Chapter 16

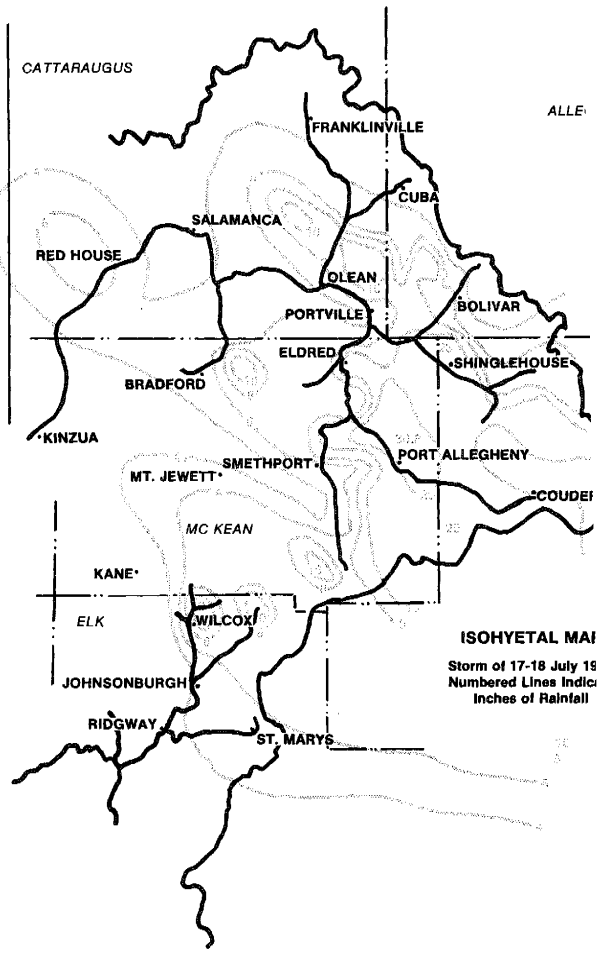
POSTWAR PROJECTS AND POLITICS

General Douglas MacArthur, who began his career as an Army Engineer, once commented that the reputation of the Engineers rested not on the projects they built but on those they did not build. He meant that, before the comprehensive planning era, the Engineers reported unfavorably on better than half the projects proposed by Congress. But, while politics may not have influenced the preparation of feasibility studies, they often affected the selection of projects for construction and the amount and timing of appropriations.

General Lytle Brown, the blunt Tennessean who served as Chief of Engineers from 1929 to 1933, commented on the subject of politics:

> *It may be said with equal truth that politics may further the adoption of a project, and may prevent it. Furthermore, as may be claimed without disturbing the equanimity of a citizen or his faith in government, politics is involved in everything that affects the welfare of the people of the Republic. Otherwise there would be no democratic principle in government.*

When a congressman won approval from his colleagues for survey of a proposed public works project, the Army Engineers undertook the study and made their report, basing their findings on economic, engineering, and, after 1970, on environmental considerations. If their report were favorable, project proponents praised them and opponents berated them; if unfavorable, the reverse occurred. The Engineers, in short, were always caught in the middle of a political controversy. The greatest political struggles began, however, after the Engineers sent their feasibility reports to Congress where the final decisions were made. Whether it was dams for flood control, local protection projects, or "Kirwan's Big Ditch," the program carried

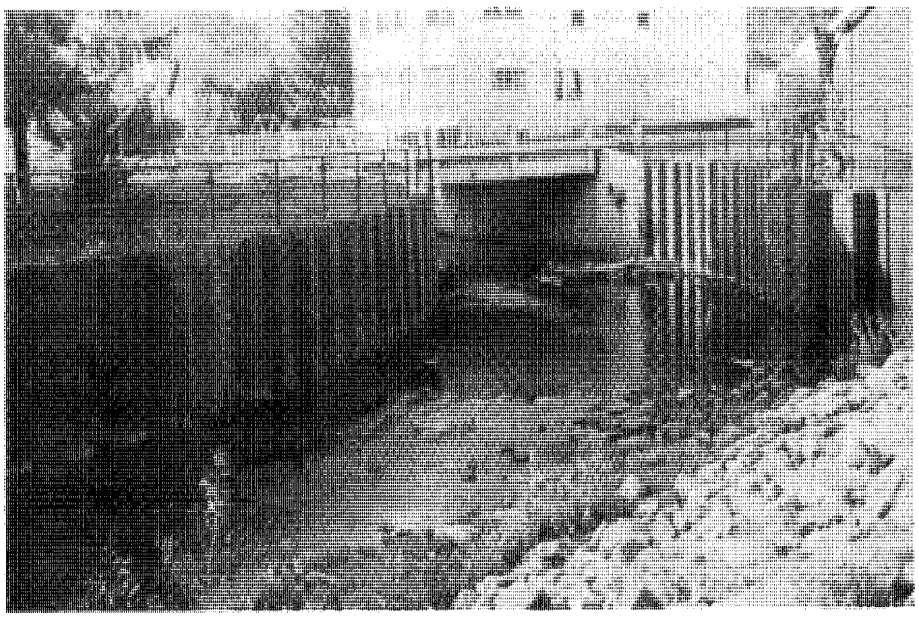


out by the Pittsburgh Engineer District during tl decades after the Second World War met politics c every hand.

East Branch of the Clarion River Dam Eve member of Congress worth his salt tried to obta public works projects that his constituents, or least those he heard, wanted. Congressman Leon I Gavin of Oil City was doing that in 1946. "I was Johnsonburg during the July 1942 flood," he told House committee, "and saw houses bowled rig over one against another. These people in this valle have suffered for 40 to 50 years from floods. The deserve relief from these terrific recurring an damaging floods."

A cloudburst on July 17 and 18, 1942, dropped u to twenty inches of rain on parts of Elk, McKear Potter and Cameron Counties, Pennsylvania, an Allegany and Cattaraugus Counties, New York (There were unofficial reports of as much as 35 in ches in the northeast portion of the storm area)

Local flood protection at Johnsonburg, Pa.



There resulted record flood flows on the Clarion and upper Allegheny rivers and better than $10 million damages. Ridgway and Johnsonburg on the Clarion were inundated, Coudersport and other communities on the Allegheny were flooded, thousands were left homeless, and fifteen people died. The flood resulted in a groundswell of public support for flood control projects in the Clarion basin.

Clarion River people had once welcomed floods, for the rises washed logs down tributaries to the main stem for rafting to supply hard cash for the lumberjacks of Elk, Jefferson, Forest and Clarion Counties. The Clarion and its tributaries were navigable by law during the 19th century; and in 1857 A. I. Wilcox, Nicholas Brockway, and others had organized the Clarion River Navigation Company to clear the stream, its east and west branches and other tributaries, for log driving and rafting. And from 1845 to 1870, flatboats carrying as much as 20,000 tons of pig iron a year had taken advantage of floods to descend the Clarion on the way to markets.

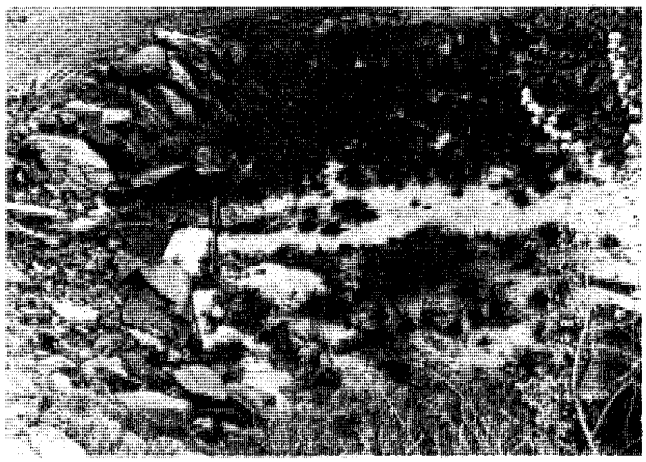
When Colonel William E. Merrill first surveyed the Clarion for the Corps of Engineers in 1882, he found staggering tonnages of forest products floating out of the river. Rivermen wanted Merrill to improve Clarion River navigation by building beartrap sluice dams; he turned them down. John Arras went back for another look in 1894, and, finding that 125,000 tons of timber, farm produce, and coalboat bottoms navigated the Clarion each year, he thought clearing the stream of rocks would be a worthwhile contribution to Clarion valley industry, but the Chief of Engineers rejected the idea.

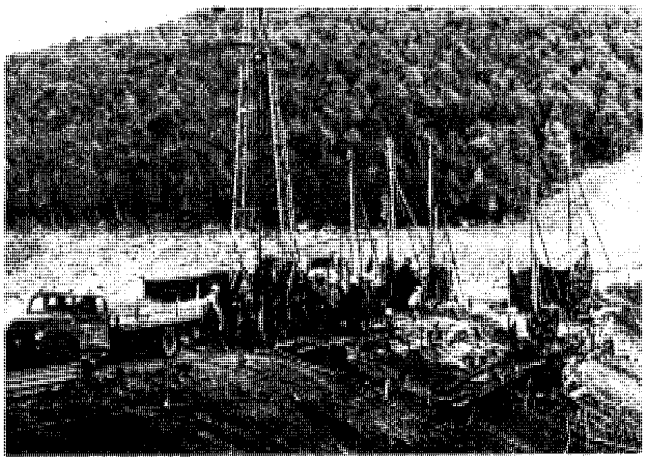
Clarion valley timber had been largely depleted by 1912 when J. R. Paull formed the Clarion River Power Company. That firm later merged with the H. D. Walbridge Company and the Pennsylvania Electric Corporation and built Piney Dam on the lower river in Clarion County during the 1920's to produce hydroelectric power.

In its early studies of Clarion basin flood control, the Pittsburgh District also studied dams for both flood control and power production on the main stem of the Clarion, but the area coal industry and state government opposed the idea, the latter objecting that main stem reservoirs would flood timber stands in state forest parks. Clarion River flood control was therefore deferred while the Engineers built on other streams in the Allegheny basin where they had full political support from the state. Then came the flood of July 1942.

