W. C. AUSTIN IRRIGATION PROJECT

By Monroe Billington*

The W. C. Austin Irrigation Project—commonly known as the Lugert-Altus project—is the first and only irrigation project in Oklahoma to be sponsored by the Bureau of Reclamation of the United States. Lying farther east than any other project sponsored by the bureau, it is possible that this project may provide a pattern for other semi-arid areas now seeking irrigation development. Dreamed, conceived, and finally brought to realization by south-western Oklahoma citizens who sold the idea to Uncle Sam, this irrigation program is destined to bring untold benefits to many people far beyond the borders of Altus.

The need for irrigation in Southwestern Oklahoma was apparent in the early 1900's as the first settlers turned from cattle grazing and began breaking the sod for wheat and the production of feed for livestock. In 1902 a party of government engineers arrived in the valley between the Salt Fork of the Red River and the North Fork of the Red River to determine irrigation possibilities. When the investigations were flooded by torrential rains and one of the survey crewmen was almost drowned, the engineers salvaged their supplies, abandoned the investigation, and returned to Washington. Along with the remainder of their official report they wrote, "The area needs flood control, not irrigation."1 Because of this report the government dropped any plans for irrigation which it had laid.

In 1927 the city of Altus erected a dam near Lugert, Oklahoma, for a municipal water supply. Three years later a number of farmers made agreements with the city of Altus to take water from the city's main pipeline for supplemental irrigation purposes. The success of these men encouraged attempts to form an irrigation district in the area but the depression of the early 1930's interrupted them.2

It was during the dust bowl era of the 1930's that the idea for irrigation began rolling again, and this time it did not stop until a project was completed. In the hot, dry summer of 1935 four prominent men in the Altus area—W. B. Gover, H. T. Kimbell, Elmer Garnett, and Harrington Wimberly—met in the lobby of the National Bank of Commerce in Altus to discuss irrigation pros-

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1 Joe Zinn, "The W. C. Austin Plan—Part 4," The Reclamation Era, XXXVI (August, 1950), 156-57. (Hereafter cited as Zinn, "Part 4.")

W. C. Austin, outstanding lawyer of that city, was asked by these men to accept the responsibility of sponsoring and organizing support for a project. He agreed to do all that he could in behalf of the irrigation dream.

The first surveys were performed by Professor N. E. Wolfard and Don McBride early in 1936, and in July the Federal Emergency Administration of Public Works viewed the situation and made preliminary sketches. A few months later a formal request was made for funds to be allotted for a survey of a proposed combination flood control, water supply, and irrigation project on the North Fork of the Red River. Senator Elmer Thomas spent much of his time in Washington trying to get the project acted upon at the earliest possible date. At Thomas' suggestion Judge Austin went to Washington in February 1937, to help get action on the survey. On February 25, President Roosevelt directed that thirty thousand dollars be made available by the Bureau of Reclamation for the survey.

After months of work by Senator Thomas and his Oklahoma colleagues in Congress, the Rivers and Harbors Act approved June 28, 1938, authorized the construction of the Lugert-Altus project as a multiple purpose program including flood control, irrigation, and resettlement.

On March 29, 1940, the land owners of the area who had irrigable land and who had agreed to enter into the irrigation project approved the formation of an irrigation district which had the legal power to make contracts with the Bureau of Reclamation. On the same date Joe Zinn was elected president of the district. The other officials elected were Bruce Braddock, treasurer, and John R. Stout, assessor.

R. S. Lieurance, construction engineer for the Bureau of Reclamation, arrived in Altus on May 31, 1940, and began immediate organization. By October there were approximately three hundred men working on the project.

