

**AN INVESTIGATION OF TOWN RELOCATION AS A PART
OF FLOOD CONTROL PLANNING**

by

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CHAPTER I
INTRODUCTION

Floods have been many things to many people. In the United States they probably stimulate more interest among more diverse groups than any other natural phenomenon. To reporters, flood victims, planning boards, political scientists, economists, Red Cross workers, hydrologists, river engineers, farmers, conservationists, legislators, lawyers, water users, statisticians, insurance executives, bankers, and others, floods have a specific meaning. To some people floods may be only a source of inconvenience; to others they may be an immediate danger; to all of us citizens they are a natural phenomenon on which we will have spent some twenty or more billion dollars under our present flood control policy.¹ (See Plate I.)

A flood may be defined as the occurrence of a flow of water of such magnitude that it overtops the natural or artificial banks in a reach of river channel. When a flood plain exists, therefore, a flood is any flow which spread out over the flood plain. Flood damage, consequently, is a result of man's utilization of the flood plain as a site for his activities. The importance of this concept in understanding the flood control problem cannot be overemphasized.² Flood control does not mean flood

¹ William G. Hoyt and Walter B. Langbein, Floods. Princeton University Press, Princeton, New Jersey, 1955, Preface.

² Luna B. Leopold and Thomas Maddock, The Flood Control Controversy. Ronald Press, New York, 1954, p. 14.

EXPLANATION OF PLATE I

Air photo of Manhattan, Kansas, during the 1951 Kansas River flood showing the extensive development of the river flood plain. Courtesy of Studio Royal, Manhattan, Kansas.

PLATE I



elimination, but provides a certain amount of protection against river overflow. Leopold and Maddock ask the following questions in reference to flood control:

1. How much can flood damage be reduced?
2. How much reduction is desirable?
3. What technical and political means should be used?
4. Who should bear the cost?³

As a land and engineering aspect, flood control is a dual attack on flood damage reduction. In the upstream area, soil conservation and small detention reservoirs are used to control runoff in the watershed. In the downstream area, major reservoirs, levees, channel stabilization works, and flood plain regulation are used to reduce flood damage. The controversy over federal flood control policy and practices has developed because this distinction is not generally understood by the public and to an extent by various representatives of the federal agencies. Questions arising in the federal resource field include the definition of the public interest, the allocation of costs and benefits, and the means for carrying development out. This often results in public manipulation for a specific program or project as opposed to group pressures for either a modification of the federal proposal or the complete rejection of it. The conflict, in essence, is between the proponents of little dams and proponents of big dams. Both types of works have a similar goal and one may wonder, therefore, why there should be any argument. Basically, the flood

³ Ibid, Foreword.

control conflict results from the following situations:

1. Present policy and procedure lead to the construction of a large number of major dams behind which extensive areas of productive land are flooded. People are displaced and towns must be relocated.

2. The incorporation of considerable engineering work by the Department of Agriculture in the upstream programs and the headwater extension of the Corps of Engineers downstream program have brought the two agencies into direct conflict on area of responsibility.⁴

The proponents of upstream engineering works and land management are aligned behind the flood control program of the Department of Agriculture. Those who favor main-stem reservoirs and levees look to, and are spearheaded by, the Corps of Engineers. The residents of larger cities located near big rivers generally want flood protection by reservoirs and levees. The quite extensive agricultural damage on the small tributaries far upstream is not of immediate concern to these people, and they would object to any delay in the construction of major dams which might result from attempts to integrate upstream and downstream programs. People who live farther upstream are aware of flood damage in the upper tributary valleys. They are close to the erosion problem, and many recognize the need for improved land management. These upstream interests are not only proponents of the flood control program of the Department of Agriculture, but they believe that the program for the construction of the big dams downstream could be reduced in scope or even eliminated by the inclusion of a proper upstream program.⁵

⁴ Ibid., p. 6.

⁵ Ibid., p. 84.

In any flood control program, it must be understood that men occupy the flood plain for agriculture and other activities owing to the economic advantages derivable from such occupancy. The utility of the flood plain for agricultural production is patent. Historically, cities were located on the rivers because river navigation was the major source of contact with the outside world. The flatness of the flood plain is a valuable topographic asset for the development of low-cost residential areas, the construction of land transportation routes, and the expansion of commercial and industrial uses. Because rivers are a major source of industrial and domestic water, the flood plain has become even more desirable as a location of urban growth.

As has been stated before, flood damage is a result of the use of the flood plain by men for their economic improvement. The removal of these existing uses from the flood plains could not be justified, economically or legally, especially in the larger urban industrial areas. Therefore, protection from flood damage must be provided to the large urban areas and, under present flood control programs, often at the expense of upstream agricultural interests and small communities that are adversely affected. The construction of a large number of big dams, to protect the large urban centers, has resulted in the removal of extensive areas of agricultural land from production and the displacement, economically and socially, of the inhabitants of the reservoir area. Homes, churches, schools, and often entire towns must be either destroyed or relocated to provide the area needed for the reservoir pool. It is the age-old practice of

providing for the majority interest at the expense of the minority group.

The problem of flood control is not limited to the prevention or reduction of flood damages. Floods are a wasteful loss of the water from productive uses. Senator Robert S. Kerr stated recently that some 40 million Americans are today teetering on the brink of a serious water shortage. We are now using three times the water per person that we did in 1900. By 1975 this consumption will be much greater. In the first three-quarters of this century, United States population will jump from a little less than 76 million to an estimated 225 million. The world wide picture is even more threatening. Today, population is exploding in the world with the net rate of increase more than 100,000 per day.⁶ Because of this unhappy imbalance of population, water, and arable land, roughly half the people on earth are undernourished from birth to death. This misery produces a constant, uneasy ferment of war and revolution. An adequate supply of food from properly utilized soil and water resources is part of the solution to this problem of hunger and strife.

The conservation and development of natural resources is a major factor in the economic survival of the United States in today's struggle for world leadership. Anyone who has ever witnessed the tragedy of the depression years dust bowl, the wild terror of a flooding river, or the raging holocaust of a forest fire will agree that these destructive and wasteful forces should

⁶ Kansas City Star, Associated Press dispatch, June 14, 1960.

be controlled. The wasteful depletion of soil, water, and forests is a luxury that we cannot afford if we expect to remain solvent in today's economic cold war with the proponents of communism.

Much effort has been expended in the fields of soil conservation, water resource development, and forest cultivation and protection, but often this work has been fragmentary and based more on a political spoils system than on area needs. If the development and conservation of national resources is to be properly guided, then reasonable programs must be established that fully recognize the general public interest, fair allocation of costs and benefits, and which provide the means and techniques for continued development with freedom from the political spoils system.

One element of water resource development that has caused so much bitter controversy is the flood control program. The nature and policies of this program now being practiced by the various federal agencies must be examined in order to explain the factors that affect flood control and the controversies that have resulted.

Particularly the utilization of the flood plain by man must be analyzed to determine what steps should be taken to avoid or at least alleviate future flood damages to flood plain development. This can best be understood by investigation of the federal flood control program in a specific river basin.

Because the construction of federal flood control works has often resulted in bitter local controversies with those people

adversely affected, a study of one of these local controversies should give some clue as to how the federal government should modify its program of action to reduce local adversity when a project is undertaken.

One of the most crucial problems that result from the construction of flood control projects is the displacement of people and communities. Since entire towns must often be relocated, the study of a specific town relocation should give an idea of what problems exist and what procedures need to be established to have a consistent and fair program of aid for the relocation of towns adversely affected by reservoir projects.

In conjunction with this a comparative study of other town relocations will be made so that the area of responsibility for each level of government involved in town relocation can be defined.

This thesis will delve into each of these phases of investigation by progressive stages. First, the nature and extent of resource politics and development will be examined, especially in the area of water resource development. Second, the nature and policies of the federal flood control program will be analyzed with special consideration of the controversy that has developed between the agencies involved. Third, a study will be made of a specific flood control program in a complete river basin, in this case, the Kansas River Basin of the Missouri River valley. Fourth, the extent of local controversy over the construction of flood control works will be examined by study of a specific example, the Tuttle Creek Dam controversy in the Kansas River

Basin. Fifth, the relocation of an entire community because of a reservoir project will be studied in the case of Randolph, Kansas. Emphasis will be placed on the nature and extent of community efforts in the relocation planning process. Sixth, a limited comparison of other town relocations will be made. Last, broad guidelines will be established for a consistent policy of town relocations in the future.

CHAPTER II
RESOURCE DEVELOPMENT

If we are to remain leaders in world resource development we must at the same time have a workable program in our own nation. What is the nature of the resource development program in our country? Norman Wengert has stated that the utility or usefulness of particular resources is largely a function of technology and culture.¹ Different societies, different communities, and different periods of history deal differently with resources. At any one time, a wide range of mechanisms for considering resource questions and for deciding resource policies come into play.

In the study of public decision making processes there must first be an understanding of the basic nature of society. In the past, many of the political theorists felt that the individual was a member of a state whose basic unit was the individual. This theory is now challenged by the group theory expounded by recent political investigators. These political scientists assert that the theory of the state versus the individual is unrealistic and that the state is merely one association among a host of associations, and must compete with conflicting group loyalties of clubs, lodges, unions, churches, racial groups, ethnic groups, and others. This group theory offers some valuable insight into the question of the basic nature of society.

¹ Norman Wengert, Natural Resources and the Political Struggle. Doubleday and Co., Inc., Garden City, New York, 1955, p. 1.

According to Earl Latham, "The instrumental philosophy of John Dewey rejects the abstract individual as a fictional character and that the individual has meaning only in his relations with others."² Arthur Bentley, an early advocate of group theory, supports this conclusion by saying that man is always involved in social or group activity. "If," says Bentley, "we take all the men of one society, say all the citizens of the United States, and look upon them as a spherical mass, we can pass an unlimited number of planes through the center of the sphere, each plane representing some principle of classification, say race, various economic interests, religion, or language."³ Some political scientists have thought that interpreting society in terms of group theory means losing sight of the individual. This is not necessarily true. "Groups," writes Latham, "exist for the individuals to whom they belong; by his membership in them the individual fulfills personal values and felt needs."⁴ Individuals are significant politically in the group relations they establish and organize, modify or destroy.

Bentley says that groups are the meaningful units of society, but he does not stop at this. The activity of groups is the raw material of society. The interaction of groups, groups pushing

² Earl Latham, "The Group Basis of Politics; Notes for a Theory," The American Political Science Review, June 1952, p. 377.

³ Peter Odegard, "A Group Basis of Politics: A New Name for an Ancient Myth," Western Political Quarterly, September 1958, p. 691.

⁴ Latham, op. cit., p. 383.

other groups and being pushed by them in return, should be studied rather than observing individual action. Groups are structures of power in that they achieve ends common to the members by application of group power to obstacles to their desired common goals. Groups are not without restraint. Every group must come to terms with its environment to endure. Although the laws are set up to control groups and individuals within groups, popular consent and understanding of the needs of society are important assets for those who formulate laws.

Somewhere in the interaction process among groups a decision is made to formulate a course of action. A definition of decision-making will help to relate the decision-making process to group interaction. Decision-making in general has been defined by Richard C. Snyder as a process which "results in the selection from a socially defined, limited number of problematical, alternative projects of one problem to bring about the particular future state of affairs envisaged by the decision-makers."⁵ According to Peter H. Rossi, "A community decision, public decision, is a choice among alternative modes of action whose goals are the change or maintenance of community wide goals or institutions, and which is made by an authoritative person or group."⁶

⁵ Roland A. Young, ed., "A Decision-Making Approach," Approaches to the Study of Politics. Northwestern University Press, Evanston, Illinois, 1958.

⁶ Young, ed., "Community Decision-Making," Approaches to the Study of Politics, ibid.

Decisions concerning resource utilization and allocation have a predominantly economic impact, although these decisions may be effected and often determined by factors not usually considered economic. In terms of consequences, economic and political decisions and processes interact and condition one another. What is decided should not be separated entirely from how the decision is reached, for each limits and conditions the other. The locating of national forests, river control works, and soil conservation areas, the what, cannot be understood without taking into account that the decisions are participated in by the U.S. Senate, the how, where political considerations tend to encourage the distribution of projects equally among the states rather than according to economic need or the technological importance.⁷

Science and technology have always had a dominant place in resource decisions. In no other field, however, is there a greater confusion between the role of the scientist in providing information relevant to policy decisions and the role of the political process in combining such information with value judgments, program goals, and preferences in order to reach a policy decision. In the field of resource policy, there has been a pronounced effort to rationalize programs and proposals in scientific terms and to cite the authority of science as justification for particular policies. At times the specialized requirements of scientific methodology have often stood in the way of integration

⁷ Wengert, op. cit., p. 2.

and comprehensive policies and encouraged a neglect of the important human values.⁸

An analysis of resource politics illustrates well the interaction among individuals and groups, ideas and beliefs, knowledge and ignorance, fact and fancy, institutions and environment in the processes of government. Often bitter conflicts have arisen because of inadequate information or because of the myopia resulting from specialization. The debates over multi-purpose dams vs. conservation dams is in this capacity.

As in most human struggles, the issues are not always clear, and the cause of science has often attracted a host of camp followers whose interests are neither in science nor in sound policy. Emotion, prejudice, and selfish interest, as well as ignorance and stupidity, have at times characterized the conflict, and often goals and high purposes have become confused, distorted, and forgotten. Thus when Gifford Pinchot sought to formulate a national water policy in 1908, he had the support of the Great Lakes -to-Gulf Waterway Association. This group was not really interested in general water policy, however, but in advancing their particular commercial purposes. As a result, the new waterway development soon degenerated into simple pork-barrel politics.⁹

The approach to resource problems has been characterized by a high regard for a pragmatic appraisal of cause and effect, of

⁸ Ibid., p. 3.

⁹ Ibid., p. 5.

costs and benefits, and a willingness to experiment and consider alternatives in the public interest. This has been intensified by the nature and extent of group interest and activity in the resource field. There is, of course, the usual type of pressure groups with economic interests, often in conflict with each other. Of a somewhat different character are the groups whose interests are esthetic or cultural and who are concerned with the preservation of natural sites and wildlife. These groups are often allied with game and recreational pressure groups. Last of all are the well intentioned and public spirited groups who seek policies and standards in the best interest of the nation. A partial list of these groups was made by F. A. Clarenback and J. Muehlbeier:

American Farm Bureau Federation
 National Farmers Union
 National Association of Soil Conservation Districts
 Soil Conservation Society of America
 Friends of the Land
 American Watershed Council, Inc.
 Isaak Walton League of America
 National Reclamation Association
 National Rivers and Harbors Association
 American Municipal Association
 American Waterworks Association
 Conservation Foundation
 Resources for the Future, Inc.
 National Association of Manufacturers
 Chamber of Commerce of the United States
 Citizens Committee on Natural Resources
 Council of Conservationists
 American Forestry Association
 National Audubon Society
 National Parks Association
 Wilderness Society
 and many others including state and areawide groups¹⁰

¹⁰ F. A. Clarenback and J. Muehlbeier, "Group Action to Develop and Protect Land," Land, the Yearbook of Agriculture. Government Printing Office, Washington, D.C., 1958, p. 371.

The federal government maintains the largest groups of professional persons directly concerned with the conservation of land and water. Most are in the Departments of Agriculture, Army, Commerce, Interior and Health, Education and Welfare. Specific agencies include the Federal Power Commission, the Corps of Engineers, the Tennessee Valley Authority, the Water Resources Authority, the Federal Security Agency, the Fish and Wildlife Service, the Forestry Service, the National Park Service, the Bureau of Reclamation, the Soil Conservation Service, the Public Health Service, the Weather Bureau, the Geological Survey, the Coast and Geodetic Survey, and others.

A typical aspect of resources politics is the extent to which governmental action has been accepted as necessary and desirable. For the wheels of the political process to begin turning, a problem must be recognized; a need must be felt by some individual or some group, a desire for action expressed. The essence of governmental decision making is the deciding of the scope and direction for governmental activity at any particular time on a specific problem.

Another characteristic of the political process in its dealings with resource development and policy is the extent to which planning has been an important factor in reaching decisions. By planning is meant the systematic application of analytical techniques in the identification of problems and the thoughtful and deliberate preparation of solutions. Planning can and does occur at many points in the governmental structure and can be thorough or superficial, competent or incompetent. To the question of how

the planning job can best be carried out, there is and can be no simple or single answer. The issue today in the field of resource policy is not whether there shall be planning, but rather who shall plan and to what ends.¹¹

First of all, in many situation relevant information may be lacking. In any case, the policy maker is at best dealing with probabilities; probable events, probable action, and probable outcomes; for policy by definition deals with the future. Policy decisions rarely deal with simple cause-and-effect relationships; instead the policy-maker must face multiple causes and multiple outcomes.¹² Very often related side effects and secondary results cannot be determined in the initial program. At times the goals may be hazy and standards cannot be determined. Very often the criteria for assessing the relationship of the means to the ends are uncertain.

The decision-maker is, in short, acting under conditions of uncertainty, created in part by limitations of knowledge, in part by limitations of time, and in part by limitations of technique. Problem-identification and problem-solving in the area of resource policy can obviously be improved by use of planning techniques, by logical analysis and rational calculation, but planning should never be confused with certitude.¹³ The methods used may be based on the highest level of rationalization; but the nonrational

¹¹ Wengert, op. cit., p. 5.

¹² Ibid., p. 6.

¹³ Ibid., p. 6.

and irrational elements of human action must be included as part of the data from which decisions are made.

A turning point in the formulation of public policy was reached about the middle of the last century when Congress and the Executive branch began to turn to scientific research and investigation for identifying resource problems and for formulating programs for dealing with them. Public programs to develop our natural resources embrace many activities and purposes.

W. A. Green and others have reduced these programs to the following:

1. Zoning and regulation of use of land and water.
2. Resource management districts implementation.
3. Collection of basic physical and economic data.
4. Research on use and control of resources.
5. Technical assistance to private individuals and groups.
6. Incentive payments to stimulate resource development.
7. Formulation, design and evaluation of projects.
8. Installation and maintenance of resource development projects.
9. Marketing of products and services produced by resource projects.¹⁴

The origin of many of these activities and policies can be traced to the legislative acts, court decisions, and administrative findings since early in the 19th century. Nine federal

¹⁴ W. A. Green and others, "Public Development of Resources," Land, The Yearbook of Agriculture. Government Printing Office, Washington, D.C., 1958, p. 542.

acts have been particularly significant in water resource development:

1. The Rivers and Harbors Act of 1824 authorized engineers to remove specified sandbars and obstructions from the Mississippi and Ohio Rivers to aid navigation.

2. The Mississippi River Commission was established in 1879 by Congress and instructed to prepare flood control plans for the lower Mississippi valley.

3. The National Reclamation Act of 1902 authorized the federal government to undertake surveys, to design and construct irrigation projects and to contract with water users for repayment on the capital investment.

4. First federal expenditures specifically for flood control were authorized in 1917 for the Mississippi and Sacramento Rivers.

5. Federal Water Power Act of 1920 established a Federal Power Commission authorized to conduct surveys of water power potential in the river basins of the United States.

6. National Flood Control Act of 1936 authorized a nationwide flood control program with the major costs to be paid for by the federal government.

7. The Flood Control Act of 1938 largely removed the already limited requirements for non-federal participation called for in the 1936 Act.

8. The Watershed Protection and Flood Prevention Act of 1954 was authorized to permit the Department of Agriculture to cooperate with local interests in the planning and construction of water resource projects in small watersheds.

9. The Water Pollution Act of 1956 authorized the federal government to cooperate with state and local officials in the solution of stream pollution problems.¹⁵

Various commissions have noted that organizational and administrative arrangements are often an important barrier to satisfactory planning of land and water projects. These groups

¹⁵ Loc. cit.

have made general suggestions concerning the organization of resource development programs. A noteworthy example is the report, "Water Resources Policy," issued in 1955 by a Presidential Cabinet Committee made up of the Secretaries of Agriculture, Defense, and Interior. They made several specific recommendations:

1. More consistent and definite collection of basic data on rainfall, streamflow and hydrology was needed.

2. An organization plan should be adopted to provide a coordinator of water resources to the President to establish principles, standards and procedures for planning and developing water resource projects; to establish a board of review to analyze engineering and economic feasibility of projects and report to the President through the coordinator; to appoint a regional or river basin water resources committee composed of federal and state agency representatives involved; to establish a federal inter-agency committee, advisory in character, on water resources composed of policy makers of the agencies involved; to initiate a uniform basis of evaluation for all water projects measured in dollars and intangible values; and to provide separate authorization by Congress of each water project.

3. All interested groups were to participate in the cost of water resources development projects in accordance with expected benefits, with the federal government and local interests paying proportionately to benefits.¹⁶

Five developments since 1940 have made us realize that we must take immediate steps to increase the conservation, improve the utilization, and expand the administration of our water resources. They are the Second World War, increases in population, shifts in industrial location, extended droughts, and

¹⁶ Ibid., p. 548.

increased pollution of rivers and lakes.¹⁷ Extended planning for the utilization of the water resources of rivers must be carried out on the basis of individual or collective river basins. Early legislation, such as the Reclamation Act of 1902, was intended primarily to aid irrigation in the West. The Flood Control Act of 1928 sought flood control in the Mississippi River Valley. Today, river basin planning by Federal and state agencies must encompass the interrelation of all the possible uses in the watershed: navigation, flood control, irrigation, power generation, municipal and industrial water supplies, recreation, and wildlife conservation (Plate II).

Conservation based on the management of the entire watershed goes far back. In 1867 a commission was established by the Wisconsin State Legislature. The commission pointed out the relationship between forest cover and streamflow. The American Forestry Congress in 1886 adopted a resolution directing attention to the value of public lands at the sources of streams in the preservation of water supplies and urging that those lands be kept for public use in order to maintain and preserve a full supply of water in all rivers and streams. In 1891 the first forest reserves were set aside under authority granted by the Congress. In 1897 the Congress enacted the Organic Administration Act for national forests and established as one of the principal

¹⁷ Karl O. Kohler, "Trends in the Utilization of Water," Water, The Yearbook of Agriculture. Government Printing Office, Washington, D.C., 1955, p. 35.

EXPLANATION OF PLATE II

Pictorial illustration of water resource development
in a hypothetical river basin. Courtesy of Caterpillar
Tractor Company, Peoria, Illinois.

PLATE II



IT STARTS WITH A RAINDROP. Perhaps up in the mountains (2). And it ends in a river or a sea (14). In between to control and store our water supply, we need to replant and manage forests (1) and grasslands (3) to hold back the rainfall and release it slowly to streams or underground reserves. Contour plowing and terracing (5) and diversion terraces and grass waterways (4) help prevent excess water from eroding valuable topsoil. Farm ponds (7) collect and store water for dry periods. All these projects help conserve water and prevent springtime flooding of river communities (6). Multi-purpose downstream dams (10) and levees (11) also control excess runoff, prevent floods. From the reservoirs comes water for large cities. Result: farmers have water for irrigation of crops (8). Industry has water for production (12). Inland navigation becomes possible (13). We all enjoy more recreational facilities (9).

purposes of such forests the securing of favorable water flow conditions.¹⁸

Increasing public interest in water flow-watershed relationships was reflected in the Reclamation Act of 1902; the establishment of the Forest Service in its present form in 1905, the White House Conference of Governors on the Conservation of Natural Resources in 1908, the Weeks Law of 1911 which authorized Federal acquisition of watershed lands in the headwaters of navigable streams for the purpose of conservation of navigation on rivers, the Federal Waterpower Act of 1920, the Flood Control Act of 1927, the McSweeney-McNary Forest Research Act of 1927, and the first federal appropriation for research on soil conservation in 1928.¹⁹ In order to combat soil erosion, the Soil Conservation Service was authorized by Congress in 1935.

The initiation of integrated river basin development started with the establishment of the Tennessee Valley Authority in 1933. In 1936 the Congress enacted the Flood Control Act which recognized watershed treatment as the counterpart and complement of downstream flood control. In 1937 the Soil Conservation Act was amended to provide incentive payments for soil conservation practices. By 1937 the state governments were enacting enabling legislation for soil conservation districts.

¹⁸ Carl B. Brown and Warren T. Murphy, "Conservation Begins on the Watersheds," Water, The Yearbook of Agriculture. Government Printing Office, Washington, D.C., 1955, p. 161.

¹⁹ Ibid., p. 162.

Primary interest from 1933 to 1952 was directed towards planning for the resources of the major river basins, Missouri, Columbia, and Arkansas. Later recognition of the small watershed as the primary unit of resource development, management, and conservation led to the formation of about 1000 watershed groups from 1945 to 1955.²⁰

The 83rd Congress added significant new general legislation:

1. Watershed Protection and Flood Protection Act of 1954, Public Law 566, which placed emphasis on state and local responsibility and initiation and with a limit on federal aid.

2. Amendments to the Water Facilities Act of 1937, Public Law 597, which was extended for application to the entire U.S. and included all soil and water conservation measures.

3. Addition of Section 175 to the Internal Revenue Code of 1954, Public Law 591, which allowed deductions from gross income for many expenditures for soil and water conservation, which formerly had to be capitalized.²¹

Centralized responsibility and administration has recently been accepted as the easy answer to water development planning, construction, financing, and to some degree, operational management problems of the present and the future. Centralized departmental level federal agencies early accepted and, to some extent, sought for the opportunities which past technology provided for large scale development and integrated management. The trend toward centralization has been strengthened by policies

²⁰ Loc. cit.

²¹ Loc. cit.

of subsidization and nonreimbursability, the practice of requiring no payment from direct and indirect beneficiaries of a project or program with payment being made from the general tax funds collected by the United States, for certain development purposes. These programs now have a very firm prospect of further broadening.²²

The orderly development and efficient utilization of the water resources of the United States must be conducted on all the levels of government from the local groups to the federal agencies. The responsibilities at each level could be divided as listed:

1. Activities appropriate for local groups, public and private, such as utility companies, cooperatives, cities, levee districts, small watershed districts, etc.