Congressman Leon Gavin expressed the wish of the people of Ridgway, Johnsonburg, and the Clarion valley for flood protection after 1942, and in 1944 he won approval from Congress for construction of a dam on the East Branch of the Clarion, together with local protection for Ridgway and Johnsonburg. Between 1947 and 1952, the Pittsburgh District built a dam for flood control and low flow improvement on East Branch of the Clarion, 7.3 miles upstream of its junction with the West Branch at Johnsonburg. Ridgway and Johnsonburg also cooperated financially in improving flood-carrying capacity of stream channels at those communities.

East Branch Clarion River Dam
The emergency Remedial work





The $9 million East Branch of the Clarion Dam was built of an impervious fill core with random fill both upstream and downstream and blanketed on the upstream face with riprap stone. It rose 184 feet above the streambed and was 1,725 feet long. The lake it impounded, 6.2 miles long, in 1952 covered the village of Instanter and a few miles of road that were not relocated in Elk County, Pennsylvania. An acre-foot of water is the amount of water that will cover the area of one acre to a depth of one foot. East Branch of the Clarion Dam could store as much as 84,300 acre-feet of water. A concrete control tower located in the lake had four sluice gates used to maintain proper lake levels. When damtenders raised the sluice gates, they released lake water into a concrete-lined tunnel, ten feet in diameter, passing under the right abutment of the dam to an outlet and stilling basin below the dam. To prevent overtopping of the dam, flood flows too great to be passed through the tunnel overflowed through a lined spillway in the left natural abutment of the dam.

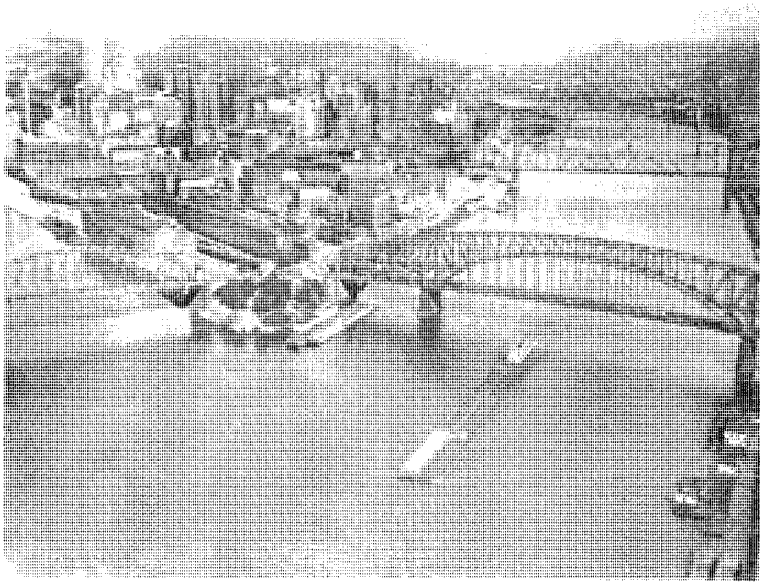
Five years after it was completed, the East Branch Dam developed a leak, the most serious leakage that had occurred at any flood control dam built by Pittsburgh District. On May 8, 1957, damtender Frank R. Johnson called project operations chief Carl A. Wheelock at the District office and said that muddy water was coming from a rock drain at the toe of the dam. Johnson had seen woodchucks in the area, but he thought the muddy water was a real leak. Geologist Shailer Philbrick and resident engineer J. P. Renouf went to the dam, built a small weir below the leak, and measured the leakage at 1.1 cfs. The sluice gates were opened, the lake drawn down, and rotary drill rigs were placed to bore test holes down into the dam and abutment to locate the source of the leakage.

Water from the lake apparently had worked its way through fractures in the natural rock under the dam, percolated up through the earthfill dam embankment, and eroded soil from the core of the dam, coming out through the drain at the toe. District Engineer H. E. Sprague and his staff called in soils and engineering experts from Washington and Cincinnati for a conference on June 20, and the men decided to plug the leak with a cement grout mixture forced under pressure down drill holes into the cavity formed by the leak. By August 19, that procedure had sealed the leak, and in November the District resumed normal operation schedules for the reservoir. During the Tropical Storm AGNES flood of June 1972, 100% of the storage capacity of East Branch Dam was used, with water through the spillway, to protect the Clarion valley and downstream areas.

Keystone on the Conemaugh Author James Parton in 1868 described Pittsburgh as "Hell with the lid taken off." Conditions had not much improved down to 1939, when architect Frank Lloyd Wright suggested it might be best to abandon Pittsburgh and build a new city elsewhere. Plagued by floods and serious air pollution, blighted by urban decay, "Smoky City" was not a fit place to live.

Business, civic, and political leaders of Pittsburgh began meeting with Richard K. Mellon in 1942 to plan revitalization of the community and in 1946

The Golden Triangle - 1947
Carnegie Library of Pittsburgh



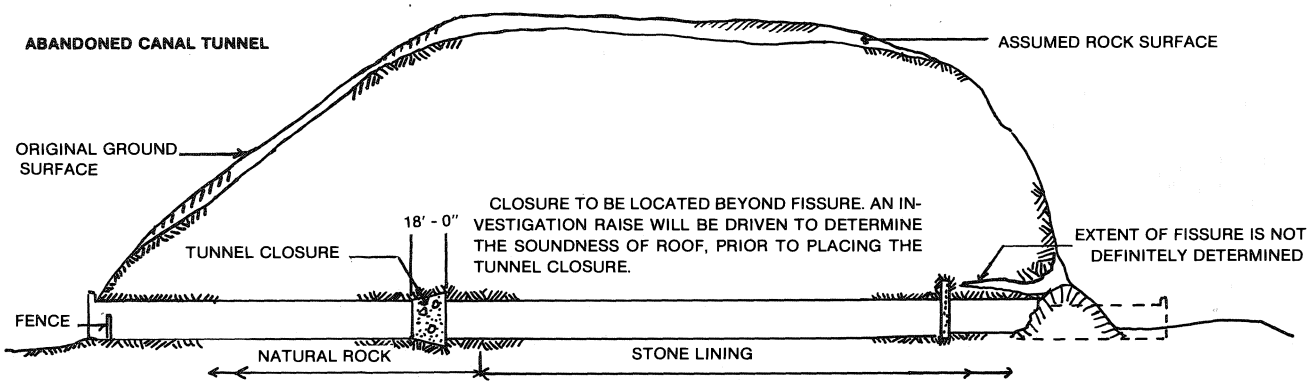
organized the Allegheny Conference on Community Development and secured full support for urban rebuilding from Mayor David L. Lawrence. The revival of urban life they planned, that became known as the "Pittsburgh Renaissance," had many features, but the pillars of reconstruction were urban renewal, smoke abatement, and flood control.

The leaders of the "Renaissance" planned rebuilding on 23-acres of the downtown Golden Triangle district adjacent to Point State Park, removing decaying buildings and erecting a complex of office buildings, underground garages, and landscaped plazas to be known as the Gateway Center. That project, the key to downtown redevelopment, would require a large private investment, and representatives of the Equitable Life Assurance Society were reluctant to commit funds of the size needed to building in an area with inadequate flood protection. The "Pittsburgh Renaissance" was thereby pegged to the proposed dam for flood control on the Conemaugh River, 7.5 miles upstream of Saltsburg. Pittsburgh Engineer District studies showed that the dam on the Conemaugh would have lopped 4.6 feet off the crest of the St. Patrick's Day flood of 1936; and Pittsburgh political and civic leaders, calling the project the keystone to flood protection for their city, began an intense lobbying campaign on behalf of Conemaugh Dam.

The Pittsburgh District had completed six dams for flood control, Tygart, Tionesta, Mahoning Creek, Crooked Creek, Loyalhanna, and Youghiogheny, by the end of 1942, and in that year the Pittsburgh Chamber of Commerce unanimously resolved that construction of Conemaugh Dam should begin at the end of the war. A shock came in 1945, however, when Congress cut an appropriation for the Conemaugh project from the public works bill. William B. Rodgers, Jr., son of the river captain who had gotten the Allegheny River bridges raised and a leader of Pittsburgh's campaign for flood control, jumped on a train to Washington, where he learned that political opposition to the Conemaugh project was coming from Blairsville and Indiana County.

Rodgers returned to Pittsburgh and, along with other members of the Chamber of Commerce, took Shailer Philbrick and representatives of the Pittsburgh District to Blairsville to reconnoiter the situation. They learned that people of Indiana County were not even aware they would be paid for lands taken for the project. Rodgers and Philbrick assured the people they would be paid fair market value for their properties. "I would question whether very many cases have ever developed where the Government has bought land that will be inundated as result of building a reservoir where people were not satisfied," Rodgers told them. "They always seem satisfied, and these people invariably will build a home within a mile or so of where they are already living because it is their home. They build a finer home because it is Government money, more money than they ever had before; it is cash on the barrel head, and the towns have profited as a result of every one of these dams so far."

People resent leaving their ancestral homes, no matter how worthwhile the project, and invariably oppose public projects requiring the exercise of eminent domain. Land acquisition for projects becomes therefore a very sensitive and difficult business, requiring friendly and frank contacts with people living at the site of a proposed project from the beginning.



The District Surveys Branch starts the process, sending parties of men armed with shovels, saws, axes, and survey equipment to the project sites to locate boundary lines, caves, springs, structures, graves, and to make precise measurements of the ground to check the results of aerial photogrammetry. Living a rugged outdoor life, the surveyors make their own paths as they move, risking insect, snake, and dog bites, and occasionally farmers waving shotguns. They always proceed with permission of landowners, though a court order for entrance can be obtained when necessary. For the most part, surveymen are an adventuresome, gregarious lot who take pains to establish friendly contacts with the people they meet.

That first contact is followed up by men and women of the District Real Estate Division who have the fascinating job of dealing directly with human reactions, whims, and caprices not at all subject to engineering formulas. They make every effort to acquire land amicably through direct negotiation with owners, resorting to court action only when owners can not be located or when amicable settlement is unobtainable. Then, the courts determine fair market value, or "just compensation" under the Fifth Amendment to the Constitution, and like as not the market value set by the courts will be the same or even less than the amount first offered by Corps negotiators.

