UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Water Resources Division

A PROPOSED STREAMFLOW DATA PROGRAM FOR OHIO

By Peter W. Anttila

OPEN FILE REPORT

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ABSTRACT

A streamflow data program is proposed for Ohio which consists of both data collection and data analysis. The program is proposed after a study which (1) established long-term objectives and goals for streamflow information, (2) examined and analyzed available data to determine its adequacy for meeting the established goals, and (3) considered alternate methods and data requirements for providing information to meet unfulfilled goals.

The program is designed to provide data (1) for current use, (2) for planning and design, (3) for definition of long-term trends, and (4) on the characteristics of stream environment. At present 141 gaging stations provide adequate data for current use. Multiple-regression relations have been defined that accurately estimate many flow characteristics needed for planning and design on natural-flow streams. A systems approach is required to define flow characteristics of regulated streams. A network of 13 existing gages is proposed for indefinite operation to define long-term flow trends, and additional data collection is proposed on the characteristics of stream environment. Studies of available data and of data to become available are suggested.

The proposed program may be modified in the future to reflect the degree of information that becomes available from new and improved data analyses.

INTRODUCTION

Water resources have been a dominant factor in the economic growth of Ohio. The most important water resource is surface water because of its relative abundance and distribution. The inception and growth of the cooperative streamflow program of the U.S. Geological Survey in Ohio have resulted from the ever increasing demand for appraisals of this valuable resource.

One of the first measurements of streamflow in the United States was made in 1823 on the Sandusky River. Prior to 1898 streamflow data collected in Ohio consisted of river stage readings and occasional discharge measurements. In 1898 the U.S. Geological Survey began cooperative stream-gaging work at Columbus on the Scioto and Olentangy Rivers. The first cooperative stream-gaging station was established on the Scioto River during August of that year and continued in operation for 3 years.

Following the disastrous floods of 1913, the Ohio Legislature in 1914 passed the Conservancy Act of Ohio, empowering residents of river basins to organize into districts for flood protection and allied purposes. The largest and most notable of the districts is the Miami Conservancy District (MCD) established in 1915 with headquarters in Dayton. Until the establishment of the present cooperative program, the streamflow program of the MCD was by far the most significant hydrologic activity in Ohio.

In July 1921 the State of Ohio and U.S. Geological Survey cooperatively established the continuous and systematic streamflow program as we know it today. From 1921 to 1936 a network of 79 gages, well distributed over the state, was established and maintained. State cooperation was discontinued from 1936 to 1939 and the network of gages was reduced to a minimum of 48. Since 1939 the streamflow program has gradually expanded to the present network (1970) of 174 daily discharge stations, 27 reservoir gages, 131 partial-record sites where annual maximum or minimum discharges are determined, 15 stage and rating stations (stations where the stage-discharge relation is defined, but flow records are not computed or published), and 9 rainfall recording stations.

Since the development of the surface-water data program in 1921, other Federal agencies, state agencies, conservancy districts, counties, and municipalities have made available substantial funds for cooperative programs with the U.S. Geological Survey. Taken together, these programs have resulted in an intensified inventory of water resources directed to specific hydrologic problems. However, the program has developed by expediency rather than planned evolution. Today, the accelerated demand for water-resources information, coupled with increasing costs of operation and current restraints on Federal funds and manpower, require a new approach to the streamflow data program that will coordinate the collection of data and efficiently provide information to serve all interests. The purpose of this study is to design such a program by evaluating the present streamflow data network and the data collected. A secondary purpose is to present the statistical characteristics of streamflow for all gaging stations with a minimum record of 10 years of natural flow.

The concepts and procedures used in this study have been presented in detail by Carter and Benson (1970) and are summarized only briefly in this report. The basic steps are (1) definition of the long-term objective of the streamflow data program in quantitative form, (2) examination and analysis of all available data to determine which objectives have already been met, (3) consideration of alternative means of meeting the remaining objectives, and (4) preparation of a proposed program of data collection and analysis to fulfill the remaining objectives.

This report was prepared under the supervision and with the assistance of J. J. Molloy, district chief, Ohio WRD District, U.S. Geological Survey. Personnel of the Ohio Department of Natural Resources assisted in preparation of table 1.

HYDROLOGY OF OHIO

Ohio has a well-developed drainage system flowing largely to the borders of water which form its northern and southern boundaries. Approximately 30 percent of its area drains northward into Lake Erie and the remaining 70 percent drains southward into the Ohio River. Table 1 lists the major drainage basins in the state.

The climate of Ohio is essentially continental. Average annual temperatures range from 49.5°F in the northeast to 57°F in the southern extremity (Ohio Division of Water, 1962). Annual precipitation averages 38 inches, but ranges from 36 inches in the north to 41 inches in the south. Rainfall is most abundant in the spring and least in the fall. High intensities occur during local summer thunderstorms that have an annual frequency of 40 to 50 events at any given locality. Average annual snowfall ranges from a high of over 60 inches in the northeast to less than 15 inches along the Ohio River.

Table 1.--Principal Ohio tributary basins and major reservoirs in Ohio River and Lake Erie basins.