The small dam on the North Fork of the Red River which held the municipal water supply of Altus was to be superseded by the Lugert-Altus dam. The city of Altus and the United States signed a contract allowing Altus a water supply when the larger

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3 Ibid.
4 H. E. Robbins to Don McBride, January 16, 1946, W. C. Austin Collection (Hereafter cited as A. C.), Irrigation, Airport and Water Supply Problem.
5 Altus Times-Democrat, February 7, 1937.
6 Ibid., February 12, 1937.
7 C. L. Albertson, "Reclamation of Subhumid Area in Southwestern Oklahoma, Altus Project," The Reclamation Era, XXXI (June, 1941), p. 166.
8 Altus Times-Democrat, August 31, 1947, sec. 3, p. 5.
9 W. C. Austin to Elmer Thomas, October 14, 1940, A. C., Irrigation, 1939-40.
dam was completed. This contract was negotiated May 2, 1941. The contract obligates the city of Altus to pay the government of the United States $1,080,000 over a period of forty years for use of water from the reservoir.10 The government allowed the city of Altus $40,000 credit for the old dam structure and surrounding land upon which the new one was to be built.

A contract between the United States and the Lugert-Altus Irrigation District providing for the construction of the project was drawn in its final form on January 12, 1942. This contract, negotiated under the reclamation laws of the United States, was executed on behalf of the United States by John J. Dempsey, under-secretary of the Department of the Interior, on March 11, 1942.11 This signature concluded the formalities incidental to the contract, and the instrument officially went into effect.

Established by an act of Congress, the reimbursable costs of the project to be paid by the district totaled $3,080,000 including the obligation of the city of Altus.12 The reimbursable cost to the irrigation district was thus established at $2,000,000 to be paid in $25,000 installments every six months for a period of forty years. The balance of the project cost was paid from the flood control funds of the Department of the Army. The labor and materials were contributed by the Works Progress Administration.13 Ordinarily an irrigation district must pay approximately one half of the construction costs. Through the efforts of Judge Austin the Lugert-Altus district must pay much less than one half of thirteen million dollars, the total sum required to build the project. In 1941 the surveys, tests, and preliminary work culminated in the tangible beginning of construction. For about a year work went as scheduled, and the proponents of the project were pleased with the progress of the construction program. Due to the critical world situation in May 1942, the War Department issued a stop construction order on the project. The Department of the Interior immediately halted work on the construction of the dam but continued with non-construction preparations in the district.14 In the following month all plans to proceed with construction of the irrigation features of the project were postponed for the duration of the war.15

10 Contract Between the United States and the City of Altus for a Municipal Water Supply, 8, A. C., Irrigation, 1941-42.
11 R. S. Lieurance to Austin, March 19, 1942, ibid.
12 Altus Real Estate Board (Compiler), Irrigation Questions & Answers Applicable to the W. C. Austin Irrigation Project, 5. (Hereafter cited as Irrigation Questions.)
15 Austin to Thomas, March 4, 1943, A. C., Irrigation, Airport and Water Supply Problem.
On December 12, 1942, the War Production Board issued an official "Stop Construction Order" limiting construction of the dam to that necessary to provide a water supply to the city of Altus and the air school located north of that city. The men interested in the project did not want to see construction stopped. The dam and dikes were about 50 per cent complete when the order went into effect. All of the earth dikes had been finished; the relocation of the Atchison, Topeka, and Santa Fe Railway, and State Highway 44 had been accomplished; the concrete batching plant was constructed; and concrete was being poured into the dam site. Since so much work had been completed, the district appealed to the War Production Board to rescind the order. Their reasoning for this appeal was two-fold: closing down and starting up construction plus cost of the temporary top for the dam would be more than completion costs; moreover, the war was causing a serious food shortage and the food produced by this irrigation project would be vital to the war effort. The request that construction be rushed to completion was denied in July 1943, on the ground that the project was not of sufficient importance to justify use of materials and labor at that time.

It was hoped that the War Food Administration could persuade the War Production Board to reinitiate construction of the project. H. W. Bashore, H. E. Robbins, Don McBride, Judge Austin and others met in Washington with representatives from the War Production Board but their efforts were to no avail. On January 5, 1944, after many weeks of deliberation, the War Production Board disapproved the application to reinitiate construction.

