

## ROOT RIVER WATERSHED STUDY GIVEN FINAL APPROVAL

It was on March 20, 1962, that the City of Racine advised the SEWRPC of periodic and costly flooding along the Root River within the City and formally requested assistance toward the long-range solutions of this critical problem. In response to this request, the Commission created the Root River Watershed Committee, comprised of elected and appointed public officials from within the Root River Watershed, to aid the Commission in the study of the problems within that watershed. See Page 9 for membership.

### Critical Problems Exist

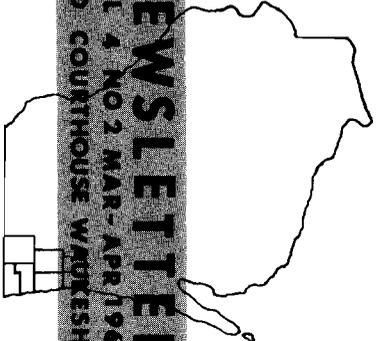
The Root River Watershed Committee adopted a bi-weekly meeting schedule, and, working from October 1962 to February 1963, prepared and approved a Prospectus for a comprehensive watershed planning program covering the entire Root River basin. The Committee after careful study and consideration identified in the Prospectus the most critical problems existing within the watershed as:

- (1) Drainage and flood control, both urban and rural
- (2) Land use development in relation to the stream and its floodways and flood plains
- (3) Recreation and public open space reservation, and
- (4) Stream pollution and water quality

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SOUTHEASTERN  
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NEWSLETTER  
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OLD COURTHOUSE WATERSHED



## ROOT RIVER WATERSHED STUDY UNDERWAY - continued

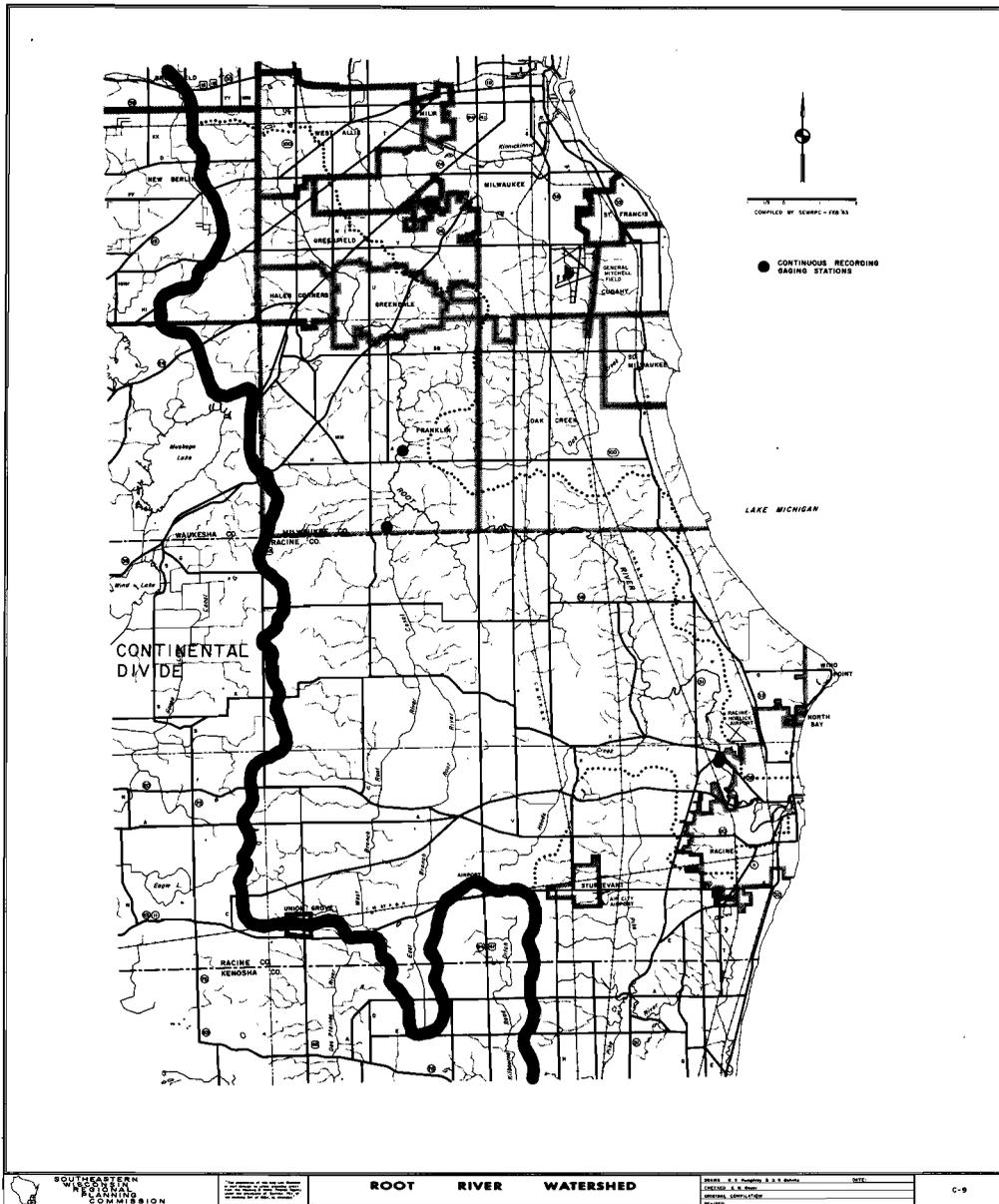
The Committee further pointed out that these problems are closely interrelated and will be intensified as urbanization increases within the watershed. A comprehensive watershed planning program leading to the ultimate solution of these problems was recommended and carefully outlined in the Prospectus. The recommended program recognizes the need to consider the watershed as an integral planning unit if sound long-range solutions are to be found to these complex interrelated problems.