People often complicate matters by clinging to their homes to the last moment. A favorite story among the Real Estate people concerns an elderly woman who plumped down in a rocker next to her fireplace and told the Corps negotiator: "No, I ain't a-goin' to sell. I'm jist a-goin' to set right here in this room rockin' and let the water come up 'round me and drown me." At each of several visits, the negotiator found her sitting in her homestead defiantly rocking at top speed. At last, he explained at great length how the dam would benefit people, how it would save property and lives of people living below it, and asked, "Why won't you cooperate?" The rocking ceased abruptly and the lady tartly replied, "Cooperate! Why, I'm a-goin' to die for the Government! What more do you want?"

Employees of the Real Estate Division perforce spend much time searching church, family, and genealogical records and reading tombstones, for all graves in a reservoir area must be moved, a job usually handled by contract with morticians who relocate the graves to the nearest well-kept cemeteries. Effort is made to identify the graves and locate next-of-kin, a big job in some years; in 1965, for example, 53 cemeteries containing 6,300 graves were moved in the Pittsburgh District. This also is sensitive work, but it has its lighter moments. Some of the most surprising epitaphs pop up: "I expected this but not just yet." "May he rest in peace until we meet again." "Died Feb. 4, 1891. A true blessing for all."

Funds for land acquisition and relocations at the Conemaugh Dam project were made available in 1946, after Pittsburghers again traveled to Washington to engage in politics on behalf of the project. The Conemaugh project had been left out of the House appropriations bill, but William Rodgers, Ralph Edgar, and a bipartisan group of Pittsburgh leaders lobbied with congressional committees, and Senators Joseph Guffey and Francis Myers restored funding for the project to the bill when it reached the Senate.

Relocations at the Conemaugh project cost twice as much as the dam. Two railroad tunnels and the old Pennsylvania Canal tunnel through the bow in the Conemaugh where the dam was built had to be plugged with concrete and sixteen miles of railroad doubletrack mainline had to be moved. Resident engineers Don D. Rait and W. C. Sale directed relocation work by the contracting team, Herman Holmes, Hunkin-Conkey, and Shofner, Gordon and Hinman, that had earlier built Youghiogheny Dam. Holmes drilled a new half-mile long tunnel for the railroad, and the other contractors made the huge cuts and fills in the rugged terrain and built six new bridges for the rail line.

Wilfred Bauknight, Chief of Construction Division until 1951, explained that at jobs like Conemaugh the resident engineer and a skeleton staff were sent to the site at the time bids were advertised

to begin control surveys, preparation of progress charts, and preliminary work. When the contractor moved his people and equipment to the site, the District sent a full inspection force, normally consisting of a field engineer, office engineer, safety engineer, and inspection, survey, and clerical staff. Contractors typically had a project manager, project engineer, general superintendent, office manager, and assistant superintendents. "Successful construction rests," said Jacque Minnotte, Bauknight's successor, "on three pillars: good plans and specifications, competent contractors, and a capable resident office staff." Resident engineers at Conemaugh Dam were, in succession, R. B. Jenkinson, C. E. Paul, and E. M. Thompson.

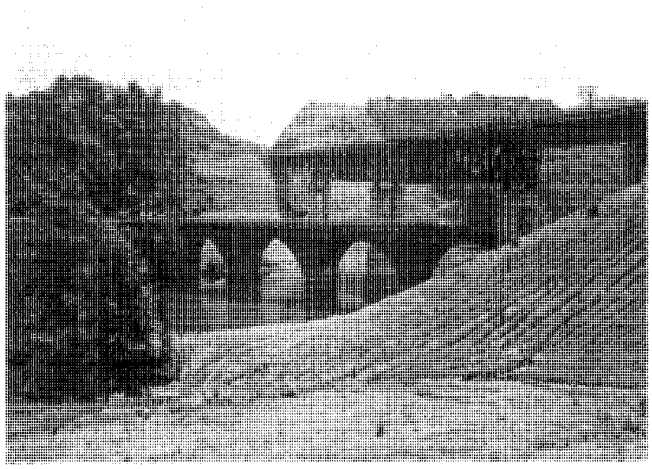
While work was underway, the resident engineer office monitored contractor progress and maintained quality control, reporting to the Construction Division in the District office, which acted as liaison between the field staff and the several other elements of the District that were concerned with the work. After the bulldozers shut down, the last concrete was placed, or the last spike driven, Construction Division recommended acceptance of the work to the District Engineer, who thereupon made final inspection, acceptance and payment to the contractors and turned the project over to Operations Division.

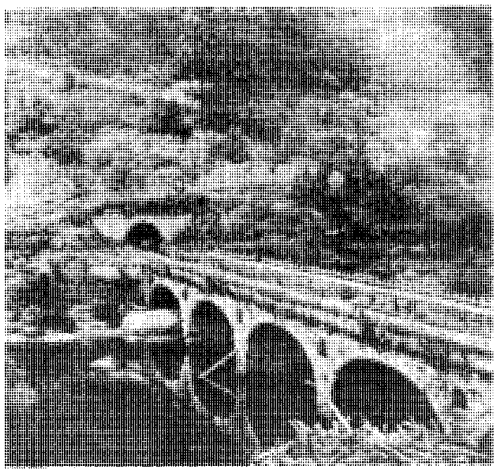
Problems crop up at every construction job, and Conemaugh was no exception: troubles ranged there from rat extermination to major landslides. Because Conemaugh Reservoir would take the Blairsville public dump, the Engineers had to buy the dump and Blairsville had to open a new landfill. The Engineers had to contract for extermination of rats at the old dump and coordinate timing of the work to kill the rodents before use of the old dump ceased; otherwise, the creatures might have run out of edibles and migrated into the town.

A landslide problem eventually forced the Chief of Engineers to appear before a committee of Congress to defend the Pittsburgh District. During relocation work at Conemaugh, earth sloughed off the side of steep hills down into the cuts, and one such slide cracked two concrete piers built for a bridge on the relocated Pennsylvania Railroad track. Congressman James G. Fulton of Dormont attacked the Pittsburgh District for negligence in connection with the slides in the newspapers. District Engineer Francis Falkner pointed out that slides were common at projects built in rugged terrain, and mentioned that General George Goethals, who had dealt with massive slides at the Panama Canal, had been rushed to Pittsburgh to advise city engineers about what to do at slides on Bigelow Boulevard, the "Dream Highway." Goethals' advice was: "Let 'er slide."

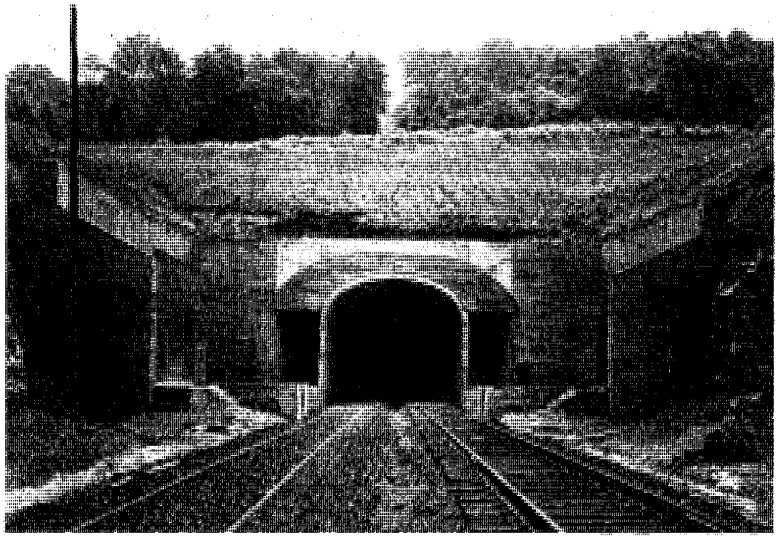
Chief of Engineers Raymond A. Wheeler explained to an investigating congressional committee that core-drilling and foundation exploration on the

1950 View across the Conemaugh River 1834





Ernest Coleman



West portal of relocated Pennsylvania Railroad tunnel

hillside above the bridge piers would have cost $350,000, so the Pittsburgh engineers had gambled that the hill would not slide and had lost. Since damages were about $150,000, the Pittsburgh District was still ahead of the game financially. General Wheeler said that, based on hindsight, he would have asked the $350,000 for foundation exploration from Congress if only to have avoided the controversy. He assured the committee that foundation investigations for structures where human life might be at stake would never be neglected.

While relocation work was underway at Conemaugh from 1946 to 1948, delegations from Pittsburgh made yearly pilgrimages to Washington to plead for accelerated funding. When they won funding for construction of the dam in 1948, Equitable Life Assurance Society approved funding for the Gateway Center, cornerstone of the "Pittsburgh Renaissance." Plans for the Center, however, wisely called for floodproofing the buildings by installing floodgates, sewer cutoff valves, submersible power units, and waterproof foundations. First floors of the buildings were also located at least a foot higher than the maximum flood of record would reach after the flood control dams had cut off its head.

Indiana County Commissioner Steele Clark, General Joseph C. Mehaffey, and Colonel Francis Falkner broke ground for Conemaugh Dam on May 9, 1949. General Mehaffey, Ohio River Division Engineer, spoke to the people crowded around the site, explaining that, while Conemaugh Dam was known as the keystone for flood control at Pittsburgh, it was not big enough for complete control of floods. He thought, nevertheless, that major reductions in flood crests could be achieved through prudent operation of Conemaugh Dam in conjunction with other dams upstream of Pittsburgh. The ceremonies then adjourned and the participants joined a motorcade back to Pittsburgh for dinner with Governor James H. Duff and Mayor David Lawrence at the Gold Room of the Roosevelt Hotel.

The Board of Consultants organized to advise on big dam construction in the Pittsburgh District had not met since 1942, when it made its decision on Youghiogheny Dam, but it reconvened in 1949 at the District office to consider plans for Conemaugh Dam. James Growdon, William McAlpine, William Creager, and Charles Berkey returned. Leroy F. Harza, founder of Harza Engineering of Chicago, was the new member of the Board. Ralph Bloor and Ed Burwell, who had moved from Division to the Chief's office, returned, and Bob Philippe, Oscar Yates, and General Mehaffey from Division attended.