Tributary basins		Major reservoirs[a]			
Name	Total drainage area (sq mi)[b]	Name	Location (stream)	Completion date (year)[c]	Total storage (acre-ft)[d]
Ohio River Basin					
Mahoning River (to Ohio-Pa. State line)-------------------	1,075	Berlin --------------	Mahoning River ------------	1942	91,200
-----do---	-----	Milton --------------	Mahoning River ------------	1916	22,200
-----do---	-----	West Branch ---------	West Branch Mahoning River -	1966	78,700
-----do---	-----	Mosquito Creek -------	Mosquito Creek ------------	1944	104,000
-----do---	-----	Meander Creek --------	Meander Creek -------------	1929	31,800
-----do---	-----	Evans Lake ----------	Yellow Creek --------------	1948	10,500
Shenango River (in Ohio) ----------------------------	277	------------------	------------------------	----	-------
Little Beaver Creek (in Ohio) -------------------------	401	------------------	------------------------	----	-------
Tributaries from Little Beaver Creek to Muskingum River ---	1,757	------------------	------------------------	----	-------
Muskingum River --	8,051	Nimisila ------------	Nimisila Creek ------------	1942	9,500
-----do---	-----	Lake Mohawk ----------	Middle Run ----------------	1962	7,900
-----do---	-----	Bolivar[e] -----------	Sandy Creek ---------------	1937	150,000
-----do---	-----	Leesville ------------	McGuire Creek -------------	1937	37,400
-----do---	-----	Atwood --------------	Indian Fork ---------------	1937	49,600
-----do---	-----	Dover ---------------	Tuscarawas River ----------	1937	203,000
-----do---	-----	Beach City -----------	Sugar Creek ---------------	1937	71,700
-----do---	-----	Piedmont ------------	Stillwater Creek ----------	1937	65,000
-----do---	-----	Clendening ----------	Brushy Fork ---------------	1937	54,000
-----do---	-----	Tappan --------------	Little Stillwater Creek ----	1936	61,600
-----do---	-----	Charles Mill ---------	Black Fork ----------------	1936	85,500
-----do---	-----	Clear Fork -----------	Clear Fork ----------------	1948	12,700
-----do---	-----	Pleasant Hill --------	Clear Fork ----------------	1938	87,400
-----do---	-----	Mohicanville[e] -------	Lake Fork -----------------	1936	102,000
-----do---	-----	Mohawk[e] ------------	Walhonding River ----------	1937	285,000
-----do---	-----	Senecaville ----------	Seneca Fork ---------------	1937	87,700
-----do---	-----	Salt Fork -----------	Salt Fork -----------------	1968	71,500
-----do---	-----	Wills Creek ----------	Wills Creek ---------------	1937	196,000
-----do---	-----	Buckeye Lake ---------	South Fork Licking River ---	1832	15,800
-----do---	-----	Dillon --------------	Licking River -------------	1959	274,000
Little Hocking River ---------------------------------	102	------------------	------------------------	----	-------
Hocking River ---------------------------------------	1,197	Burr Oak (Tom Jenkins Dam)---------------	East Branch Sunday Creek ---	1950	26,900
Tributaries from Hocking River to Scioto River -----------	2,118	------------------	------------------------	----	-------
-----do------------------in Raccon Creek basin -----------	681	------------------	------------------------	----	-------
Scioto River ---	6,517	O'Shaughnessy --------	Scioto River --------------	1924	16,300
-----do---	-----	Delaware ------------	Olentangy River -----------	1947	131,000
-----do---	-----	Hoover --------------	Big Walnut Creek ----------	1954	60,342
-----do---	-----	Deer Creek -----------	Deer Creek ----------------	1968	103,000
-----do---	-----	Rocky Fork -----------	Rocky Fork ----------------	1952	34,100
Tributaries from Scioto River to Little Miami River -------	1,165	------------------	------------------------	----	-------
Little Miami River ------------------------------------	1,757	Cowan Lake -----------	Cowan Creek ---------------	1947	[f]12,800
Tributaries from Little Miami River to Great Miami River --	181	West Fork Reservoir --	West Fork Mill Creek ------	1953	11,200
Great Miami River ------------------------------------	5,371	Indian Lake ----------	Great Miami River ---------	1852	45,900
-----do------------------in Ohio ----------------------	3,946	Loramie -------------	Loramie Creek -------------	1844	[f]13,000
-----do------------------in Indiana -------------------	1,425	Lockington[g]---------	Loramie Creek -------------	1921	70,000
-----do---	-----	Taylorsville[g]--------	Great Miami River ---------	1922	186,000
-----do---	-----	Englewood[g]----------	Stillwater River ----------	1922	312,000
-----do---	-----	Huffman[g]------------	Mad River -----------------	1922	167,000
-----do---	-----	Germantown[g]---------	Twin Creek ----------------	1922	106,000
-----do---	-----	Acton Lake -----------	Fourmile Creek ------------	1957	9,400
Lake Erie Basin					
Maumee River ---	6,608	Grand Lake St. Marys -	(h)	1845	107,000
-----do------------------in Ohio ----------------------	4,862	Auglaize River -------	Auglaize River------------	1912	9,800
-----do------------------in Indiana -------------------	1,283	------------------	------------------------	----	-------
-----do------------------in Michigan ------------------	463	------------------	------------------------	----	-------
Tributaries from Maumee River to Sandusky River ----------	992	------------------	------------------------	----	-------
-----do------------------in Portage River basin ----------	581	------------------	------------------------	----	-------
Sandusky River ---------------------------------------	1,420	------------------	------------------------	----	-------
Tributaries from Sandusky River to Cuyahoga River --------	1,734	------------------	------------------------	----	-------
Cuyahoga River ---------------------------------------	809	LaDue ---------------	Bridge Creek --------------	1961	18,100
-----do---	-----	Lake Rockwell --------	Cuyahoga River ------------	1914	6,880
-----do---	-----	Mogadore ------------	Little Cuyahoga River -----	1939	6,900
Tributaries east of Cuyahoga River ----------------------	1,426	Roaming Rock --------	Rock Creek ----------------	1967	6,090
-----do------------------in Ohio ----------------------	1,256	------------------	------------------------	----	-------
-----do------------------in Pennsylvania --------------	170	------------------	------------------------	----	-------
-----do------------------in Grand River basin -----------	705	------------------	------------------------	----	-------

[a] Reservoirs with total storage capacity greater than 5,000 acre-feet.

[b] Figures from U.S. Geological Survey topographic maps, scale 1:24,000 and only include drainage area of tributary streams listed by W. P. Cross (1967).

[c] Year in which construction of dam was completed.

[d] Figures rounded off to three significant figures from latest reservoir surveys through 1965.

[e] Flood control only.

[f] Estimated.

[g] Detention dams with automatic outlets.

[h] On divide between St. Marys River (Maumee River basin) and Beaver Creek (Wabash River basin).

Runoff averages about 13 inches per year with a distribution of about 10 inches per year in the north to 15 inches per year in the south and southeast. Floods are most common during the spring, but may occur during any season. Glaciation, which advanced into the western and northern two-thirds of the state during the Pleistocene epoch, has strongly influenced the areal variability of flows, particularly the sustained flow of streams. Cross and Hedges (1959) report highest indices of sustained flow occur in basins such as the Muskingum and Great Miami Rivers where extensive permeable glacial gravels have been deposited. Lowest indices are in the impermeable glacial till areas such as the Little Miami River basin. Unglaciated areas generally have relatively low sustained flows, but these flows are greater than those of till areas.

CONCEPTS AND PROCEDURES USED IN THIS STUDY

This study was conducted to design a streamflow data program that will provide streamflow information at any point on any stream in Ohio. Because it is not feasible or economically wise to operate a gaging station on every stream, streamflow information must be provided by a combination of data collection and analytical methods that generalize information obtained at gaged sites.

The general framework of this study is shown in table 2. Streamflow data are classified into four types: (1) data for current use, (2) data for planning and design, (3) data to define long-term trends, and (4) data on stream environment. For planning and design, streams are classified as natural or regulated, and each of these classifications is further subdivided into principal or minor, with the separation of the two occurring at a drainage area of 500 square miles.

Table **2** —*Framework for design of data collection program*

Type of data	Current use	Planning and Design				Long-term trends	Stream environment
		Natural Flow		Regulated Flow			
		Minor streams	Principal streams	Minor streams	Principal streams		
Goals	To provide current data on streamflow needed for day-by-day decisions on water management as required.	To provide information on statistical characteristics of flow at any site on any stream to the specified accuracy.				To provide a long-term data base of homogeneous records on natural-flow streams.	To describe the hydrologic environment of stream channels and drainage basins.
Drainage area limits	Full range	Less than 500* sq mi.	Greater than 500* sq mi.	Less than 500* sq mi.	Greater than 500* sq mi.	Full range	Full range
Accuracy goal	As required	Equivalent to 10 years of record.	Equivalent to 25 years of record.	Equivalent to 10 years of record.	Equivalent to 25 years of record.	Highest obtainable	As required
Approach	Operate gaging stations as required to provide specific information needed.	Relate flow characteristics to drainage basin characteristics using data for gaged basins.	Operate gaging stations to obtain 25 years of record (or the equivalent by correlation) at a network of points on principal streams; interpolate between points.	Develop generalized relations that account for the effect of storage, diversion or regulation on natural flow characteristics.	Utilize analytical model of stream system with observed data as input to compute homogeneous records for both natural flow conditions and present conditions of development.	Operate a number of carefully selected gaging stations indefinitely.	Observe and publish information on stream environment.
Evaluate available data	Identify stations where data is used currently and code the specific use of data.	Develop relationship for each flow characteristic and compare standard error with accuracy goal. Evaluate sample.	Lay out network of points on principal streams and compare data available at these points with goal.	Appraise type of regulation, data available, and areas where relationships are needed.	Identify stream systems that should be studied using model approach and determine data requirements.	Select two stations in each WRC subregion to operate indefinitely for this purpose.	Evalualte information available in relation to goals.
Design future program		Identify goals that have not been attained. Consider alternate means of attaining goals. Identify elements of future program.					

*May be varied with terrain and hydrologic conditions.

In the initial phase of the study, program goals were established for each type of data. Accuracy goals were quantitatively defined for data for planning and design. All available data were then examined and analyzed. This led to a comparison of the information now available with the goals that had been set and to consideration of the elements that should be included in the future program.

Criteria for each of the four types of data, and the methods employed in deriving information, are discussed in the following sections of this report.

Data for Current Use

Current information on streamflow is needed at many sites on a day-to-day basis for water management, for assessment of current water availability, for the control of water quality, for forecast of water hazards, and for surveillance necessary to comply with legal requirements. Sites at which data are collected for these purposes are termed "current purpose" streamflow stations.

Current-purpose data stations are identified separately in this study because (1) justificiation can be related to specific needs; (2) the data may have little or no transfer value in a hydrologic sense; and (3) the station locations, accuracy requirements, and periods of operation are specified by the user of the data, who usually provides the financing.

This part of the program is not subject to theoretical design, but changes in response to the needs for data in water management.