- a. Industrial water use and supply.
- b. Agricultural water use and supply.
- c. Municipal water use, supply and distribution rate control.
- d. Electrical generation, transmission and distribution.
- e. Local flood damage prevention.
- f. Water recreation.
- g. Mosquito control.
- h. Waste disposal.

2. Activities appropriate for state organizations.

- a. Regulatory functions in water allocation, land use zoning, utility rate control, ground water exploitation and water disposal control.
- b. Planning, development and management of intra-state watersheds.
- c. Basic data collection.
- d. Technical assistance to local public groups.

²² Edward A. Ackerman and George O. G. Lof, Technology in American Water Development. Johns Hopkins Press, Baltimore, Maryland, 1959, p. 640.

3. Activities appropriate to regional organizations, river basins and watersheds.
 - a. Balancing water development and other resource use.
 - b. Collection and interpretation of basic data in the basin.
 - c. Program and budget development.
 - d. Management of large scale multiple purpose works.
 - e. Basin-wide water regulation.
 - f. Coordination of operational management and planning for development.

4. Activities appropriate at the national level.
 - a. Regulation to forestall site encumbrance and control weather modification practices.
 - b. Research and data collection.
 - c. Advance planning for inter-basin use and development, relation of water to other resources, national demand, obsolescence, and the promotion of technical improvements.
 - d. Large scale financing.
 - e. Provision of demonstration developments, research and experimentation.
 - f. Provision of development essential to defense, promotion of the commerce and the general welfare.
 - g. Management of federal lands and associated waters.

In recent years several decisions have been made that will have considerable effect on future water resource development in the United States. In 1958 Congress enacted the Federal Water Supply Act which authorized the federal agencies to increase the water storage capacity of federal projects at the request of state and local governments with the cost of such additional storage capacity to be paid for by the local governmental units under a liberal repayment plan.²³

In July of 1961, Senator Clinton P. Anderson of New Mexico and Representative Wayne N. Aspinall of Colorado introduced

²³ Kansas City Star, "New Dams Key to River Task," July 2, 1961.

identical bills to establish a federal Water Resources Planning Act. These bills would establish a national Water Resources Council, appointed by the President, to coordinate river basin plans and to maintain a continuing study of water supply requirements and management. Regional or river basin commissions would also be authorized with the responsibility of preparing comprehensive, integrated, joint plans for federal, state, and local development of water and related land resources. The preparation of detailed plans and specifications for individual projects and the construction and operation of works of improvement would continue to be the responsibility of appropriate federal, state, or local agencies. The proposal would authorize financial assistance to the states to enable them to play a more effective role in planning for the development and conservation of water and related land resources.²⁴

²⁴ National Society of Professional Engineers, Legislative Bulletin. Washington, D.C., August 1961.

CHAPTER III
FEDERAL FLOOD CONTROL

When a flood strikes a community, the first estimates of damage are invariably exaggerated. The newspapers, the people, and especially the Chamber of Commerce tend to "blow up" the hometown show. Then, after the flood, the local estimates swing back from grossly exaggerated to minimized accounts of the flood and its effects, lest the facts handicap the community. The fear gradually develops into a desire to forget the whole thing and to cling to the happy illusion that the worst is over.¹ Let us examine the facts.

Estimates of damage by floods in the United States range from \$200,000,000 to \$500,000,000 per year, on the average. Flood losses may be defined as the destruction or impairment, partial or complete, of the value of goods or services, or the health of citizens, resulting from the action of flood waters and the silt and debris they carry.² Flood losses are classified as direct or indirect, depending on the action; tangible or intangible, depending on the nature. The direct damage is the most obvious type as it consists of loss of physical goods and property. Indirect damage is more difficult to determine as it consists chiefly of loss of business and services and includes many intangibles.

¹ William G. Hoyt and Walter B. Langbein, Floods. Princeton University Press, Princeton, New Jersey, 1955, p. 79.

² Ibid., p. 77.

Of the increase in property damages by flood, about 45 percent is due to the increase in property values, 25 percent is due to an increase in the amount of flooding, and 30 percent is due to an increase in building construction and other uses on flood-hazard lands.³ The magnitude of the flood damage problem is due basically to the uncontrolled development of the flood plains (Plate III). As was stated in Chapter I, men have found the river flood plain a choice location for agriculture and other uses because of the economic advantages involved. The river flood plain sediments are ideal for farm production. The flat topography is valuable for transportation routes and sites of cities. The need for large amounts of water for domestic and industrial uses makes the flood plain a natural site for men to locate their cities.

By increased intrusion upon river banks and river valleys by cities; towns, farms, industrial plants, highways, and railroads may be found in the mounting annual figures of flood losses. The trouble lies not so much in the fact that the flood plains are occupied, as in the fact the flood plain as a part of the river is not given thorough consideration. Man's error has not been the neglect of flood control measures, but his refusal to recognize the rights of rivers to their floodways, the flood plains.

The Water Planning Committee of the National Resources Planning Board said:

³ Jerrold A. Moore, Planning for Flood Damage Prevention. G.I.T. #35, Atlanta, Georgia, p. 1.

EXPLANATION OF PLATE III

Photomontage showing the results of uncontrolled water flow.
Courtesy of Caterpillar Tractor Company, Peoria, Illinois.

PLATE III



Replacing Bridges
(Everyone Pays)

Soil goes - so goes the City

Washed Out Roads
(Everyone Pays)

Flooded
Non-Productive Fields

A Drop of Rain Striking Soil.
Like Atomic Explosion -- Just as
Destructive if not Properly Managed.

Moving Topsoil

No Crops Here

Abandonment
of the Farm

Formation of Galle

Starving Cattle

The persistent recurrence of flood damages in our country, and, indeed, their tendency to increase, have given birth to the mistaken notion that floods are increasing rapidly in size and frequency. The rising damage totals are not fully attributable to greater or more frequent floods, however; rather they are primarily the result of increasing occupancy of river banks and river valleys by cities, towns, industrial plants, bridges, railroads and highways and the increasing use of rivers as a source of water supplies for municipalities and industries and for power, irrigation, navigation and recreation.⁴

Indiscriminate development and settlement on natural flood plains constitutes a policy of doubtful wisdom. It has been asked, "Is it sound economics to let such property be damaged year after year, to rescue and take care of occupants, to spend millions for their protection, when a slight shift of location would assure safety?"⁵ There is a growing conviction that owners of lands vulnerable to flooding do not have a clear right to put these lands to dangerous use and then obtain protection at the public expense against their indiscretion. Apparently, however, society has little protection at present against such willful abuse. As wise elders, we teach our Boy Scouts to pitch their tents on high grounds where flood waters cannot surprise them, but as unwise elders we build our factories, homes, and cities on any low, flat ground.⁶

Even if future development on the river flood plains was somehow brought under control, the removal of existing uses could

⁴ Ralph B. Wertheimer, Flood Plain Zoning. California State Planning Board, June 1942.

⁵ Hoyt and Langbein, op. cit., p. 93.

⁶ Loc. cit.

not be justified either economically or legally. The investment in existing cities, transportation routes, and farms on the flood plains represents such a high proportion of our economy that it could not be written off.

Flood plain occupancy, however, is in direct competition with the river. First, there must be a general understanding of what a flood plain is and its importance. The flood plain is the lowland that borders a river which is usually dry but is subject to flooding. It is built of alluvium, of sediments carried, deposited, and reworked by the action of the river. Rough estimates indicate that there are about 50,000,000 acres of land in the United States known to be below flood levels. This comprises about 25 percent of the total land area of the United States. It is also estimated that 10,000,000 persons are subject to annual flood hazard or roughly 6 percent of the total population.⁷ A flood may be defined as the occurrence of a flow of water of such magnitude that it overflows the natural or artificial banks of the river channel. Where a flood plain exists, therefore, a flood is any flow which spreads out over the flood plain.

There are several reasons for floods occurring in the North Temperate Zone:

1. During the winter when the soil is frozen and impervious, sudden snow thaws or heavy unseasonal rains discharge almost all surface runoff into the streams and rivers.

2. After prolonged heavy rainfalls the saturated soil is unable to absorb additional moisture and

⁷ Ibid., p. 12.

subsequent precipitation is discharged into the streams and rivers.

3. During sudden storms of unusual intensity the drainage area of the watershed will produce surface runoff in quantities beyond the channel capacity of the streams and rivers.⁸

Various adjustments can be undertaken by inhabitants or communities in flood hazard areas to mitigate flood losses. John R. Sheaffer has listed six major flood damage prevention and control elements:

1. Flood protection with protective works.
2. Relief payments from local and federal governmental units.
3. Insurance sponsored by federal program.
4. Land use regulations and control of future development.
5. Rescheduling and removal of existing and proposed uses.
6. Flood proofing of specific uses where feasible.⁹

Although these six adjustments are known and proven methods of achieving flood damage reduction, flood protection by engineering works is the favored adjustment in our national flood program. Since 1936, over \$4,000,000,000 has been spent for the construction of flood protection works. This enormous construction program has not reduced flood damage potential on a national level.¹⁰

⁸ Ray E. Behrens, "Zoning Against Floods in Milwaukee County," The American City. Volume 67, September 1952, p. 112.

⁹ John Sheaffer, Flood Proofing: An Element in a Flood Damage Reduction Program. Research Paper No. 65, Department of Geography, University of Chicago, 1960, p. 1.

¹⁰ Loc. cit.

Just what is the federal interest in flood control? Local economies develop in such a way as to absorb the effect of frequent variation in local conditions. The local economy can absorb or protect against the effect of the small frequent flood, but at infrequent intervals there are large floods which inundate huge acreages of land, wash out bridges, disrupt transportation, halt the production of goods, interfere with trade, and cause loss of life and property. Since local communities are unable to cope with such floods, and because their effects extend far beyond the localities involved, it is the responsibility of the federal government to provide for their control or to devise measures to alleviate them.¹¹

Federal participation in flood control activities began with the establishment of the Mississippi River Commission in 1879. This commission was instructed to prepare flood control plans for the lower Mississippi River valley below St. Louis, Missouri. The first federal expenditures specifically for flood control were authorized by Congress in 1917 for the Mississippi and Sacramento Rivers. The Rivers and Harbors Act of 1917 authorized funds for the express purpose of flood and debris control work. Later, the Congress authorized the Corps of Engineers to prepare comprehensive studies of all the major river basins in the United States by enactment of the Rivers and Harbors Act of 1927. The initiation of integrated river basin development started with the

¹¹ Luna B. Leopold and Thomas Maddock, Jr., The Flood Control Controversy. Ronald Press Company, New York, 1954, p. 237.

establishment of the Tennessee Valley Authority in 1933. This program was to alleviate and correct the existing problems of drought, soil erosion, unemployment, flood damage, substandard living conditions, and other unhealthy factors prevalent in the region.

The Flood Control Act of 1936 established for the first time a national integrated flood control policy. This program, which was to be primarily paid for by the federal government, recognized watershed treatment as the counterpart and complement of downstream flood control. In 1938 the Congress enacted the Flood Control Act of 1938 which largely removed the already limited requirements for non-federal participation called for in the 1936 Act. This act was later amended in 1944 to broaden the concept of flood control to include provisions for major drainage improvements in the programs of the Corps of Engineers. The application of the 1936 Act to the Department of Agriculture in relation to watershed treatment was repealed in the Watershed Protection and Flood Protection Act of 1954. The 1954 Act, as amended in 1955, authorized the Secretary of Agriculture to assist local agencies in the planning and carrying out of programs for flood control, drainage, irrigation, and other specified water use purposes on watersheds not exceeding 250,000 acres in extent.¹²

Until the Flood Control Act of 1936, the Corps of Engineers had been looked upon by the general public as having the primary

¹² J. T. Sanders and N. A. Back, "Wanted: Partnership to Manage Water," Land, The Yearbook of Agriculture. Government Printing Office, Washington, D.C., 1958, p. 352.

responsibility for flood control in this country. Early construction was concentrated on levee systems, primarily in the Mississippi River Basin, and debris control work in the Mississippi and Sacramento Rivers. Since 1938, when further legislation removed the necessity for financial participation by the local beneficiaries in reservoir projects, there has been a rapid increase in the growth of downstream works.¹³

As the major dams rose in the valleys of the big rivers, and projects dotted the maps, the acreage of useful land flooded by the reservoirs assumed importance. The people who had to be displaced to make room for the spreading water began to be heard from in increasing number. So began an organized opposition to the rapidly developing program of downstream works. In the Act of 1936, federal interest in the control of floods was stated by Congress. The law recognized that flood control should involve the watershed as well as the river channel. The Act divided responsibility for the flood control investigations between the Department of Agriculture and the Corps of Engineers. During the period lasting from 1936 to 1942, a general feeling existed among the technicians of the Department of Agriculture that the upstream measures should be largely land management rather than structural work.¹⁴

Shortly after the war, however, there was a very marked change in the policy of the Department. It represented a change

¹³ Leopold and Maddock, op. cit., p. 84.

¹⁴ Ibid., p. 87.

in thinking associated with the appearance of new faces in the Soil Conservation Service after the war. Where formerly policy had been in the hands of agronomists, soil technicians, and range managers, after the war, engineers attained a number of policy making posts. In order to reduce damages from the larger but still frequent storms, small reservoirs were added to the program.¹⁵

When the larger detention type structures appeared in the Department's reports, the official review comments by the Corps of Engineers took on a highly critical tone. The controversy had begun. The Corps claimed that the upstream flood control structures would have some effect on the downstream dams. More basically, however, the Corps recognized that upstream detention dams could, in certain cases, take away benefits claimed for a Corps' structure. In such an instance, the upstream program, which could not control the more catastrophic floods, would prevent the construction of a major dam which could control them. Furthermore, at least certain officers of the Corps of Engineers maintained that in the construction of upstream detention dams the Department of Agriculture was encroaching on the Corps' field of activity.¹⁶

In any case, the Corps' objections were aimed at the retarding structures and related engineering works rather than at the land management measures. The historical sketch indicates that the conflict between upstream and downstream flood control programs

¹⁵ Ibid., p. 88.

¹⁶ Ibid., p. 89.

may well be labeled "The big dam-little dam controversy."¹⁷ The problem is complicated immensely by the fact that watershed management for the conservation of soil and the improvement of productivity has become intermixed with the concept of flood control. Upstream flood control became synonymous in the minds of many with conservation. This rallied many of the conservation groups behind the program of the Department of Agriculture.

The question of big dams versus little dams is the controversy, but what is the problem of flood control? Flood control is a dual attack on flood damage through both land management and engineering works (Plate IV). In upstream areas, proper soil conservation practices and small detention reservoirs will control the water runoff in the watershed. In downstream areas, major reservoirs will hold back the top of the flood waters and levees, and channel stabilization works will control and guide the flood waters being uniformly discharged from the reservoirs. It has not been obvious to many of the persons involved in flood control that both measures are required for a comprehensive solution of flood damage. Basically, the flood control controversy has resulted from two situations. The present policy and procedure of the Corps of Engineers has led to the construction of large dams that have resulted in the flooding of large areas of farm land, the dislocation of homes and towns, and the displacement of the inhabitants of the areas selected for the reservoir pools. Also the incorporation of considerable engineering work by the Department of Agriculture

¹⁷ Loc. cit.

EXPLANATION OF PLATE IV

Photomontage showing the results of comprehensive water resource development. Courtesy of Caterpillar Tractor Company, Peoria, Illinois.

PLATE IV



in the upstream programs and the headwater extension of the Corps of Engineers' downstream programs has brought the two agencies into direct conflict with each other on specific area of responsibility in flood control.

Flood control is instituted for the protection and benefit of the people involved. At the same time these programs are paid for by the people. When differences of opinion are the result of a specific flood control program, then the agencies involved must make a decision to select the course of action which appears to have the most merit in long run considerations. Two important concepts, both basic statements of federal policy, are contained in a section of the 1936 Flood Control Act:

1. That flood control is a proper federal function and that the federal government should improve or participate in the improvement if the benefits to whomsoever they may accrue are in excess of the estimated costs.

2. That a flood control program is justified if the lives and the social security of the people involved are otherwise adversely affected.¹⁸

The flood control controversy at the grass roots level is not over who should build big dams and who should build little dams, but is a matter of who will benefit and who will suffer from a specific flood control measure. The benefits of a program are often located in one section of the river valley, whereas the damages caused by land acquisition for a reservoir are located in another part of the drainage basin, often at some distance from the first. This means that two separate groups have vested interests in the flood control program, one for and one against. This

¹⁸ Ibid., p. 6.

results in a geographically determined division of opinion, usually the urban areas versus rural valleys.

The proponents of upstream engineering works and land management are in support of the programs of the Department of Agriculture. Those who favor main-stem reservoirs and protective works are behind the Corps of Engineers. The residents of the urban centers located on the main-stem want flood protection at once and are not concerned with flood damage on the upstream agricultural areas. They would object to any delay in the construction of major dams for their protection which might result from attempts to integrate the upstream and downstream programs. The people who live in the upper reaches of the watershed are aware of soil erosion and the need for improved land management. These interests not only support the flood control measures of the Department of Agriculture, but believe that the downstream measures could be reduced in scope if not even eliminated by the inclusion of a complete upstream program.

The question has often been raised whether flood control alone is the answer to the problem of flood damage. Basically, one approach to the problem of preventing flood damage is that of adjusting land use to flood conditions. This may be done in a number of ways: by reducing the volume of water through storage dams and land management measures; by keeping water off the land by dikes and other protective works; by using areas subject to flood in ways that damage will be kept to a minimum; or by a combination of two

or more of these methods.¹⁹

The first two of these methods are those presently being used by the agencies involved in flood control. The third method has often been proposed, but, except for localized instances, has seldom been utilized at the national level. Land use planning with respect to flood hazard areas has two primary objectives:

1. To bring about the most effective use of the flood plain, consistent with overall community and area development.

2. To promote the health and safety of the present occupants of the land subject to flooding.²⁰

Before any program to mitigate flood damage can be formulated, full consideration of future development, feasibility of existing uses, and the possible need to relocate certain areas must be given to flood hazard areas.²¹ The Flood Control Act of 1938 authorized the Chief of Engineers to contribute, in lieu of constructing protective works under the 1936 Act, equivalent funds to localities that preferred to locate on higher ground. Information from the Corps suggests that this authority in the past has been used only in connection with community adjustments to reservoir projects.²²

In contrast to the lack of federal efforts to relocate towns in lieu of constructing flood control works, there are numerous

¹⁹ R. W. Siler, Jr., Flood Problems and Their Solutions Through Urban Planning Programs. Tennessee State Planning Commission, September 1955, Preface.

²⁰ Moore, op. cit., p. 29.

²¹ Loc. cit.

²² Siler, op. cit., p. 3.

examples of local effort towards keeping man away from flood hazard lands. Milwaukee County in Wisconsin began acquiring floodlands along rivers and converting these into parks and recreation areas during the past decade. Putnam, Connecticut, started in 1955 to demolish whole portions of its downtown business district, which had been hard hit by floods in the past, and replacing these with landscaped parks. A new shopping and civic center is being built on higher ground. In Massachusetts, conservationists have been acquiring land along the Sudbury River and transforming it into nature areas for wildlife and vegetation development.²³

Flood control, land use control of flood-hazard areas, and combinations of the two have the same basic objective. Singly or in combination, zoning, building regulations, and subdivision controls are fruitful devices for the effective use of flood plain lands. In May of 1961 the Army Engineers began accepting applications for special flood plain studies to aid state and local governments in regulating the use of overflow lands to help reduce the loss of life and property in flood disasters. An appropriation of \$500,000 has been requested in the budget now pending in the 1961 Congress.²⁴

²³ Peter Farb, "Let's Plan the Damage Out of Floods," Reader's Digest, May 1961.

²⁴ Kansas City Star, "More Land Under Flood Control," May 31, 1961.

CHAPTER IV
THE KANSAS RIVER

During May and June of 1951 nature set the stage for the major Midwest catastrophe of all times, the Kansas River flood of 1951.

Fort Riley and Manhattan were the first urban places to be inundated in early July. At Fort Riley, barracks were smashed and carried away and at Manhattan the main business section was flooded to depths of eight feet and 1600 homes were inundated (Plate V). Early on the morning of July 12, levees failed at Topeka and large portions of the city were flood-swept and deserted after 24,000 people had been evacuated. Kansas City, Kansas and Kansas City, Missouri, on the banks of the mouth of the Kansas River, felt the brunt of the sediment-laden waters to the maximum extent. Some \$140,000,000 damage resulted in the central industrial section of the Kansas Cities, with their concentration of railroad yards, stockyards, packing plants, warehouses, and industrial plants.

The flood covered such a large area so intensely that emergency operations of the Army, Coast Guard, and Red Cross were overtaxed. Only 28 persons lost their lives, a remarkably low figure when the hazards are considered. Some 87,000 persons were forced to flee from their homes and 2,500 houses were totally destroyed. The Corps of Engineers estimated the damage resulting from the flood at about \$870,000,000 (Plate VI). Federal flood control works prevented additional damage of more than \$270,000,000.¹

¹ William G. Hoyt and Walter B. Langbein, Floods. Princeton University Press, Princeton, New Jersey, 1955, p. 408.

EXPLANATION OF PLATE V

Photos of damage resulting from the 1951 Kansas River flood in Manhattan, Kansas. Courtesy of Studio Royal, Manhattan, Kansas.

Fig. 1 - Residential

Fig. 2 - Commercial

PLATE V



Fig. 1



Fig. 2

EXPLANATION OF PLATE VI

Photos of damage resulting from the 1951 Kansas River Flood in Manhattan, Kansas. Courtesy of Studio Royal, Manhattan, Kansas.

Fig. 1 - Transportation

Fig. 2 - Communication

PLATE VI



Fig. 1



Fig. 2

As the flood waters receded from the devastated areas, the President and the Red Cross asked for money to meet the emergency; New Deal and Fair Deal senators asked for the establishment of a valley authority; conservationists clamored for more conservation measures; engineers promptly revised their flood control plans upward for the basin; commentators suggested the diversion of flood waters into the drought-stricken Southwest; and funds were requested to complete authorized projects and to build additional works.²

It is difficult to tell which natural phenomenon, too much water or too little water, has, over the years, most affected the economy of the region.³ During the depression of the 1930's a prominent New Deal official broadcast a dream in which he saw the ruins of Kansas City skyscrapers standing starkly in the middle of a sandy desert. A mere twenty years later, in July of 1951, those same skyscrapers were overlooking one of the most devastating floods known to the citizens of the Middle West.

At the time, experts predicted that this flood event would unquestionably result in an expansion of the flood control features of the Pick-Sloan plan, bring the flood control features of the Department of Agriculture into clear focus; and result in a new type of federal-state administration for the Missouri River Basin.⁴

In the Great Plains area of the Missouri Basin, which stretches 1300 air-line miles from Cut Bank, Montana to St. Louis,

² Ibid., p. 3.

³ Ibid., p. 275.

⁴ Ibid., p. 285.

Missouri, a 600-mile wide belt, reservoir storage projects have been built or are planned that will take some of the random variations out of nature's pattern of too much or too little water supply. Described by some geographers a century ago as the "Great American Desert," this region has risen above many of its adversities to become one of the world's great grain and livestock production areas.⁵ Because the area economy is primarily based on agriculture, it is highly sensitive to the vagaries of annual precipitation common to the basin.