The total cost of the watershed planning program was estimated at \$175,050 of which \$67,850 will be furnished by the Commission in the form of basic data obtained from other planning programs now underway or completed, at no direct cost to the Root River Watershed planning program. It was the recommendation of the Root River Watershed Committee that the remaining cost of \$107,200 be financed in part through an HHFA Section 701 planning grant, leaving \$35,733 to be supplied by the four counties directly concerned -- Kenosha, Milwaukee, Racine, and Waukesha -- on the basis of relative equalized valuation within the watershed.

The Prospectus was approved by the Commission on April 15, 1963, and in accordance with the Commission's advisory role, was recommended to the four counties concerned for action. By October 1963, all of the county boards had approved the Prospectus thus assuring the local share of the necessary financing, and the Commission filed an application for a Section 701 planning grant. On February 13, 1964, the HHFA announced the approval of the grant, thus assuring full financing.

The bulk of the contemplated watershed planning work will be accomplished by private consultants working under the general direction of the Commission staff. The Root River Watershed Committee will continue in a key policy advisory capacity throughout the entire study and is presently in the process of interviewing consultants in order to select and recommend to the Commission the most experienced and qualified consultant to carry out the work. The necessary steps in the watershed planning work are summarized in Figure 2. Actual work will begin late this spring with final plans to be ready within thirty months of the start of the work.

# MAP OF ROOT RIVER WATERSHED



## ABOUT THE ROOT RIVER WATERSHED

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The map of the Root River Watershed (page 3) shows the location of three continuous recording stream gages which were installed on the Root River last fall through the cooperative efforts of Racine County, Milwaukee Metropolitan Sewerage Commission, U. S. Geological Survey, and SEWRPC. These gages are continuously recording stream flow data necessary to the study.

The entire Root River drainage basin has an area of 197.42 square miles and lies in portions of four counties: 58.14 square miles in Milwaukee County; 123.66 square miles in Racine County; 13.02 square miles in Waukesha County; and 2.61 square miles in Kenosha County. In general the main channel is extremely flat, being confined by low banks surrounded by a wide and relatively level flood plain. The main channel has an overall fall of approximately 170 feet from its point of beginning in eastern Waukesha County to its junction with the south branch, and approximately 90 feet from its junction with the south branch to its outlet in Lake Michigan. The overall length of the main channel is approximately 42 miles, of the south branch about 5 miles, and each of the east and west branches are about 11 miles in overall length.

A sub-continental divide, shown on the map (page 3) separates the Great Lakes - St. Lawrence River basin, which drains to the Atlantic Ocean, from the Mississippi River basin, which drains to the Gulf of Mexico. The divide runs diagonally through the Region in a northwesterly - southeasterly direction. This divide and the resultant drainage patterns have important physical and legal implications for water resource planning within the Region. Three of the six major watersheds in the Region, including the Root River, drain to Lake Michigan. The sub-continental divide follows the western boundary of the Root River Watershed.