Data for Planning and Design

Streamflow records form the principal basis for the planning and design of water-related facilities. Past hydrologic experience, however, is never precisely duplicated in the future; the exact sequence of wet and dry years probably will not occur again. For this reason, designers and planners commonly utilize statistical characteristics of streamflow rather than the records of flow at specific times. Typical statistical characteristics are the mean flow, the flood of 50-year recurrence interval, and the standard deviation of annual mean flows.

A long record of streamflow at the specific site is desirable for defining statistical characteristics of streamflow at that site. Although it is not feasible to collect a long continuous streamflow record at every site where it may be needed, a representative sampling of sites can provide information that can be transferred to ungaged sites or to sites where only a small amount of streamflow data is available.

To evaluate the statistical characteristics of streamflow, the streams in Ohio were identified as having either natural or regulated-flow conditions. For the purpose of setting accuracy goals, streams were further classified into minor streams (drainage area less than 500 sq mi), and principal streams (drainage area greater than 500 sq mi). The intent of this classification was to use size of drainage area as an index of worth of data. More costly water-related development can be expected on larger streams, thereby justifying a higher accuracy goal for principal streams than for minor streams.

Natural-Flow Streams

Characteristics of natural streamflow may be transferred from a sample of gaged sites by (1) regionalization techniques which define relations for estimating flow characteristics from measured drainage basin characteristics, (2) interpolation between gaged points, and (3) correlation between long-term records and flow observations at sites that have inadequate data for direct definition of flow characteristics.

For minor streams, some method of regionalization will be required because of the great many sites on small Ohio streams where planning and design data may be needed. Regionalization techniques vary from simple linear relations between a flow characteristic and a single basin characteristic, to complex relations involving numerous basin characteristics. The relations are generally defined with basin characteristics that can be evaluated from climate or topographic maps, but more difficult to obtain basin characteristics requiring field measurements also can be used.

For principal streams, regionalization techniques are also applicable. Past experience, however, indicates that regional relations sometimes are inadequate to estimate flow characteristics with the high degree of accuracy desired on large streams. Interpolating between a sample of gaged sites is an alternate method of estimating characteristics of principal streams. Interpolation would require a network of gages at sites with drainage areas of about 500 square miles at the headwaters of all principal streams and additional downstream gages at sites where the drainage area has approximately doubled.

Regulated-Flow Streams

The natural flow regimen of many streams is altered by the construction of storage reservoirs and the diversion of water for consumptive use. These alterations increase the scope of both the data collection and the analysis that is required to provide information on streamflow characteristics.

To be useful in statistical prediction, streamflow data must be homogeneous in time. Frequently, however, it is not possible to obtain a long record under one condition of development before additional changes occur.

Definition of the flow characteristics at any point on any stream is also much more difficult under conditions of regulation. The procedures used for natural streams -- regression, correlation, interpolation, etc. -- cannot be applied.

For regulated streams, a systems approach seems to be the most efficient way of providing meaningful information on the statistical characteristics of flow. This approach requires some sort of analytical model of the stream system. Such models are simple in concept and generally consist of water-budget equations and flow-storage equations. However, in many instances the use of the digital computer is required for complex equations, or to handle large volumes of data. A computer program tailored to the individual system can be prepared.

Development of such a model requires information on stage-capacity curves of reservoirs, stage-discharge curves at the outlets, operating-rule curves for the release of water, losses due to evaporation and seepage, the geometry of the stream channel, and records of diversions and return flow. Information on streamflow at some point or points is also needed as input to the model and to verify the output. Frequently, aquifer characteristics and ground-water pumpage should be considered.

The model and the associated data can be used to derive homogeneous data for either the natural or the regulated conditions. All historical streamflow records for both natural and regulated flows could be used as input to the model. Furthermore, data could also be derived for ungaged sites in the stream system.

Accuracy Goals

In using past hydrologic experience to appraise the probability of future occurrences, some error must be tolerated. Natural streamflow, like other events related to climate, is generally random in occurrence and varies greatly in time and space. Statistical techniques used in the analysis of random events, therefore, are considered applicable. Measures of the variability with time of annual mean flow and other streamflow characteristics are determined from the historical streamflow data, and the probable errors involved in defining streamflow characteristics can be appraised. The principal measure of the accuracy with which a particular streamflow characteristic can be determined is the statistical measure of error, "standard error of estimate," and is expressed in this report as a percentage of the average value of the characteristic. The standard error is the estimated limit above and below the average within which about 67 percent of future values of the characteristic is expected to fall. Conversely, there is only one chance in three that future values will differ from the average by more than one standard error.

In general, the longer the record, the more reliable are the estimates of probable future occurrences. However, even with a long record, say 50-100 years or more, it is not possible to determine with great precision the probability of certain flow characteristics such as floods of a given magnitude, for example. The standard error of various streamflow parameters decreases with increasing years of available record, but at a decreasing rate (reduction in error is proportional to the square root of the length of record). Typical examples are shown in figure 1. The incremental economic value of the additional years of

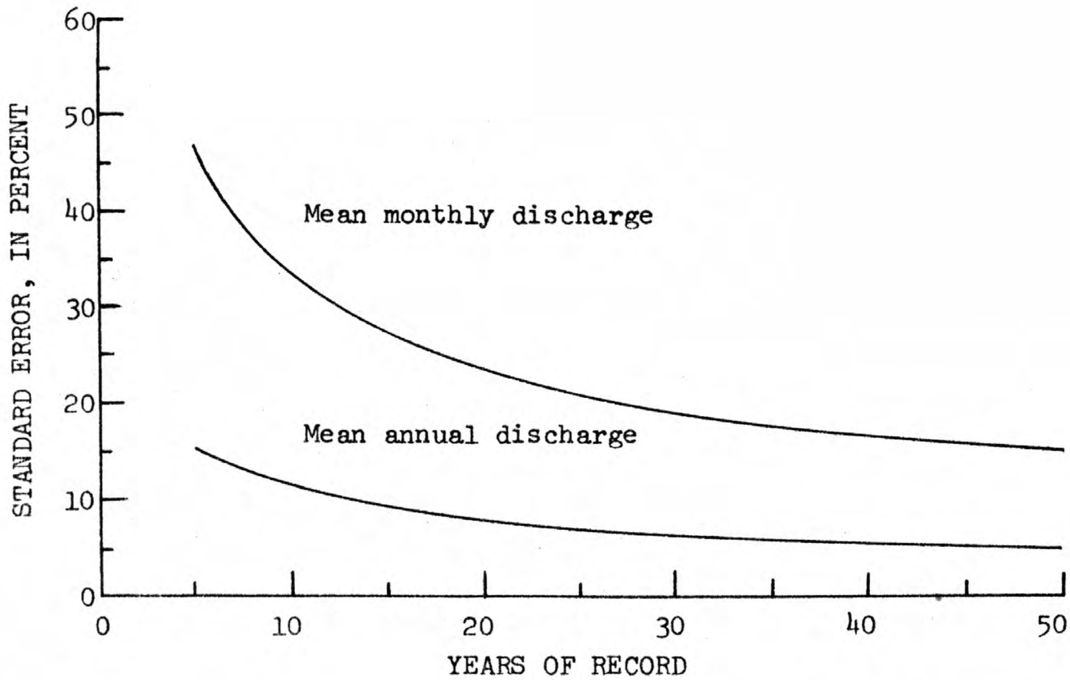

Figure 1.--Curve showing relation of standard error to length of record.

record beyond a reasonable limit in the planning and design of projects is under continuing study, but no usable guidelines are available now.

Accuracy goals for streamflow characteristics are expressed as the accuracy equivalent of an arbitrary number of years of record. These goals are the same for natural and regulated flows; that is, accuracy equivalent to that which would be obtained from 10 years of record at the site for minor streams (drainage area less than 500 sq mi), and accuracy equivalent to that which would be obtained from 25 years of record for principal streams (drainage area more than 500 sq mi).