Shailer Philbrick, Jim Neill, and the District engineering staff had devised an innovative plan for the foundation of the concrete dam to be built on the Conemaugh. The sheer weight of water impounded by high dams creates stresses always trying to force the dams downstream, and classic dam design, to prevent such sliding action, involved excavating the

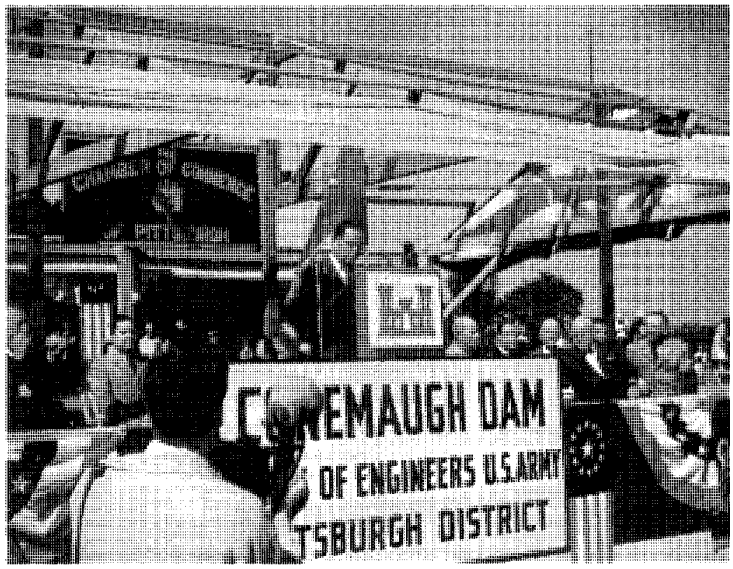
bedrock under the dam so it was lower at the upstream end than at the downstream toe and thereby more closely at right angles to the stresses. At the Conemaugh site, however, foundation rock dipped downstream and the strata varied from claystone and siltstone to limestone, coal, and sandstone. The District wanted to build Conemaugh Dam with a 3% downstream inclination so the entire structure would rest on essentially the same rock stratum.

Ed Burwell, Charles Berkey, and most of the consultants questioned the District plan and wanted to build the dam in the classic fashion, cutting across the strata to obtain an upstream inclination. Philbrick defended the District's plans against the entire Board, arguing that if the dam were built in the classic manner and rested on different rock strata with varying resistances to pressures it might settle into place at different rates, perhaps cracking the concrete. Philbrick maintained his position and the Board, after observing that the toe of the dam would be embedded about twenty feet into foundation rock, finally approved the District's plans and adjourned for sandwiches and coffee.

Conemaugh Dam was built as the District designed it: on a downstream dipping siltstone layer. After the Conemaugh meetings, the Board of Consultants faded out of the picture. By 1953, the engineers of the Pittsburgh District had about as much experience with big dams as any engineers, public or private, in the nation.

A special train from Pittsburgh and a motorcade from Wheeling traveled to Conemaugh Dam on September 18, 1953, for dedication ceremonies. Savin Construction Company had built the 137-foot high and quarter-mile long concrete dam between 1949 and 1953. It backed a lake seventeen miles up Conemaugh River and twelve miles up Black Lick Creek. Chief of Engineers Samuel D. Sturgis, William B. Rodgers, and District Engineer Ralph A. Lincoln presided at the dedication ceremonies, opening the dam's sluice gates to let water gush through for the entertainment of the crowd. They returned to Pittsburgh that evening for dinner at the William Penn Hotel, where Governor John S. Fine and Mayor David Lawrence spoke to honor the people who had built Conemaugh Dam as the keystone of the floodwall of dams growing around the headwaters district.

Dedication of Conemaugh Dam



Reservoir Operations When Charles Ellet proposed his reservoir scheme in 1850, he said that reservoir operations would be simple. All that would be needed was one damtender at each dam to close the gates to hold floods and open the gates to release. One central superintendent and a telegraph communication system would complete the outfit. Reservoir operation, in practice, proved far from simple, but Ellet had the principles right.

After Conemaugh Dam was finished in 1953 it became the responsibility of the District Flood Projects Operations Branch. Normally, three damtenders were stationed at each dam to operate the gates and perform routine maintenance. All three worked the day shift except during floods and emergencies. They were linked to the District office by telephone and radio communications and had diesel generators for emergency power supply.

Carl A. Wheelock, Chief of Flood Project Operations, explained the setup. Twice daily, more often during floods, the District office contacted damtenders throughout the District by radio and told them to "open certain gates at a certain opening at a certain time." The damtenders then went to the control panels in the operations buildings and pushed buttons activating electric motors that moved the gates up and down in their housings. In the event of power failure, the gates could be moved by standby generators or by hand. If mechanical problems prevented proper gate operations, steel bulkheads could be lowered across the gate openings so repairs could be made. If communication with the District office were broken for some reason, the damtenders had emergency instructions on hand for use until communications were restored.

Emil Schuleen, R. M. Morris, and Tom Reilly worked out five separate operations schedules for the dams and reservoirs: for routine operation, minor rises, flood storage, water supply storage, and release of low flow storage.

Information needed for scheduling reservoir operations was collected by the Hydrology Branch, headed for many years by Thomas L. Reilly, a Bellevue native who joined the District in 1935 and who could amaze laymen by reeling off a century's flood stage records in the Pittsburgh District from memory. Precipitation and stream flow measurements poured into the Hydrology Branch daily from the National Weather Service, stream gaging stations, and the dams. During unusual weather conditions, surveyors from the Hydrology Branch went scouting across the watersheds above Pittsburgh, driving perhaps 2500 miles in three days, tramping on snowshoes through the mountains to ascertain snow accumulations and marching along flooded streams to measure runoff rates. After the data was assembled at the District office, it was analyzed to determine the best long and short range reservoir operation schedules.

The normal annual operations program planned low reservoir levels allowing maximum flood storage during the winter and early spring, then impoundment of late spring rains for release during summer and autumn low flow periods. Few years have completely normal precipitation patterns, however, and challenges to operations came when floods occurred in quick succession, or during summers after impoundment for low flow had begun, or when precipitation did not occur in the amounts expected. Erratic weather usually meant around the clock work at the Hydrology and Projects Operations Branches and midnight calls to the damtenders, who stumbled through cold and snow and wet weather to operate the gates. That's why damtenders welcome summer sunshine more than most.

Operation of Conemaugh Dam furnished several benefits in addition to flood control. Its 274,000 acre-feet of storage was devoted entirely to flood control, but its releases made significant contributions to downstream water quality and reductions in fishkills. Conemaugh River was notorious for its high acid and manganese content, and, before the dam was built, local rains over the Conemaugh basin sent slugs of polluted water into the Allegheny and Ohio rivers that caused trouble all the way to Wheeling. Division Engineer Walter P. Leber, in an address to the Pittsburgh Sanitary Engineering Conference in 1963, explained that runoff stored temporarily by Conemaugh Dam for subsequent slow release reduced acid water problems downstream of the dam.

Local Protection Clifford Davis, chairman of the House Committee on Flood Control, opened the July 25, 1955, hearing with the remark: "The Chair has been under tremendous pressure during the last six weeks, and I am sure some of you do not know the extent of the pressure."

Congressman John J. Dempsey asked, "Mr. Chairman, could we take action, subject to a favorable report by the Board of Engineers?"

"We have not done that before," said the chairman.

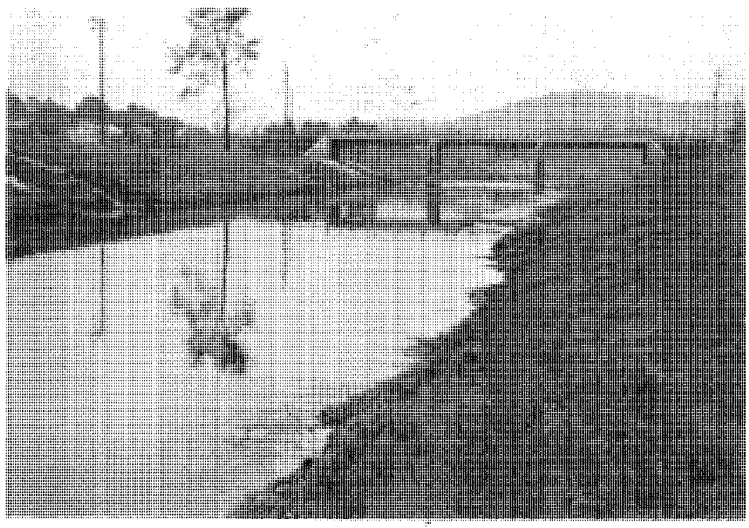
"I have never had so much threatening before, either."

"No," said Mr. Davis, "I tell you he nearly broke my eardrum one time, and I do not want him to break it again."

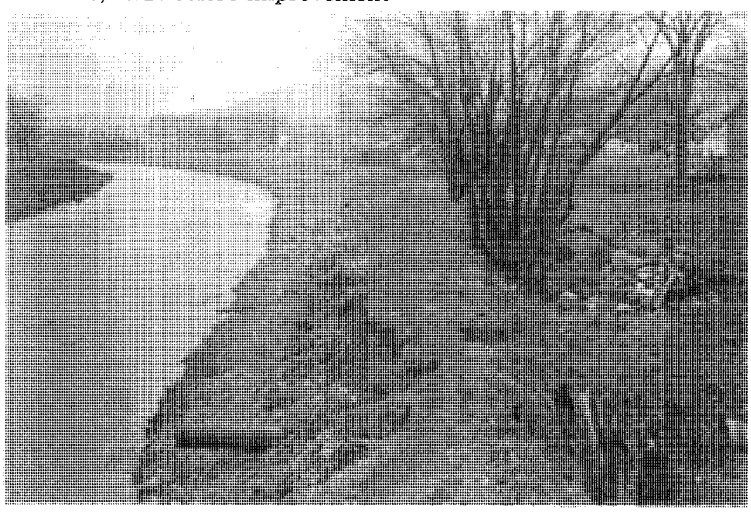
The butt of the committee's humor was Congressman Leon H. Gavin, who rose to defend himself, saying his people at Brookville, Pennsylvania, were very unhappy that work on a local protection project at nearby Reynoldsville was underway and they were left out. "When it comes to a colossal project, something that is gigantic or monumental," said Gavin, "the engineers become greatly concerned about it, but when it comes to some little project where a town is flooded out every spring and fall due to heavy rains and the snows, and it requires the relocation of highways and telephone poles and sewer lines and lot of detailed work, they seemingly are not too concerned about those little troublesome projects. They should be concerned, because those small projects are just as important as the projects of a gigantic or monumental nature."