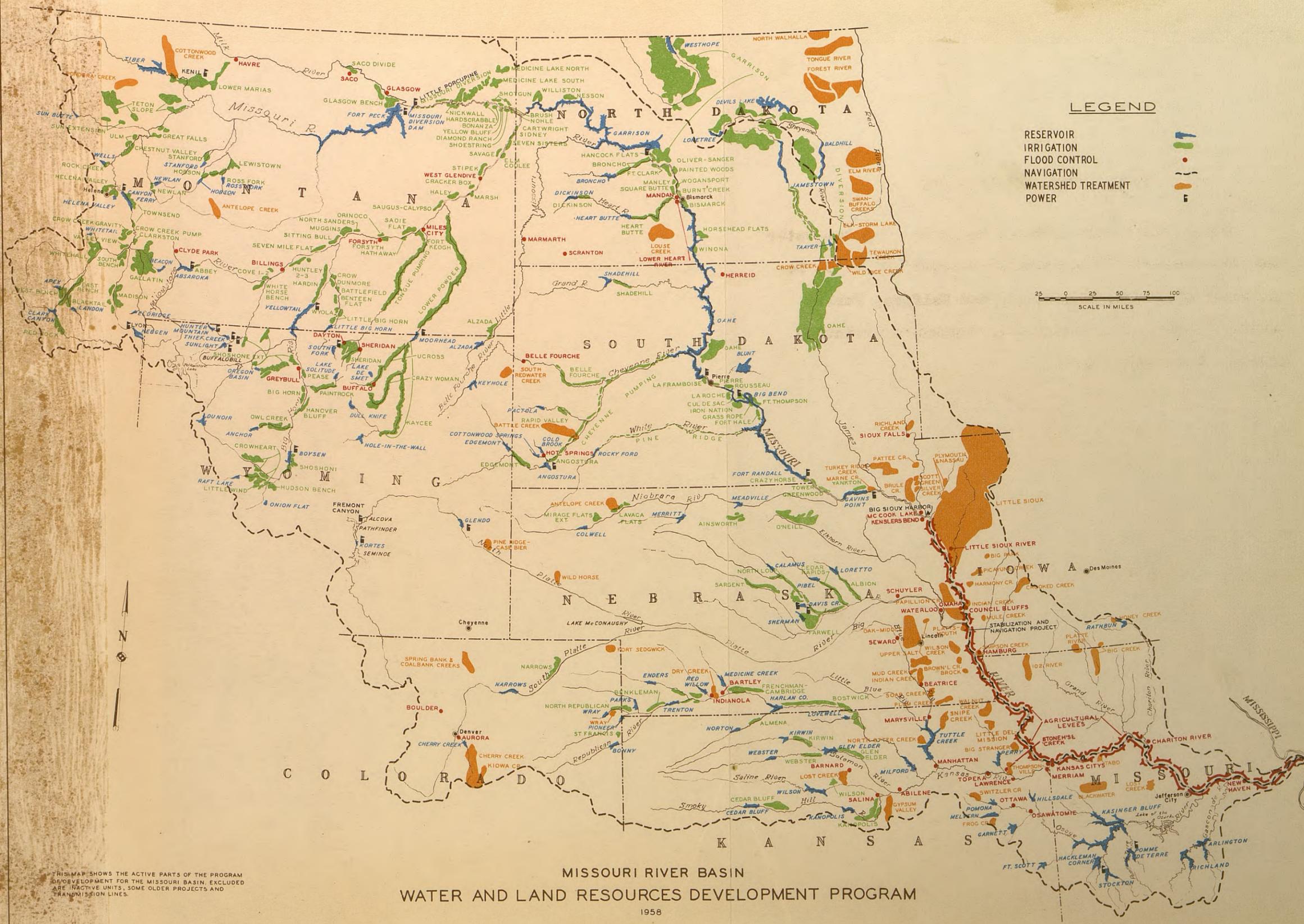
Upon this picture of a regional economy geared to nature's weather pattern, a man-made system of river control works and water conservation projects is being superimposed. The basin has been the scene of tremendous construction on a large federal program of water resources development since World War II. This program, commonly known as the Pick-Sloan Plan, is being carried out by the Corps of Engineers and the Bureau of Reclamation of the Department of Interior. The plan was developed in 1943 and 1944 and provides for the storage of flood waters in multiple purpose reservoirs to reduce flood damage and their subsequent release on a regulated basis to benefit irrigation, river navigation, water supply, power generation, and pollution abatement⁶ (Plate VII). Minor elements in the program include bank stabilization work,

⁵ R. J. Pafford, Jr., "Operation of Missouri River Main Stem Reservoirs," American Society of Civil Engineers, Transactions 83:1370-1, September 1957.

⁶ Wendell E. Johnson, "Missouri River Basin Plan in Operation," American Society of Civil Engineers, Transactions 81:800-2, September 1955.

EXPLANATION OF PLATE VII

Map of the Missouri River Basin showing the water and land resource development. Courtesy of U. S. Department of Health, Education, and Welfare, Public Health Service publication 604, Government Printing Office, Washington, D.C.



THIS MAP SHOWS THE ACTIVE PARTS OF THE PROGRAM OR DEVELOPMENT FOR THE MISSOURI BASIN. EXCLUDED ARE INACTIVE UNITS, SOME OLDER PROJECTS AND TRANSMISSION LINES.

MISSOURI RIVER BASIN
WATER AND LAND RESOURCES DEVELOPMENT PROGRAM

flood protection levees in urban areas, and the development of recreational facilities in the reservoir areas, including fish and wildlife protection.

The following general approach was developed and agreed upon during the design and planning of the reservoir system and is being observed in the preparation of the Annual Operating Plans for the basin-wide system.

1. Flood control will be provided for by observation of the requirements that predetermined upper blocks of storage space in each reservoir will be vacant at the beginning of each year's flood season.

2. All irrigation, and other upstream tributary water uses, during each year will be provided for.

3. Downstream urban water supply and stream sanitation requirements will be provided for.

4. The remaining water supply available will be regulated in such a manner that the outflow from the lower most reservoirs conforms to the seasonal requirements of navigation, with internal adjustments within the reservoir system and minor adjustments in overall releases from the system to provide for the generation of the maximum amount of usable power consistent with the foregoing uses.

5. Insofar as possible, without serious interference with the foregoing primary functions, the reservoirs will be operated for the maximum benefit to recreation, fish and wildlife and other secondary purposes.⁷

A coordinating committee for the operation of the Missouri River system was organized to direct and consolidate the viewpoints of all interests so that they may be represented adequately in the Annual Operating Plans. The following are represented on the committee:

⁷ Pafford, op. cit., p. 1370-6.

1. The states of Montana, North Dakota, South Dakota, Nebraska, Iowa, Kansas and Missouri.

2. Federal agencies of the Weather Bureau, the Geological Survey, the Fish and Wildlife Service, Federal Power Commission, the Public Health Service, the Bureau of Reclamation and the Corps of Engineers.⁸

The backbone of the Missouri River system is the main stem reservoirs in Montana and the Dakotas. This system consists of six major reservoirs, the first of which, Ft. Peck, Montana, began to store water in 1938. Fort Randall, South Dakota began operation in 1952 and Garrison, North Dakota, in 1953. Oahe and Big Bend in South Dakota, and Gavins Point in Nebraska complete the group. Below this main stem reservoir system, the comprehensive plan is based on a system of smaller reservoirs on the tributary streams and local protective works in the urban areas. In all, over 100 reservoirs will make up the total main stem and tributary streams system for the Missouri River Basin. This integrated system will provide protection from floods to nearly 4,000,000 acres of land. The local protective works, of which some 50 are in various stages of planning and construction, will provide protection to over 1,000,000 persons in urban areas. In addition, nearly 2,000 miles of levees will be built to protect agricultural lands in the flood plains.⁹

⁸ Ibid., p. 1370-7.

⁹ More detailed information is contained in "The Missouri," a report issued by the U.S. Department of Health, Education and Welfare, Public Health Service Publication No. 604, Government Printing Office, Washington, D.C., 1958.

One of the most critical flood areas in the country is located along the Kansas River, one of the major tributary streams of the Missouri River. The Kansas River empties into the Missouri River near the urban center of Kansas City, Kansas, and Kansas City, Missouri. Flood damages in the basin since 1941, when damage investigations started, have amounted to more than \$860,000,000 including \$460,000,000 at the Kansas Cities resulting from the 1951 flood out of the uncontrolled Kansas River.¹⁰

The Kansas Basin is the watershed drained by the Kansas River and its tributaries. The Kansas River proper is formed near Junction City, Kansas by the confluence of the Republican and the Smoky Hill Rivers. It flows eastward about 170 miles to join the Missouri River at Kansas City. The entire basin extends westward from Kansas City for about 480 miles. It has a maximum width of 140 miles and a total area of over 60,000 square miles, and thus comprises about one-ninth of the drainage area of the Missouri River. The principal sub-basins are those of the Republican, the Smoky Hill, and the Big Blue, which enter the Kansas River below Manhattan, Kansas.¹¹ The complete watershed includes almost the northern half of Kansas, much of the southern border of Nebraska, and a sizable part of northeastern Colorado.

Floods, though spectacular in occurrence, are actually normal events in the natural cycle. Their characteristics in the Kansas Basin reflect a variety of conditions. In the first place, the

¹⁰ Corps of Engineers, Water Resources Development in Kansas. Dallas, Texas, January 1961, p. 37.

¹¹ Corps of Engineers, Review Report on the Kansas River. Kansas City, Missouri, September 1960, p. 5.

meeting of warm moist Gulf air masses with colder Polar air masses can cause long and heavy precipitation in the eastern part of the Basin. Secondly, resultant storms are moved in a west to east direction, parallel to the Basin's axis. Thirdly, the parallel courses of the main tributaries tend to bring large discharges simultaneously into the Kansas main stem, and produce peak flows which lead to flooding. Fourthly, the worst floods generally occur when a heavy storm falls on ground which has already been saturated by a long period of heavy precipitation. Finally, the permeable rocks in the Basin are in the west, whereas in some parts of the east, impervious beds and claypan subsoils lie near the surface. Hence, the bulk of the rainfall falls on the area of least infiltration, contributing to a large amount of runoff.¹²

Two main types of floods may be distinguished. One is the small flash flood, which may be of great intensity but affects only a local watershed area. Such floods are common and occur at any time in the spring or summer in any part of the Basin. The second is the large general flood, which is less frequent, but is of longer duration and has disastrous effects throughout the greater part of the basin, or at least its eastern half. The larger floods almost always occur in the period between May and the middle of July.¹³

The frequency of floods can be considered fairly high within the watershed. Although the pattern is quite irregular, rivers may

¹² Resources for the Future, The Kansas Basin, Pilot Study of a Watershed. University of Kansas Press, Lawrence, Kansas, September 1956, p. 52.

¹³ Loc. cit.

be expected to reach flood stage about once in two years, whereas flooding may take place about once in five years. Major floods occur less often and are usually confined to a single tributary basin. Finally, it has been calculated that outstanding floods over the whole watershed will occur once in fifty years, while floods of the 1951 proportions may be expected once in one hundred or even two hundred years.¹⁴ The two outstanding floods of this century occurred in 1903 and 1951. Calculations based on Corps of Engineers' estimates indicate that the average annual flood loss for the years between 1902 and 1952 was \$18,000,000. About two-thirds of this was in urban areas. When the two outstanding floods of 1903 and 1951 are excluded, the average annual loss is then \$3,000,000. Of this figure less than one-eighth was in urban areas.¹⁵

It is a paradox of the Kansas Basin, as it is in other basins, that lands that are most susceptible to flooding are the very lands that man finds most attractive. The first towns to be established after the opening of the Kansas Territory were built on the principal rivers that flow from the state. The Kansas and Missouri Rivers were the main arteries of transportation and the lines of contact that connected Kansas with the civilized world. The struggle among the early towns to become the dominant centers of Kansas was based upon their river location and the fact that the communications system of the time was dependent upon river

¹⁴ Loc. cit.

¹⁵ Ibid., p. 65.

navigation. The New England Emigrant Aid Society sent groups up the Kansas River and established settlements at Lawrence, Topeka, and Manhattan.¹⁶

Since the first settlements, farmers found that the riverine lands were the most productive in the basin. Railroad companies found that the flood plains were nicely graded and ideal for constructing lines, shops, and yards. The industrialists found that these railroad facilities, as well as the general availability of flat land, made the flood plains by far the best areas for constructing factories and developing industrial areas. Finally, low-income groups found that lower land values made the river bottoms cheap locations for their homes. It is this intensive use of the flood plains, and not the phenomenon of flooding itself, that makes floods so damaging and at times so disastrous.¹⁷

In sum, flood problems in the Kansas Basin should be viewed against several basic considerations:

1. Floods are detrimental because people have occupied the land which by nature belongs to the river.
2. Floods in rural areas occur frequently, but in some cases may actually benefit the farmer's land as much as they damage it.
3. Floods assume disastrous proportions primarily in the urban areas on the flood plains.
4. The disastrous floods occur relatively seldom, so that general opinion in post-flood years tends to

¹⁶ George P. Miller, The Historical Aspects of Community Development in Kansas. Unpublished Master's thesis, Kansas State University, Manhattan, Kansas, 1961.

¹⁷ The Kansas Basin, loc. cit.

give an emphasis to the flood problem which is out of true perspective.¹⁸

The economic and social losses caused by floods have created the most universal demand that something be done to mitigate them. There are several basic ideas on how the flood damage problem should be approached. As was stated in Chapter III, there are six major flood damage reduction and control elements. These are flood protection, relief payments, insurance, relocation of existing uses, regulation and control of land use, and flood proofing of remaining uses. Each of these methods has its strong advocates, and the issue has at times become extremely controversial. The advocates tend to forget that there is no single answer to the flood damage problem. It is necessary to understand the various approaches which can be taken in the Kansas Basin.

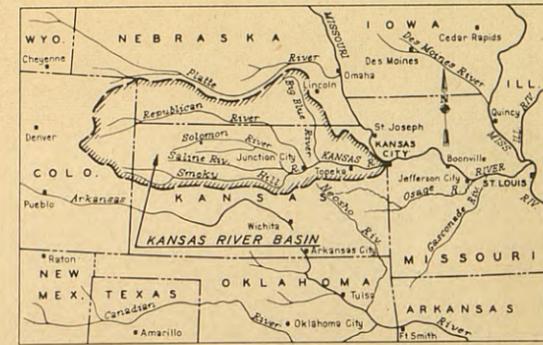
The flood protection approach is the one presently being adopted. The Corps of Engineers' program in the basin is essentially one of larger dams on the lower reaches of the main tributary valleys, with protection works in the downstream communities (Plate VIII). The basic premise is that, by holding back flood waters from the major tributary basins, floods in the main stem valley will be controlled.¹⁹ The program already authorized will afford some degree of protection for considerable areas of bottom land. Stretches of valuable valley land below each of the reservoirs will be protected, even from a major flood. Moreover, lesser

¹⁸ Ibid., p. 66.

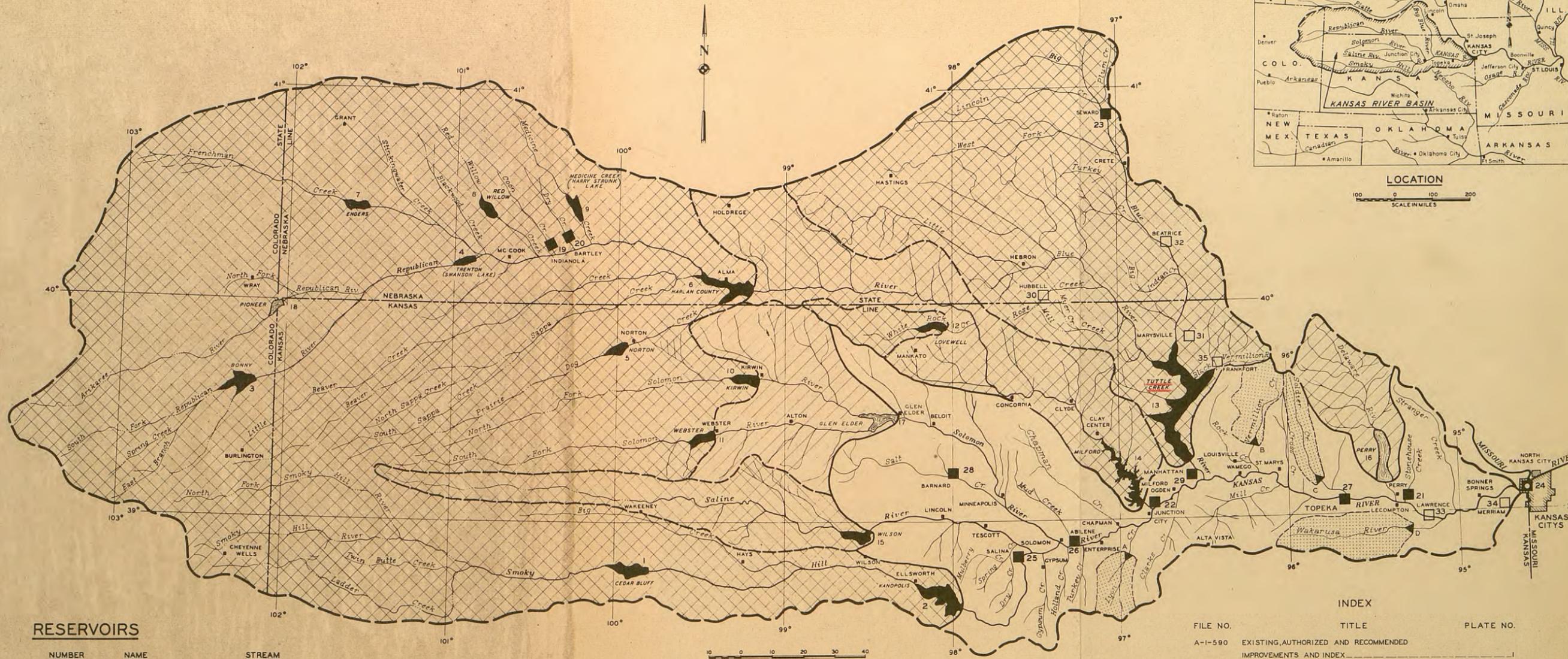
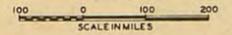
¹⁹ Ibid., p. 67.

EXPLANATION OF PLATE VIII

Map of the Kansas River Basin showing the water resource development projects. Courtesy of U. S. Army Corps of Engineers District, Kansas City, Missouri.



LOCATION



RESERVOIRS

NUMBER	NAME	STREAM
COMPLETED OR UNDER CONSTRUCTION		
1	CEDAR BLUFF	SMOKY HILL RIVER
2	KANOPOLIS	SMOKY HILL RIVER
3	BONNY	SOUTH FORK REPUBLICAN RIVER
4	TRENTON (SWANSON LAKE)	REPUBLICAN RIVER
5	NORTON	PRAIRIE DOG CREEK
6	HARLAN COUNTY	REPUBLICAN RIVER
7	ENDERS	FRENCHMAN CREEK
8	RED WILLOW	RED WILLOW CREEK
9	MEDICINE CREEK (HARRY STRUNK LAKE)	MEDICINE CREEK
10	KIRWIN	NORTH FORK SOLOMON RIVER
11	WEBSTER	SOUTH FORK SOLOMON RIVER
12	LOVEWELL	WHITE ROCK CREEK
13	TUTTLE CREEK	BIG BLUE RIVER
14	MILFORD	REPUBLICAN RIVER
15	WILSON	SALINE RIVER
AUTHORIZED BUT NOT STARTED		
16	PERRY	DELAWARE RIVER
17	GLEN ELDER	SOLOMON RIVER
18	PIONEER	ARIKAREE RIVER
RECOMMENDED ADDITIONAL		
A	WOODBINE	LYON CREEK
B	ONAGA	VERMILLION CREEK
C	GROVE	SOLDIER CREEK
D	CLINTON	WAKARUSA RIVER

LOCAL PROTECTION PROJECTS

NUMBER	NAME	STREAM
COMPLETED OR UNDER CONSTRUCTION		
19	INDIANOLA, NEBRASKA	COON CREEK (TRIBUTARY OF REPUBLICAN RIVER)
20	BARTLEY, NEBRASKA	DRY CREEK (REPUBLICAN RIVER)
21	STONEHOUSE CREEK, KANSAS	STONEHOUSE CREEK (TRIBUTARY OF KANSAS RIVER)
22	FORT RILEY, KANSAS	KANSAS RIVER
23	SEWARD, NEBRASKA	BIG BLUE RIVER
24	KANSAS CITIES (KANSAS AND MISSOURI)	KANSAS AND MISSOURI RIVERS
25	SALINA, KANSAS	SMOKY HILL RIVER
26	ABILENE, KANSAS	SMOKY HILL RIVER
27	TOPEKA, KANSAS	KANSAS RIVER (TRIBUTARY OF SOLOMON RIVER)
28	BARNARD, KANSAS	SALT CREEK (TRIBUTARY OF SOLOMON RIVER)
29	MANHATTAN, KANSAS	KANSAS RIVER
AUTHORIZED BUT NOT STARTED		
30	HUBBELL, NEBRASKA	ROSE CREEK (TRIBUTARY OF BIG BLUE RIVER)
31	MARYSVILLE, KANSAS	BIG BLUE RIVER
32	BEATRICE, NEBRASKA	BIG BLUE RIVER
33	LAWRENCE, KANSAS	KANSAS RIVER
34	MERRIAM, KANSAS	TURKEY CREEK (TRIBUTARY OF KANSAS RIVER)
35	FRANKFORT, KANSAS	BLACK VERMILLION RIVER
RECOMMENDED MODIFICATION OF EXISTING PROJECT		
24	KANSAS CITIES	KANSAS RIVER

LEGEND

RESERVOIRS

- COMPLETED OR UNDER CONSTRUCTION
- AUTHORIZED BUT NOT STARTED
- RECOMMENDED ADDITIONAL

LOCAL PROTECTION

- COMPLETED OR UNDER CONSTRUCTION
- AUTHORIZED BUT NOT STARTED
- RECOMMENDED MODIFICATION OF EXISTING PROJECT

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REVIEW REPORT KANSAS RIVER

EXISTING, AUTHORIZED AND RECOMMENDED IMPROVEMENTS AND INDEX

floods will probably be prevented throughout the main Kansas River valley. The reservoirs will also regulate the flow of the Kansas River to a degree and provide a more dependable water supply for municipal and rural water consumption, and for the dilution of sewage disposal.

Three basic difficulties prevent the reservoir system from affording the desired protection in times of major floods.

1. Suitable dam-sites close above the cities which are to be protected are not always available. Dams on the Big Blue, Republican and Smoky Hill Rivers, though protecting areas immediately below them, are far away from the towns of Topeka, Lawrence and the Kansas Cities. An average of 30 percent of the total discharge of the Kansas River at Bonner Springs near the river's mouth is contributed below Wamego.

2. The nature of the basin's storms is such that the center of a major storm may be anywhere in the eastern part of the watershed and hence the area where a flood might originate is unpredictable.

3. An important fact is that the watershed areas upstream from the reservoirs receive no protection from flooding.²⁰

One basic handicap of the reservoir approach is that large areas of bottom land will be flooded by the reservoir pools. To carry out the program, over 450,000 acres would be purchased, of which about 200,000 acres are eastern valley lowlands. Taking this bottom land out of production could disrupt the balanced agriculture economy in the area as the fertile bottom lands are utilized to grow the feeds needed to supplement the grazing activities carried out in the surrounding uplands. Also the amount of land to be flooded by the reservoir pools as compared with the

²⁰ Loc. cit.

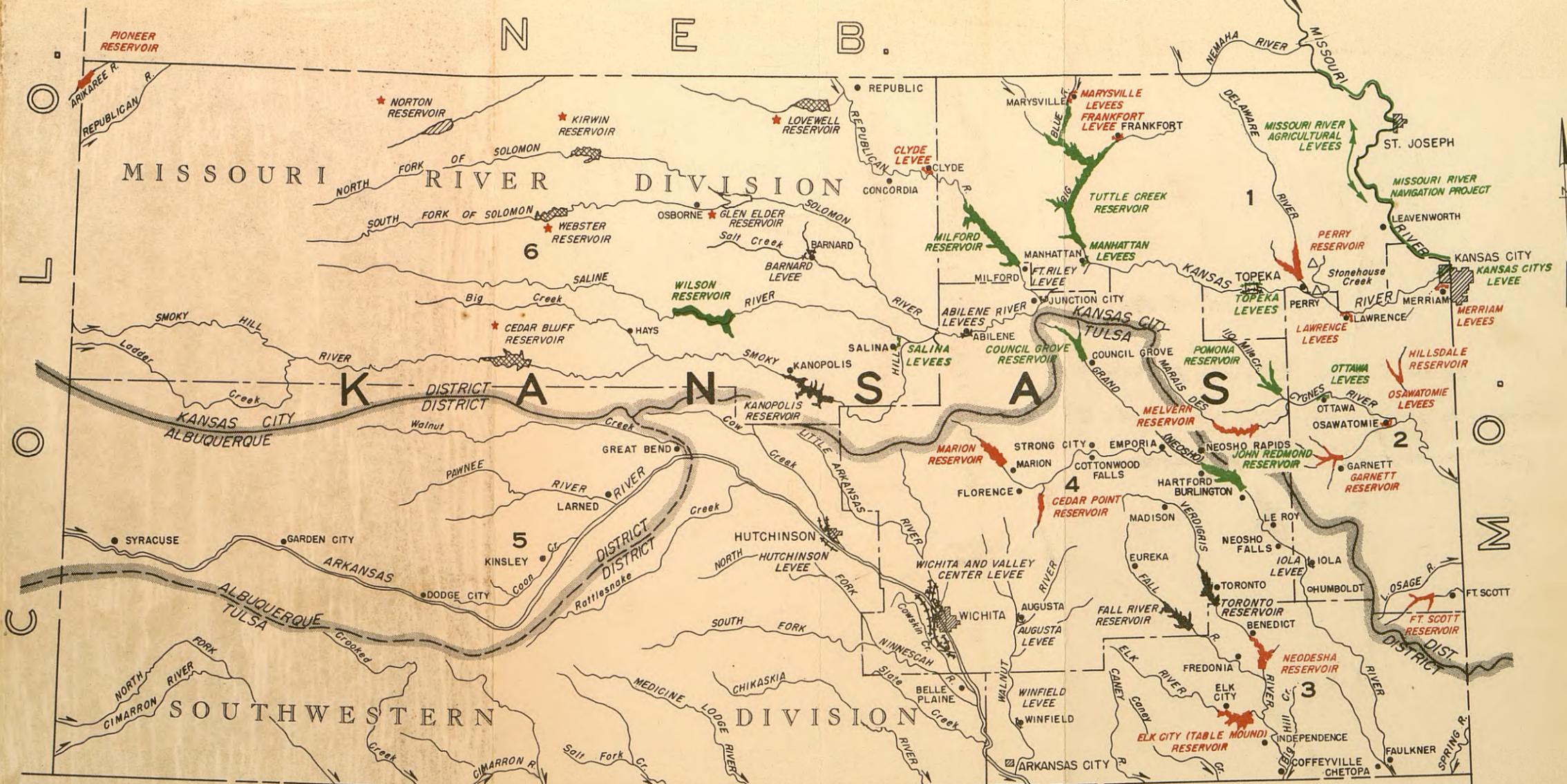
area which might be protected is questionable. The total land flooded in the 1951 flood amounted to about 900,000 acres, only twice the number of acres which will be included in the reservoir pools. The infrequency of a flood of the magnitude of the 1951 flood makes the average annual acreage protected by the reservoir amount to only a fraction of the reservoir pool areas. It can be concluded then that the reservoir program is planned almost entirely for the protection of the cities of the lower valley. As has been stated, these cities are, on the whole, too far removed from the tributary reservoirs to benefit fully from the proposed protection (Plate IX).