At sites on natural-flow streams where streamflow records are not available, the desired streamflow characteristics may be estimated by means of the general relation between the streamflow characteristic and the characteristics of the drainage basin that have been defined at measurement sites. This definition is accomplished by multiple regression analysis, a statistical method of handling sample data that can relate streamflow characteristics to the topographic and climatic characteristics that affect streamflow. This analysis produces a regression equation that can be used to compute the flow characteristics at any point on natural streams in Ohio. In addition, this analysis provides standard errors of estimate that represent the accuracy with which estimates of flow characteristics can be made. The standard errors of estimate of regression equations can be compared with the accuracy goals for streamflow information to determine if the accuracy objective has been met.

Data to Define Long-Term Trends

Characteristics of streamflow defined from gaging-station records are used to estimate future-flow characteristics, on the assumption that the observed record is a representative sample of the long-term flows of the stream. To affirm this assumption, or to better define the ways in which the characteristics of flows change with time, selected gaging stations on natural streams should be operated indefinitely. It is necessary to gage these sites with extreme accuracy.

Data on Stream Environment

Environmental data describe the physical environment in which the water exists, especially those features that relate to the use of water for recreation, waste disposal, conjunctive surface water-ground water supply, and the preservation of the esthetic character of water features. The types of data required for this purpose are suggested by the following:

(1) The geologic and hydraulic properties of the stream-aquifer systems.

(2) Time of travel of solutes in stream channels.

(3) Definition of flood profiles along stream channels.

(4) Identification of flood plains of streams for floods of different frequencies.

(5) Definition of stream and stream-channel properties, such as velocities, depths, bank vegetation, bed material, water temperature, water quality, and accessibility.

(6) Data needed to define the effects of manmade changes in the environment on the quantity and quality of streamflow.

(7) Character of the drainage basin, including area, vegetal cover, land and channel slopes, geology, and topography.

(8) Climatic factors influencing the water supply.

GOALS OF THE OHIO STREAMFLOW DATA PROGRAM

Specific goals are set for each of the four types of data that represent the particular information that is needed.

Data for Current Use

The program goal for this type of data is to provide the particular information needed at specific sites for current use. Intensity of observation and sophistication of instruments may be varied to meet accuracy goals specified by the data user.

Data for Planning and Design

The goal for this type of data is to define, with the specified accuracy, the statistical flow characteristics listed in table 3. This goal applies not only to all streams with natural flow, but also to all streams that are affected by regulation and diversion. The accuracy goals shown for minor streams are equivalent to the accuracy obtained from 10 years of actual record. Those shown for principal streams are equivalent to 25 years of actual record. Accuracy goals for Ohio streams in terms of equivalent years of record are converted to standard errors of estimate in percent of mean value (as described by Hardison, 1969) and are defined from an index of natural variability known as the coefficient of variation. The coefficients of variation for each streamflow characteristic were determined from actual Ohio streamflow records.

Table 3.--Accuracy goals

Streamflow characteristics	Standard error of estimate (percent)	
	Minor streams	Major streams
Mean annual discharge -------------------	11	7
Standard deviation of annual discharge --	22	14
Mean monthly discharge (average) --------	34	21

Table 3.--Accuracy goals--Continued

Streamflow characteristics	Standard error of estimate (percent)	
	Minor streams	Major streams
Standard deviation of monthly discharges (average) --------	22	14
2-year flood -------------------------	19	11
5-year flood -------------------------	22	14
10-year flood ------------------------	26	16
25-year flood ------------------------	31	19
50-year flood ------------------------	34	22
7-day, 2-year low flow ---------------	20	13
7-day, 10-year low flow --------------	28	17
7-day, 20-year low flow --------------	31	20
7-day, 2-year high flow --------------	15	9
7-day, 10-year high flow -------------	20	13
7-day, 50-year high flow -------------	26	17

Data to Define Long-Term Trends

The goal for this category of data is to define any long-term trends in streamflow characteristics that might be occurring over large areas of the state. The required data may be obtained only by operating indefinitely a small network of gaging stations on streams that are expected to be relatively free from manmade changes.

Data on Stream Environment

The long-range goals for data on stream environments in Ohio are given as follows:

(1) Definition of stream-aquifer systems.

(2) Determination of time of travel of solutes in stream channels under a variety of streamflow conditions.

(3) Definition of flood profiles along stream channels.

(4) Identification of flood plains of streams for floods of different frequencies.

(5) Definition of streamflow and stream channel parameters in relation to future hydraulic construction and water use.

(6) Evaluation of the effect of manmade changes in the environment on streamflow.

EVALUATION OF EXISTING DATA IN OHIO

All available data have been considered and analyzed in relation to program objectives. A separate evaluation has been made for each of the four types of data.

Data for Current Use

Presently (1970), 141 of the gaging stations in Ohio are operated to provide data for current use. The current purpose stations and the principal uses for the data are identified in table 6. It is assumed that the need for current use data is met by these gages. However, this part of the program is subject to modifications as the needs for data change.

Data for Planning and Design

Statistical streamflow characteristics needed for planning and design may be defined by various techniques. Regional relations will be required for the numerous minor streams and may be adequate for principal streams. System studies will be required for regulated streams.

Evaluation of the Natural-Flow Systems

The adequacy of natural-flow data now available was evaluated on the basis of its ability to define flow characteristics prediction equations by multiple-regression analysis. Multiple-regression is a statistical technique, that for sample data relates a dependent variable (a flow characteristic) to a set of independent variables (basin characteristics), defines the mathematical equation of the relation, and provides a measure of the accuracy of flow predictions by the equation. If regression relations are found to have a predictive accuracy that meets the goals for planning and design data then the available data are adequate. If the relations do not meet the accuracy goals then additional data, a different analytical technique, or both may be needed.

Selection of Streamflow Records for Analysis

In the analysis 186 streamflow records, including five from Indiana and one from Pennsylvania, were used. The out-of-state records were selected from stations whose drainage areas are located near Ohio's boundary. All records have been published by the Geological Survey through the 1967 water year and represent both minor and principal streams with 10 or more years of essentially unregulated flow or flow that can be adjusted to natural conditions. Stations located on the same streams were selected on the basis of a minimum increase of 25 percent in drainage area. No records were extended in time or adjusted to a base period. The combination of time periods yields a random set of data which are considered necessary for computing long-term expectancies of streamflow characteristics.

Streamflow Characteristics

The streamflow characteristics required for planning and design represent a complete range of flow. Values of the determined characteristics for each Ohio station used in the analysis are listed in table 7. Not all of the characteristics have been determined for each station. Low flows or flood peaks materially affected by regulation or undetermined diversion were not computed. In the Great Miami River basin, for example, flood peaks at stations below flood detention dams were omitted from the analysis. Only flood peak characteristics were determined for the last 73 stations listed in table 7.

The following streamflow characteristics are used in planning and design:

(a) Flood-peak characteristics are represented by discharges from the annual flood-frequency curve at recurrence intervals of 2, 5, 10, 25, and 50 years. The frequency curves were prepared as described by the Water Resources Council (1967). Only peaks with recurrence intervals equal to or less than twice the number of recorded annual peaks were used for regression analysis.

(b) Mean-flow characteristics are described by the mean of the annual means and by the means of record for each calendar month.

(c) Flow-variability characteristics are represented by the standard deviations of the annual and monthly means.

(d) Low-flow characteristics are the annual minimum 7-day mean flows at 2-year, 10-year, and 20-year recurrence intervals. These were determined by graphical low-flow frequency curves and by frequency curves prepared as described by the Water Resources Council (1967).

(e) Flood-volume characteristics represent the annual highest average flow for 7-day periods at recurrence intervals of 2, 10, and 50 years. The frequency curves were prepared as described by the Water Resources Council (1967). Flood volumes with a 50-year recurrence interval at stations with less than 25 years of record were not used for regression analysis.

Drainage-Basin Characteristics

The drainage-basin characteristics used in this study define the principal meteorologic, topographic, and other physical characteristics that affect streamflow from a drainage basin. Values of these characteristics for each of the Ohio gaging stations used in the analysis are listed in table 7. The basin characteristics are defined as follows:

(a) Drainage area, in square miles, as shown in the latest Geological Survey streamflow reports.