The record of the Pittsburgh Engineer District indicates that Congressman Gavin's charges were groundless. In fact, environmentalists during the 1970's would probably argue the reverse: that Pittsburgh District built too many local protection projects, which involved dredging stream channels to widen, deepen, and straighten them to increase their flood-carrying capacity. Congressman Gavin was practicing politics, however, and he got the local protection project for Brookville on schedule. When Brookville met local cooperation requirements in January 1960, the Engineers began construction and turned the completed project over to Brookville for operation and maintenance in October 1962.

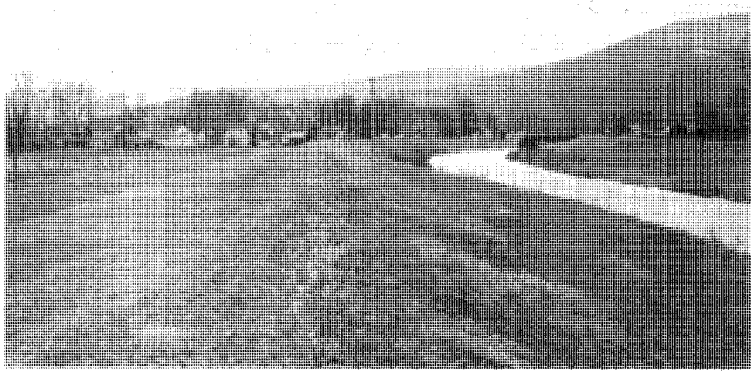
In general, three types of local protection projects were built by the Pittsburgh Engineer District. Channel rectification projects, of the sort built at Brookville, were most common. Levees, the ancient device of building nearly continuous earth dams



Channel improvement - Reynoldsville, Pa.
Portville, N.Y. before improvement

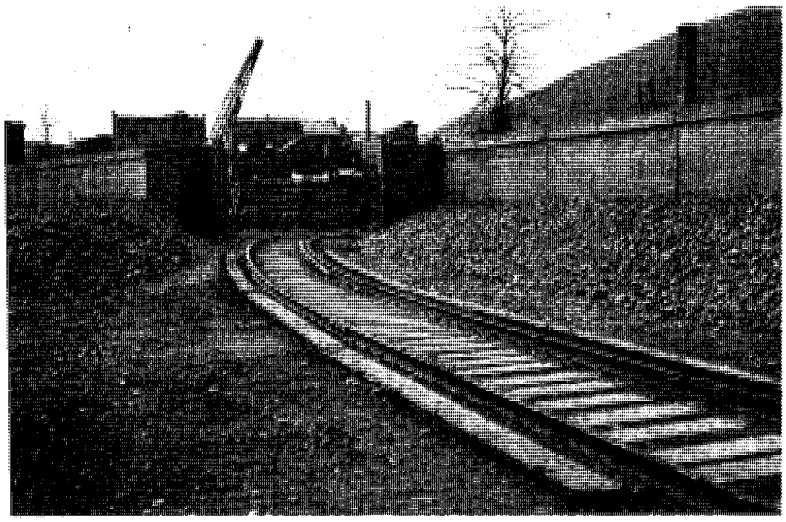


Portville, N.Y. after improvement



Colonel Ralph A. Lincoln

Flood wall at Wellsville, Ohio

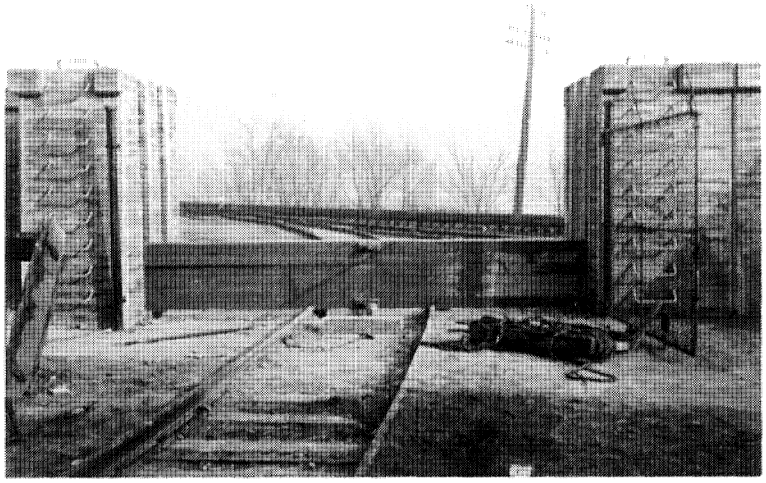


from high ground to high ground to protect low-lying areas, were built by the District at Olean and Portville, New York, and a few other places. The third type, concrete floodwalls, that replaced levees where towns crowded up to riverbanks, were built at Wellsville on the Ohio and Kittanning on the Allegheny. There were, of course, many complex combinations of all three types to meet specific needs and varying terrain most economically and effectually.

Local protection projects were nearly always initiated by the communities that desired them through contact with their congressmen, who shepherded an appropriation for a survey through Congress. The Pittsburgh District then studied various plans to provide protection and held public meetings to find out what the communities wanted and if they were willing to pay their share of the costs. If a community was willing to cooperate and estimated project benefits exceeded estimated costs, the District returned a favorable report to Congress and somewhere down the line Congress funded the work. The process usually took several years.

One of the first local protection projects built by the Pittsburgh District was at Wellsville on the Ohio, which had wanted such a project since the flood of 1913. Just after the 1913 flood, attorney P. M. Smith, for the Wellsville city council, wrote the District Engineer that Wellsville, in Columbiana County, 48 miles downstream from Pittsburgh, had suffered heavy flood damages and wanted help with building dikes for protection. "Can you Engineers help us?" he asked. The District Engineer replied, "Yes, we can. Enclosed is a map showing accurately the areas of Wellsville that were flooded, from which your city engineer can work out plans for a dike to prevent flood water from entering the low section of your town." That was the extent of it. The Engineers could do no more because before 1936 Congress did not approve nor fund local protection projects except in odd instances where it did so under the guise of improving navigation. In 1936, Wellsville was first in line for a local protection project, and the Wellsville flood wall became a pilot project for the Ohio River basin.

During a visit to Pittsburgh in January 1937, William McAlpine from the Chief's office recommended that planning for the Wellsville project be conducted with the goal of establishing standards for similar projects throughout the Ohio River Division. With that goal in mind, Bob Philippe and the District soils laboratory were assigned model studies to analyze standard flood wall designs, and William McAlpine returned to the Pittsburgh District for a series of conferences during 1937 and 1938 at which general design criteria for flood wall and levee construction in the Ohio River basin were worked out. Colonel Paschal Strong, Bob West, and Ralph Bloor generally represented Ohio River Division at the conferences. Harry Pockras came from Huntington District, and Sam Bailey and John Kurrasch from Louisville. Charles Wellons, Emil Schuleen, Bob Philippe, D. P. Grosshans, H. A. Vierheller, and Captain Ralph A. Lincoln usually represented the Pittsburgh Dis-



Close-up of gate closure and bulkhead timbers - Wellsville, Ohio

trict. Captain Lincoln, a distant relative of President Lincoln, was there because he had charge of the Wellsville project during planning and early construction phases. He returned to Pittsburgh as District Engineer in 1952.

At the 1937-38 conferences, the engineers debated flood wall and levee design at length. They agreed that earth levees should have a top width of eight feet, side slopes of at least 1 on 2, and should be constructed of compacted fill with a center-line exploration trench, drainage system, and sodded or protected slopes. Concrete flood walls were to be of the reinforced cantilever design, or the steel-piling cantilever type devised by Sam Bailey of Louisville District. All walls and levees were to be built to a height at least three-feet above the maximum flood stage of record, with freeboard allowed for wave action and settlement. Road openings through the walls were to be closed during floods by poiree needle bulkheads designed by the Pittsburgh District or with timber stop logs.

Under local direction of Captain Lincoln, Lieutenant John Schermerhorn, and C. A. Nutter, construction began at Wellsville in 1938. The 1,977 feet of concrete wall, 5,700 feet of earth levee, 3 gate closures, 4 pumping plants, and drainage structures were turned over to Wellsville in August 1942 for operation and maintenance.

When he returned as District Engineer in 1952, Colonel Ralph Lincoln went to Wellsville to see how the project he began in 1938 was performing. In the years between his tours at Pittsburgh, Lincoln, as part of his military engineering duties, had drafted the blackout regulations used during the Second World War to prevent visual location of cities from the air and had devised functional packaging of complete military buildings and bridges for use of the combat Engineers. Colonel Lincoln was pleased with the Wellsville project. By 1952, it had held seven major floods out of Wellsville and prevented flood damages estimated to be double the amount of project costs.

Because the benefits of a local protection project accrue chiefly to a specific area, citizens of that area must tax themselves to fund their share of project costs before the Engineers begin work. Raising local taxes often has serious political consequences, and local governments frequently neglect flood protection work until a major flood generates public support. At Olean and Portville in Cattaraugus County, New York, as an instance, local governments with state assistance built low dikes along the Allegheny and the creeks which join the river at those towns after suffering serious flooding in 1913 and 1916. The Engineers warned that those low dikes were inadequate in 1936, but nothing was done until the July 1942 flood overtopped and breached the dikes, causing $3.7 million damages at Olean and better than half a million dollars damages at Portville.