These men were not deterred. They submitted another application as soon as it could be prepared. On April 5, 1944, the War Production Board revoked the decision which it had issued in December 1942.

The situation became acutely critical in September 1944, when shortages of material hampered the work. Progress was delayed because of late delivery of canal outlet materials, metal work, and reinforcement steel. Construction continued on a limited basis throughout 1945, however, and January 30, 1946, was one of the biggest days in the history of the project. The construction of the entire project was far enough along to warrant a "preview of Oklahoma's first irrigation project." Governor Robert S. Kerr

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16 H. W. Bashore to War Production Board, July 31, 1943, ibid.
17 McBride to Thomas, May 31, 1943, ibid.
18 Bashore to Thomas, July 3, 1943, ibid.
19 Robbins had succeeded Lieurance as construction engineer at Altus in the spring of 1941. Lieurance had gone into the armed forces.
20 Frank W. Herring to Maury Maverick, January 5, 1944, A. C., Irrigation, Airport and Water Supply Problem.
21 Robbins to T. H. Brooks, April 11, 1944, ibid.
sent out scores of invitations to interested people. A tour of the irrigation project was conducted for the group of several hundred people by H. E. Robbins. Judge Austin presided at the formal program following the educational tour of the dam, dikes, and methods of irrigation.

The first section of canals reaching into the project area was completed on April 30, 1946, and on May 27 public notices were sent to the farmers telling them of the water charges, methods of distribution, and other necessary information. On June 19 the first water was delivered irrigating about five hundred acres in the northernmost divisions of the district that year. On August 9, 1946, the project was considered 95 per cent complete. Essential work remaining to be done consisted of the raising of one state highway bridge above the rising waters of the reservoir and the installation of steel gates on the spillway of the Altus dam.

Judge W. C. Austin, provisional superintendent of the Lugert-Altus project, died on October 5, 1946. Without any monetary remuneration whatever, Judge Austin had spent fully one third of the last ten years of his life trying to get this project completed. Appreciative of the work which Austin had done, the board of directors of the Lugert-Altus Irrigation District passed a resolution on November 12, 1946, to petition Oklahoma senators and representatives to seek the enactment of legislation to change the name of the Lugert-Altus irrigation project to the W. C. Austin project. Senator Thomas and Congressman Preston Peden introduced legislation to change the name of the project as indicated by the resolution. The Eightieth Congress passed Public Law 69 and President Harry S. Truman signed it on May 16, 1947, which named the project in honor of Judge Austin.

The name "Lugert-Altus" is still attached to the irrigation district which is the operational end of the project while the name "W. C. Austin" has come to be attached to the construction end of the project.

The formal dedication of the project was on September 5, 1947. Governor Roy J. Turner, former governor Robert S. Kerr, and Secretary of the Interior J. A. Krug were only a few of the outstanding guests and speakers who were present for this dedication. On that day a large bronze plaque which was set in natural granite and permanently affixed to the east end of the dam was unveiled.

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22 The irrigated acreage increased to 3,373 in 1947, and to 17,483 in 1948. Water was available to all project lands for the first time in 1949, and 35,841 acres were irrigated. In 1950 practically all of the 48,000 irrigable acres of the project were supplied with water.


24 Chamber of Commerce (Publisher), Altus, The Irrigation Pioneer of Oklahoma (September, 1947), p. 10.
The plaque contains an image of Judge Austin's face in bas-relief. Below it are these words written by his good friend, H. E. Robbins:

W. C. Austin

whose life was completely dedicated to the service of his God, his Country, his community and his fellow man. Who never turned away from a call for his helping hand. Who asked as his reward for accomplishment only another chance to serve. Loved and respected by all who had the privilege of knowing him, the citizens of Oklahoma unite in dedicating to him this monument and the irrigation works comprising the project which now so rightfully bears his name.