(b) Main-channel slope, in feet per mile, determined from elevation at points 10 percent and 85 percent of the distance along the channel from the gaging station to the divide. This index was described and used by Benson (1962, 1964).

(c) Main-channel length, in miles, from the gaging station to the basin divide, as determined with a map measure using topographic maps of 1:24,000 scale.

(d) Surface storage index is the percent of total drainage area occupied by lakes, ponds, and swamps measured from topographic maps by use of transparent grids. The characteristic used for regression was surface storage index plus 1.0.

(e) Mean basin elevation, in feet above mean sea level, computed by averaging the elevations at the 10 and 85 percent distance points along the channel. The credibility of this method is discussed by Benson (1964). The characteristic used for regression analysis was mean basin elevation in 1,000 feet above mean sea level.

(f) Forest area, in percent of total drainage area, measured by a grid sampling method from topographic maps. The characteristic used for regression analysis was forest area plus 1.0.

(g) Mean annual precipitation, in inches, determined from an isohyetal map published by the Ohio Department of Natural Resources (1962). The characteristic used for regression analysis was mean annual precipitation minus 27.

(h) The maximum 24-hour rainfall having a recurrence interval of 2 years ($I_{24,2}$), in inches, determined from U.S. Weather Bureau Publication (1961).

(i) Soils infiltration index, in inches, calculated by the U.S. Soil Conservation Service for each major land resource area in Ohio.

Regression Analysis

The regression model used in this study has the form $Y = aA^bS^cP^d$---, where Y is a statistical streamflow characteristic; a is the regression constant; A, S, and P are basin characteristics; and b, c, and d are coefficients obtained by regression analysis. A high-speed digital computer performed the voluminous calculations required for step-backwards regression analysis. The procedure involved entering into the computer a streamflow characteristic and the nine basin characteristics for each of the 186 stations. The computer calculated the regression equation, the standard error of estimate, and the statistical significance to the equation of each basin characteristic. Automatically, then, the computer repeated the calculations, omitting the least significant basin characteristic until only the most significant basin characteristic remained. After all relations for a given streamflow characteristic had been computed, the entire computation process was repeated using a new streamflow characteristic along with the nine basin characteristics.

Table 4 illustrates the series of equations computed for predicting mean annual discharge of Ohio streams. The optimum equation is the one in which all coefficients are significant at the 5 percent level and remain signficant at that level until subsequently dropped in step-backward analysis. On this basis, the optimum equation for estimating mean annual discharge is:

$$Q_a = 0.353A^{1.02}St^{-0.06}E^{0.24}F^{0.05}P^{0.42}Si^{-0.18},$$

where Q_a is mean annual discharge, in cubic feet per second (cfs); A is drainage area in square miles; St is surface storage index, in percent (plus 1.0); E is mean basin elevation, in 1,000 feet above mean sea level; F is forest area, in percent (plus 1.0); P is mean annual precipitation, in inches (minus 27); and Si is soils infiltration index, in inches. It should be noted, however, that additional equations are applicable for prediction purposes. For example, the equation $Q_a = 0.284A^{1.01}F^{0.05}P^{0.45}$ is only 0.5 percent less accurate. The effort saved in computing only three basin characteristics may offset the loss in accuracy for some users.

Values of the regression constant, the regression coefficients, and the standard error of estimate for each of the 39 streamflow characteristics are shown in table 5. These regression equations are considered the

Table 4.--Summary of regression analyses of mean annual discharge

Dependent variable	Regression constant	Regression coefficients for independent variables									Standard error of estimate[a]	
		Area (A)	Slope (S)	Length (L)	Storage (St)	Elevation (E)	Forests (F)	Precipitation (P)	Intensity ($I_{24,2}$)	Soils (Si)	Percent (%)	Percent change
Mean annual discharge, (Q_a)	0.398	[b]1.02	-0.01	-0.01	[c]-0.06	[c]0.21	[b]0.05	[b]0.45	-0.17	-0.13	10.4	----
Do ---------------------	.387	[b]1.01	-.01	-----	[c]-.06	[c].22	[b].05	[b].45	-.18	-.13	10.4	0
Do ---------------------	.377	[b]1.02	-----	-----	[c]-.06	[c].21	[b].05	[b].45	-.18	-.13	10.4	0
Do ---------------------	.353	[b]1.02	-----	-----	[c]-.06	[b].24	[b].05	[b].42	-----	[c]-.18	10.4	0
Do ---------------------	.266	[b]1.02	-----	-----	[c]-.06	[b].25	[b].07	[b].44	-----	-----	10.5	+0.1
Do ---------------------	.270	[b]1.01	-----	-----	-----	[c].18	[b].06	[b].45	-----	-----	10.7	+.2
Do ---------------------	.284	[b]1.01	-----	-----	-----	----	[b].05	[b].45	-----	-----	10.9	+.2
Do ---------------------	.267	[b]1.00	-----	-----	-----	----	----	[b].53	-----	-----	11.7	+.8
Do ---------------------	.987	[b].99	-----	-----	-----	----	----	----	-----	-----	16.0	+4.3

a/ Percent change when least significant variables are dropped.
b/ Significant at the 1-percent level.
c/ Significant at the 5-percent level.

best available for prediction purposes and are considered applicable to any natural-flow site in Ohio.

Minor Streams

Comparison of the standard errors of regression relations in table 5 with the accuracy goals for natural-flow characteristics on minor streams given in table 3 indicates that regression relations can adequately estimate:

Mean annual flow

Standard deviation of annual flow

and

7-day average highest flows of 2-year to 50-year recurrence intervals.

Because these relations were adequately defined from available data, no additional data are required on these characteristics.

Regression relations were inadequate to estimate with the desired accuracy the flow characteristics of

7-day lowest flows

flood peaks

and

standard deviations of monthly flows.

Additional data, improved analytical techniques, or both will be required to meet the accuracy goals for these flow characteristics on minor streams.

Principal Streams

For natural flows on principal streams, only the 50-year, 7-day highest flow characteristic can be estimated with the desired accuracy

Table 5.--Summary of regression equation

$$\left[\text{Model is } Y = aA^{b_1}S^{b_2}L^{b_3}St^{b_4}E^{b_5}F^{b_6}P^{b_7}I_{24,2}^{b_8}Si^{b_9}\right]$$

All regression coefficients are statistically significant at the 1% level except those underlined which are significant at the 5% level.

A = drainage area, in square miles

a = constant in regression equation

$b_1, b_2, b_3 \ldots b_n$ = regression coefficients

E = average basin elevation, in 1,000 ft above sea level datum

F = forested area, in percent of total drainage area and increased by 1.00 percent

$I_{24,\,2}$ = intensity of 24-hour, 2-year rainfall, in inches

L = main-channel length, in miles

$M_{7,\,t}$ = minimum annual 7-day average flow expected on the average once each t years, in cubic feet per second

n (subscript) = number of month starting with January at 1

P = mean annual precipitation, in inches

Q_a = mean annual discharge, in cubic feet per second

q_n = mean monthly discharge for month n, in cubic feet per second

S = main-channel slope, in feet per mile

SD_a = standard deviation of mean annual flow, in cubic feet per second

SD_n = standard deviation of mean monthly discharge for month n, in cubic feet per second

Si = soils infiltration index, in inches

St = surface storage index, i.e., percent of total drainage area occupied by lakes and swamps, and increased by 1.00 percent

$V_{7,\,t}$ = maximum annual 7-day average flow expected on the average once each t years, in cubic feet per second