In the aftermath of the 1942 flood, the communities requested federal assistance, and the Pittsburgh District recommended stronger levees providing protection to a river stage three feet above the maximum flood of record. Congress approved local protection for Olean and Portville in 1946, with the New York Department of Public Works acting as local cooperating agency; and the Pittsburgh District built the two levee projects between 1948 and 1952.

The work at Olean involved improving six miles of old dikes along the Allegheny River and Olean Creek, building one and a half miles of new earth levee and a half mile of concrete flood wall, plus relocations, dredging, and pumping plants to handle internal drainage. At Portville, the District improved old dikes and built new levees and flood walls along Oswayo and Dodge creeks and the Allegheny, also installing pumping plants and rebuilding bridges. That investment paid off in June 1972, when a flood greater than that of July 1942 occurred.

Local governments generally launch local protection projects through appeals to their congressmen, but individuals have sometimes begun campaigns

for specific projects. It apparently happened at Punxsutawney, Pennsylvania, a town on Mahoning Creek 52 miles above its mouth. Punxsutawney is always remembered on Groundhog Day. In a January 1937 letter to the President, Ed A. Murray, department store owner of Punxsutawney, wrote: "As I sit in my window and look out over Big Mahoning which rose three feet in the night, a stream that has been filled and refilled with rubbish, I-beam bridges and iron works slag, and one place just below our house, there are twelve acres of slag and a part of a bridge-fill in the stream way, which more than doubles the hazard."

Mr. Murray bombarded the President, Congress, and the Corps of Engineers with letters, even sending sketches of conditions along Mahoning Creek. On his own, he collected signatures of 328 property owners in the vicinity on a petition asking federal help with flooding problems.

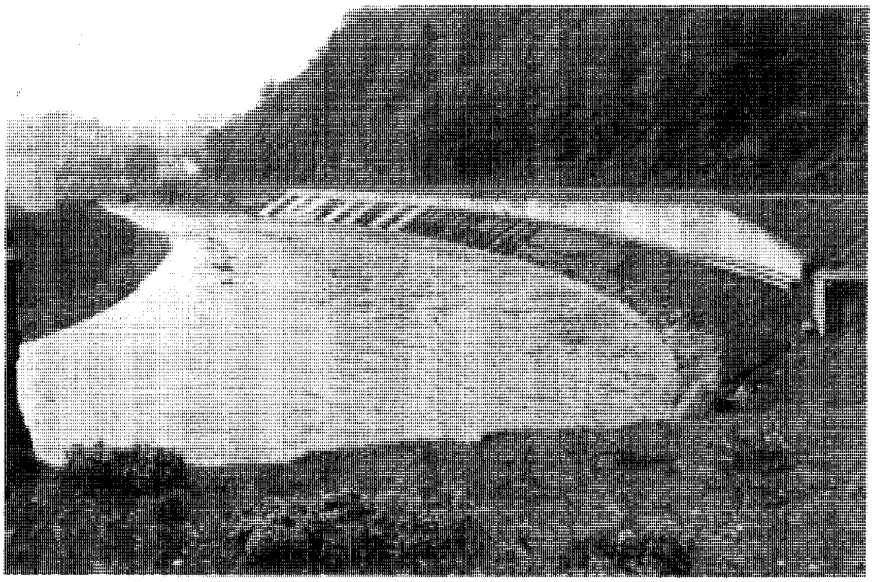
The community petition and Mr. Murray's personal efforts culminated in 1938 with assignment of the Pittsburgh District to a study of the Punxsutawney project. The District learned the borough suffered annual floods and $1 million damages during the March 1936 flood alone, and in 1941 it reported favorably on providing flood protection through construction of 2.5 miles of flood wall and earth levee and 3.5 miles of channel improvements. After a wartime delay, construction of the project began in 1946 and was completed in 1950.

The Pittsburgh District built more than three dozen local flood protection projects in all five states served by the District, ranging from a project at Portage, Pennsylvania, at the head of Conemaugh River on the eastern District boundary, to Salamanca, New York, at the northernmost bend of the Allegheny, to Amsterdam, Ohio, on the western border of the District, and Elkins, West Virginia, on the Tygart River in the southern sector of the District. The District built one local protection project in Maryland at Friendsville in the Youghiogheny River basin.

The largest local protection project of recent date was on Chartiers Creek, that joins the Ohio River at McKees Rocks. The creek was navigated by traders during the 18th century. George Washington owned much land in Chartiers Creek valley and encouraged the early settlements in the region, and pioneer riverman George Morgan had settled in the valley at Morganza.

The Chartiers valley suffered heavy flood damages in 1874, 1912, 1936, and 1943. As industry located along the floodplain, the consequences of

Channel improvement - Punxsutawney, Pa.



Chartiers Creek local protection project - June 1972

flooding became serious, culminating in August 1956 when a flood caused near $5.7 million in damages. The Chartiers Valley District Flood Control Authority was organized to assume local responsibility for a flood protection project on the creek in the Carnegie-Heidelberg-Bridgeville vicinity, and Washington County acted as cooperating agency for work on the Canonsburg-Houston section of the stream. Congressman James G. Fulton of Dormont and Senator Edward Martin obtained study funding from Congress in 1957, the Pittsburgh District made a favorable report in 1963, and Congress approved the projects in 1965.

At the Collier Street bridge in Heidelberg on July 26, 1968, District Engineer Wayne Nichols and Congressman Fulton broke ground for the Carnegie-Bridgeville work, later named the James G. Fulton project in honor of its chief sponsor in Congress. Flood protection was provided through dredging more than eleven miles of Chartiers Creek, building concrete walls and drop structures, placing bank slope revetment, plus the usual relocation of bridges, rail tracks, and sewer and utility lines. Similar work on 4.5 miles of the creek in the Canonsburg-Houston vicinity began in 1968.

The District bicentennial project was located on Girtys Run, an Allegheny River tributary that flows through Millvale on the Pittsburgh North Side. The stream was named for Thomas Girty, brother to Simon, James and George Girty, who, unlike his infamous brothers, remained at Pittsburgh during the Revolution and served with the American army as a scout. Thomas settled on Girtys Run, raised a family, and died there in 1820.

Flash flooding was common on Girtys Run. On September 15, 1911, for instance, five inches of rain fell on the area in three hours and Girtys Run and neighboring streams sent a flood flow into the Allegheny so quickly that John Arras was caught with his wickets up at Herr Island Dam. Arras tried to batter the wickets down from below with two wooden barges, but the sole result, he lamented, was two barges ruined. The major flood of record on Girtys Run occurred in July 1950. It damaged Millvale to the tune of $1 million.

After a study of alternatives such as a diversion tunnel or a reservoir, the Pittsburgh District settled on channel improvement as the best method of protecting Millvale against floods that occurred at an average interval of about twenty years, though full protection against all floods was not economical. District Engineer Max R. Janairo, Congressman H. John Heinz, County Commissioner Thomas Foerster, and Millvale mayor Regis McCarthy broke ground for the Girtys Run project on July 16, 1976, at Millvale.

From Johnstown and Wellsville to Girtys Run, politics at all levels, whether federal, state, or local, have had impact upon the construction of local protection projects, and that is not necessarily evil, for politics, ideally, express the will of the people. General Joseph C. Mehaffey, Ohio River Division Engineer in 1948, said it this way:

The Corps of Engineers is the servant of the people as their desires are expressed through the Congress. We recommend to the Congress what the people want when the desired improvement can be economically justified, not what we think they should have. We may recommend a certain improvement or a given type of construction, but the residents of the city or other political subdivision concerned have absolute veto power. They have exercised this more than once.

Kirwan's Big Ditch September 30, 1941. The House Committee on Rivers and Harbors was hearing the arguments about the proposed Lake Erie and Ohio River Canal, and Congressman Louis E. Graham from Beaver, Pennsylvania, had the floor.

"That is all it is," Graham said, "a pork barrel."

"You think this is 'pork?' " asked William Pittenger of Minnesota.

"It reeks with it," replied Graham, "and you, from Duluth, ought to go back and read Proctor Knott's speech on the Glories of Duluth."

"I have memorized it."

"Then you ought to apply it."

Michael Kirwan of Youngstown interjected, "Mr. Graham, you said when you started to talk that we are all selfish and were seeking to get a better advantage than the other; is that correct?"

"Not quite that way."

"Well, that is the way you put it, I think."

"No, I do not think so. You may refer to it. But if you want to take it that way, take it that way."

"You would not say that the district of Youngstown is doing that, would you?" Congressman Kirwan asked. "You talk about taxes. We paid more in the Youngstown district in the '20s than four States did, and in that paying we helped your town of Beaver by letting them canalize the Ohio. And they did that for the Monongahela, and some of that big tax money came out of Youngstown."

"Out of Youngstown? Out of 48 States of the United States and 132,000,000 people, of which you are only a part!"

"But of those taxes Aliquippa paid very little," said Kirwan.

"How utterly absurd it is for you," countered Graham, "to argue to me that the one little place, Youngstown, paid all this debt."

"No, she did not and I did not say that."

"Well, it did not pay it."

"But Aliquippa was not even built, so it was paying no taxes. We paid plenty of them and let you build the plant. We canalized or helped to canalize the Ohio River without one bit of opposition from our district."

"You will be the sole beneficiary of this, and we will reverse it and pay it to you," said Graham.

"Oh, no!"

"Exactly what it is. That is it."

"At no time in the history of the United States," Kirwan summarized, "after all the taxes that we have paid in, did the Federal Government ever spend a dime on the river in the Youngstown, Ohio, district, but we certainly helped to canalize the river for you people down on the great Ohio that you say God gave you. That was true. You just left it there. We gave you a good hand to canalize it."

Few, if any, of the public works ever proposed caused greater acrimony and political infighting, no holds barred, than the Lake Erie and Ohio River

Canal. The history of the project had many twists and turns, and perhaps the greatest paradox of all was that Pittsburgh spent thousands during a half-century fight to get the canal built, then worked for almost another half-century to prevent it.