The existing Root River channel is inadequate to carry peak discharges, and flooding of the flat area adjacent to the main channel is common on all reaches of the stream during severe storms and during the spring snow melt. Flooding problems in some areas are further complicated by the inundation of sewage disposal plants and consequent sewerage and pollution problems.

## WHY WATERSHED PLANNING?

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The concept and importance of the watershed as a national resource related planning unit has been relatively slow in development. Natural science first began to connect the amount of water occurring in streams, springs and wells with the rainfall over a watershed in the seventeenth century. It took almost 300 years since then for man to realize that rivers, streams, and watercourses cannot be properly studied without examining the land through which they flow and that good forests, good soil and good water go hand in hand. The watershed is a natural land area which receives, stores and delivers our water supply. Whether a few thousand or several hundred thousand acres in extent, a watershed may, through proper management, be expected to produce a maximum, regular flow of clear, clean, high quality water.

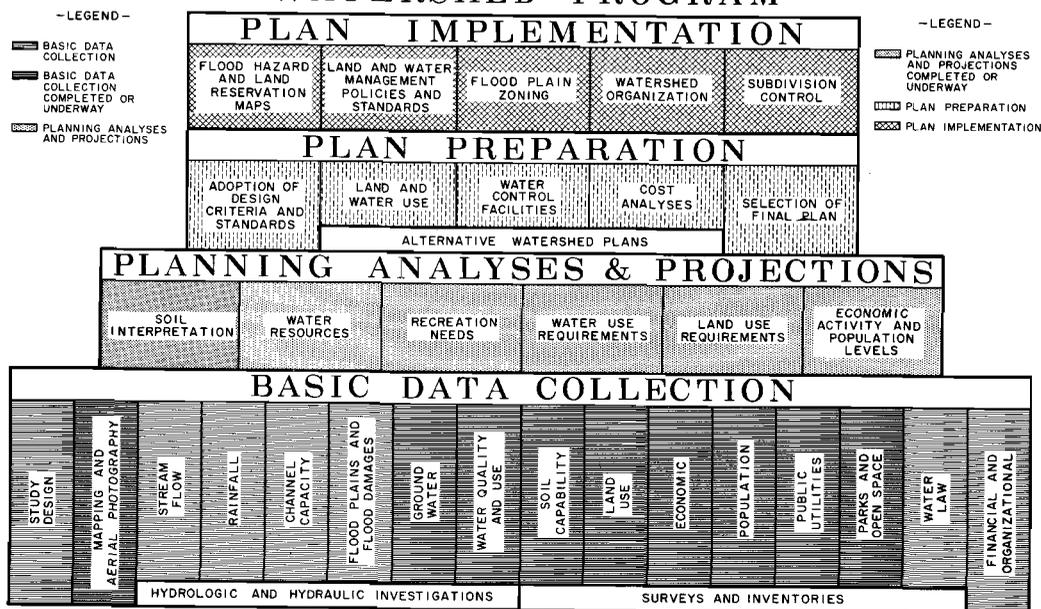
Within a watershed in Southeastern Wisconsin receiving 31 inches of precipitation annually, every acre of land will receive and dispose of over 3500 tons of water each year. In the orderly disposition of this huge amount of water, every square foot of ground within the watershed performs a vitally important function, yet this function has been often neglected in land use planning and development; and as a consequence our water resources have been abused, wasted, and even destroyed. Flood crests are increased, low flows decreased, erosion and siltation intensified, surface water quality deteriorated and fish and wildlife habitat destroyed. Wells must be deepened as the water table drops while drainage ditches and sewers carry off to the rivers and lakes water that should be replenishing this ground water supply.

Natural laws are absolute: Water will run downhill and its destruction force will be increased with an increase in the amount and rate of runoff; water will become impure and incapable of sustaining higher forms of life if impurities are discharged into it; water tables will sink if means are not found to collect and retain rainfall within a watershed; destructive floods will occur if urban development is allowed to encroach on wetlands and on the natural floodways and flood plains of streams and rivers. All plant and animal life on earth is entirely dependent upon the supply of water which is its life blood.