Another approach to the flood problem of the Kansas Basin is the provision of flow-ways through the urban areas where most of the flood damage takes place. This is accomplished by setting back levees so the river has an adequate, clear channel in time of excessive flows. The flow-way approach has a great advantage in that the solution is applied where the flood damage is the greatest. Hence, its effectiveness is the same no matter where the floods take place. Also, real property required for the sites of the flow-ways, flood walls, and levees would be located in the benefited areas, rather than in remote agricultural areas. Wolman estimated that the cost of a flow-way program would be about one-fourth of that for the proposed reservoir program of the Corps of Engineers.²¹

²¹ Ibid., p. 69.

EXPLANATION OF PLATE IX

Map of Kansas showing the water resource development projects. Courtesy of U. S. Army Corps of Engineers Division, Dallas, Texas.

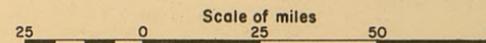


LEGEND

AUTHORIZED CORPS OF ENGINEERS PROJECTS

	COMPLETE	UNDER CONSTRUCTION	NOT STARTED
RESERVOIR			
WATERWAY			
LEVEE			
CHANNEL IMPROVEMENTS AND BANK STABILIZATION			
OTHER PROJECTS			
LAKES OR RESERVOIRS			
CONGRESSIONAL DISTRICTS			

CORPS OF ENGINEERS CIVIL WORKS PROJECTS STATE OF KANSAS



* A PORTION OF THE STORAGE CAPACITY IN THIS U.S. BUREAU OF RECLAMATION RESERVOIR IS ALLOCATED TO FLOOD CONTROL AND OPERATED UNDER THE DIRECTION OF THE CORPS OF ENGINEERS.

But there are also disadvantages in the flow-way approach. It is purely a flood control program and makes no provision for water storage or flow regulation. Nor does this type of approach protect farm lands against flooding.

Still another approach to flood problems in the Kansas Basin is that of watershed management. The premise is that by vigorous soil conservation practices and by a series of small detention dams, water would be held where it falls. The water would soak into the ground or run off slowly. Such treatment has proven successful for normal rainfalls in many small watersheds in Kansas and Oklahoma, but it has not been tested for major storms in an area the size of the Kansas Basin. The land treatment and watershed management approach operates on the principle that the moisture is retained or detained in the soil. The effectiveness of this method then depends on the degree to which the accumulated rainfall can be controlled.

Even though percentage reductions in peak runoff are large, the quantities can be expressed in tenths of inches. Because of the intensity of major storms, the effectiveness of this approach is drastically reduced. Great floods are invariably associated with long periods of rainfall during which the soil becomes nearly saturated, or with frozen ground, melting snow, or a combination of such conditions. Under these conditions the possibility of altering the infiltration rate or the retention of water is minimized. This kind of reasoning has led many, including the Department of Agriculture, to conclude that the effect of land management practices on great floods, such as the Kansas River flood of

1951, is not significant.²²

A last approach to the flood problem concerns the management of the flood plain developments. In this approach the use of flood hazard bottom land would be reserved for those uses which make the fullest utilization of the flood plains' potentialities and which could not function as efficiently in another location. An outstanding advantage of the approach is that the spreading of the river over its flood plain at long intervals is accepted as being perfectly natural and that the approach calls for adjustments to this condition rather than attempts to prevent it. Another advantage is that no valuable land, either in upstream agricultural areas or in main stem cities, is taken permanently out of use.²³

There are many obvious disadvantages to this approach. Some flood damages and temporary disruption of economic activities in flooded areas are inevitable in times of major floods. Again, like the flow-way approach, this method is purely to prevent flood losses, and no water will be stored or regulated for other uses. Also the financing required to relocate people and structures could be more, or less, than the construction costs of other flood control programs. The number of habitations in rural and urban areas on the flood plain is well nigh overwhelming as the early settlement of the Kansas River valley occurred primarily at river

²² Luna B. Leopold and Thomas Maddock, Jr., The Flood Control Controversy. Ronald Press Company, New York, 1954, p. 82.

²³ The Kansas Basin, loc. cit.

locations because of the need for river transportation, communication, and water supply.

In July of 1961 the Kansas Water Resources Board urged city and county governing bodies to investigate the possibility of coming under the newly authorized Corps of Engineers flood plain program. The 1960 Flood Control Act had authorized the Army Engineers to compile and disseminate information on floods, including identification of flood hazard areas, magnitude and frequency of floods, general criteria for use of flood plains, and engineering advice for planning reduction of flood damage.²⁴ Initial applications were expected from areas along the major streams where protective works have been installed and on smaller tributary streams where growing urban development may be creating new flood hazards.

Although the future holds some prospect for a more comprehensive and impartial flood control program in Kansas, there have been many examples in the past where adversely affected areas have raised bitter resistance to proposed flood control works. The most striking example of local controversy has been over the construction of Tuttle Creek reservoir in Kansas.

²⁴ The Kansas City Times, "Push Flood Data Plan," July 18, 1961.

CHAPTER V
TUTTLE CREEK DAM

The past flood program of the Army Engineers for big dams in Missouri and for one such structure in Kansas was stymied, in contrast with the way other projects had moved along in the Missouri River Basin program for flood control. The Kansas undertaking in question was Tuttle Creek Dam on the Big Blue River near Manhattan, where that stream enters the Kansas River. This job was authorized by Congress in 1938, but there was a bitter local controversy about it for years. As late as 1950 only some minor planning funds had been appropriated for it. The people of northeastern Kansas quarreled about the location, so the Army Engineers resurveyed the problem and came back with a recommendation for the original site and plan on the grounds that they would be cheaper than others and give more protection, but the objections continued. Meanwhile, the estimated cost of the project rose from \$28,000,000 in 1941 to over \$70,000,000 by 1951.¹

Tuttle Creek, the biggest dam in Kansas, was the rallying point for a quarter century of a controversy between valley farmers and urban dwellers. Angry farmers, faced with dislocation by the reservoir, naturally sought any alternative.² The Blue Valley Study Association, composed mostly of residents of the reservoir

¹ Richard C. Baumhoff, The Damned Missouri Valley. Knopf, New York, 1951, p. 241.

² Kansas City Star, "A Symbol in Tuttle Creek Blast," June 29, 1959.

area, led the potent and bitter fight against the dam in which emotion often outweighed engineering (Plate X). This association was dedicated to the conservation of soil, water, and human resources of the Blue River valley and the furtherance of a coordinated comprehensive flood control program. The local group received outside assistance, usually in the form of emotional appeals from well known writers. Richard Kleiner of the New York City Newspaper Enterprises Association visited the Blue River valley and commented that it was evident that the Big Blue River was not responsible to any great extent for the flood damages that occurred in the Kansas River valley in the 1951 flood. Elmer Peterson, editor of the Daily Oklahoman, Oklahoma City, Oklahoma, spoke to the Blue Valley association at Randolph during the height of the controversy. Peterson is remembered as the author of the highly controversial article, "Big Dam Foolishness," published in the Country Gentleman farm magazine in May of 1952. In this article he stated, "As an aftermath of last summer's disastrous Missouri Valley floods, the country is now being sold a program that consists mainly of huge downstream dams, designed to protect only the narrow river zones below them, the banks and the flood plains of the large streams."³ He went on to state that he felt that a much better program, cheaper and more productive, could be built than the one offered by big dam enthusiasts. His proposal was to make full use of little dams and modern soil

³ Elmer T. Peterson, "Big Dam Foolishness," Country Gentleman. May 1952, p. 26.

EXPLANATION OF PLATE X

Examples of visual material used by the Blue Valley Study Association in the Tuttle Creek Dam controversy. Courtesy of Mrs. Lucille Bischoff, Chapman, Kansas.

Fig. 1 - Photograph of typical sign placed on highways leading into the Blue River valley.

Fig. 2 - Mail sticker showing comical parody of watershed development vs. flood control reservoirs.

PLATE X

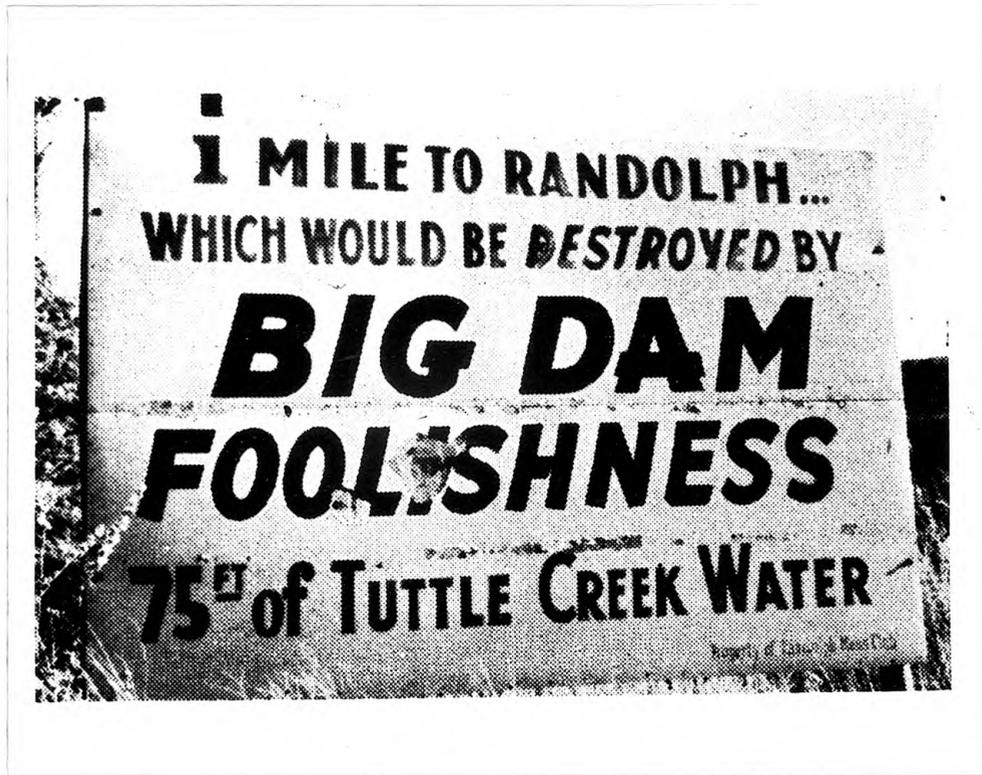


Fig. 1

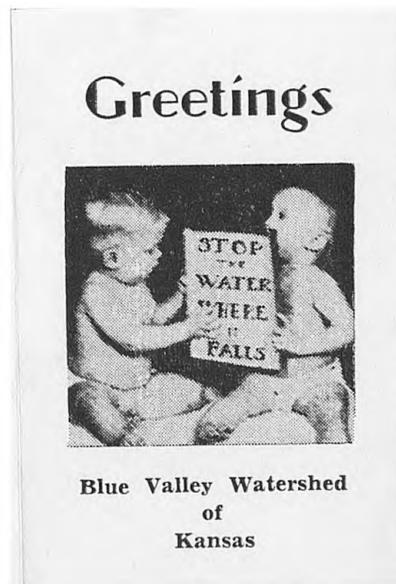


Fig. 2

and water conservation practices which would stop or slow down the water where it fell. He claimed that this type of agricultural flood control would make farmlands more productive instead of inundating rich land behind the dams proposed by the Army Engineers.

Peterson further said, "A bitter fight is now shaping up. On one side the Army Engineers, the politicians with a keen scent of the pork barrel, a powerful tax-financed bureaucracy and some newspapers and business interests backed by cities and towns which want something fast, regardless of cost."⁴ He further stated that on the other side were the farmers organized in watershed associations backed by many newspapers and unorganized citizens who were appalled by the harm done by big dams in the very valleys they were supposed to protect. * He felt that the Army Engineers' stubborn determination to build a great dam at Tuttle Creek on the Big Blue River of Kansas to help protect the downstream cities of Manhattan, Topeka, Lawrence, and the Kansas Cities would flood 55,000 acres of fertile farmland. He claimed that many homes, schools, stores, churches, and cemeteries, along with several beautiful villages would be flooded along with an area that produces over \$6,000,000 worth of crops annually.

Peterson further claimed that using actual case histories from the Soil Conservation Service it could be asserted that under conditions typical of many watersheds, that the bigger the dam the less it is able to control floods. He said this was due to the multiple purpose uses of large reservoirs for power and recreation

⁴ Ibid., p. 27.

which require a water level above minimum pool capacity. He said that to build huge dams with capacity enough to meet every imaginable flood threat of the future would cost more than the damages such dams would prevent by driving people and their productive efforts from vast tracts of our best soil.

The watershed program of the Department of Agriculture, now moving into high gear in Kansas, combines many small dams with intensive soil conservation treatment. Such measures can save the topsoil and reduce the upstream flood loss, but the most hopeful of the top soil conservationists in Washington have never contended that they would harness major floods.

Since the mid-30's, at hundreds of public meetings and congressional hearings, the argument over how best to control floods in Kansas has raged. Tuttle Creek has been the focal point. Top civilian and army engineers had labeled the site near the Blue River mouth, with over 2,000,000 acre-feet of reservoir storage, as the keystone of any effective flood control plan for the Kansas River. Even though the project was authorized in 1938, the Congress was sympathetic to the deluge of anti-Tuttle Creek mail and the effective pleas of the Kansas farm women who called themselves the Blue Valley Belles.⁵ There were 225 homesteads and 644 homes and businesses in nine small towns and hamlets within the 70,000-acre reservoir area. Statistics on the purported losses which the dam would inflict on the crop production and general economy of the area were shouted at many an angry public meeting. The Belles

⁵ Kansas City Star, "Tuttle Creek Controversy," December 2, 1956.

toured the area in motor caravans and even went to Washington for Congressional appropriations committee hearings.⁶

The billion-dollar Kansas River flood of 1951 swung the tide of local bitterness over on the side of drowned out farmers, homeowners, and the local businessmen of the Kaw Valley, Topeka, Lawrence, Kansas City, and on east along the Missouri River. Congress voted \$5,000,000 in 1952 to start Tuttle Creek and the Bennett Construction Company of Kansas City began work that October on a \$2,238,888 preliminary contract.⁷

In the meantime the Kansas Industrial Development Commission had engaged a board of engineers to make a study of flood protection requirements in the Kansas River Basin. This board consisted of Abel Wolman, Louis R. Howson, and N. T. Veatch. In their report they said, "Storms larger than that experienced in 1951, are of course possible, but such storms are certainly of rare occurrence."⁸ They went on to state that the average frequency of the 1951 flood was in the order of once in several hundred years. They felt that the Kansas River would inevitably overflow unprotected flood plains with greater and greater property loss requiring that greater attention must be paid to flood plain occupance and development.

Wolman and his associates further stated that of the total area examined for flood damage, 86 percent represented agricultural

⁶ Loc. cit.

⁷ Loc. cit.

⁸ Abel Wolman and others, Report on Flood Protection-Kansas River Basin. Kansas Industrial Development Commission, Kansas City, Missouri, May 1953, p. 17.

land to which no damage was done to the soil itself, even though it was included in all official documents as showing material, direct or indirect, monetary damage. Damage to growing crops due to inundation, of course, was material. The board concluded that any program for the reduction of flood damages should first be focused upon the excessively damaged areas, largely urban in character, and that protection of strictly agricultural lands be recommended only where the costs of such protection and the assumed benefits have some detectable relationship.⁹

The board of engineers also said that the program proposed by the Department of Agriculture for the Big Blue River Basin, included conservation and improvement measures for crop and grasslands, farm wood lots and shelter belts, measures for stabilizing small watercourses, upstream flood-water retarding structures, diversion dams and ditches and flood-ways, and technical and educational assistance, research, and soil surveys. They further stated that even though the federal government was then spending an estimated \$1,215,000 annually in the Big Blue Basin alone in assisting the landowners in establishing proper conservation procedures on their farms, it was their opinion that in the 1951 flood, the watershed treatment program, had it been completed, would not have provided major relief.¹⁰

The board felt that the evidence so far presented indicated that to accomplish reduction of flood runoff damages, one or more of the following had to be considered:

⁹ Ibid., p. 28.

¹⁰ Ibid., p. 45.

1. The accurate forecasting of floods.
2. The control of flood plain occupance.
3. The development of a system of reservoirs.
4. The provision of an adequate flow-way system.¹¹

The engineers concluded that flood protection on the Kansas River could be provided by reservoirs and enlarged channels at an estimated cost of about \$1,000,000,000 from all the agencies involved in flood protection or by the enlarged channels alone at an estimated cost of \$200,000,000 which would protect all of the urban developments in the basin against a flood as great as that of 1951. The board recommended that all work and all expenditures on reservoirs such as Tuttle Creek, Kirwin, Webster, and others, in which money was being spent for flood storage capacity, be suspended and not resumed until the need for each such reservoir for the mitigation of flood damages in the valley below Manhattan had been determined and its cost economically justified on a rational and factual basis.¹²

Meanwhile a setback had occurred within a month of the start of construction on Tuttle Creek Dam in 1952. In the November general election, Howard S. Miller, a 73-year-old Brown County farmer and soil conservationist, became the first Democrat ever elected to Congress from the First Kansas District when he ran on an anti-Tuttle Creek platform and defeated a pro-Tuttle Creek Congressman, Albert Cole.¹³ The Blue Valley Belles had canvassed the district

¹¹ Ibid., p. 69.

¹² Ibid., p. 28.

¹³ Kansas City Star, loc. cit.

for Miller, knocking on doors to ask simply, "Help us save our homes." Overnight, Tuttle Creek acquired a political "danger" label for most Kansas congressmen, and for the next two years the project was deleted from the Army Engineers' river appropriations in Washington.

Construction slowed to a halt as funds ran out in January, 1954, and the job lay idle behind a perimeter fence. The people of the Blue River valley had continued their campaign to kill the Tuttle Creek project. The battle was replete with tons of apparently conflicting statistics, colorful incidents, and tensions. The Blue Valley Belles scored their greatest victory in April of 1953 when they were received at the White House, met with the Director of the Budget, Joseph Dodge, and appeared before the Senate Appropriations Committee.¹⁴ The Blue Valley Study Association retained a Hollywood producer, Charles M. Peters, to prepare a lavish color movie portraying the Blue River valley as an agricultural paradise faced with destruction (Plate XI). Garish red, yellow, and blue signs blossomed on highways U.S.-24 and K-13 near the damsite, protesting "Big Dam Foolishness." One farmer mowed a message, visible from the air, in 50-foot letters in an alfalfa field: "Senators, stop Tuttle Creek Dam." Army engineers explaining land acquisition procedures at an early meeting on a farm near the damsite faced a threatening, jostling crowd, one of whom asked them if they had ever been run off a place with a gun. Windows were found broken in survey crew vehicles. When one survey crew

¹⁴ Kansas City Star, June 29, 1959, loc. cit.

EXPLANATION OF PLATE XI

Photo of poster issued by the Blue Valley Study Association during the height of the Tuttle Creek Dam controversy. Courtesy of Mrs. Lucille Bischoff, Chapman, Kansas.

PLATE XI

Tuttle Creek Story

A Story of American Democracy in Action

Motion Picture produced by
Mr. Charles M. Peters
Beverly Hills, California

—Presented by—

People of the Blue Valley of Kansas

This documentary colored 16 m.m. film vividly portrays the united efforts of the Blue Valley people against the construction of the Tuttle Creek Dam. The Blue Valley struggle has given impetus to the nationwide watershed movement with emphasis upon the conservation of our land and water resources. This movie shows how a group of ordinary people have demonstrated that the grassroots can still be heard in Washington when the people are aroused to action. Show time, 25 minutes.

Premier Showing - Randolph, Kansas

SEPTEMBER 18, 1953

Continuous Shows Beginning 4 p. m.

For purchase or rental of the "Tuttle Creek Story"
address communications to:

**MR. OTTO HALLER, Secretary,
Blue Valley Film Committee,
Winkler, Kansas.**

moved into the reservoir area while the Tuttle Creek appropriations still lacked final approval, the Blue Valley leaders fired off a telegram to Washington stating that they had been invaded by "government troops."

But the flood victims and the longtime workers for river development had their own stubborn slogan, "No surrender on the Kaw!" A trainload of them, 1500 strong, went to Topeka and surged up the capitol steps, carrying a sign, "We want Tuttle Creek," to persuade the Kansas Legislature to reverse its stand against the dam, and whole platoons trooped to Washington as pro-Tuttle Creek witnesses at congressional hearings.¹⁵

Early in 1955, two somewhat surprised Congressmen, E. P. Scrivner, whose second Kansas district included the flood battered Kansas City, Kansas, and Richard Bolling of the Missouri fifth district, Kansas City, found that they were able to insert a Tuttle Creek item in the House committee river bill.¹⁶ The reservoir backers flocked to the Washington fund hearings every spring with a large delegation of mayors, business leaders, farmers, and usually spokesmen for the governors of Kansas and Missouri. A \$7,500,000 allotment safely passed the legislative mill in 1955 and \$9,000,000 was added in 1956. Senator Hennings of Missouri asked for \$15,000,000 in 1957 and from then on the funds rolled in.

Work was resumed in November of 1955 and the big 28-cubic foot earth machines again roared across the valley floor. In one of the

¹⁵ Kansas City Star, December 2, 1956, loc. cit.

¹⁶ Loc. cit.

few compromises, it was agreed to operate Tuttle Creek as a dry reservoir, stowing water in times of flood only. Then five years of harsh drought did as much to boost support for the project as the worst flood danger ever had. To farmers hauling water over dusty roads to thirsty livestock, that big lake began to look good and the Senate restriction on the conservation pool was dropped.¹⁷

Today the majority of the people have accepted the fact that major floods, the destroyers that periodically have ravaged Kansas farms and towns, can only be controlled by a flood control program that includes large dams. Today the Tuttle Creek dam is completed and the overall reservoir project is nearly done, except for some local road relocation and land clearance. The real estate acquisition, the outright purchase or flowage easements on 60,000 acres, has been a long, tough job with an estimated land cost of \$21,000,000. Awards by a three-man condemnation commission have generally been well above the government appraisals with about half of the cases going to condemnation. The usual figure for condemnation cases, out of total acquisitions, would be about 25 percent according to C. R. Morris, head of the Army Engineers' real estate office in Manhattan.

The distress of some families at having to give up land homesteaded by their grandparents has been alleviated in many cases by sales of their remaining property, above reservoir level, as potential resort and new land subdivision development. Pasture land once worth \$60 to \$75 an acre has sold for \$200 to as much as

¹⁷ Kansas City Star, June 29, 1959, loc. cit.

\$1,500 an acre. Nevertheless, the majority of people dislocated by the reservoir are still bitter at their treatment at worst or partially resigned at best.

Tuttle Creek was the turning point in the big dam versus little dam controversy. There will be other fights, other meetings, other protests, but the remaining dams needed to help control floods on the Kansas River and other rivers will be built now. The Blue Valley Study Association is now dormant, its members resigned if not reconciled to the way their fight ended.

The long controversy over the construction of Tuttle Creek reservoir was not an isolated example. In many of the federally sponsored flood control projects, local resistance has formed because the benefits of the project have incurred in areas other than those adversely affected by the reservoir construction. It would seem pertinent that some consideration should be given to lessening the impact of reservoirs on the areas adversely affected.

Construction of a large reservoir, in a settled area, affects individuals in the area and the local government as a whole in many ways. Often a large number of farm families are faced with the problem of finding homes elsewhere. On occasion an entire town must be evacuated or relocated. These moves are costly to the individuals concerned and disruptive to local governments and area economy. Although there are many local benefits that the area residents can look forward to, such as flood protection, irrigation, recreation, power generation, river navigation, and water supply, the individuals who reap these benefits are often

not the ones who are most adversely affected by the reservoir.¹⁸

It seems that once the local effects of reservoir construction in an area are fully recognized, ways could be found to avoid or at least alleviate most of the problems arising for those adversely affected. It should be possible to keep the cost of a reservoir, in terms of social and economic values, from becoming disproportionately high to certain individuals in the area affected.

The attitudes of rural people are important in understanding their problems of adjustment. Some of these attitudes have been formulated on the basis of misinformation, rumor, and prejudices; others seem to rest on firm fact. To some extent the attitudes found are those of people who had difficulty in understanding the procedures and methods of the federal government. It should not be concluded that this existed equally among all people or with respect to all phases of the flood control construction and land acquisition work. In many instances the people understood full well the reasons for certain methods and were able to plan their activities accordingly. In other instances, however, this lack of understanding was so great that open conflict would have been no surprise.¹⁹

Part of the difficulty traces back to the fact that rural people are accustomed to informal discussion before deciding upon

¹⁸ Local Effects of the Wappapello Reservoir, Wayne County, Missouri. Missouri Division of Resources and Development, Jefferson City, Missouri, February 1950, p. 1.

¹⁹ Ibid., p. 36.

a course of action. To them, written documents only legalize or formalize the oral discourse. Rural people have their own standards for determining what is right and what is wrong. They have their own folkways as accepted ways of action and understand only poorly the operation of legal and administrative processes. In addition, rural people have values slightly different from those of urban dwellers. Money means less to the rural person than to the urbanite. Rural persons build their status more on their friends, their length of residence in the community, their character, and other non-monetary elements. As such, many of the values held by rural persons cannot be compensated for by money alone. Destruction of these intangible values, without recognition of their meaning to the local people, has been a source of discontent with federal programs. It is possible that the representatives of the government should have assumed greater responsibility in trying to acquaint themselves with local situations before application of government procedures.