The idea of building canals along the routes of old portages to link Lake Erie with tributaries of the Ohio spread just after the nation was founded. The portages from the lake to the head of French Creek, Beaver River, and the Scioto, Muskingum, Miami, and Wabash rivers all seemed likely sites for canals. George Washington, after study of Thomas Hutchins' maps in 1788, decided that the best of all the routes was that from the lake to the Beaver River. After intensive studies and detailed surveys lasting from about 1881 to 1934, the Army Engineers concluded that Washington had been right.

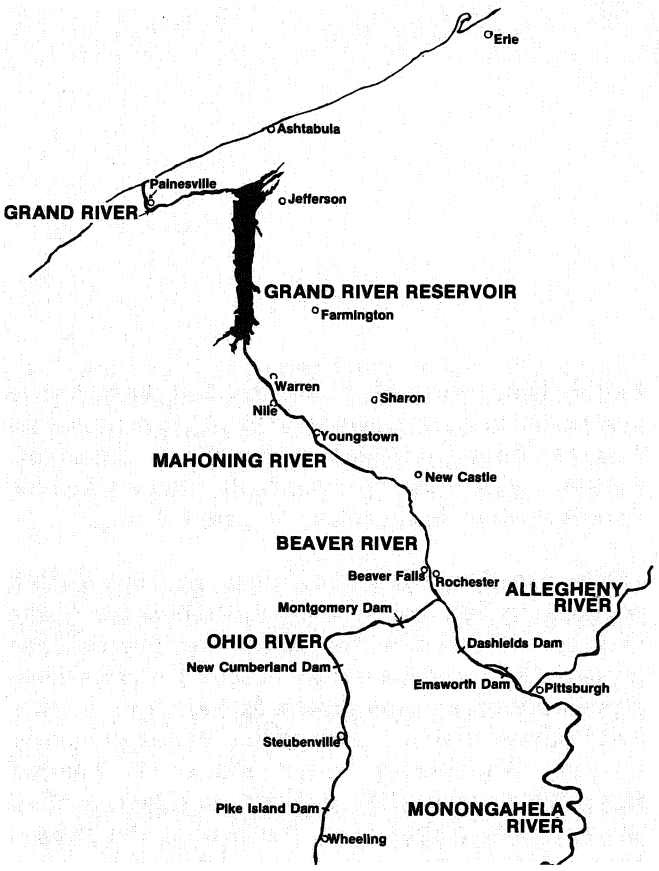
Congressman Michael J. Kirwan

The first canal survey performed by the Army Engineers, by General Simon Bernard and Colonel Joseph Totten in 1824, was of a canal route between the Ohio and Lake Erie via the Beaver River and its tributaries. That survey was used by the Pennsylvania canal engineers who in 1844 completed the Beaver and Erie Canal, with terminals at Rochester on the Ohio and Erie on the lake. Branch canals were built to connect with French Creek at Meadville and the Ohio Canal at Akron, and the project operated successfully from 1844 to 1871.

After he reopened the Corps of Engineers office at Pittsburgh in 1866, William Milnor Roberts, who had served as construction engineer and first chief of operations from 1839 to 1845 on the Beaver and Erie Canal, was asked by the canal owners to plan modernization of the project to serve larger watercraft. In 1868, he recommended construction of Pymatuning dam on the Shenango River to furnish more water supply, rebuilding the canal to a minimum 70-foot width and 7-foot depth, and replacing the old locks, which were 15 by 90 feet in the chamber, with locks 20 feet wide and 110 feet long to handle 300-ton boats.

General James K. Moorhead, Benjamin F. Jones, W. Harry Brown, and other Pittsburgh industrialists formed a committee to support enlargement of the old canal, and Pittsburgh newspapers eloquently boosted the project. On February 3, 1870, the *Pittsburgh Gazette* declared: "An enlarged channel between this place and Erie, to float craft which can navigate the lakes and pass down to New Orleans is so palpably one of the grand conceptions of the age, to create wealth, increase comfort, multiply our resources, that it baffles the utmost ingenuity to find a substantial objection against it. Objections to it looks like hostility to our most vital municipal interests."

The canal company needed government loans to fund the enlargement project, however, and efforts of Pittsburgh businessmen to obtain the funds from the Pennsylvania legislature were frustrated by railroad interests, notably "canal wrecker" William L. Scott, president of the Erie and Pittsburgh



Proposed Lake Erie and Ohio River Canal - 1965 Edition

Railroad with which the canal competed. Scott bought control of the canal company in 1870 and stopped its operations in 1871 after a canal aqueduct collapsed, and converted most of the canal towpath into a railroad track.

Pittsburgh baron Andrew Carnegie revived the idea of building an enlarged canal in 1889. "Of all the works that could most advance the interests of the western portion of the State," he said, "I know of nothing involving so little expenditure which would be so beneficial as a ship canal between the lakes and the Ohio River at Beaver." He predicted that such a waterway would carry an immense tonnage of iron ore south from Lake Erie to Pittsburgh and Monongahela coal north to the Great Lakes.

In 1889, Andrew Carnegie generally got what he wanted, and Pennsylvania appropriated $10,000 for a survey to be performed by Thomas P. Roberts and John M. Goodwin. As part of the study, Roberts collected statements from various Pittsburgh leaders about the canal and the potential tonnage it might carry.

"I'll tell you right now that if the terminus of the former canal had been at Pittsburgh instead of Rochester, it would have been in operation today," river captain John A. Wood told Roberts. "But in those days we did not have dams on the Ohio, and time and again I have seen canal boats lie for weeks at Rochester waiting for a rise. That was what killed the old canal; but now we have a remedy for this."

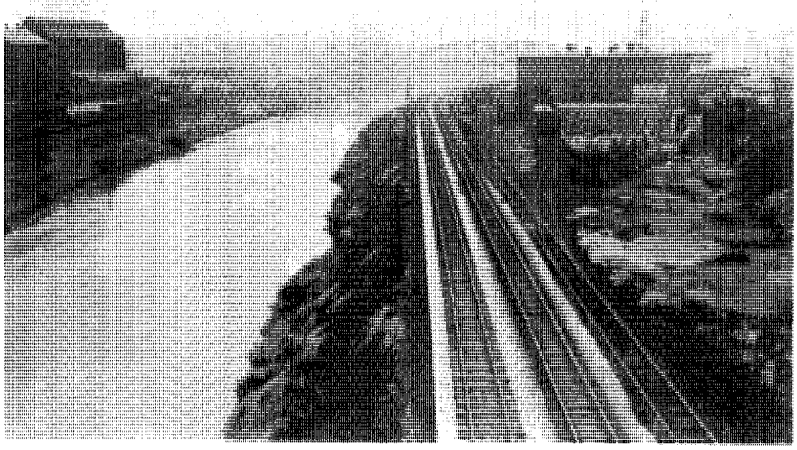
Henry C. Frick, Carnegie's lieutenant, was plainspoken as usual. "I have not the least doubt but that it would be a great thing for Pittsburgh manufacturers," he declared, "and whatever is for the interests of manufacturers is for the good of the people of Pittsburgh. The railroads ought not to complain, as they have been claiming a shortage of cars, and have been unable to give prompt attention to their patrons for some time."

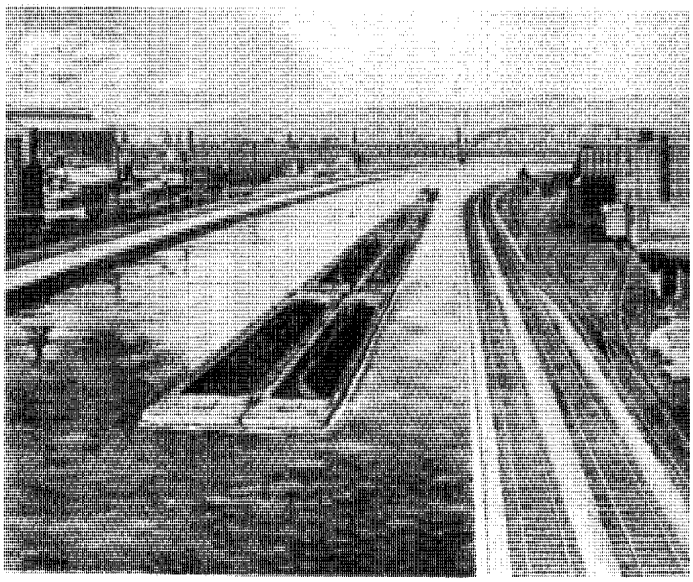
Whether Carnegie actually wanted the waterway built, or whether he used it as leverage to obtain better rail service and lower rates, is not clear, but after he built the Bessemer and Lake Erie Railroad in 1896, he lost interest in the canal project. Thomas Roberts, however, was convinced by the surveys he made in the 1890's that such a waterway was feasible and would be profitable. So much so that in 1905 he organized the Lake Erie and Ohio River Ship Canal Company. Engineers George Lehman and Emil Swensson joined Roberts in the company, and they won a national charter from Congress and financial support for surveys to the tune of $60,000 from Pittsburgh businessmen. The national depression that began in 1907, however, killed their hopes of obtaining sufficient private capital for construction.

The Pittsburgh Engineer District made its first study of the canal project in 1911 at the request of the National Waterways Commission. District Engineer Henry C. Newcomer came up with plans for a 12-foot canal with 56 by 360-foot locks, following Beaver River, Mahoning River, and Mosquito Creek to a summit at Jefferson, Ohio, and down Indian Creek to Lake Erie. Project costs were estimated at $60 million and traffic volume, mostly coal and iron ore, at 50 million tons annually.

The National Waterways Commission recommended the project in 1912, though by a complicated funding scheme. Federal participation

Mahoning River at Youngstown, Ohio
The way it was The way it might have been





would be limited to dredging a harbor at the mouth of Indian Creek, increasing the depth of Ohio River slackwater above the mouth of the Beaver to 12 feet, and project planning and supervision by the Army Engineers. Funds for canal construction would come from Pittsburgh, Youngstown, and other communities along the canal line through local bond issues. As gestures of cooperation, Pennsylvania in 1914 established the Lake Erie and Ohio River Canal Board, first headed by Mayor William A. Magee of Pittsburgh and subsequently by William H. Stevenson and Alexander Dann, with George M. Lehman as chief engineer; and in 1919 Ohio approved formation of local canal districts, with power to issue tax-supported bonds and cooperate with the Federal Government in construction of canal projects. The hope of cooperative federal-state-local construction of the canal gradually faded, however, as major changes in the steel industry put the Youngstown and Pittsburgh steel districts at loggerheads.