Presented by friends of Southwestern Oklahoma,
September 5, 1947

The W. C. Austin Irrigation Project is located in Jackson, Greer, and Kiowa counties in Southwestern Oklahoma. Most of the irrigable lands in the project are within a 15-mile radius of Altus, Oklahoma. Lake Altus is approximately 18 miles north of the city of Altus. It covers 6,800 acres and impounds fifty billion gallons of water. The outside walls of the Altus dam are built from native granite of excellent quality excavated from quarries only a few miles from the dam site; the inside of the dam is of cement. It is 100 feet high and 500 feet long; there are about 500 feet of earth-fill embankments extending on the ends of the rock construction making the total length of the dam 1,160 feet.

To prevent water from spreading over too much acreage, four dikes—North, South, East, and Lugert—totaling seven miles were built to an average height of forty feet on portions of the outer edges of the reservoir.

Approximately 270 miles of canals and laterals serve the irrigable lands of the project which extend from about 13 miles north to 8 miles south of Altus. The main canal is 4½ miles long. Since the general slope of the land to the south is about 8 feet per mile, all the water is carried to the land by gravity flow.

There are three main feeder canals—Altus, West, and Ozark canals. The Altus Canal runs south for about seven miles and the longest of the three, the Ozark, carries water to a large area south of Altus. On the 220 miles of laterals there are 2,500 minor hydraulic structures which aid in delivery of water to farm lands. Measuring devices have been installed in order that the water going to each farm can be measured at or near the point of delivery. A valuable asset in this project is that the laterals and main canals can be used for drainage if rain is too plentiful or if a flash flood occurs. This prevents crops from being drowned by the presence of an over-supply of water.

Because of the erratic rainfall in the area, the Lugert-Altus irrigation project was designed as a supplemental water supply; it spreads water over the project during the irrigation season to fill in the gaps left by inadequate rainfall. In thirteen of the years between 1907 and 1936, crop yields were decreased 50 per cent or more because of drouths. This supplemental water supply is designed to aid crop growth during similar drouth periods. The project is unique in reclamation history since other irrigation projects in the United States are designed as year-round water supplies.

The offices of the Bureau of Reclamation for the project are located one mile north of Altus. Since 1947 J. A. Callan has filled the position of project engineer.

The district has taxing power. The landowners in the district must make repayment of construction charges plus operation and maintenance costs. In 1950 the district made a minimum charge of $2.75 per irrigable acre—whether water was used or not—which entitled the owner to one half acre foot of irrigation water per irrigable acre. Additional water was furnished at $3.50 per acre foot. It is from these assessment charges that the district pays the costs of operation and maintenance. An additional $1.25 per irrigable acre is charged yearly for the retirement of the $2,000,000 which must be paid back to the federal government at the rate of $50,000 per year for 40 years. Thus, the 1951 assessments were levied at $4.00 per irrigable acre. In the future the bureau plans to charge $4.00 per acre foot for water bought over and above the usual one half acre foot received for the assessment. The question naturally arises: are six inches of water enough to take care of the farmers' needs, or must they ordinarily buy additional water. The average irrigation water delivery per acre for the entire district for a 5-year period (1946-50) was 6.55 inches with a low of 4.56 inches in 1950 and a high of 10.56 inches in 1948. All data available indicate that the one acre foot of irrigation water used as an average requirement in planning the project should be sufficient except in extremely dry years. Thus, $6.00 per acre seems to be the average cost of irrigation water for one growing season. There is no limit on the amount of water a farmer may buy over and above the first 6 inches. The land assessment for those 6 inches must be paid although no water at all may be used in a year when the rainfall happens to come at the time when water is most needed.

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27 Irrigation Questions, p. 3.  
28 An "acre foot" of water is the amount of water required to cover an acre of land to an average depth of one foot.  
29 H. E. Robbins (Regional Director), Increased Production with Irrigation, An Analysis of W. C. Austin Project Records, 1946 through 1949 (February, 1950), 4. (Hereafter cited as Project Records, 1946-49.)  
30 Personal interview with Merle Wilkerson, January 25, 1951.  
There are 48,000 acres of land under irrigation. About 488 farms are being served and the average size of the farms in 132 acres.\(^3\) Small farms, intensively cultivated, are encouraged by the district.