One of the greatest problems that the people had was in securing authentic information about their status with respect to the reservoir program. If the people could have been adequately informed, many of the problems and unfavorable attitudes would have been alleviated. But in the absence of authentic information, rumors spread rapidly. It seems safe to say that nothing would have done more to help the people in their personal adjustment than a well-developed program of education designed to answer the questions that were continually perplexing them. The difficulty of securing information was so great that many of the people concluded

that the government was attempting to take advantage of them. Many concluded that the only concern of the government was for the people in the valley below the dam and that the people above the dam were held in open contempt because they were in the way of progress.²⁰

It is recognized that to deal with each family on an individual basis concerning its many problems is difficult. Rules and regulations have to be made and procedures established to obtain the efficient operation of any program, but if blanket rules and regulations are followed rigidly, some individuals and families are placed in unfortunate circumstances and undue hardships. Unyielding application of blanket rules and procedures give the suggestion that the government is not interested in individuals or small communities.

Good public relations are important both before a decision is reached that a project should be built and during the period of construction and operation once a decision to build has been made. Many cases could be cited which have contributed to bad public relations. To illustrate but a few, there is the surveyor who failed to replace a fence post he had removed to locate a cornerstone; the appraiser who neglected to close gates, and who refused and showed resentment when asked to close them; the engineer who refused to discuss with the owner the reason he was on the place; or the official who displayed arrogance when negotiations were not going to his satisfaction. At first glance, these items may not

²⁰ Ibid., p. 37.

seem important because each affects only one or two people. The sum total of these cases, however, resulted in bad public relations. Each violated a concept of right held by the people. A whole community can turn against a program because of inconsiderate treatment shown to a few members.²¹

If, as was stated in Chapter III, flood control works are instituted for the protection and benefit of the people involved, then certainly the federal government is obligated to institute an acceptable program for the alleviation of damages, tangible and intangible, to those persons adversely affected by the reservoir project. The dislocation of Randolph, Kansas is a striking example of the adverse effects of a federal project.

²¹ Reducing Adverse Effects of Reservoirs, Great Plains Council, Publication No. 6, Agricultural Experiment Station, Kansas State University, Manhattan, Kansas, October 1952, p. 25.

CHAPTER VI
RANDOLPH, KANSAS

Future motorists driving along highways U.S.-77 or K-16 in northern Riley County, Kansas, will see a small town, Randolph, nestled in the hills near the junction of the two highways on the west side of Tuttle Creek Lake. The casual tourist will see Randolph as just another small town baking in the hot Kansas summer sun. Residents from nearby states might remember that Randolph was the focus of local efforts to stop construction of Tuttle Creek Dam during the early 1950's and perhaps wonder why feelings ran so high since the town is obviously located above the shorelines of the lake. Area drivers will probably remember, upon seeing the relative age of the schools, churches, business establishments, and homes, that the town was relocated from its old site on the river valley flood plain that is now occupied by the reservoir waters.

Knowing that Randolph is a new town, the more cognizant viewer might wonder why the business establishments are strung out along the highways instead of being in a central location; why the natural beauty of the site has not been utilized for enhancement of the residential areas through a park system; why the streets were laid out without regard for good traffic flow and proper storm water drainage; and why the schools are to one side of the residential areas without provision for pedestrian ways for the school children.

The explanation for these oversights in town planning is involved and lengthy. Basically it is a result of the local controversies over Tuttle Creek Dam, school redistricting, and town relocation. Some of the residents had been involved in the various controversies for most of their adult lives and eventually succumbed to defeatism in the final relocation process. Randolph had every right to become an ideally planned town at its new site, but many forces, some good but many confused and selfish, were eventually involved in the relocation of the town.

During the bitter controversy over the construction of Tuttle Creek Dam, the residents of Randolph evidently gave little thought to what they would do if they should lose their struggle. They evidently believed that they were right and would finally win the fight against construction of the reservoir. After a two-year layoff due to local success in fighting the project, Congress appropriated \$7,500,000 in 1955 and work was then resumed on the reservoir. With this action it became apparent to many residents that they had lost their long struggle and would soon have to consider moving after purchase of their property by the government.

At this time in 1956 the people of Randolph had several choices of action about their future place of residence. They could elect to move their town to a new site, to move in a group to some nearby town, or to disintegrate their town and individually move away. This was naturally a difficult decision for the people to have to make for their roots were very deep.

Randolph was settled in the late 1850's by Gardiner Randolph and Henry Shellenbaum. The story goes that when conflicting land

claims arose, the land agent in Junction City ruled that the man who first laid down a cabin foundation had prior rights. Randolph, who owned a horse, decided that he could afford to spend the night in Junction City and leave early the next morning. Shellenbaum, who had no horse, walked all night to reach the disputed property, start his cabin foundation at daybreak, and win the hare-and-tortoise race.¹ Gardiner Randolph was a typical town site boomer and laid out two other "paper towns" of which he scattered maps and charts throughout the East, but both were failures.² Randolph was from North Carolina via Illinois and was active in local campaigns to make Kansas a slave state.

From this modest beginning the town of Randolph slowly grew as more settlers arrived in the area; a store was started to handle local needs for dry goods and food staples, and a post office was established for the mail route between Ft. Riley and Marysville. During the 1850's the religious needs of the area were served by circuit riders who made periodic visits from the Manhattan settlement.

In 1866 the Union Pacific Railroad built its line to a terminus at Coon Creek near Randolph. A small settlement that sprang up near this terminus to serve the construction crew was later absorbed into Randolph.³ During this same period a saw and

¹ Kansas City Star, "A Kansas Ghost Town to Vanish Soon," February 25, 1961.

² The Randolph Enterprise, "History of Randolph," September 13, 1906.

³ Loc. cit.

grist mill was built on Fancy Creek and provided a much needed service for the area. Soon after a drug store, a blacksmith shop, a cabinet shop, and a hotel were built in the town. By 1868 the people realized the need for a school and one was built to provide schooling through the sixth grade.

During the 1870's a harness shop, a furniture shop, and a livery stable were added to the business center of the town. Before the end of the decade the town could also boast of a doctor and an attorney. By 1886 the population had grown to 293 and the town leaders decided that the town was ready for incorporation as a third class city.⁴ Having received this official status, Randolph continued its slow but steady growth until by the turn of the century it contained 464 persons.

At this time the town was at its peak in both population and local prosperity. Because of the railroad the town had become a center for the production and shipping of livestock and timber to the east. Randolph contained nearly all the facilities required by local residents. These included two banks, a printing office and newspaper, a real estate and loan office, an insurance office, a doctor, a dentist, a photographer, a telephone station, an express and freight line, a city omnibus service, an undertaking parlor, and two barber shops. The town also had the usual stores and shops with a meat market, a feed store, a produce station, two drug stores, five grocery and dry goods stores, a shoe repair shop, two millinery shops, a furniture store, a billiards hall, two

⁴ Loc. cit.

lumber and hardware stores, two cafes, two hotels, a blacksmith shop, a wagon shop, a livery barn, a grist mill, a livestock shipper and numerous painters, carpenters, and masons. The town had facilities for both grade and high school students. The town leaders had also provided equipment and a bandstand for the local concert band. Randolph appeared to have a good chance for even further growth and prosperity.

During the next several decades Randolph continued as the center of an active local agricultural economy. Area farmers came, first by horse and buggy and then by the horseless carriage, to sell their produce and purchase their necessary services and staples. Randolph continued as a livestock shipping center although the cutting of timber declined and farmers began to produce grain crops to maintain a livelihood. There was some reduction in local trade as area residents began to make periodic trips to the larger cities in the vicinity on the newly constructed hard-surfaced highways.

Then with the start of the depression in the late 1920's, farmers found that they had to sell their livestock at prices lower than the cost of production. This brought about a decline in shipping along with the sale of many area farms. The area economy suffered during the depression along with the rest of the nation. Nevertheless, the two local banks made it through the depression and Randolph continued, on a reduced scale, as the local service and trade center for the people of the lower Blue River valley. Area economy stabilized for a while.

After the war during the 1940's, another period of decline began as the young people, who had been in service and in the war production centers, failed to return. The town soon became a place of older retired people. By 1950 the population had dropped to 351 and the town had become little more than a slowly dying settlement. Randolph still had numerous facilities for serving the area, but little, if any, new development was being undertaken. The town still had two banks, a hotel, three cafes, a newspaper, a real estate and insurance office, a furniture and undertaking establishment, two grocery stores, two hardware stores, an implement store, a drug store, a beauty parlor, a barber shop, a pool hall, a shoe repair shop, a furniture repair store, two garages, four gas stations, a lumberyard, a blacksmith shop, a plumbing shop, a cold storage plant, three churches, a doctor, two grain elevators, and several carpenters and stonemasons. But the newspaper, the Blue Valley News, was soon to stop publication after over 50 years of weekly circulation to area residents. One of the banks, the Citizens State, was considering a move to another city. Other residents and businessmen were ready to leave and get a fresh start elsewhere. This then was the setting for the decision of the residents on how and where they should move when their property was purchased by the government.

In May of 1956 the residents of Randolph decided, by unofficial petition, to turn down all invitations from other towns to move as a body, and to go their own ways when forced to move by the Tuttle Creek reservoir construction. The petition, taken by

Mayor J. Holmstrom, now deceased, was based on local opinion for or against relocation as a group. Several towns, including Blue Rapids and Marysville, had sent delegations to Randolph urging the businessmen and the residents to move to their towns as a group, but the Blue Valley News reported in its last edition in May that there would be no relocation of Randolph as a town.⁵

The petition for the businessmen and property owners was drawn up on May 18, 1956, by the ten-man Randolph Businessmen's Association. All of the businessmen were contacted and voted 100 percent as not being in favor of moving the City of Randolph. The businessmen who signed the petition stated that they did not want to make a living by prying into another town's trade territory and so were not in favor of relocation. Other reasons mentioned were that the high cost of new buildings, in the face of low farm prices and the age of most of the local businessmen, was prohibitive. Nine petitions were also circulated throughout the town's residential districts and the property owners voted 85-1 not to relocate Randolph. There were eight owners who were not contacted. Most residents claimed that they did not want to live in an area where taxes were bound to rise because of the loss of the productive farm land to the reservoir. Others said that they had seen the town of Republican City, Nebraska formed when a large reservoir forced residents to move, and they did not want to live in a town of vacant lots.⁶ This then was the way in which the

⁵ Manhattan Mercury, "Randolphers Vote Not to Relocate the Town," May 24, 1956.

⁶ Loc. cit.

people of Randolph expressed their feelings on the relocation of their town, but they did so in the face of past adversity and after years of fighting a losing battle for their very way of life.

Upon hearing of this decision by the people of Randolph not to relocate the town, the Corps of Engineers then proceeded to acquire only the private property on an individual by individual basis. No provision was made for publicly owned facilities, other than a lump sum salvage value payment to be used for debt retirement. As various individuals received payment for their property, the exodus from the town began.

In the next few years several decisions were made which cast a new light on the probable relocation of Randolph. First, because of the land areas being acquired in the Blue River valley for the pool of the reservoir, the Army Engineers were requested by the various rural school boards to provide replacement facilities. After considerable debate it was decided that the best solution was to replace the many small schools, both grade and high, with a large consolidated school system. There was some disagreement over which side of the reservoir pool the school facilities should be located, but finally the district school board agreed on a western shore site. The new consolidated high school district, Joint District 7, consisted of Garrison, Olsburg, Fostoria, Randolph, and Cleburne with parts of both Riley and Pottawatomie Counties included in it. The Army Engineers agreed in 1959 to provide \$500,000 for the construction of a 40,000 square-foot facility for the accommodation of 150 to 200 students in the future. The grade school district, composed of Randolph and several local

rural grade school systems, was to also receive \$250,000 for the construction of a new consolidated facility to handle an estimated 100 to 125 future students.⁷ A site for the new facilities was selected close to old Randolph and near the proposed future intersection of relocated highways U.S.-77 and K-16. K-16 was to cross the upper portion of the reservoir on a new bridge and thus would provide easy access to the schools for residents of the eastern shore of the reservoir.

Next, the Corps of Engineers released information that nine public use recreational areas would be provided at various locations around the reservoir pool. One of these areas, Fancy Creek, was located near the same highway intersection as the proposed site for the new consolidated school facilities. The area selected for the park is partially wooded and situated on a prominent point overlooking the reservoir pool and the Fancy Creek inlet. Because this inlet would be out of the strong winds from the north and south, it would develop into a popular site for fishermen and vacationers. The Army Engineers stated that they would provide certain facilities such as access roads, sanitary facilities, boat-launching ramps, picnic areas, and camping grounds.

With these two proposals in mind, the remaining residents of Randolph began to consider the possibility of relocation of the town to a site on higher land near the new schools and recreational area. It was felt that with construction of the schools and the

⁷ Manhattan Mercury, "Blue Valley School Dedication," June 25, 1961.

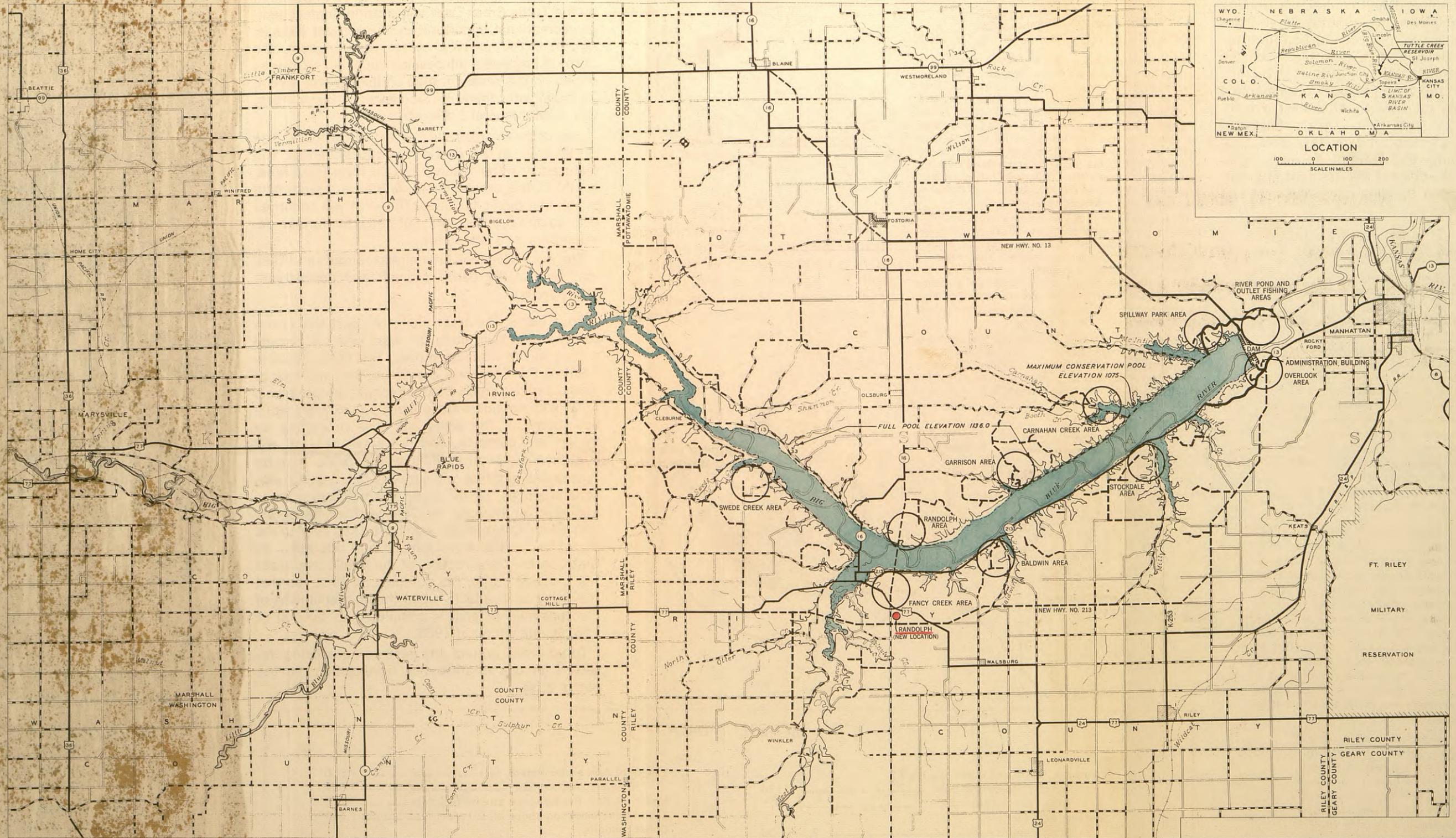
recreational area, there was a good potential for growth of a town located at the intersection of the new relocated highways U.S.-77 and K-16 (Plate XII). A group of local residents then joined together and formed a corporation, the Randolph Annexation Company, for the purpose of acquiring a site for the town. This group raised \$12,000 by individual contributions and purchased an 80-acre site just south of the proposed school site. The group then petitioned the City of Randolph for the annexation of the site pursuant to the General Statutes of Kansas. On March 19, 1959, the City of Randolph, in order to remain intact and to continue to operate as a distinct entity under the existing city charter, annexed the 80-acre tract along with a corridor along highway U.S.-77 connecting the tract to the original town. Concurrently the city council passed a resolution which provided that the official seat of the city government would be moved to the new addition as soon as suitable facilities were constructed.

The Randolph Annexation Company then agreed to prepare a plat of the area, with appropriate public dedications, and to sell lots to any interested purchasers who were or had been landowners in the original City of Randolph or the immediate vicinity. Approximately 80 present and former landowners executed sworn statements of intent to purchase plats in the new addition and made downpayments towards the purchase of lots.⁸ The Corps of Engineers was then notified that the people of Randolph were intent

⁸ City of Randolph vs. United States of America, petition filed by legal counsel in the United States Court of Claims, 1960, p. 8.

EXPLANATION OF PLATE XII

Map of Tuttle Creek Reservoir showing the water pool, the recreation areas, the area road relocations, and the relocated site of Randolph, Kansas. Courtesy of U. S. Army Corps of Engineers Office, Manhattan, Kansas.



LOCATION
SCALE IN MILES
0 100 200

- LEGEND**
- Existing Road, Concrete or Bituminous Surface —————
 - Existing Road, Gravel Surface - - - - -
 - Existing Road, Graded Surface - - - - -
 - Proposed or Under Construction - - - - -
 - Proposed Recreation Areas ○

7000 0 7000 14000 21000
SCALE IN FEET

BIG BLUE RIVER, KANSAS
TUTTLE CREEK RESERVOIR

U. S. ARMY ENGINEER DISTRICT, KANSAS CITY

MAY, 1961

on relocating the town and wished to discuss the possibility of federal assistance for the relocation.

At first the Army Engineers questioned the legal basis for the annexation procedure, but finally concurred that the annexation procedure was legally valid under Kansas Statutes after the legal representative, Mr. George Powers of Wichita, prepared a brief and entered into negotiations with the Corps concerning this point. The Corps then claimed that they were not going to aid in any relocation of the town as the people had voted in 1956 not to relocate and therefore the Corps had proceeded to acquire private property and public facilities on this basis. By this time in early 1959, the Army Engineers had acquired a major portion of the privately owned property in and adjacent to the City of Randolph. It appeared that they wanted to conclude their land acquisition work without becoming involved in any further financial expenditures for acquisition or replacement of public facilities.

The question of whether the City of Randolph had or had not legally decided not to relocate is quite lengthy and can be discussed only briefly in this thesis. Legal counsel for the town has contended in a suit filed against the federal government that no official action concerning such relocation was ever taken, either by election of the voting population of the City of Randolph or by resolution or ordinance of the city council of Randolph. Rather the legal counsel contends that even though Randolph experienced a gradual decline in population due to the acquisition of the private property in and adjacent to the city, it has continued to function and discharge its duties as a municipal corporation and at no time

has ceased to operate or function or in any manner ceased to retain its identity as a corporate entity.⁹

Furthermore, the people of Randolph claim that between 1956 and 1958 various informal discussions concerning the possibility of relocation of the town were held with representatives of the Army Engineers. The people state that during this period they were not advised as to the sites to be used for relocation of the schools and highways by the Army Engineers. The residents feel that it was next to impossible for them to make any decisions on when, how, or where to relocate until they knew exactly where these facilities were to be relocated. They feel that the official decision to relocate to a new site was made when the information on the new sites for the schools and highways became known to them in late 1958 and early 1959. The only information of record of the desire of the people not to relocate as a group was expressed in the unofficial petitions signed in 1956. This particular decision was unofficial and was based primarily on whether to move as a group to another town. The validity of the claim for compensation for relocation or replacement of public facilities remains to be settled in court.

In April of 1959, years after the controversy began, Keith Swenson was notified in the course of his employment by the Riley County Planning Commission that the people of Randolph were considering the relocation of their town. Shortly thereafter Swenson, accompanied by Sheldon Williams, a Kansas State University

⁹ Ibid., p. 6.

planning student, met with the Randolph group to discuss the extent of local efforts towards the relocation of the town. This initial meeting resulted in a request, known to the county planning commission, for aid from personnel at Kansas State University in the relocation process. Later that month the local group, spearheaded by the Randolph Annexation Company, met with Dr. Murlin Hodgell, staff planner in the Division of Engineering and Industrial Services at the university, and Vernon Deines, graduate planning student. It was agreed that Deines and Williams, under the supervision of Dr. Hodgell, would informally work with the Randolph group on preliminary relocation studies.

During May of 1959 periodic meetings were held in Randolph between local representatives and members of the Army Engineers concerning the possibility of governmental assistance in the relocation of Randolph. Mr. Deines and Mr. Williams attended these meetings so as to become acquainted with the background of the relocation situation. In early June the Army Engineers agreed to consider a request from Randolph for federal aid in relocation, but only upon completion and submission of specific legal documents indicating the intent of the residents to relocate, and preparation and submission of a town plan for the new site.

The university planners met with the people of Randolph during the following weeks in June to assist in the preparation of a program of action for possible relocation. Plans for creating a new city planning commission were discussed, and action taken in that regard. The new city planning commission was authorized to make plans and maps of the whole or any part of the city and of any

land immediately adjacent to the city, which in the opinion of the commission bore any relation to the planning of the city, and to make changes in such plans or maps when deemed necessary. The commission was further authorized to accept or employ the aid of qualified persons in the planning and map making, but with any expenses incurred to not exceed the budget of the commission.¹⁰

The members appointed to the commission were:

1. L. Hillstrom, farmer
2. F. Goranson, farmer
3. Dr. G. Atwood, retired physician
4. G. Hohman, postmaster
5. F. Johnson, banker
6. R. Bellman, service station owner
7. D. Hohmberg, mail carrier

During the relocation process the members of the Randolph city council consisted of:

1. E. Weik, automotive mechanic
 2. W. Boles, postal clerk
 3. P. Kimmnitz, grain elevator operator
 4. W. Wherety, service station operator
 5. H. Hedren, feed store clerk
 6. H. Beckman, mayor and grocery store operator
- Ex Officio: R. Boles, city clerk

In addition, the members of the Randolph Annexation Company were quite active in the relocation process. Hillstrom, Atwood, Johnson, Bellman, Weik, W. Boles, Kimmnitz, and Wherety from the planning commission and city council were members of this group, along with H. Bellman, service station owner; B. Cowan, mortuary owner; L. Peterson, druggist; P. Wohler, high school custodian; H. Kunze, farmer; and E. Hemphill, realtor.

¹⁰ The legal notice for the city planning commission was published in The Riley Countian on August 27, 1959, as City Planning and Zoning Ordinance 795.

Through joint action of these various groups it was agreed to retain an engineering consultant to prepare a topographic map of the Southwest Addition and to conduct engineering studies on street layout, water supply, sewage disposal, and lot layout. The university planners were to continue their assistance to the City of Randolph on an advisory planning basis. The city council then retained the firm of Bartlett and West from Topeka for the engineering work on the planning studies.

After completion of the topographic map of the area, the engineering consultants met with the university planners to discuss general elements of the relocation studies. These two groups agreed to work closely together in the preparation of a tentative town plan to be submitted to the Army Engineers. During July several conferences were held between the engineers and the planners to work out various details, and a physical layout was completed near the end of the month. This layout included considerations for proper lot design with provisions for drainage, street access, lot size, and utilities layout; integration of traffic patterns for controlled intersections, storm water drainage, and provision for pedestrian movement to shops and schools; inter-related design of residential neighborhoods to public and semi-public facilities with provision of pedestrianways and parking facilities; integration of a park system, utilizing the natural features of the site with the town center and residential areas; provision for natural drainage of sewage disposal to a central disposal plant and gravity flow for water supply from a centrally located tower supplied by pumps from available wells in the area;

and long range provision for future additions to expand from the existing street connections onto surrounding land (Plate XIII).

Frequent meetings were held with personnel of the Army Engineers during July to acquaint them with progress on the studies and to adhere to any technical or legal procedures required by the federal government for the consideration of relocation aid. The legal representative for the town had collected the documents of intent to relocate by the residents of Randolph. Some 80 former and present property owners had executed sworn statements and presented personal drafts for downpayment of the purchase price of plats in the Southwest Addition.