$Y_1, Y_2, Y_3 \ldots Y_n$ = streamflow characteristics

Flow index (Y)	Regression constant (a)	Regression coefficients for									Standard error of estimate (%)
		A	S	L	St plus 1.0	E	F plus 1.0	P minus 27	$I_{24,\,2}$	Si	
Q_2	3.92	0.78	0.22	----	-0.18	-0.94	----	1.03	----	----	37
Q_5	5.49	.75	.25	----	-.17	-.90	-.06	1.17	----	----	36
Q_{10}	6.38	.74	.26	----	-.20	-.81	-.07	1.23	----	----	37
Q_{25}	7.61	.74	.30	----	-.19	-.60	-.11	1.27	----	----	39
Q_{50}	17.2	.59	----	----	-.33	----	-.12	1.62	----	----	41
Q_a	.353	1.02	----	----	-.06	.24	.05	.42	----	-0.18	10
q_1	.369	1.02	----	----	----	----	.05	.51	----	----	19
q_2	.509	.92	----	0.14	----	----	.05	.59	-0.39	----	14
q_3	1.37	.92	----	.13	----	----	.05	.35	----	-.47	12
q_4	.829	.99	----	----	----	----	.08	.26	----	----	11
q_5	.356	1.03	----	----	.11	.39	.11	.32	----	----	15
q_6	.117	1.20	----	-.37	----	----	-.11	.58	----	.67	27
q_7	.031	1.26	----	-.45	----	.58	----	.50	1.08	.52	28
q_8	.015	1.26	----	-.34	----	1.02	----	1.17	----	----	37
q_9	.013	1.31	----	-.34	-.27	1.04	----	1.02	----	----	41
q_{10}	.050	1.20	----	----	----	1.66	.13	.63	1.28	----	52
q_{11}	.209	1.06	----	----	----	----	----	.71	-1.40	----	30
q_{12}	.379	.94	----	.19	----	----	.07	.60	-1.16	----	21
Mean of standard errors of regression equations of mean monthly discharges ---------------											26
SD_a	.114	1.04	----	----	----	----	.06	----	.77	----	16
SD_1	1.21	1.03	----	----	----	----	----	----	----	----	24
SD_2	.462	.88	----	.19	----	-.28	.05	.18	.71	-.38	15
SD_3	.136	.83	----	.26	----	----	----	.69	.56	----	21
SD_4	1.06	.88	----	.16	----	-.50	----	----	----	----	19
SD_5	.377	.92	----	.22	----	----	.10	----	.70	-.35	20
SD_6	.843	1.04	-.26	-.27	-.20	.78	----	----	1.32	----	33
SD_7	.697	.91	----	----	----	----	----	----	----	----	33
SD_8	.072	1.01	----	----	----	----	----	1.22	-1.45	----	45
SD_9	.019	1.08	----	----	----	----	----	.96	----	----	53
SD_{10}	.953	.97	-.42	----	----	----	----	.94	-2.81	----	71
SD_{11}	.160	.99	-.23	----	----	----	.11	.55	----	----	35
SD_{12}	2.34	.88	-.09	.19	----	----	----	----	----	-.79	23
Mean of standard errors of regression equations of standard deviations of mean monthly discharges											33
$M_{7,\,2}$	No meaningful equation derived				----	----	----	----	----	----	--
$M_{7,\,10}$	No meaningful equation derived				----	----	----	----	----	----	--
$M_{7,\,20}$	No meaningful equation derived				----	----	----	----	----	----	--
$V_{7,\,2}$	6.20	.87	----	.16	----	-.34	----	.30	----	-.43	15
$V_{7,\,10}$	3.32	.86	----	.21	----	----	----	.56	----	----	16
$V_{7,\,50}$	3.38	.93	-.10	----	----	----	-.09	.96	----	----	15

by defined regression relations. It will be necessary, therefore, to define all principal stream, natural-flow characteristics by interpolation between a network of gaged sites.

As of the 1970 water year, the principal streams network in Ohio includes 20 sites on unregulated streams, with at least 25 years of available record at 17 of the 20 sites. At the three other sites, which are on Paint Creek, Salt Creek, and Blanchard River, development in the near future will effect the natural flows. Therefore, it is apparent that adequate data are currently available on natural-flow characteristics of principal streams.

Evaluation of the Regulated-Flow System

Meeting the information goals for planning and design characteristics is more difficult on regulated than on natural streams because the techniques of regionalization do not apply, the flow characteristics may not be stationary in time, and the flows at a regulated and an unregulated site may be uncorrelated. A systems approach, therefore, seems to be the most practical method for defining flow characteristics on streams for either natural conditions or for various patterns of regulation and diversion. Systems studies for all regulated stream systems in Ohio will require a major effort. The present evaluation is therefore limited to identifying the regulated streams and describing briefly the types of data that can be used in developing a systems model.

Table 1 lists the major reservoirs (gross storage of 5,000 acre-feet or more) in Ohio and the streams on which they are located. About two-thirds of these reservoirs are located in the Scioto, Muskingum, and Mahoning River basins.

Information needed to define a systems model is the flow-storage-routing relations for the reservoirs and stream channels, and rule-curves for each storage and diversion operation. Records of inflow, storage, and outflow are available for most major reservoirs in Ohio, and these records should provide an adequate data base for development of systems models.

Data to Define Long-Term Trends

At present only one gaging station, Upper Twin Creek at McGaw, has been designated as a long-term trend station for indefinite operation on a natural-flowing stream. A national network of two long-term trend stations in each Water Resources Council subregion has been recommended by Carter and Benson (1970). This will require that an additional 10-14 sites be so designated. These gages may be selected from existing stations on the basis of (1) long existing record, (2) widest possible range in physical and climatic variables that govern streamflow, (3) accurate conditions for gaging, (4) probability that natural conditions will remain, and (5) multiple uses of station records.

Data on Stream Environment

Many environmental factors were determined for the 180 Ohio drainage basins used in this study. In addition to basin characteristics listed earlier in this report, average annual snowfall, maximum July temperatures, and minimum January temperatures were determined also.

Flood plains and flood profiles defined for selected streams have been outlined on 89 topographic quadrangle maps. Included among these maps are 11 urban flood maps published as Hydrologic Atlases.

Channel surveys have been made at many sites in connection with indirect determination of peak flow for major floods. A detailed channel survey has been made at the one existing long-term trend station. Channel geometry has been determined at five gaging stations. Four surveys of time of travel of solutes in streams have been conducted in the state -- all on the Great Miami River.

THE PROPOSED STREAMFLOW DATA PROGRAM

The information developed in different segments of this study has been merged and applied in planning a streamflow data program that would eventually attain as many of the remaining goals as possible within the limits of available funds. For the optimum program, a balance must be maintained between data collection and data analysis in order to gain a better understanding of the hydrologic system in Ohio and to guide future evaluation of the program in meeting the ever-changing needs of streamflow information and in adapting to the changes in technology.

Data Collection

Data for Current Use

The 141 gaging stations, identified as presently meeting the needs for current-purpose data (table 6), will be continued. The needs for these station data will be examined periodically and as the needs for data change, stations will be added, discontinued, or reduced to partial-record sites, to maintain the optimum possible network for current-use data.

Natural Flow-Minor Stations

Regression relations provide adequate natural-flow characteristic estimates except for low flows, flood peaks, and standard deviations of monthly flows.

Improvement of estimating relations for standard deviations of monthly flows may require additional continuous daily discharge records, improved analytical methods, or both. The regression model used in this study omitted any index of precipitation variability, and it is believed that further study using such an index would improve the standard diviation of monthly flow estimates more than the collection of additional data. Because this is the only flow characteristic for which any additional daily flow information would be required, and the benefits of improved estimates through additional daily flow records may be less than the cost of obtaining those records, the addition of an index of precipitation variability in the regression model is proposed.

For the above reasons, the following gaging stations which are currently operating on natural-flow minor streams are not recommended for continual operation in the future program:

03-0895 Mill Creek near Berlin Center

03-0920 Kale Creek near Pricetown

03-0985 Mill Creek at Youngstown

03-1160 Tuscarawas River at Clinton

03-1250 Home Creek near New Philadelphia

03-1305 Touby Run at Mansfield

03-1564 Hocking River at Lancaster

03-2180 Little Scioto River above Marion

03-2245 Whetstone Creek near Ashley

03-2355 Tar Hollow Creek at Tar Hollow State Park

03-2423 Caesar Creek at Harveysburg

03-2465 East Fork Little Miami River at Williamsburg

03-2607 Bokengahalas Creek near DeGraff

03-2608 Stony Creek near DeGraff

03-2665 Mad River at Zanesfield

03-2675 Mad River at Tremont City

03-2677 Moore Run near Eagle City

03-2679 Mad River (St. Paris Pike) at Eagle City

03-2708 Wolf Creek at Trotwood

Low-flow characteristics may be estimated by correlating discharge measurements for partial-record sites with concurrent flows for index sites where low-flow characteristics are known. Operation is recommended for eight existing gaging stations to complete a low-flow index station network which will provide a wide areal distribution and which will cover a range of basin sizes. These eight sites listed below should be operated to obtain 20 years of record.