Through the efforts of Judge Austin and the co-operation of Dr. Louis E. Hawkins, the Altus Irrigation Experiment Station south of the town of Blair, Oklahoma, was created for the specific purpose of a scientific study of the problems related to the production of field and vegetable crops under irrigation in this particular area. This experiment farm tries many varieties of crops under various conditions and reports its results for the benefit of the neighboring farmers. In about 1944 the experiment station took over the demonstration farm of the Bureau of Reclamation. This farm, one mile below the dam, is also being used for experimental irrigation purposes.

The transition from dry land farming to irrigation farming has been relatively easy compared to the desert type of irrigation development.\(^3\) A gradual conversion to irrigated crops has probably proved wise. Rather than immediately abandoning their past crop varieties and cultivation methods, the farmers have been cautious. With their inexperience and inadequate land preparation it could not be expected that their progress would be phenomenal during the first few years of irrigation methods. However, the progress reports prepared by the Bureau of Reclamation for the first five years show distinct success with irrigation.

Cotton has been the principal irrigated crop during the first five years of the project's existence. About 60 per cent of the irrigable crop land was in cotton in 1949. This crop responded well to irrigation during the first three years by producing double the yield of non-irrigated land. The maximum yields of 1.4 bales per acre in 1949 and 1.9 bales in 1948 indicate the possibilities of this crop. On the whole cotton is averaging half a bale of cotton more per acre under irrigation.

Alfalfa for hay and seed has shown considerable response to irrigation. New crops which have been tried during the first five years of project operation include popcorn, watermelons for seed, sweet potatoes, Irish potatoes, onions, black-eyed peas, spinach, castor beans, and permanent pastures.

Grain sorghum has not responded as was first expected and does not appear to profit from irrigation. Wheat for gain alone has not responded sufficiently to irrigation to justify its use; therefore, the trend is away from wheat in irrigation farming.

\(^3\) Ibid., p. 1.  
\(^3\) Ibid., p. 20.
Is irrigation profitable from a financial point of view to the individual farmer? Water costs money, new equipment is expensive, and new methods much different from dry land farming must be employed. Is it worth the change? In 1946 while dry land farms in the area were producing an average of $22.09 per acre, the irrigated lands of the W. C. Austin project produced $130.72 per acre. In certain key tracts the irrigated crop production created an average gross value of over $100 per acre in 1949, and the gross crop value per irrigated acre in the same year was $85.16 for the entire project.

The value of the increased crop production created by irrigation is only one measure of the benefits. It is recognized that there is an increase in farm expenses over and above the cost of the irrigation water. To determine the net benefits from irrigation would require a farm management and cost of production study. From 1946 to 1950 the production and value of crops from non-irrigated land were above average. In 1949 the non-irrigated production was one of the highest on record. From comparative records for that year it must therefore be concluded that irrigation has provided a substantial increase in farm income. Needless to say, the value of the land in and around the district has increased enormously. The land value before irrigation came into the area was $40 to $80 per acre and is now worth $250 to $275 per acre. Some of it has been sold for over $330 per acre. Unquestionably irrigation has improved the wealth of the community of Altus and Southwestern Oklahoma in general.

This great experiment in irrigating semi-arid country might well be the beginning of a new era in irrigation farming. Joe Zinn expressed the silent opinion of many when he wrote:

"We look upon ourselves as modern pioneers, for we are trying new methods, making new discoveries, and blazing a trail for our children. . . . We are mighty thankful for the change from the old days—days of prairie fires, drought, and flood—days when we met at the community church to pray for rain, or perhaps, to pray for it to cease raining. No longer do we fear. . . ."

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