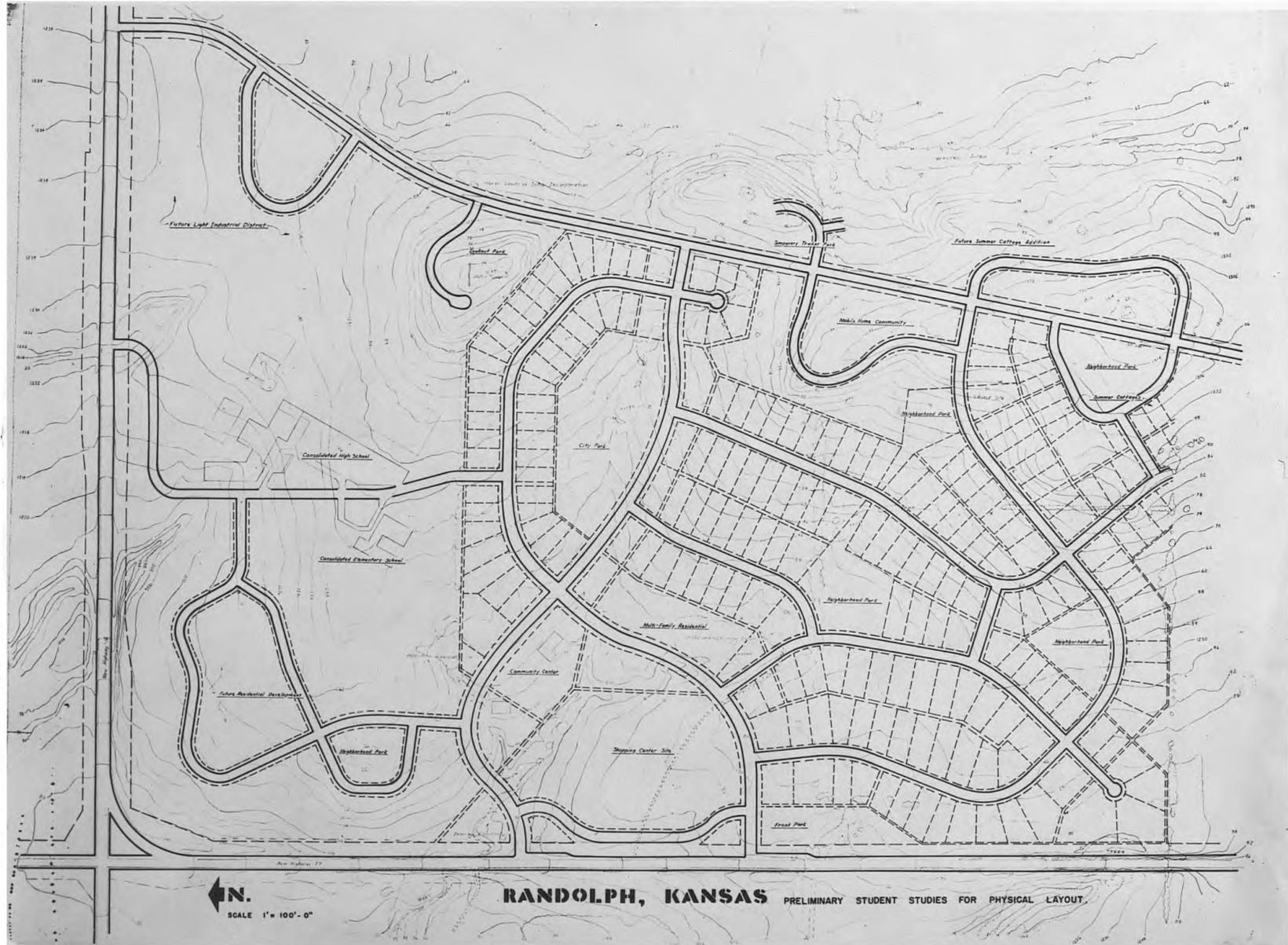
In early August the tentative plan and the legal documents were presented to the Randolph city planning commission and city council for approval. After final approval by the governing body of the city, these items were given to the city clerk to process and mail to the Corps of Engineers for consideration of federal financial assistance in relocation of the town.

At this point a local controversy arose between residents of Randolph over the submission of the approved preliminary town plan. The town clerk, Richard Boles, who had held office for over 35 years, had prepared another relocation plan. This had been done without the knowledge of the other townspeople and presented at the same meeting where the above-mentioned studies were approved. At that time no one seriously considered the clerk's alternate plan, but he later refused to process the officially approved relocation plan and insisted that the other citizens accept his version.

EXPLANATION OF PLATE XIII

Photograph of student study of physical layout for new site of
Randolph, Kansas. Courtesy of Department of Architecture, Kansas State
University, Manhattan, Kansas.

PLATE XIII



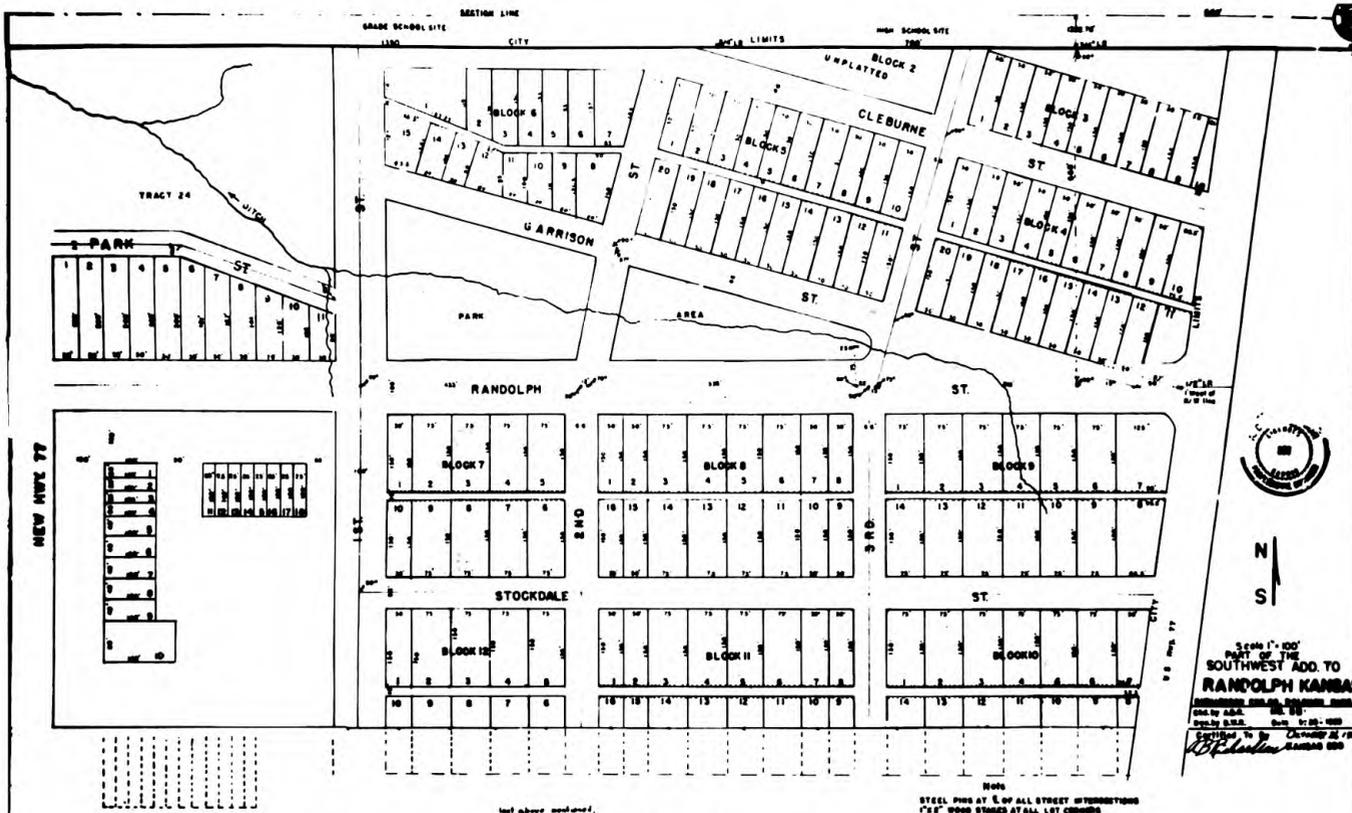
His plan appeared to have been prepared without consideration of the area topography, which was quite hilly and contained numerous streams and ponds. Onto this irregular site he had superimposed a modified grid street system with the major axis running east to west. To circumvent the largest stream, which runs in a westerly direction, he had two major streets placed on either side of the stream. Because of the topography, these major streets intersected near the end of the stream with two minor streets, thus creating a problem in traffic flow and safety. The modified grid street system was not only an error in site planning, but also neglected the needs of rainfall drainage, gravity water supply and sewage disposal, and access to streets in the residential areas. There were other minor errors and examples of poor design inherent in this plan in addition to the major problems cited (Plate XIV).

The clerk was initially supported in his stand by only one other person, Mayor Harry Beckman, but they eventually succeeded in persuading the rest of the members of the city council, the city planning commission, and the Randolph Annexation Company to go along with this substitute plan. Although all of those persons in responsible positions did not concur in the subsequent acceptance of the alternate plan, the majority of the city council agreed to do so in individual discussions. The legal documents and the substitute plan were then processed and mailed to the Army Engineers for submission to the Chief of Engineers in Washington for consideration for federal financial assistance in the relocation of the town.

EXPLANATION OF PLATE XIV

Photograph of legal plat prepared by Randolph city clerk and consulting engineer showing the substitute physical layout used for the new site of Randolph, Kansas. Courtesy of Illustrations Department, Kansas State University, Manhattan, Kansas.

PLATE XIV



Scale 1" = 50'
 PART OF THE
RANDOLPH ADD. TO
 SOUTHWEST ADD. TO
 RANDOLPH KANSAS
 Surveyed by *[Signature]*
 Approved by *[Signature]*
 Recorded at *[Signature]*

DESCRIPTION
 The first part of the Southwest Quarter (SW 1/4) of Section Twenty One (21), Township One South (17T), Range 10 West (10R) of the 23rd P.M. 23rd M.E. Meridian, Kansas, as shown on a certified map and as recorded in Book 100 of the Public Records of the County of Riley, Kansas, is hereby divided into 12 blocks, each containing 12 lots, as shown on this plat, and the same are hereby designated as follows: Block 1, Block 2, Block 3, Block 4, Block 5, Block 6, Block 7, Block 8, Block 9, Block 10, Block 11, and Block 12. The total area of the above described land is 60.00 acres (more or less) lying all west of Highway 1.

(cont) *[Signature]* *[Signature]*
 Term Expires July 30 19 63

STATE OF KANSAS } ss.
 COUNTY OF RILEY }

I, the undersigned, being a duly qualified and sworn notary public in and for the County of Riley, State of Kansas, do hereby certify that the above described land is the property of the State of Kansas, and that the same is hereby divided into 12 blocks, each containing 12 lots, as shown on this plat, and the same are hereby designated as follows: Block 1, Block 2, Block 3, Block 4, Block 5, Block 6, Block 7, Block 8, Block 9, Block 10, Block 11, and Block 12. The total area of the above described land is 60.00 acres (more or less) lying all west of Highway 1.

Witness my hand and the seal of my office this 15th day of November, 1957.

[Signature]
 Notary Public

Approved by Riley County Planning Commission
[Signature]
[Signature]
[Signature]
[Signature]
[Signature]

State of Kansas
 County of Riley

The undersigned, being a duly qualified and sworn notary public in and for the County of Riley, State of Kansas, do hereby certify that the above described land is the property of the State of Kansas, and that the same is hereby divided into 12 blocks, each containing 12 lots, as shown on this plat, and the same are hereby designated as follows: Block 1, Block 2, Block 3, Block 4, Block 5, Block 6, Block 7, Block 8, Block 9, Block 10, Block 11, and Block 12. The total area of the above described land is 60.00 acres (more or less) lying all west of Highway 1.

Witness my hand and the seal of my office this 15th day of November, 1957.

[Signature]
 Notary Public

Approved
 City of Randolph, Randolph, Kansas
 By *[Signature]* Mayor
 Attest: *[Signature]* City Clerk

Approved by Riley County Commissioners
[Signature]
[Signature]
[Signature]
[Signature]

Notary Public in and for the County of Riley, Kansas
[Signature]
 Notary Public

STATE OF KANSAS, RILEY COUNTY, SS.
 I, the undersigned, being a duly qualified and sworn notary public in and for the County of Riley, State of Kansas, do hereby certify that the above described land is the property of the State of Kansas, and that the same is hereby divided into 12 blocks, each containing 12 lots, as shown on this plat, and the same are hereby designated as follows: Block 1, Block 2, Block 3, Block 4, Block 5, Block 6, Block 7, Block 8, Block 9, Block 10, Block 11, and Block 12. The total area of the above described land is 60.00 acres (more or less) lying all west of Highway 1.

Witness my hand and the seal of my office this 15th day of November, 1957.

[Signature]
 Notary Public

It is believed that the other persons involved accepted the substitute plan in order to avoid further delay in the submission of the legal documents and plan to the Army Engineers. The majority of the local group were only vaguely aware of the desirable features of the original plan as opposed to the incompetency of the substitute plan, otherwise they would have rejected any consideration of the clerk's plan.

Personnel from the university continued their work on various phases of the work as an exercise in university planning classes. These phases included shopping center studies, a park plan, a three-dimensional study model of the physical plan, and survey reports of resort and recreational potential in the area (Plate XV). This material was later used in the annual state planning conference display held at the university in October.

In late August, representatives of the City of Randolph, spearheaded by the city clerk and mayor, retained the Richardson Engineering Company of Solomon to prepare a legal plat of the substitute plan and to survey and stake out the streets and lots in the Southwest Addition. Mr. Richardson, owner of the engineering firm, is registered as an electrical engineer although he has engaged in land survey and plat preparation work.

The Roggendorf Construction Company of Manhattan was then hired to construct the streets and grade the lots. In the course of the construction work, the city clerk got into a disagreement with the job foreman over the use of the road construction equipment. The clerk felt that a farm tractor and plow could be used just as well for the work with a savings in cost. The job foreman

EXPLANATION OF PLATE XV

Photograph of student design of a proposed shopping center for the new site of Randolph, Kansas. Courtesy of Department of Architecture, Kansas State University, Manhattan, Kansas.

PLATE XV

A SHOPPING CENTER FOR RANDOLPH, KANSAS

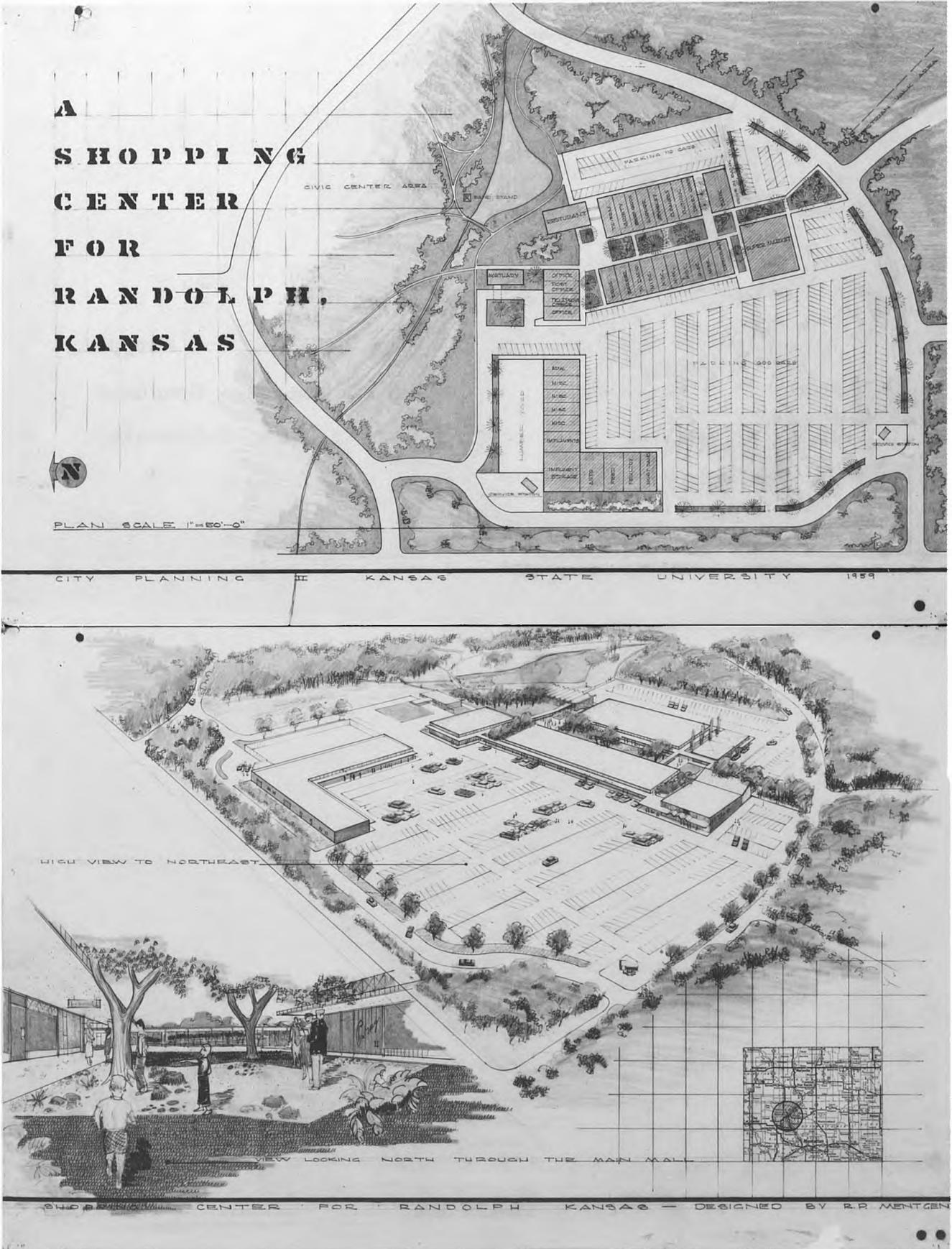
PLAN SCALE: 1"=60'-0"

CITY PLANNING II KANSAS STATE UNIVERSITY 1959

HIGH VIEW TO NORTHEAST

VIEW LOOKING NORTH THROUGH THE MAIN MALL

SHOPPING CENTER FOR RANDOLPH, KANSAS - DESIGNED BY R.R. MENTGEN



threatened to quit, but other members of the local group persuaded him to remain on the job and complete the work as originally planned with standard road equipment.

At the next city council meeting in September, the clerk and his wife, a local telephone operator, denounced one of the council members, Mr. E. Weik, for his part in retaining the Roggendorf firm to complete the grading work. They felt that considerable money could have been saved by using local men on farm machinery for this work instead of using construction workers on standard road equipment. The rest of the city council and other local persons present resisted the clerk and his wife on this point and requested them to avoid any further argument.

Throughout the remainder of 1959, the Army Engineers made various requests of the City of Randolph regarding evidence desired prior to the rendering of a final decision as to whether the Corps would voluntarily participate in and assist in the relocation of the town. Although each and every such request and demand was complied with and despite repeated promises by Corps officials that a decision would be made by November of 1959, the City of Randolph was not notified until February 17, 1960, that the Corps of Engineers would not voluntarily participate. Instead they again offered salvage value compensation of \$26,400 for the local swimming pool, the water treatment plant and distribution system, the city building, and the city park with a bandstand.¹¹

¹¹ Ibid. City of Randolph vs. United States of America, p. 9.

Since this salvage value offer was disproportionate to the estimated cost of replacement and relocation of public facilities, the town made its final counter offer to the Army Engineers in an attempt to settle the matter (Plate XVI). This counter offer for market value compensation of public facilities was not met and consequently expired on April 1, 1960. At that time, Col. L. E. Laurion of the Army Engineers advised the people of Randolph that the counter offer had been rejected by the government.¹²

The city council then instructed their legal counsel, Mr. George Powers of Wichita, to initiate a lawsuit against the government in the U.S. Court of Claims for \$500,000 in compensation for the public facilities. The contention of the lawsuit is that by the taking of the city property and facilities by the government, it will become necessary for the City of Randolph to replace and duplicate most, if not all, of the facilities in the Southwest Addition after the reservoir pool is filled with water.¹³

Upon the completion of street grading and lot layout work by the Roggendorf Construction Company in September of 1959, several residents then moved their homes from old Randolph or built new homes on their lots in the Southwest Addition. Most of the other residents were planning to move to the new site with the advent of warmer weather in the spring of 1960.

After a winter of heavy snow and early spring rains, the Army Engineers deemed it necessary to impound water behind Tuttle Creek

¹² Loc. cit.

¹³ Ibid., p. 11.

EXPLANATION OF PLAGE XVI

Photographs of old Randolph, Kansas during
the period of relocation from 1959 to 1961.

Fig. 1 - View looking northeast from
Highway U.S.-77.

Fig. 2 - View of high school.

Fig. 3 - View of business district.

Fig. 4 - View of town square park with
bandstand.

PLATE XVI



Fig. 1



Fig. 2



Fig. 3



Fig. 4

Dam so as to avoid flooding downriver in the larger urban areas. By March 31, 1960, the water level in the reservoir reached old Randolph and forced the remaining people hurriedly to evacuate their houses to higher ground. For those with houses still on the original site this caused an unnecessary financial expenditure for overtime pay to house-moving crews. After the flood waters subsided, the remaining residents then moved their houses to the Southwest Addition to the lots that they had earlier purchased.

During the remainder of 1960 the people of Randolph continued the work of establishing their homes, jobs, and community-wide activities in the new location of their town. Construction of a new \$80,000 Methodist church was started in early July and completed by the end of the year. A number of attempts were undertaken to drill a satisfactory well to supply water to the two schools. After considerable difficulty in locating a source that would meet state standards for school water supply, a successful well was finally obtained. Construction work on the two schools, which had begun in the fall of 1959, was completed just before the end of the year (Plate XVII). Classes were first taught in the new facilities during the second semester of the 1960-61 school year.

The development of commercial establishments during 1960 did not occur at the same level as residential and public developments. Only two businesses were started during the year with the construction of a service station and a combined cafe and beer tavern on old highway U.S.-77 outside the city limits (Plate XVIII).

EXPLANATION OF PLATE XVII

Photos of new school and church facilities at
the new site of Randolph, Kansas.

Fig. 1 - View looking northeast at Methodist
Church.

Fig. 2 - View looking northwest at grade school.

Fig. 3 - View looking southwest at high school.

Fig. 4 - View looking west at high school.

PLATE XVII



Fig. 1



Fig. 2



Fig. 3



Fig. 4

EXPLANATION OF PLATE XVIII

Photographs of new site of Randolph, Kansas,
during 1960-1961.

- Fig. 1 - View of cafe and beer tavern located
on old Highway U.S.-77 looking north.
- Fig. 2 - View of service station located on
old Highway U.S.-77 looking north.
- Fig. 3 - View looking southwest towards site
of proposed business district near
relocated Highway U.S.-77.
- Fig. 4 - View looking northeast on Garrison
Street showing extent of street fill
required.

PLATE XVIII



Fig. 1



Fig. 2



Fig. 3



Fig. 4

Both of these businesses relied heavily on trade from the construction workers in the area. In all there were two bridge projects, three building projects, and several road construction projects within a few miles of the relocated townsite.

With the advent of 1961, building construction slowed to a mild pace in the town. One local businessman purchased a plat in the business district and constructed an automotive and implement repair and service shop. The bulk of the work for this shop in 1961 was based on a contract to service and repair the eleven busses of the consolidated schools in the town. By the summer of the year several more houses had been built and foundations poured for the placement of a few remodeled houses.

In April of 1961, R. Bellman was elected mayor and Boles, the city clerk, was fired. The new mayor appointed the wife of Mr. F. Weik to serve as city clerk. The present mayor stated that he fired the old city clerk for several reasons. First, the clerk was still drawing from \$200 to \$300 a month salary even though there was little city work to be transacted. Second, he had an accident early in the year while driving the city truck without auto insurance coverage. This later cost the city \$500 in damages for the other vehicle. Third, the clerk had failed to process the necessary papers to establish a mill levy for the retirement of \$5,000 bonded indebtedness still outstanding against the town. Therefore, when \$1,000 became due in early 1961, the city officials had to sell the city truck and use the remaining meager city funds to pay this note.

In June of the year, the members of the Randolph Annexation Company decided to purchase 40 acres of land adjacent to the south of the city limits. This land was acquired for a \$4,000 down-payment with \$5,000 to be paid in the future. With the city funds sadly depleted and the assessed valuation of real property set at \$45,000, the town is not in a good position at the present to start the construction of needed street improvements, let alone pay off the existing debt of \$4,000. Although the Randolph Annexation Company is planning on improving the business district to attract new firms, this step will be hampered by the inability of the city to provide the necessary improvements required to bring in commercial development on any scale.

The current status of the town, as of this writing, is that all former residents of old Randolph have either relocated to the Southwest Addition or moved away from the area. Of the 135 families living in Randolph in 1956, 17 families moved to or near the new site. Of the remainder, 27 families moved to Manhattan, 18 to Waterville, 16 to Leonardville, and 10 to Clay Center. From one to four families moved to some 20 other towns and five other states. There are now 17 homes, 6 new and 11 relocated, 2 schools, 1 church and 3 commercial establishments, a service station, a cafe and beer tavern, and an automotive service and repair garage in the town. Of the 17 homes, only 11 are now occupied and the population, as of this writing, is about 50 persons. The Manhattan realtor in charge of selling plats has stated that 12 other persons have purchased one or more plats in the town and eventually intend

to build a home and live there. The only proposed business development at this time is for the construction of a service station in the business district near relocated highway U.S.-77.

This then represents the extent of progress at this time in the relocation of the City of Randolph. The question now is whether the relocation of the town was successful or merely a futile effort to extend the life of the town. Only time can produce a full answer to this question. Nevertheless, it is pertinent to determine what might have been if the relocation had been done in a more acceptable fashion.

Certainly, the ultimate responsibility for the proper relocation of the town should be charged to the Corps of Engineers. Because of the construction of the flood control reservoir, the Army Engineers forced the people of the area to be displaced. Regardless of the argument over whether or not the people of Randolph voted in 1956 not to relocate, the Corps certainly did no more than it felt necessary to help the people in their decision. Rather, from statements of various residents, the Corps did more to confuse and mislead the people than it did to aid them in making a logical decision on how, where, and when to move when forced out by the reservoir project.

