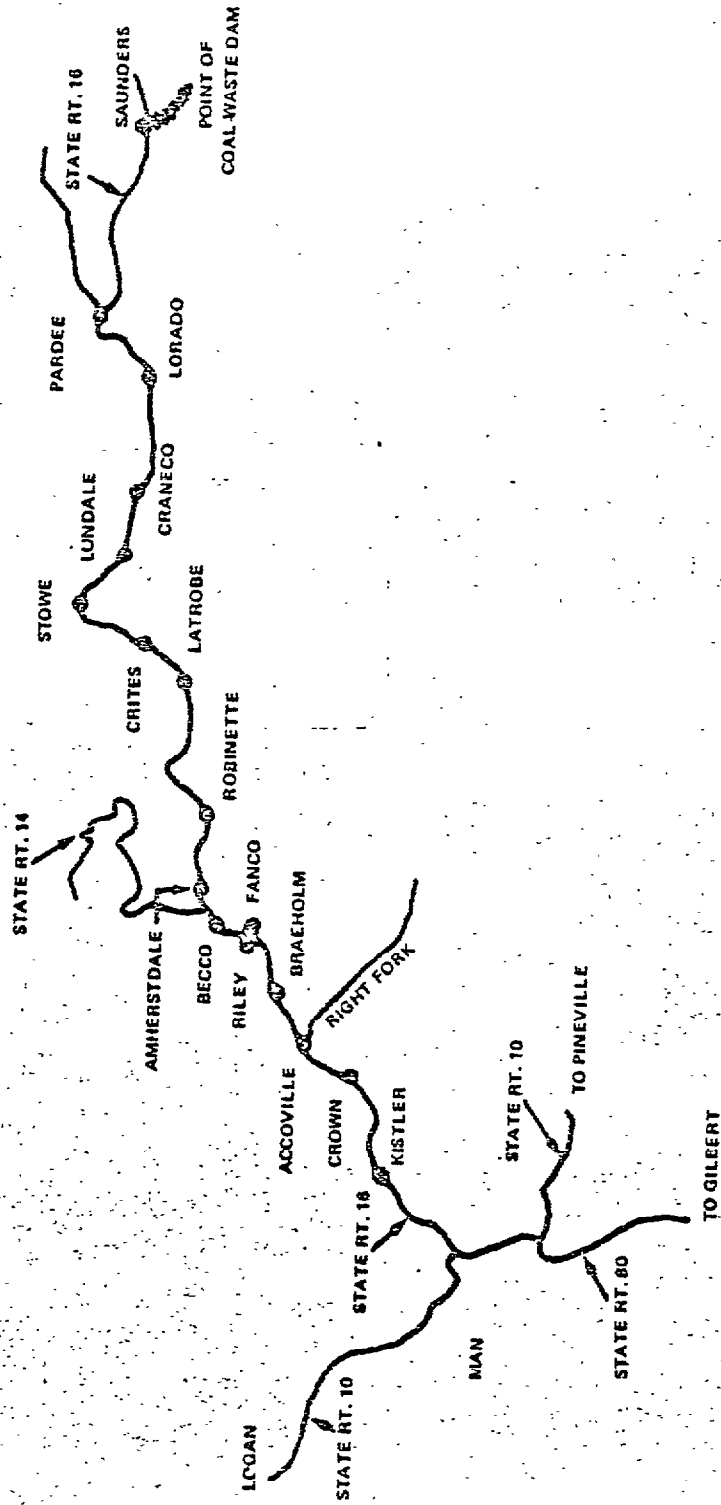
I hope to hear from you soon.

Sincerely,



Ken Hechler

BUFFALO VALLEY, WEST VIRGINIA



DESCRIPTION OF WATER AND SEWER CONTRACTSWater system

W-1	Lorado storage tank
W-2	Transmission main: Crites to Lorado
W-3	Distribution system: Crites to Lorado
W-4	Transmission and distribution system: Lorado to Pardee and Right Fork area
W-5	Water tank foundations and site work; valve control stations
W-6	Storage tanks
W-7	Transmission main: Kistler to Crites
W-8	Distribution system: Kistler to Crites
W-9	Treatment plant
W-10	Well system
W-11	Water lines from wells to treatment plants

Sewer system

S-1	Interceptor sewer: Crites to Lorado
S-2	Interceptor sewer: Braeholm to Crites
S-3	Interceptor sewer: Kistler to Braeholm
S-3a	Regionalization interceptor
S-4	Waste water treatment plant
S-5	Interceptor sewer: treatment plant to Kistler
S-6	Collection system: Crites to Lorado
S-7	Collection system: Kistler to Crites
S-8	Interceptor sewer and collection system: Lorado to Pardee