03-1029.5 Pymatuning Creek at Kinsman

03-1154 Little Muskingum River at Bloomfield

03-1460 North Fork Licking River at Utica

03-1560 Hunters Run at Lancaster

03-1595.4 Shade River near Chester

03-2288.05 Alum Creek at Africa

03-2415 Massies Creek at Wilberforce

04-2072 Tinkers Creek at Bedford

Only the stations on Massies Creek and Tinkers Creek will be operated solely for this purpose.

Low-flow partial-record data are currently gathered at 71 sites. This sparse network is inadequate to evaluate areal distribution of low flows. The network of low-flow partial-record sites should be expanded to include one site on all ungaged streams with a size of 50 square miles or more -- approximately 110 sites. At each of these sites, from 8 to 10 low-flow measurements gathered over a 5-year period should provide adequate correlations with index-station flows to define the low-flow characteristics. Low-flow characteristics on streams of less than 50 square miles drainage area will be determined only on specific request of a cooperator.

Although the standard errors of estimate of the regression relations for estimating flood peaks are relatively small (36-41 percent), they do not meet the desired accuracy levels. The relations might be improved by obtaining additional data, or by more detailed regression analysis. An improvement in the regression model by use of additional basin characteristics and possibly including characteristics such as channel width and depth, that must be measured at the site, seems like the method most likely to provide accurate estimates.

Until the success of alternate repression models is tested, the present flood-flow partial-record network of 73 stations is proposed for continued operation. After the study is completed the network can be modified as necessary. Because of an increasing interest in floods of large recurrence intervals, flood data should be indefinitely obtained at a number of sites, but these sites may be selected when the data collection program is modified as a result of future flood studies.

The future partial-record network for low flow and high flow can be operated at a relatively low cost. The present partial-record stations in Ohio are shown in figure 2 (in pocket).

Natural Flow-Principal Streams

The accuracy objective of 25 years of record has been attained at 17 of the 20 sites identified as providing this category of data. The remaining three sites are located on streams subject to regulation in the near future. Only one station, 04-1925 Maumee River near Defiance, in the principal stream network serves no other purpose and, therefore, this station is not recommended for inclusion in the program.

Regulated-Flow Systems

The regulated portion of principal streams will offer the greatest challenge in the future program. The three most highly developed stream systems in the state -- the Scioto River, the Muskingum River, and the Mahoning River -- are proposed for future systems studies. The following gaging stations, not classified as current-purpose stations, and having 10 years of record for minor streams or 25 years of record for principal streams under regulated conditions, are not recommended for inclusion in the program:

03-1180 Middle Branch Nimishillen Creek at Canton

03-1360 Mohican River at Greer

03-2440 Todd Fork near Roachester

04-2045 Little Cuyahoga River at Massillon Road, Akron

04-2050 Springfield Lake Outlet at Akron

04-2115 Mill Creek near Jefferson

Initial study is proposed for the Scioto River basin because of its more recent water developments and greater availability of streamflow records before construction in comparison to the other two basins. Because analytical approaches and data requirements are not yet well defined, a pilot study on one stream segment should be conducted before the entire Scioto stream system is modeled. The Olentangy River from Claridon to Worthington is proposed for the pilot study.

A systems study in the Great Miami River basin will not be required. Storage in the five detention dams (table 1) occurs only during flood periods. The accuracy goals for all streamflow characteristics except flood peaks have been achieved on the Great Miami River by actual 25 years or more of record at key sites. In addition, flood peaks are being forecast by a computer model operated by the Miami Conservancy District in Dayton.

Data to Define Long-Term Trends in Streamflow

The one station operated for this purpose in the current program should be continued in operation indefinitely. As part of this study, 12 additional stations in the present network have been designated as long-term trend stations and should be operated indefinitely to meet the needs for this type of data. (Two stations were selected from each of the seven Water Resources Council subregions represented in Ohio. Two stations that are not included in the Ohio program are located in Indiana.) The 13 long-term trend stations are listed below with drainage area and period of record shown for each station:

Station number	Station name	Drainage area (sq mi)	Period of record
03-1095	Little Beaver Creek near East Liverpool ------------------------	496	1915-
03-1175	Sandy Creek at Waynesburg ----------	253	1938-

The 13 long-term trend stations are continued.

Station number	Station name	Drainage area (sq mi)	Period of record
03-1400	Mill Creek at Coshocton -----------	27.2	1936-
03-1570	Clear Creek near Rockbridge -------	89.0	1939-
03-2020	Raccoon Creek at Adamsville -------	585	1915-35, 1938-
03-2195	Scioto River near Prospect --------	567	1925-32, 1939-
03-2320	Paint Creek near Greenfield -------	249	1926-35, 1939-56, 1966-
03-2372.8	Upper Twin Creek at McGaw --------	12.8	1963-
03-2400	Little Miami River near Oldtown --	129	1952-
03-2670	Mad River near Urbana ------------	162	1925-31, 1939-
04-1935	Maumee River at Waterville -------	6,329	1898-1901, 1921-35, 1939-
04-1980	Sandusky River near Fremont ------	1,251	1898-1901, 1923-35, 1938-
04-2120	Grand River near Madison ---------	581	1922-35, 1938-

Data on Stream Environment

Environmental data are necessary for hydrologic studies and for planning, designing, and operating systems for controlling water or pollution. Collection of the following environmental data is proposed as part of the streamflow data program:

(1) Stream-channel geometry.

(2) Profiles of flood elevations and areas subject to inundation by floods in urban areas.

(3) Velocities and time of travel of water and wastes in channels.

(4) Land use in stream basins.

(5) Aquifer characteristics, including location, extent, hydraulic connection to stream channel, and hydraulic characteristics.

Summary

Table 8 summarizes the streamflow data-collection phase of the proposed program. The table includes all continuous-record streamflow stations now in operation. The types of data are identified for each station to be included in the proposed program. Stations shown as not recommended for inclusion were operated for objectives that have been attained and do not serve a current need. The location of gaging stations included in the proposed program and the types of data to be collected are shown in figure 3 (in pocket).

Data Analysis

The proposed program of data analysis for Ohio should be conducted in two phases: (1) analyses based on data collected to date, and (2) analyses for which additional data will be required.

The data program through the years has supplied an abundant amount of data that should be analyzed and presented in reports. The following hydrologic studies, based on available data, along with the information derived and presented in this study, are proposed:

(1) Magnitude and frequency of peak flow in small drainage areas.

(2) Magnitude and frequency of low flow in Ohio -- an update of the 1965 report on low-flow frequency and storage requirement indices.

(3) Flood-volume frequency of Ohio streams.

Listed as follows are the hydrologic studies that should be incorporated into the proposed program. These studies will require the collection of additional data which may be continuous or short term in nature.

(1) Effect of urbanization on flood runoff.

(2) Systems studies of regulated streams.

(3) Time of travel and dispersion of solutes in Ohio's principal streams.

(4) Hydraulic geometry of Ohio streams.

(5) Relation of runoff to channel geometry.

(6) Stream-aquifer flow system for selected streams.

(7) Areal studies of selected basins.

(8) Regionalization of flood peaks by multiple regression analysis.

(9) Regionalization of standard deviation of mean monthly discharge by multiple regression analysis.

These are only a few of many hydrologic studies that could be made. The streamflow data program for Ohio has been designed so that modification in the collection and analysis of data can be made to meet the changing needs of streamflow information and to adapt to new technology.