Part of this attitude of the Corps can be traced to the long and bitter fight with the local people over the construction of the reservoir in the first place. More important though is the method used by the Army Engineers to obtain funds for construction projects. Where the Department of Agriculture gets support directly

from the grass roots level in its requests to Congress for annual appropriations, the Corps of Engineers gains its support for project appropriations directly through negotiation with individual members of Congress on a political spoils system approach. This results in a loss of feeling and consideration for the people down at the grass roots level where federal projects most directly affect individuals and local communities.

Where the individual can directly influence policies and practices of the Department of Agriculture through local farm groups, he can only indirectly indicate his feelings and convictions on programs and projects of the Army Engineers to his congressional representatives, who are beset by many diverse and often conflicting opinions from their constituents.

On the local level, the people of Randolph were certainly working with a handicap because of the actions of the city clerk. It was later determined from local sources that the city clerk apparently acted as he did so that he could take some credit for the building of a new town. It seemed that his father had been one of the founding fathers of the town of Chapman and evidently the son wanted to have recognition for a similar deed by the relocation of Randolph. The reason for the support of the clerk by the former mayor is less evident, although it is felt that the clerk used the weight of his 35 odd years in office to force the support of the relatively inexperienced mayor.

The clerk not only sought a certain amount of personal status as the official decision maker in the town, but he also felt that he was entitled to certain special privileges. For example, when

he prepared to purchase four lots, two on either side of the alley, he asked the city council to vacate the alley so his land would be continuous. The city officials refused to do this and the city clerk then acquired a site outside of the town and later told people that he had been refused a site in the town.

The clerk certainly had a base of power in the community because of his long familiarity with local legal and governmental affairs. This was intensified by the informal knowledge he had of outside communication to members of the community through his brother in the post office and his wife in the local telephone exchange. The old city clerk may have felt that he not only was the only person qualified to make decisions for the community, but that because of his long tenure in office it was his just due to direct community effort.

Nevertheless, his efforts did irreparable harm to the efforts of the people to gain federal aid in relocation of the town. Even though the townspeople finally fired the clerk from his job, it was too late to rectify his past actions that contributed to the loss of federal aid to an extent and, more important, to the loss of a town plan that would have placed Randolph in a stronger position for the attraction of business, industry, and residential development.

Randolph had every chance of becoming an ideally planned town at the location selected. With the construction of the two new schools with federal funds, the town was in the enviable position of having these new facilities without a financial obligation. More important though, had the town received federal aid in

relocation, the town would also have had new streets and sidewalks, a modern water supply and treatment system, a park with swimming pool and bandstand, and a new city building; all without any financial outlay by the town. This would have been very attractive to anyone considering Randolph as a place in which to work and live. The only public facility that the town would have lacked was a sewage disposal system and plant. In view of having all the other needed elements free and clear, this one utility would not have been difficult to acquire, especially with the growth potential the town would have had.

In addition to the cited physical and financial advantages that the town could have had, the factor of proper town planning is even more important. The potential for future growth in a desirable manner is based on having proper site layout, good traffic flow and access to highways, an attractive and convenient shopping center, and provision for orderly future expansion (Plate XIX). All of these assets derivable from comprehensive planning would have certainly given the town every chance for a healthy life.

Although the town is located at the intersection of two newly constructed highways affording access via a new bridge to the proposed eastern shore site of the Grasslands National Park, it is questionable if it will attract much trade from tourists, because the present condition of the town has little to offer for the location of tourist type businesses. It is to be expected that some trade will be generated from people using the facilities of the Fancy Creek recreational area just north of the town. But this

EXPLANATION OF PLATE XIX

Comparison of original and substitute schemes for the physical layout of Randolph, Kansas, at the new site.

Fig. 1 - Air photo looking east at actual layout of Randolph, Kansas, based on substitute scheme prepared by city clerk.

Fig. 2.- Photograph of three-dimensional study model of physical layout of Randolph, Kansas, prepared by students in planning classes at Kansas State University.

PLATE XIX



Fig. 1



Fig. 2

probably will be limited to gasoline sales and some cafe and beer service sales. Because of the present financial condition of the town, it will be some time before public and commercial facilities can be obtained that will make Randolph attractive to general tourist trade or resort development. By that time, Randolph will probably have been long passed by as a location for tourist and resort development.

Randolph is by no means an isolated example of a town being forced to relocate because of some outside factor. Towns have been relocated in the past for many reasons. These include the construction of water and land resource development projects, the development of military installations, and the hazards of the natural elements of floods, volcanoes, and glaciers.

The procedures and results involved in other relocations are as varied as the number of cases to be cited. The process and status of the relocation of Randolph can best be evaluated by the investigation of other town relocations due to water resource projects.

CHAPTER VII

OTHER TOWN RELOCATIONS

Examples of other relocations of towns due to reservoir flood control or other water development projects are many and varied. The majority of cases has occurred in federal programs, although examples have resulted due to local public utility projects. The majority of these cases has occurred in the past 30 years, roughly paralleling the national trend towards centralization of water development projects through the integration of basin-wide programs.

When the federal government initiated its national flood control program during the late 1930's, the inclusion of the project at Franklin Falls, New Hampshire, doomed the town of Hill, a community of 350 people. Although it would have been easier to disintegrate, the people of Hill decided to relocate their town and on March 12, 1940, they voted 74 to 4 in favor of acquiring and developing a new townsite. First, a new public layout for the town common and public buildings was assigned to the village selectmen to be done by town action. Second, a plan for the development of private homes and businesses was assigned to a voluntary non-profit group, The Hill Village Improvement Association, for completion.¹

These groups met with representatives of the State Planning Commission and received professional aid in the selection of a site and the preparation of a town plan. This town plan was based

¹ Benton MacKaye, "Democracy in Flood Control," Survey Graphic, September 1940, p. 468.

on three precepts; easy access to the market place; retention of the character of the old New England village; and provision so school children would cross no highway traffic. The specific uniqueness of this town relocation is that the residents took immediate action upon learning of the reservoir project and sought the help of trained planners for site selection and plan preparation.

The initiation of integrated river basin development with the establishment of the Tennessee Valley Authority in 1933 had many effects on area residents. Roads, houses, barns, railroads, telephone lines, and graveyards, everything below the future water line, had to be destroyed or moved. Families had to be moved to higher ground, often unfortunately, against their will. TVA even had to undertake the replanning of towns, and occasionally, even had the responsibility of relocating whole communities. Because of the breadth of the underlying purpose, towns were not simply paid money damages for streets and utilities that would be inundated by the waters of the reservoirs and thereupon marked off the list of "headaches."²

What happened to the little City of Guntersville in northern Alabama is an instance. The backwaters of Guntersville Dam would cover a number of streets and utilities in the business section of this cotton-farmer trading center. A considerable readjustment of the public facilities and business life of the community was inevitable. It was not easy for the city to face the change, but

² David E. Lilenthal, TVA-Democracy on the March. Pocket Books, Inc., New York City, New York, January 1945, p. 72.

long before the waters rose, TVA planning technicians were consulting with city and state officials. Out of this consultation came a Guntersville City Planning Commission and a zoning ordinance, the first in that part of the state. Later a subdivision regulation and a major street plan were completed. The deep waterfront at the city's center made Guntersville a port through which today large tonnages of freight pass. Under the town's new plan, the industrial uses of the waterfront are separated from the recreational uses, and this city, extending in a long peninsula into the broad blue waters of Guntersville Lake, is today one of the most attractive towns in Alabama.³

Although Guntersville is not a true example of a relocated town, it does represent a good example of a town adversely affected by a reservoir project that has benefited in the long run. This has occurred because outside help was provided to the town in developing proper planning and zoning procedures.

While the Bureau of Reclamation was studying plans and data for the Army Engineers' Cove Creek project in the Tennessee Valley during the 1930's, the TVA Board of Directors issued orders for the construction of a permanent village, Norris, near the proposed damsite. The small staff of the Land Planning and Housing Division of TVA was given the task of planning and designing the village in as short a time as was possible. Thus, in one month the group produced a plan for the town which was to be located about three miles from the construction site of the dam. The planners

³ Loc. cit.

settled on a plan to include 294 houses, 9 duplexes, and 5 six-unit apartment buildings.⁴ The plan offered several desirable features including a belt of public park land around the residential area; variable angle location of the houses to make the best use of sun, breeze, and view; a public common with the public buildings and school on one side and houses on the other sides; and a street pattern based on the site topography with only three major intersections on the main thoroughfare, Norris Road.

In 1948, the entire town was sold by the government to a private company for about \$2,000,000; and then resold to the residents, who now own all of the properties. Norris has grown some in size since the original plan and has now incorporated, but it still preserves its quiet, undisturbed suburban character.⁵ Norris is not actually a case of a relocated town, but a new town. Nevertheless, it was constructed because of a reservoir project and is mentioned here because of the federal aid provided in the planning of the town. The character of the residents differs quite radically from that found in most relocated towns in that they were new people and not local rural persons. It has never developed an economic base as a substitute for the original construction work, and today about half of its workers commute to Oak Ridge or other places for employment.

The development of the Wappapello Reservoir in Wayne County, Missouri, in 1938 by the Corps of Engineers made it necessary not

⁴ J. H. Kyle, The Building of TVA-An Illustrated History. Louisiana State University Press, Baton Rouge, Louisiana, 1958, p. 16.

⁵ Ibid., p. 18.

only for the farm people to move but also the residents of Greenville, a small town of 572 persons almost completely within the reservoir area. Although construction of the dam was started in 1938, many of the people were convinced that it would never be completed. By 1939 it finally became evident that the dam was going to become a reality. The people in the old town of Greenville began to look about for new places to live. Some chose to move completely away from the area. Others, in business, preferred to stay in or near the familiar area rather than attempt to start in places already served by existing establishments.⁶

Frequent public meetings were held for discussion of the problem. A Citizens Committee was formed which wrote Governor L. C. Stark for assistance in relocating their town. Stark requested the Director of the State Planning Board to study the relocation of the town. On April 19, 1939, the staff of the planning board was authorized to cooperate with the Citizens Committee of Greenville in preparing a plan for relocation. The National Resources Committee was asked to assist by providing planning consultation.⁷

The local group made inspections of all the possible sites in the area and after much inspection and discussion a site was selected and approved by the citizens at a mass meeting. The town site selected did not meet with the approval of all the residents, however, and eventually the dissatisfied group selected a second site which they named Kailville.

⁶ Local Effects of the Wappapello Reservoir, Wayne County, Missouri. Missouri Division of Resources and Development, Jefferson City, Missouri, February 1950, p. 46.

⁷ Ibid., p. 47.

In order to manage and finance the building of New Greenville, a non-profit corporation was formed. The Greenville Improvement Corporation obtained a state charter and was capitalized for \$2,000 by subscription of 36 people to operate legally as a non-profit organization with the purpose of building the new town. The corporation proceeded to acquire the new town site and to develop it according to a plan prepared by the Missouri State Planning Board. The Corps of Engineers surveyed the site, marked off lots and streets, and made an official plat map of the town. The corporation employed a director of operations to handle publicity and the technical problems associated with relocation of the town. Plans included paved streets, sidewalks in front of every house, an adequate drainage system, a public water supply and sewage disposal systems. The corporation donated lots for the county courthouse and the three churches already in Greenville.

The relocation of the courthouse became a controversial issue. Had it been impossible to retain the courthouse, it is questionable whether relocation of the town would have been attempted. Local residents were anxious to have the town relocated in such a way that would make it possible to keep its name and its status as the county seat. To avoid the chance of losing its county seat status, Greenville extended its city limits to include the site selected for new Greenville. The county court then ordered a new building constructed on the site located within the present city limits of Greenville. The old court house was purchased for \$70,000, and \$10,000 used for bond retirement. The balance was used to pay the sponsor's share of the W.P.A. project for

construction of the new courthouse.⁸

The local school board received over \$80,000 for its properties and purchased a site in the new town. Another W.P.A. project was used to build the new combined grade and high school with the board paying some \$60,000 sponsor's cost on the project and \$14,000 for bond retirement. The school building was left incomplete because of curtailment of the W.P.A. program.

Greenville would seem to be an excellent example of town relocation in that all levels of government from the local county government to the federal National Resources Committee were involved at various stages of the planning and construction. Nevertheless it is interesting to note that many of the plans for public improvements never materialized either because of lack of money or public support of the projects. Planning without coordination can also result in a community with inadequate facilities.

One of the major elements in the development of the St. Lawrence Seaway after World War II was the construction of power generation facilities for use by both Canadian and United States interests. The site selected for the installation was on the Long Sault Rapids near Iroquois Point on the Canadian side of the river. To make a power pool where the Long Sault Rapids flowed would flood 18,000 acres on the American side of the river and displace more than 200 farms and 600 small homes. On the Canadian side the flooding would be even more disrupting, for canals had brought St. Lawrence commerce along the north shore. Three towns,

⁸ Ibid., p. 54.

four villages, over 200 farms, 40 miles of railroad, and some 35 miles of highway had to be moved to build the projected pool that was planned to be more than 30 miles long and one to four miles wide.⁹

The Hydro-Electric Power Commission of Ontario, Ontario Hydro for short, began their task early. As soon as plans for the seaway were assured in 1951 and the power project seemed likely, representatives carrying maps visited every family, every business, school, and church that would be affected. The project was explained and then a question asked. "Will you help?" Will you move back from the river three or four miles? We will build you a new house or move your present home."¹⁰ The cost of either plan chosen was to be paid jointly by Ontario Hydro and the Power Authority of the State of New York, which was assisting in construction of the new power project.

This was not an easy decision to make. People had lived for years by the river; their living and their neighbors were there. They were told that the highway would be moved back and that a modern town with a shopping center would be built back from the river. The young people welcomed the excitement of change and the older people, though reluctant, went along with the move. Ingle-side, Morrisburg, Iroquois, and four villages agreed to move.

Sites were selected in the newly laid out area back on higher ground. Plans were made and approved. Over 500 houses were moved

⁹ Clara Ingram Judson, St. Lawrence Seaway. Follet Publishing Company, Chicago, Illinois, 1959, p. 106.

¹⁰ Ibid., p. 107.

and hundreds more were built, complete with electricity, telephones, and water service. Gardens were quickly planted and families resumed normal living after only a few days of moving from the old towns.

The relocation of these towns in the St. Lawrence Seaway project is important from the fact that non-governmental agencies were involved in the planning and construction of the relocated towns. The understanding of individual needs and desires, as expressed in the 100 percent contact of persons involved by the companies, is an example that federal agencies involved in reservoir development projects could well benefit from. Another important feature is the completeness and speed with which the people and their property were relocated. When people are inconvenienced by a project of this nature, they expect and deserve prompt, courteous attention.

In 1956 the Denver Water Board approved a plan for the development of a large reservoir storing water from the Blue River and adjoining tributaries in the vicinity of Dillon, Colorado. When the exact location of the dam was apparent, it was determined that the existing town of Dillon would need to be relocated. One of the key factors in planning the new town was that of state and U.S. highway relocation. While desirable development of the town could not take place in a strip area along a major highway, it was necessary to locate the community with convenient access to highway routes. The town will be located on Dillon Reservoir approximately two hours driving time west of Denver. Dillon promises to be one of the state's finest recreational centers with fishing,

hunting, boating, swimming, and skiing in the area. The town will provide for a permanent population of 800 and a peak tourist population of about 2000.¹¹ It remains to be seen how well the town of Dillon will grow, but it is encouraging to see a well planned town being considered in connection with the construction of a water supply reservoir (Plate XX).

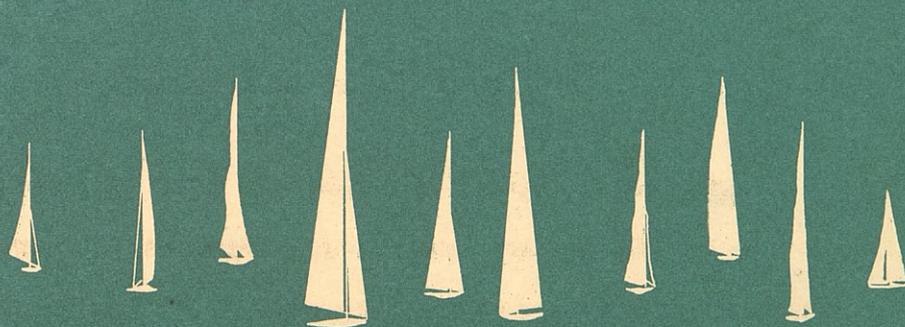
In order to benefit future town relocations, it is pertinent that the nature and scope of town relocation be determined so that general policies and procedures may be established.

¹¹ Dillon, Colorado. A brochure prepared by Trafton Bean and Associates, Planning Consultants, Boulder, Colorado, 1961.

EXPLANATION OF PLATE XX

Brochure plan for town of Dillon, Colorado.
A town relocation due to the Denver, Colorado
water supply project. Courtesy of Trafton Bean
and Associates, Planning Consultants, Boulder,
Colorado.

PLATE XX



THE FINEST NEW RESORT TOWN IN THE WEST

DILLON



Reservoir approximately two
west of Denver, the town of
promises to be one of the
tional centers. In addition
hunting, and skiing areas
four and one half square
offer excellent new oppor-
shing, boating, and swim-
pletely planned town is on
hillside, overlooking the
Mountain Range. Thus
mining and forestry, and
a service community, the
now develop with the very
esort accommodations.

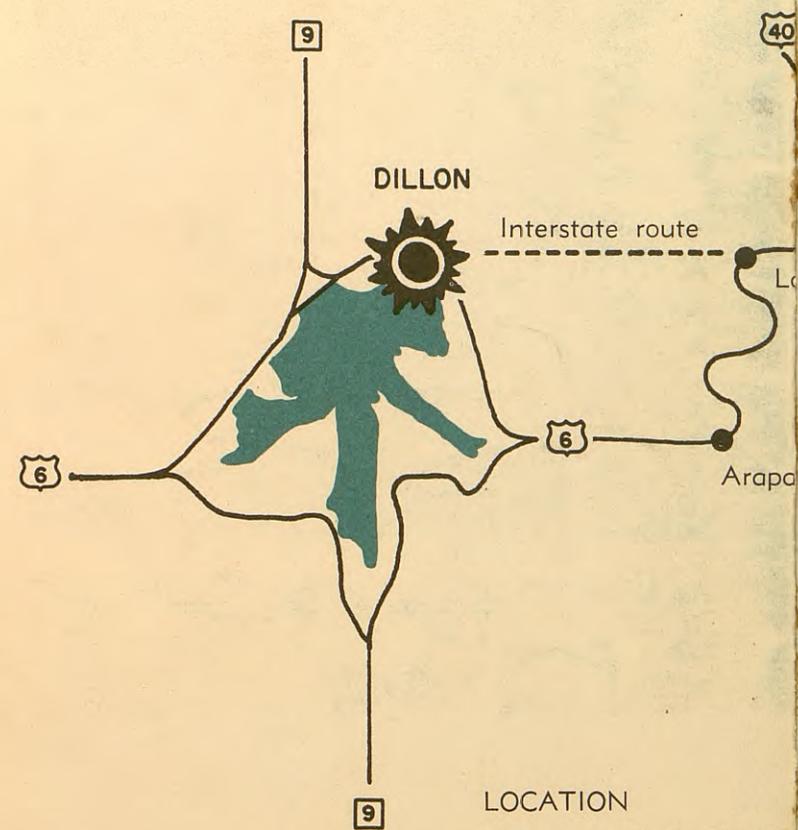
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place in a strip area along
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n convenient access to the
ghway routes. Because of
rning the exact location of
ate Highway west of Den-
own site were delayed for
the Interstate Highway and
highway relocations could
ct construction timing for
e is still uncertain, but its
ght Creek approximately
n of the new town seems
hway No. 6, currently the
etween Denver and Grand
ocated along the northerly
State Highway No. 9 will
ay No. 6 at the west edge

ed by the new dam will
half square miles of sur-
to its location in moun-
e than sixty miles of shore-
le. This means that the
recreational purposes will
argest lakes in the Rocky

The town is expected to
manent population of app-
for a temporary population
more than 2000 persons.
of the reservoir become bet-
tional 5000 people may be
in the area surrounding the
tourist and lodge facilities
the major economic basis
munity, other business e-
grocery stores, clothing
restaurants, gas stations,
lishments serving the daily
lation will be required. In-
specialized resort feature:
business units such as sp-
curio shops, art shops, and
tional buildings may be c-
business point of view it
dicted that the service p-
reach 500 persons and wi-
during peak winter and
service population of mor-
expected.

In keeping with the reso-
building sites have been re-
velopment and for the c-
center. Almost one half
the town is set aside for s-
The balance of the area
dential use and for scho-
and similar community
within the new town site c-
mize unnecessary through-
mit easy access to maic-
within the community. P-
lic sewerage facilities are
within the Town so that
excellent water and sewer
standards of the Colorad-
partment.

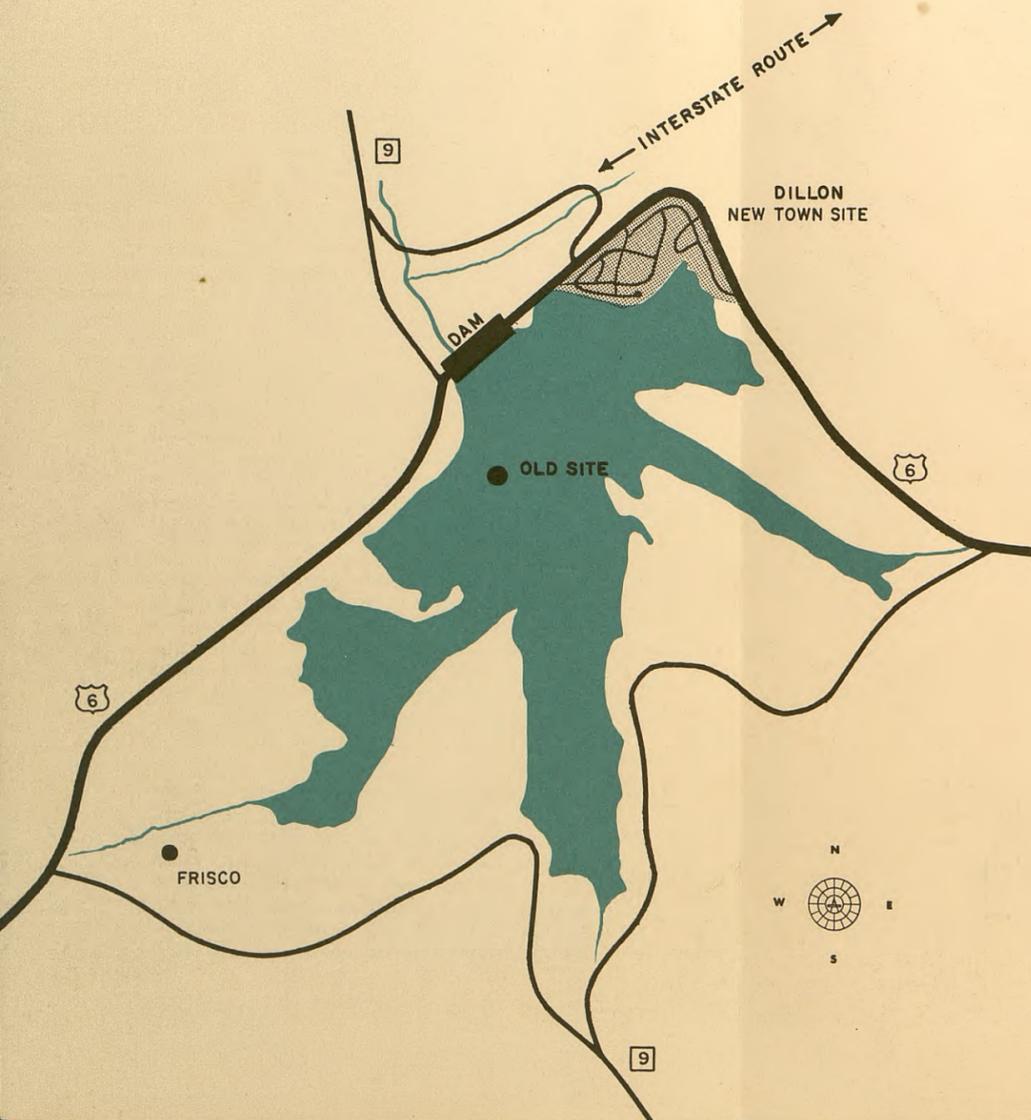
This view of the site of
the beautiful natural set



LOCATION

- Denver via U.S. Highway
- Denver via proposed U.
- Pikes Peak via State H
- Rocky Mountain Nat'l Pa
- way No. 9
- Aspen
- Dillon Reservoir
- Green Mountain Reservo
- Antero Reservoir
- Blue River fishing and
- Deer, Elk, and Antelope
- Arapahoe Ski Area
- Loveland Pass Ski Area
- No. 6
- Loveland Pass Ski Area
- terstate route
- Proposed new ski areas i

location



Located on Dillon Reservoir approximately two hours driving time west of Denver, the town of Dillon, Colorado promises to be one of the State's finest recreational centers. In addition to present fishing, hunting, and skiing areas in the region, the four and one half square mile reservoir will offer excellent new opportunities for lake fishing, boating, and swimming. The new completely planned town is on a beautiful wooded hillside, overlooking the lake and the Gore Mountain Range. Thus from its history of mining and forestry, and later as a roadside service community, the town of Dillon will now develop with the very best facilities for resort accommodations.