## WATERSHED PLANNING - continued

Water resource problems can only be resolved within a regional framework of study and analysis within which local governments and private developers join hands in cooperative efforts. Drainage and flood control problems are intensified by urbanization and require that the watershed be recognized as a rational planning unit. Storm water drainage and flood control facilities must form a single integrated system over an entire watershed, a system capable of carrying both existing and future runoff loads. Drainage and flood control problems are closely related to: land and water use problems; sanitary sewerage and sewage disposal; water quality, supply and pollution; wildlife habitat; recreation and public open space reservation. Practical solutions to these problems must consider solutions to all other related problems. Thus any effective water related planning program must recognize the watershed as an integrated land-water resource unit having a complex community of interest among its residents.

### GENERAL STEPS IN A COMPREHENSIVE WATERSHED PROGRAM



## WATERSHEDS IN THE REGION

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There are six major and five minor watersheds in the Region, plus a number of small local streams draining the lakeshore plain area immediately adjacent to Lake Michigan. The Root River Watershed is the third largest in the Region. The six major watersheds and their approximate drainage areas within the Region are:

Fox River (Illinois)	926 square miles
Milwaukee River	439 square miles
Root River	197 square miles
Des Plaines River	143 square miles
Menomonee River	128 square miles
Rock River	622 square miles

The Root River is one of the two major watersheds contained entirely within the Region; and, as can be seen on the map on Page 3, drains parts of Kenosha, Milwaukee, Racine and Waukesha Counties, flowing into Lake Michigan at Racine. The Menomonee River drains central Milwaukee and eastern Waukesha and Washington Counties, and contained entirely within the Region, it flows into Lake Michigan at Milwaukee. The Milwaukee River is the other major watershed in the Region which empties into Lake Michigan. See Page 4.

The "minor" watersheds in the Region are Pike Creek and Pike River in Kenosha County; Oak Creek and the Kinnickinnic River in Milwaukee County; and Sauk Creek in Ozaukee County.

In the southeastern part of the Region the Des Plaines River empties into the Illinois River just west of Chicago. The Fox River is a tributary of the Illinois River, and the Bark River, the Oconomowoc River and Turtle Creek are tributaries of the Rock River whose mouth is situated near Rock Island on the Mississippi River.

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Watershed planning seeks to discover the damage that has been done to our land and water resources, and to recommend means of correcting these damages and abating their attendant development problems while there is yet time. The diagram on the preceding page sets forth the general steps and major elements of a comprehensive watershed planning program.

## SEWRPC NOTES

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Built into the structure of the SEWRPC is a system of advisory committees whose membership is representative of federal, state and local technicians, elected local public officials and citizen groups and organizations.

The purpose of these committees is twofold: One, to assist and advise the SEWRPC in determining and coordinating basic technical and nontechnical policies involved in the conduct of the regional planning program and thereby to actively involve the various government bodies, technical agencies, and private interest groups in the regional planning process. Two, to serve as a clearinghouse for planning and engineering data in order to provide for the close coordination of the ongoing regional and local planning efforts and avoid any needless duplication of efforts.

The first of these committees to be activated was the Technical Advisory Committee on Regional Transportation Planning, which in a series of ten meetings beginning in October 1961, advised the staff during the preparation of the Prospectus for the Regional Land Use-Transportation Study. Membership on this committee included representation from Milwaukee County, the State Highway Commission of Wisconsin, and the U. S. Bureau of Public Roads.

The second technical advisory committee to be organized was the eighteen member Technical Coordinating and Advisory Committee on Natural Resources and Environmental Design, which held its organizational meeting in January 1962 and which serves to assist and advise the Commission on natural resource oriented planning programs. Membership includes representation from all agencies having resource planning, conservation, and management programs underway in the Region, and this committee functions as a particularly valuable source of technical resource related data.

The seventeen member Root River Watershed Committee was formed in August 1962, with a membership representative of the municipalities located within the Root River Watershed as well as of certain state and federal agencies. In a series of twelve biweekly meetings, this

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SEWRPC NOTES - continued

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committee prepared the Root River Watershed Planning Program Prospectus which was used to obtain financing for the comprehensive watershed planning program and which will serve as an outline for the study. The present membership includes:

Howard W. Gregg, Chairman  
General Manager-Milwaukee  
County Park Commission

Walter Fehr, President  
Village of Hales Corners

Arthur Abendschein, Mayor  
City of Oak Creek

Jerome Gottfried, Chairman  
Town of Muskego

K. W. Bauer, Exec. Director  
SEWRPC

John M. Kuglitsch, Manager  
City of Greendale

Ralph Becker, City Engineer  
City of New Berlin

Milton F. LaPour, Commissioner  
SEWRPC

Peter H. Burbach, City Engineer  
City of West Allis

Ray D. Leary, General Manager  
Metropolitan Sewerage Comm.