Until 1924, a steel pricing system known as "Pittsburgh Plus" gave steel producers in the Pittsburgh area certain advantages. Under "Pittsburgh Plus," purchasers in New York had to pay the cost of a steel product plus the amount of rail charges from Pittsburgh, whether the product was made in New York or Pittsburgh. The Federal Trade Commission in July 1924 ordered the "Pittsburgh Plus" pricing system abandoned. Steel companies, without recognizing the jurisdiction of the Commission, agreed to conform and to quote thereafter FOB (freight-on-board) prices. Steel plants not located on navigable waterways were placed in a disadvantageous position because rail rates had nearly doubled during the First World War; and favorably located steel industries began increasingly to rely upon waterways for transport of materials.

"Survival of our industry is at stake," said J. C. Argetsinger of Youngstown when he appealed in 1933 for construction of the Lake Erie and Ohio River Canal. He pointed out that in 1930 Chicago had supplanted Youngstown behind Pittsburgh as the No. 2 steel production center in the nation, that no new steel plants had located in the Youngstown area since 1918, and that some plants there had closed to relocate on navigable waters. "The cheaper transportation furnished by the rivers saved the life of the Pittsburgh district as the country's greatest steel-producing center, caused the expansion of that district, and benefited the railroads even more than the river carriers," he concluded.

George Mahaney of Sharpsville, chairman of the Ohio River-Lake Erie Canal Association of the Shenango, contended the same thing was happening at New Castle, Farrell, Sharon, and Sharpsville on the Shenango River. Sharpsville, where in 1855 iron from Lake Superior ore had first been successfully smelted, Mahaney said, was becoming a "ghost town" as the steel plants shut their doors.

The Pittsburgh Engineer District made several studies of the Lake Erie and Ohio River Canal during the 1930's, finally settling on a route up the

Beaver and Mahoning rivers and Mosquito Creek to a reservoir on Grand River, then through locks down the north slope to a harbor at the mouth of Wheeler Creek. The engineers proposed beginning with construction of the "stub canal," canalizing the Beaver and Mahoning as far upstream as Struthers and building the remainder of the project at a later date.

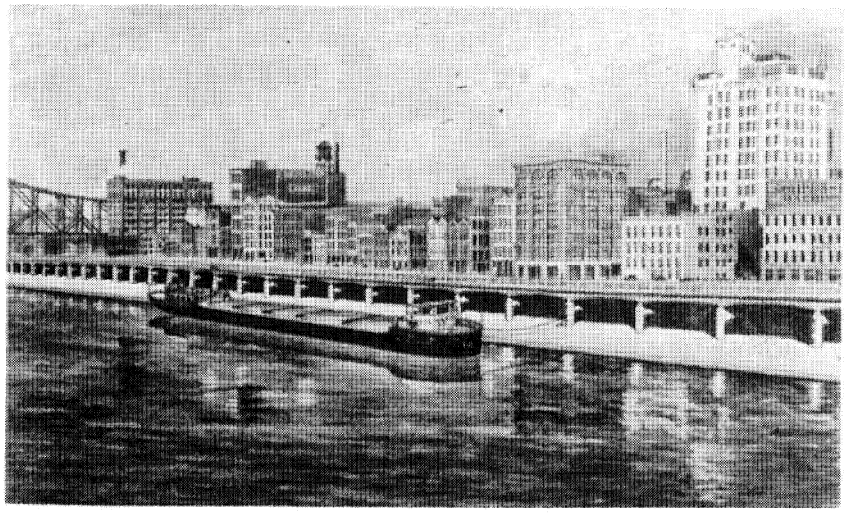
In its review of the District report in 1939, the Board of Engineers for Rivers and Harbors pointed out that, though the waterway could save as much as 70¢ per ton of freight over comparable rail rates, if railroads would reduce their rates 29¢ a ton the canal would lose its favorable benefit/cost ratio. "It would be advantageous to both the railroads and the United States," the Board reported, "for such reductions to be made before large obligations are incurred for construction work on the through canal." President Franklin Roosevelt therefore ordered the Interstate Commerce Commission to investigate rail rates and determine if reductions were possible before construction of the canal began.

In October 1939, the Interstate Commerce Commission advised the President that railroads could not afford to make the reductions needed, nor could they afford the loss of the $35 million per year income received from the 56 million tons of traffic that would move annually on the canal. The I.C.C. concluded that the railroads should be protected from waterways competition.

Railroads organized the Upper Ohio Valley Association to fight the canal project, and by 1935 Pittsburgh had joined the railroads in opposition. The Pittsburgh Chamber of Commerce labelled the proposed canal a "vicious" subsidy to Youngstown industry at public expence. "The theory that the Government should spend money for a waterway to equalize transportation costs among competitors is novel," commented the editors of *Greater Pittsburgh*, the Chamber of Commerce journal. "It has no economic justification and if applied as a reason for constructing this waterway, would have far-reaching effects which could create a dangerous and inexcusable precedent." Captain Fred Way, the sage of Sewickley, said that shudders ran up and down the spines of Pittsburgh steel executives at the very thought of the Youngstown mill owners extending their steely fingers down the canal into the Ohio and Mississippi river markets.

Thus matters stood when Congressmen Mike Kirwan of Youngstown and Louis Graham of Beaver fought it out in 1941 before the House Committee on Rivers and Harbors, and thus matters continued for the following quarter-century. Opponents of the canal derisively called it "Kirwan's folly," or "Kirwan's Big Ditch," and Kirwin responded in kind with tongue-lashings for the opposition at frequent intervals. "Pittsburgh is famous for the Golden Triangle," said Kirwan, "but we have spent a million dollars on Pittsburgh, connecting it to its markets and its sources of supply with good navigation channels and protecting it from being flooded and everything like that. However, when we go to do something outside of Pittsburgh, the Chamber of Commerce up there comes in and claims we are wasting the taxpayers' money."

When the Pittsburgh District reports favorably or unfavorably upon some project, some of the opponents or proponents of that project may even call for removal of the District Engineer, perhaps in the belief that he personally prepared the report and that a new officer in charge of the District might reverse the findings of the report. In 1947, about two weeks before a favorable review report on the Lake Erie and Ohio River Canal was to be completed by the District, Colonel Walter Lorence received abrupt orders sending him to China. Advocates of the canal claimed the transfer came as a result of political pressures from the railroad lobby. The Chief of Engineers said, however, that Lorence had been on the top of the list for overseas duty for better than a year and a top-flight river engineer was needed in China. At any rate, Lorence, who had become allergic to the medicines used to combat malaria during his quarter-century as an Engineer officer, resigned from active service, rather than accept overseas duty.



Canal lake boat at Monongahela River wharf at Pittsburgh - if the canal had been built

Colonel Francis "Frank" Falkner succeeded Lorence as District Engineer and the favorable report on the canal, showing a 1.2 to 1 benefit/cost ratio, was submitted on schedule.

While the 1947 report was under review at Washington, the River-Lake Belt Conveyor Company of Akron, Ohio, announced plans to build a two-way conveyor belt from Lorain on Lake Erie to East Liverpool on the Ohio, shipping the iron ore and coal that would move on the proposed canal. That much publicized conveyor belt system was never built, but it temporarily stopped the canal project while the Engineers completed a study of the comparative costs of shipping by canal and conveyor belts.

During the Eisenhower administration, Mike Kirwan carried on his fight for the canal before committee after committee without much luck, but in 1961 he won funds for a new study that would consider the impact of completion of the St. Lawrence Seaway on the canal economic justification. According to John W. Barriger, president of the Pittsburgh and Lake Erie Railroad, President John Kennedy had ordered the new survey solely to placate that "gracious, eminent, and politically useful Congressman from the Ohio 19th district." Barriger predicted building the canal would sound the death knell for railroads in the eastern United States and said he could conceive of "no more wasteful use of the taxpayers' money."

The Pittsburgh District completed its canal study in 1965 and found the project still had a favorable benefit/cost ratio despite an inflationary trend that had raised estimated costs to nearly a billion dollars. Project opponents promptly labeled it the "world's biggest boondoggle." Justice William O. Douglas, in his broad attack on the Army Engineers and Congressman Kirwan printed in *Playboy* magazine, called the canal the "most brazen project of all." The refusal of the Commonwealth of Pennsylvania in 1967 to support construction of the project killed hopes for the canal.

At Sewickley, Captain Fred Way commented, with tongue-in-cheek, that he thought he heard a sigh of relief coming downriver from Pittsburgh when Congressman Kirwan died in 1970, meaning that Pittsburghers hoped the canal project had also died. Like a phoenix, Kirwan's successor Charles Carney continued support for the project, however, and in 1972 the House Committee on Public Works approved another review study of the "stub canal." But no funding for the study was furnished, and it appeared that after two centuries of study the dream of linking of the Great Lakes and the Ohio River by canal was, at long last, dead.

On a hot July day in 1976, the subject of the Lake Erie and Ohio River Canal came up at Al Layton's table in Stouffers Restaurant in the Golden Triangle, where Pittsburgh District oldtimers frequently gathered to reminisce over lunch. Richard "Dick" Thalimer, an engineer retired from the District who had worked on the several canal surveys completed after 1946, said he had become discouraged about the canal, that he doubted it would ever be built. A visitor from the Nashville Engineer District mentioned the Tennessee-Tombigbee Waterway, a project similar in scope and function to the Lake Erie and Ohio River canal, that was under construction, with completion scheduled in 1985: if it proved as successful as predicted, reconsideration of the canal in Pittsburgh District might be in order.

"Let's not forget," said Frank Stocker, who was involved with the District's energy conservation efforts, "that watercraft operate quietly and economically and use less energy for freight movement than highway or rail equipment." He implied that if efficient use of energy were to become an imperative national goal, then the Lake Erie and Ohio River Canal would have attractive advantages in addition to savings in transportation costs.