One of the key factors in planning the new town was that of State and U. S. Highway relocation. While desirable development of the town could not take place in a strip area along a major highway, it was necessary to locate the community with convenient access to the U. S. and State Highway routes. Because of uncertainties concerning the exact location of the proposed Interstate Highway west of Denver, plans for the town site were delayed for many months until the Interstate Highway and details of the other highway relocations could be determined. Exact construction timing for the Interstate Route is still uncertain, but its location near Straight Creek approximately one-half mile north of the new town seems definite. U. S. Highway No. 6, currently the major travel way between Denver and Grand Junction will be relocated along the northerly edge of Dillon, and State Highway No. 9 will intersect U. S. Highway No. 6 at the west edge of the town.

The lake impounded by the new dam will cover four and one half square miles of surface area; and due to its location in mountainous terrain, more than sixty miles of shoreline will be available. This means that the total water area for recreational purposes will compare with the largest lakes in the Rocky Mountain Region.

The town is expected to provide for a permanent population of approximately 800 and for a temporary population in peak periods of more than 2000 persons. As the advantages of the reservoir become better known, an additional 5000 people may be expected to reside in the area surrounding the lake. While the tourist and lodge facilities are expected to be the major economic basis for the new community, other business enterprises, such as grocery stores, clothing stores, drug stores, restaurants, gas stations, and similar establishments serving the daily needs of the population will be required. In addition, due to the specialized resort features of the area, other business units such as sporting goods stores, curio shops, art shops, and specialized recreational buildings may be anticipated. From a business point of view it may be safely predicted that the service population will soon reach 500 persons and within five years time, during peak winter and summer months, a service population of more than 3000 can be expected.

In keeping with the resort economy, choice building sites have been reserved for lodge development and for the centralized shopping center. Almost one half of the total area of the town is set aside for such tourist facilities. The balance of the area is planned for residential use and for school, hospital, church, and similar community purposes. Streets within the new town site are designed to minimize unnecessary through traffic and to permit easy access to major points of interest within the community. Public water and public sewerage facilities are now being installed within the Town so that every lot will have excellent water and sewer service, meeting the standards of the Colorado State Health Department.

This view of the site of the new town shows the beautiful natural setting.

setting

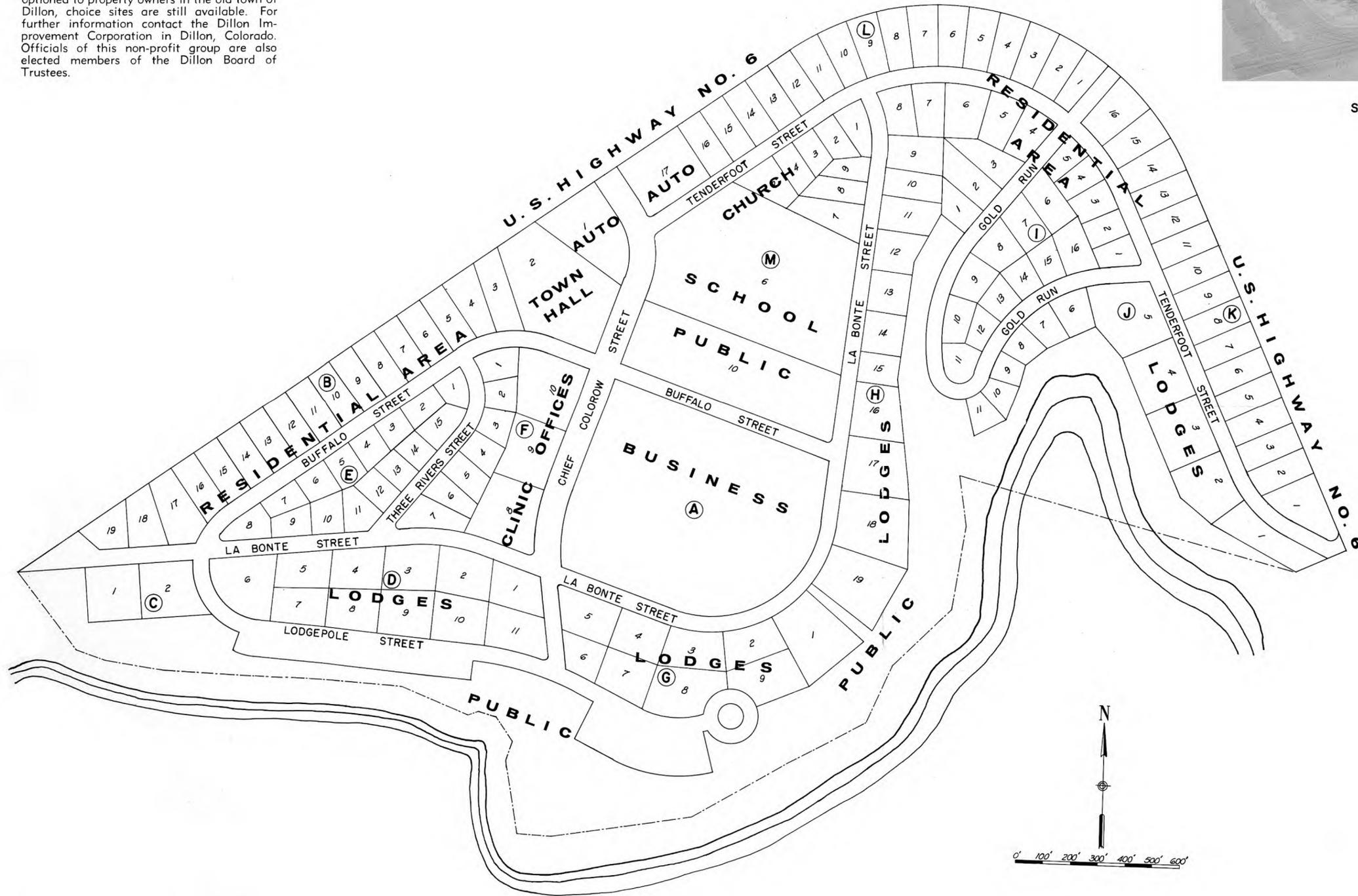


This plat of the new town, emphasizes the provision of expansive public areas along the lake frontage, the availability of choice lodge sites overlooking the lake, the centralized business area, the large school and community area, the separation of residential areas on quiet streets, and the use of relatively large lots in order to protect the natural beauty of the area.

In order to protect the new town of Dillon from unwarranted damage to the natural beauty of the site, deed restrictions have been prepared. These minimum standards for development of the new town include protection of the forest area from unwarranted destruction, the use of building materials compatible with the area, and special sign restrictions.

Although many of the sites in the town were optioned to property owners in the old town of Dillon, choice sites are still available. For further information contact the Dillon Improvement Corporation in Dillon, Colorado. Officials of this non-profit group are also elected members of the Dillon Board of Trustees.

plat of the new town



SKETCH OF PROPOSED BUSINESS CENTER



In 1956 the Denver Water Board approved a plan for the development of a large reservoir storing water from the Blue River and adjoining tributaries in the vicinity of Dillon. When the exact location for the dam was determined, it was apparent that the existing town of Dillon would need to be relocated. In order to transfer the water from the proposed Dillon Reservoir to the City of Denver, the large Rob-

erts Tunnel was constructed through the mountains. In 1959 the Denver Water Board authorized construction of the dam which should be completed in 1962. Since water from the reservoir will receive complete treatment when it reaches the eastern slope, normal lake recreation activities may be conducted safely on the new reservoir.

Town planning by Trafton Bean and Associates, Planning Consultants, Boulder, Colorado. Engineering and utility design by Harold Hoskins and Associates, Consulting Engineers, Greeley, Colorado.

CHAPTER VIII

A WORKABLE PROGRAM

A major deficiency in present federal reservoir programs that has caused the most enduring resentment by those adversely affected has been the lack of an adequate and consistent procedure for relocation of towns. The creation of a new town, physically, is a rare opportunity to develop a community that is designed for good living. It is proper that the people of a displaced community be given every chance to relocate their town so that community institutions are maintained and civic growth is assured. This requires that all concerned are aware of community goals, scope of community planning, and considerations in town relocation.

America came to greatness from her "grass roots," and it is from life in small communities that strength must continue to flow in aiding the nation's future accomplishments. Small communities must intensify their efforts to grow and become better, more interesting places for the people to live and prosper in. After all, our nation is just one community added to another until the total makes us what we are! A community is not just air and soil and water. Nor is it just streets and buildings and utilities. It is people living in space and time under a system of government and within a framework of social and economic institutions.

Communities do not grow unhampered and without control. First of all, the resources in communities are scarce. Secondly, there is always conflict within communities over the use of land,

as there is conflict within any group over the proper use of its resources. Last, unplanned communities are expensive communities, as hindsight is always more costly than intelligent forethought.

Foresighted and intelligent planning is the best method of maximizing the opportunities and minimizing the dislocations affecting a specific area or locality in the dynamic society of today. Such planning must be based upon thorough knowledge of the locality and direction in which it is going. Like any attempt to forecast the future, it is vulnerable to error and should, therefore, be subject to periodic review and revision. But it is far better than blind guesswork or, what is even worse, to the unthinking assumption that the community will continue to grow and prosper without benefit of any kind of forward planning.

Five basic steps underlie the planning process:

1. The determination of objectives and goals.
2. The collection of all pertinent facts and information on existing conditions.
3. The analysis and evaluation of collected data for determination of trends, future needs and developmental standards.
4. The preparation of the comprehensive plan.
5. The implementation of the plan with periodic review and revision of all elements.

The comprehensive community plan includes all aspects and elements of the community life, economic, social, and physical. Economic considerations will include the tax structure, the employment and wage structure, the balance between basic and non-basic industry and services, the trends in private building construction, and the potential for public improvements. Social considerations

will include the community history and culture, the framework of social institutions, the desires and needs of individuals and groups, and the power structure of community leaders. The physical considerations will include the local climate, topography, water resources, utilities, public facilities, building conditions, street systems, park and school facilities, subdivision regulations, and zoning controls. The success of the comprehensive plan depends on the analysis and integration of these many elements.

The comprehensive plan must be based on the needs of the people. The agreement of the people must be obtained in order for the goals to be achieved, otherwise the plan will not be supported by the people and will fail. Once the support of the people has been achieved, the plan must be implemented by use of legally acceptable means and in light of local customs and practices. The plan must be based on sound economic and technical considerations which are consistent with accepted planning principles.

Community and regional planners are concerned with the process of town relocation for several reasons. First, town relocation requires that the total structure of a community be considered for adjustment and improvement on a new physical site during a relatively short period of time as opposed to the long range community improvement program undertaken normally in a comprehensive planning process. Second, community relocation affects the static balance of the area, especially the economic and social elements such as the local trade areas; the institutional populations of churches, schools, and social groups; the local tax

structures; and the continuity of individual businesses. Third, the process of relocation usually occurs in smaller communities where technically qualified personnel for making decisions are at a minimum. Because of these factors the success of the relocation process is dependent on outside sources for assistance.

In order for community and regional planners to become involved in the process of town relocation, consideration of the following factors must be undertaken:

1. The nature of community relocation and new town development.
2. Procedures and assistance in past town relocations.
3. Deficiencies and "pitfalls" in past town relocations.
4. Policies and roles of governmental units at the various levels in the community relocation process.
5. Considerations for maximization of the relocation process.

The relocation process involves the physical movement of an entire community to a new site within the general trade territory, as opposed to the total development of a new town in an existing trade area. The first involves the realignment of existing economic and social forces to maintain the static balance of the area while the second involves the introduction of additional forces into the area that must be absorbed and integrated. Both town relocation and new town development involve the adaptation of the selected site for proper land use and future growth. The external relationships with the trade area vary for the two processes of town relocation and new town development, but the internal elements are basically the same.

In past examples of town relocations, the most typical characteristic is the inconsistency of procedures used and assistance provided in cases of town relocation. In the Franklin Falls, New Hampshire reservoir project the people of Hill initiated a program for relocation and eventually received aid from the state planning board. The Hill Village Improvement Association was initiated to manage the development of private land uses. During the development of the Tennessee Valley Authority projects, TVA planners initiated action on town relocation and new town development in the cases of Guntersville, Alabama, and Norris, Tennessee. In the case of Guntersville, the TVA planners worked with the city officials in the partial relocation and redevelopment of the business district.

When the construction of the Wappapello reservoir made it necessary to relocate the town of Greenville, Missouri, the local citizens requested aid from the state. The state planning board enlisted the aid of the national government to provide planning assistance. The federal W.P.A. assisted the town in the construction of new schools and the county court house. The development of power generation facilities in the St. Lawrence Seaway project resulted in a private utility, Ontario Hydro, and a public governmental agency, the Power Authority of the State of New York, working together to relocate seven towns and villages due to be flooded by future power pools. This example was unique in that every family in the area was personally interviewed to minimize individual hardships because of relocation. The cooperating utility and power authority paid all relocation costs and built

completely new towns and transportation facilities for the displaced people a few miles from the project site.

In the planning of increased water facilities for Denver, Colorado, the city water board included the relocation of Dillon as an integral part of the total project. The town was not moved as it was, but plans were made to develop it as a future resort and recreational center for the area. In the cases cited the planning procedures have ranged from local initiation to immediate action from the agencies responsible for the relocation. Assistance from the responsible agencies and other higher level of government has ranged from technical advice on planning through partial financial assistance to fairly complete programs of technical and financial assistance in relocation.

Past examples of town relocation have been less than successful in most cases because of the lack of an adequate planning program as an integral element in the relocation process. This deficiency has resulted in numerous instances of individual hardship and failure of various portions of the relocation program. One example was the failure of the TVA technicians to develop an economic base for the town of Norris after the completion of the construction work on the dam. In New Greenville, Missouri, the plans for paved streets and central water and sewage facilities were not realized because of lack of money and public support. Up to this writing, little consideration has been given by responsible agencies for compensation to businessmen for loss of business as a result of relocation. Because of the loss of private land from the tax rolls, local governmental units have been

severely impaired in their future financial operation. These and many other problems could have been reduced in scope, if not eliminated, by the inclusion of comprehensive planning procedures in the relocation process and the consideration of town relocation as a basic part of the total project by the responsible agency.

Planning services for the relocation of a town can come from many sources. These include the local planning commissions, various state agencies, the federal government, and private consultants. Usually, the local groups are suited to act in a decision-making capacity only. Therefore, the actual planning must come from the higher levels of government or from private consultants. In general, the federal government does not want to become directly involved with communities, but prefers to act through state agencies. For example, assistance in planning is provided by the federal government under section 701 of the Housing Act. The state agency administers the funds and the local governmental units administer the legal involvements. Planning consultants or municipal staffs are retained by the towns to do the actual planning work. The initiative for the implementation of the planning process must come from the local governmental unit and from the agency responsible for the displacement of the community involved. The state and national levels of government must provide the necessary legislation to manage the planning for relocated communities. This must include a continuing policy of advance relocation planning adopted by the state and federal agencies involved.

Local interest is absolutely necessary if any real benefits are to come from a program of community relocation. It is obvious

that no town can be saved in spite of itself, nor should any outside agency attempt to do so. Help can come from outside sources, but the interest must come from the people within the community. In the case of Randolph, Kansas, it must be remembered that little, if any, professional aid was given by the Corps of Engineers who were more interested in reducing project costs at the expense of human values. Also, there was no evidence to local people of the benefits to be expected from planning because of the lack of planning programs in other communities in the area.

When a town becomes aware of the fact that a local reservoir project will cause flooding of the area, a decision must be made about what course of action to take in the displacement of the town. Because of experience gained in other reservoir projects, the responsible agency should advise and aid the affected town in its decision and subsequent course of action. Early action on the part of the community to assure effective planning assistance is essential.

Once a town has decided, after due deliberation of alternative courses of action, to relocate as a town, all levels of government involved should aid in the relocation process so that a minimum of hardship and financial costs occurs. One thing that must be borne in mind is that the responsible agencies have a social responsibility to the adversely affected people that is far more important than any concern for financial efficiency.

The creation of a workable program of town relocation will depend on a systematic approach by the responsible agency in the development of the project program to include relocation as an

integral phase. A suggested relocation program should include the following considerations. It is recognized that there are minor or procedural problems that have not been listed, but which could be classified under one or more of the major elements listed.

1. The location and design of the engineering project should be selected so as to minimize local readjustments, consistent with sound engineering practice.

2. Local people should be provided immediately with pertinent information on proposed projects and informed as to how they will be affected.

3. In order to avoid bad publicity and to insure consideration of local interests, the federal government or responsible agency should organize local groups to work effectively with the responsible agency in the project readjustments.

4. When private property is taken for public use, the method of acquisition should be such that the owner will feel his interest is fully represented.

5. Reservoir land, which can remain in agricultural use, should be managed so its productivity is maintained and tenants have reasonable security of tenure.

6. The federal government should avoid the impairment of the finances of local governments when it acquires land for a reservoir by provision for equalization funds.

7. Cost of relocation and disturbance, which terminate and can be measured, should be paid as part of the cost of land acquisition.

8. The federal government, with experience gained elsewhere, should provide information on the disadvantages and advantages of alternative courses of action when an entire town is affected.

9. When special benefits are desired by local groups on a project, the federal government should require local participation in the costs of the specific benefit.

10. After each federal project has been completed, a study should be made to determine how effectively procedures have dealt with local problems so as to insure continued improvement of federal programs in relation to local effects.

A workable relocation program must include all levels of government from the local groups, through state and regional units, and including the federal agencies involved. The most important aspect of this program will be the degree to which all groups are coordinated into an efficient and impartial operation. In any specific relocation, each group must have clearly defined responsibilities and goals. The breadth and scope of such a program will require the full cooperation and efforts of everyone involved. Realistic progress must be based on the intelligent guidance of physical resources for the general improvement of the social, economic, and spiritual well-being of men.

The whole essence of long-range comprehensive planning as the best method for maximizing the results of town relocation has been aptly stated by Rudyard Kipling.

I keep six honest serving men
(They taught me all they knew)
Their names are What, and Why, and When,
And How, and Where, and Who.

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LITERATURE CITED

Books

- Ackerman, Edward A., and George O. G. Lof. Technology in American Water Development. Resources for the Future, Inc. Baltimore: John Hopkins Press, 1959.
- Baumhoff, Richard C. The Damned Missouri Valley. New York: Knopf, 1951.
- Hoyt, William G., and Walter B. Langbein. Floods. Princeton, New Jersey: Princeton University Press, 1955.
- Judson, Clara Ingram. St. Lawrence Seaway. Chicago: Follet, 1959.
- Kyle, J. H. The Building of TVA-An Illustrated History. Baton Rouge: Louisiana State University Press, 1958.
- Leopold, Luna B., and Thomas Maddock. The Flood Control Controversy. New York: Ronald Press, 1954.
- Lilenthal, David E. TVA-Democracy on the March. New York: Pocket Books, 1945.
- Wengert, Norman I. Natural Resources and the Political Struggle. Garden City, New York: Doubleday and Co., 1955.
- Young, Roland A. Approaches to the Study of Politics. Evanston, Illinois: Northwestern University Press, 1958.

General References

- Brown, Carl B., and Warren T. Murphy. "Conservation Begins on the Watersheds," Water, The Yearbook of Agriculture. United States Department of Agriculture. Washington: Government Printing Office, 1955.
- Clarenback, F. A., and J. Muehlbeier. "Group Action to Develop and Protect Land," Land, The Yearbook of Agriculture. United States Department of Agriculture. Washington: Government Printing Office, 1958.
- Green, W. A., and others. "Public Development of Resources," Land, The Yearbook of Agriculture. United States Department of Agriculture. Washington: Government Printing Office, 1958.

- Kohler, Karl O. "Trends in the Utilization of Water," Water, The Yearbook of Agriculture. United States Department of Agriculture. Washington: Government Printing Office, 1955.
- Sanders, J. T., and N. A. Back. "Wanted: Partnership to Manage Water," Land, The Yearbook of Agriculture. United States Department of Agriculture. Washington: Government Printing Office, 1958.

Periodicals

- Behrens, Ray F. "Zoning Against Floods in Milwaukee County," The American City, September 1952, 67:112-113.
- Johnson, Wendell E. "Missouri River Basin Plan in Operation," American Society of Civil Engineers, Transactions, September 1955, 81:800-2.
- Latham, Earl. "The Group Basis of Politics: Notes for a Theory," The American Political Science Review, June 1952.
- MacKaye, Benton. "Democracy in Flood Control," Survey Graphic, September, 1940.
- Odegard, Peter. "A Group Basis of Politics: A New Name for an Ancient Myth," Western Political Quarterly, September 1958.
- Pafford, R. J. "Operation of Missouri River Main Stem Reservoirs," American Society of Civil Engineers, Transactions, September 1957, 83:1370-1 to 1370-6.
- Peterson, Elmer T. "Big Dam Foolishness," Country Gentlemen, May 1952.
- Farb, Peter. "Let's Plan the Damage Out of Floods," Reader's Digest, May 1961.

Publications and Bulletins

- Corps of Engineers. Water Resources Development in Kansas. Dallas, Texas: Southwestern Division, January 1961.
- _____. Review Report on the Kansas River. Kansas City, Missouri: Kansas City District, September 1960.
- Great Plains Council. Reducing Adverse Effects of Reservoirs. Kansas Agricultural Experiment Station Circular 293, October 1952.

Local Effects of the Wappapello Reservoir, Wayne County, Missouri. Missouri Division of Resources and Development. Jefferson City, February 1950.

Moore, Jerrold A. Planning for Flood Damage Prevention. Engineering Experiment Station Report 35. Atlanta: Georgia Institute of Technology.

Legislative Bulletin. National Society of Professional Engineers. Washington, August 1961.

Resources for the Future. The Kansas Basin, Pilot Study of a Watershed. Lawrence, Kansas: University of Kansas Press, September 1956.

Sheaffer, John. Flood Proofing: An Element in a Flood Damage Reduction Program. Department of Geography Research Paper 65. Chicago: University of Chicago Press, 1960.

Siler, Robert W. Flood Problems and Their Solutions Through Urban Planning Programs. Tennessee State Planning Commission. Nashville, September 1955.

Wertheimer, Ralph B. Flood Plain Zoning. California State Planning Board. Sacramento, June 1942.

Wolman, Abel, Louis R. Howson, and N. T. Veatch. Report on Flood Protection in Kansas River Basin. Kansas Industrial Development Commission. Topeka, May 1953.

U. S. Department of Health, Education and Welfare. The Missouri. Public Health Service Publication 604. Washington: Government Printing Office, 1958.

Newspapers

"A Kansas Ghost Town to Vanish Soon," Kansas City Star, February 25, 1961.

Associated Press Dispatch, Kansas City Star, June 14, 1960.

"A Symbol in Tuttle Creek Blast," Kansas City Star, June 29, 1959.

"Blue Valley School Dedication," Manhattan Mercury, June 25, 1961.

"City Planning and Zoning Ordinance 795," Riley Countian, August 27, 1959.

"History of Randolph," Randolph Enterprise, September 13, 1906.

"More Land Under Flood Control," Kansas City Star, May 31, 1961.

- "New Dams Key to River Task," Kansas City Star, July 2, 1961.
- "Push Flood Data Plan," Kansas City Times, July 18, 1961.
- "Randolphers Vote Not to Relocate the Town," Manhattan Mercury,
May 24, 1956.
- "Tuttle Creek Controversy," Kansas City Star, December 2, 1956.

Other Material

City of Randolph, Kansas vs. United States of America, petition filed by Foulston, Siefkin, Schoepel, Bartlet, and Powers of Wichita, Kansas in the United States Court of Claims in 1960.

Dillon, Colorado. A brochure prepared by Trafton Bean and Associates, Planning Consultants, Boulder, Colorado, 1961.

Miller, George P. The Historical Aspects of Community Development in Kansas. Unpublished Master of Regional Planning thesis, Kansas State University, Manhattan, Kansas, 1961.

AN INVESTIGATION OF TOWN RELOCATION AS A PART
OF FLOOD CONTROL PLANNING

by

VERNON PHILLIP DEINES

A. A., St. John's College, 1949
B. S., Kansas State University, 1952

AN ABSTRACT OF A THESIS

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requirements for the degree

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Department of Architecture

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1962

With continued development of industrial, commercial, residential, and agricultural uses on the river flood plain, mounting flood losses have spurred the federal government, in cooperation with local interests, to embark upon an extensive program for the reduction of flood damages. Ever since the first federal work of this kind resulted from catastrophic floods in the Mississippi River valley, federal policy has been primarily concentrated on the prevention of disaster through construction of flood control works.

As a result of the federal program of flood control, extensive areas of productive land have been taken out of use for the construction of the reservoirs. This has caused much local controversy as adversely affected areas containing farms, churches, schools, cemeteries, and towns have been displaced.

This study investigates various methods of flood damage reduction that have not been extensively used to date, including the regulation of flood-plain development, the provision of flow-ways through areas of intensive use, the use of flood insurance and relief payments, and the improvement of storm warning and evacuation techniques in flood-hazard areas. It gives special emphasis to problems of town relocation in relation to flood control projects.

In the past there has been no consistent federal program for assistance to dislocated communities in reservoir projects. Although there has been compensation for loss of property and, to some extent, for the cost of moving, there has been little

recognition of the need for comprehensive long-range planning in town relocation.

The relocation of an entire town is a startling idea, particularly to local residents, for existing towns have grown too slowly for any generation to understand the full process. Relocation presents many problems, individual as well as group, with which people have had little experience.

In the case of Randolph, Kansas, which is cited in detail in this thesis, the relocation process was severely hindered because of local controversies. In the period of adjustment, the people gave little thought to future community prosperity. At the time they were more interested in moving out and getting settled in their relocated homes. Later, they saw that action should have been taken to protect their community-wide institutions, economic, social, and physical.

Since the creation of a new community is a rare opportunity to develop a town designed for good living, there is a definite need for technical planning assistance. Provision for such assistance should be made a part of any comprehensive flood control program by the governmental agencies involved.