Floyd A. Carlson, City Planner  
City of Racine

Elwin G. Leet, County Agent  
County of Racine

William J. Chadwick, City Engr.  
City of Racine

John Margis, Jr., Chairman  
Town of Caledonia

Francis Conners, Work Unit Cons.  
Waterford

John P. Murphy, Commissioner  
SEWRPC

Theodore Fadrow, Mayor  
City of Franklin

The Root River Watershed Committee will continue in an active advisory capacity throughout the 2 1/2 year study and will have a major role in evaluating the alternative plans to be prepared and in recommending the best plan for adoption.

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## SEWRPC NOTES - continued

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### Programs and Progress

A regional Financial Resources Study is currently being undertaken by the Land Use Planning Division of the Land Use-Transportation Study. The purpose of this study is to project existing public revenues and expenditures to 1985 in order to permit the evaluation of the financial feasibility of alternative regional land use-transportation plan proposals, thereby permitting public officials within the Region to more intelligently choose among the alternative plans.

Data will be collected concerning annual revenues and expenditures of governmental units within the Region since 1948, with particular emphasis on revenues and expenditures for highway transportation, along with data concerning deficit financing and available state and federal aids. These data will be organized and subjected to a comprehensive analysis after which an evaluation will be made of past, present and potential public revenue and expenditure patterns within the Region. At the same time, a procedural outline will be prepared whereby the local units of government can, if they desire, evaluate their own revenue and expenditure patterns. Subsequently, a systematic data collection procedure will be recommended whereby the data can be maintained current. The program will be accomplished by the staff and should take approximately ten months to complete.

#### NOTICE OF ANNUAL MEETING

THE 1964 ANNUAL MEETING OF THE SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION WILL BE HELD ON JUNE 4, 1964, AT 3:00 P.M. IN THE WASHINGTON COUNTY COURTHOUSE WEST BEND, WISCONSIN. AGENDA ITEMS WILL INCLUDE ADOPTION OF THE 1965 BUDGET.

## QUESTION BOX

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### WHAT IS A WATERSHED?

As the term is used by the SEWRPC, a watershed is defined as an area of the earth's surface draining to a common outlet and thereby discharging all surface water runoff over the entire watershed to this outlet through a stream system. Such an area is also termed a drainage area, drainage basin, or catchment area. It forms a rational planning area with respect to surface water related resource problems and is often selected as a suitable area for the detailed planning and application, in a rural setting, of soil and water conservation measures and, in an urban setting, of storm water drainage and flood control measures.

The term "watershed" is also applied to the ridge line or stretch of high land dividing the areas drained by different stream systems, but the term "watershed boundary" is a more precise term when used in this manner.

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### NEW SEWRPC PUBLICATIONS

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Planning Guide #2 - Official Mapping Guide. This is the second of four guides published by the Commission to aid the local officials in carrying out their planning responsibilities. This guide explains the function and benefits of the Official Map, discusses the engineering considerations involved in this preparation and contains a suggested model ordinance. Distribution has been made to all participating municipalities, all public and private libraries within the Region and to selected public officials. Additional copies are available at \$1.50 through SEWRPC's Community Assistance Division.

Annual Report - 1963. This report summarizing the financial condition and accomplishments of the Commission for 1963 will be sent to all participating municipalities, and to all libraries within the Region soon. Its preparation and distribution to member municipalities is required by the Wisconsin Statutes. A limited supply is available upon request.

QUOTABLE QUOTE.....

"No single factor has a more decisive influence on human beings than water, and every drop we use comes from our watersheds. Limited comprehension about this has wasted millions of acres of land, caused sharp drops in crop yields, raised the crests of floods, starved cattle, spread deserts over the face of the earth, destroyed recreation beaches, lowered the quality of the water we drink and polluted it to the menace of our health.

Only recently have....scientists started to realize that if we are to survive, much less improve our standard of living, we must create for ourselves a healthy, harmonious relationship with our total environment....

Hitherto, we have thought of conservation as something a farmer does to grow more and better crops; now we must start to think of it as part and parcel of our individual hold on life....

....The history of dead civilizations tells tragically what our future will be if we continue to abuse our water resources."

The Royal Bank of Canada  
"Monthly Letter"  
December , 1963.

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