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Table 6.--Ohio current-purpose gaging stations

Station number	Station name	Purpose: Accounting	Operation	Forecasting	Disposal	Water quality	Compact or legal	Research or special studies
03086500	Mahoning River at Alliance	-	x	-	-	-	-	-
03090500	Mahoning River below Berlin Dam, near Berlin Center	-	x	-	-	-	-	-
03091500	Mahoning River at Pricetown	-	x	-	-	-	-	-
03092090	West Branch Mahoning River near Ravenna	-	x	-	-	-	-	-
03092460	West Branch Mahoning River below West Branch Dam at Wayland	-	x	-	-	-	-	-
03093000	Eagle Creek at Phalanx Station	-	x	-	-	-	-	-
03094000	Mahoning River at Leavittsburg	-	-	-	-	x	-	-
03095500	Mosquito Creek below Mosquito Creek Dam, near Cortland	-	x	-	-	-	-	-
03098000	Mahoning River at Youngstown	-	x	-	-	-	-	-
03099500	Mahoning River at Lowellville	-	-	-	-	x	-	-
03102950	Pymatuning Creek at Kinsman	-	x	-	-	-	-	-
03109500	Little Beaver Creek near East Liverpool	x	-	x	-	x	-	-
03110000	Yellow Creek near Hammondsville	-	-	-	-	x	-	-
03111500	Short Creek near Dillonvale	-	-	-	-	x	-	-
03114000	Captina Creek at Armstrongs Mills	-	-	x	-	x	-	-
03115400	Little Muskingum River at Bloomfield	-	-	x	-	x	-	-
03116200	Chippewa Creek at Easton	-	-	-	-	x	-	-
03117000	Tuscarawas River at Massillon	-	-	x	-	x	-	-
03117500	Sandy Creek at Waynesburg	-	-	-	-	x	-	-
03118500	Nimishillen Creek at North Industry	-	-	x	-	-	-	-
03120500	McGuire Creek below Leesville Dam, near Leesville	-	x	-	-	-	-	-
03121500	Indian Fork below Atwood Dam, near New Cumberland	-	x	-	-	-	-	-
03122500	Tuscarawas River below Dover Dam, near Dover	-	x	x	-	-	-	-
03123000	Sugar Creek above Beach City Dam, at Beach City	-	x	-	-	x	-	-
03124000	Sugar Creek below Beach City Dam, near Beach City	-	x	-	-	-	-	-
03124500	Sugar Creek at Strasburg	-	x	-	-	-	-	-
03126000	Stillwater Creek at Piedmont	-	x	-	-	-	-	-
03127000	Stillwater Creek at Tippecanoe	-	x	-	-	-	-	-
03127500	Stillwater Creek at Uhrichsville	-	x	x	-	-	-	-
03128500	Little Stillwater Creek below Tappan Dam, at Tappan	-	x	-	-	-	-	-
03129000	Tuscarawas River at Newcomerstown	-	x	x	-	-	-	-
03130000	Black Fork below Charles Mill Dam, near Mifflin	-	x	-	-	-	-	-
03131500	Black Fork at Loudonville	-	x	-	-	x	-	-
03133500	Clear Fork below Pleasant Hill Dam, near Perrysville	-	x	-	-	-	-	-
03135000	Lake Fork below Mohicanville Dam, near Mohicanville	-	x	-	-	-	-	-
03136500	Kokosing River at Mount Vernon	-	-	x	-	-	-	-
03137000	Kokosing River at Millwood	-	-	-	-	x	-	-
03138500	Walhonding River below Mohawk Dam, at Nellie	-	x	-	-	-	-	-
03139000	Killbuck Creek at Killbuck	-	x	x	-	-	-	-
03140000	Mill Creek near Coshocton	-	-	-	-	-	-	x
03140500	Muskingum River near Coshocton	-	x	x	-	-	-	-
03141500	Seneca Fork below Senecaville Dam, near Senecaville	-	x	-	-	-	-	-
03143500	Wills Creek below Wills Creek Dam, at Wills Creek	-	x	-	-	-	-	-
03144000	Wakatomika Creek near Frazeysburg	-	-	-	-	x	-	x
03144500	Muskingum River at Dresden	-	x	x	-	x	-	-
03145000	South Fork Licking River near Hebron	-	x	-	-	-	-	-
03146000	North Fork Licking River at Utica	-	-	-	-	x	-	-
03146500	Licking River near Newark	-	x	x	-	x	-	-

Station number	Station name	Purpose: Accounting	Purpose: Operation	Purpose: Forecasting	Purpose: Disposal	Purpose: Water quality	Purpose: Compact or legal	Purpose: Research or special studies
03147500	Licking River below Dillon Dam, near Dillon Falls	-	x	-	-	-	-	-
03150000	Muskingum River at McConnelsville	x	x	x	-	-	-	-
03157000	Clear Creek near Rockbridge	-	-	-	-	-	-	x
03157500	Hocking River at Enterprise	-	x	x	-	-	-	-
03159000	Sunday Creek at Glouster	-	x	-	-	-	-	-
03159500	Hocking River at Athens	x	x	-	-	x	-	-
03159540	Shade River near Chester	-	-	-	-	x	-	-
03201800	Sandy Run near Lake Hope	-	x	-	-	x	-	x
03202000	Raccoon Creek at Adamsville	-	-	x	-	x	-	-
03219500	Scioto River near Prospect	-	-	x	-	-	-	-
03220000	Mill Creek near Bellepoint	-	x	-	-	-	-	x
03221000	Scioto River below O'Shaughnessy Dam, near Dublin	-	x	x	-	-	-	-
03223000	Olentangy River at Claridon	-	-	-	-	x	-	-
03225500	Olentangy River near Delaware	-	x	x	-	-	-	-
03226800	Olentangy River near Worthington	-	x	x	-	-	-	-
03227500	Scioto River at Columbus	-	x	x	x	-	-	-
03228500	Big Walnut Creek at Central College	-	x	-	-	-	-	-
03228805	Alum Creek at Africa	-	-	-	-	x	-	x
03229000	Alum Creek at Columbus	-	x	x	-	-	-	x
03229500	Big Walnut Creek at Rees	-	x	x	x	-	-	-
03230500	Big Darby Creek at Darbyville	-	-	x	-	x	-	x
03230800	Deer Creek at Mount Sterling	-	x	-	-	x	-	-
03230900	Deer Creek near Pancoastburg	-	x	-	-	-	-	-
03231000	Deer Creek at Williamsport	-	x	-	-	x	-	-
03231500	Scioto River at Chillicothe	x	x	x	-	x	-	-
03232000	Paint Creek near Greenfield	-	x	-	-	x	-	-
03232470	Paint Creek below Paint Creek Dam, near Bainbridge	-	x	-	-	-	-	-
03232500	Rocky Fork near Barretts Mills	-	x	-	-	-	-	-
03234000	Paint Creek near Bourneville	-	x	x	-	x	-	-
03234500	Scioto River at Higby	x	x	x	-	x	-	-
03237280	Upper Twin Creek at McGaw	-	-	-	-	x	-	-
03237500	Ohio Brush Creek near West Union	-	-	x	-	x	-	-
03238500	Whiteoak Creek near Georgetown	-	-	x	-	x	-	-
03242050	Little Miami River near Spring Valley	-	x	-	-	x	-	-
03242150	Caesar Creek near Xenia	-	x	-	-	-	-	-
03242200	Anderson Fork near New Burlington	-	x	-	-	-	-	-
03242350	Caesar Creek near Wellman	-	x	-	-	-	-	-
03245500	Little Miami River at Milford	x	-	x	-	-	-	-
03246200	East Fork Little Miami River near Marathon	-	x	-	-	x	-	-
03247050	East Fork Little Miami River near Batavia	-	x	-	-	-	-	-
03247400	Shayler Run near Perintown	-	-	-	-	-	-	x
03247500	East Fork Little Miami River at Perintown	x	-	x	-	x	-	-
03248000	Little Miami River at Plainville	-	x	-	-	-	-	-
03255500	Mill Creek at Reading	-	x	-	-	-	-	-
03257500	West Fork Mill Creek at Woodlawn	-	x	-	-	-	-	-
03259000	Mill Creek at Carthage	-	x	-	-	-	-	-
03261500	Great Miami River at Sidney	-	-	-	-	x	-	-
03261950	Loramie Creek near Newport	-	x	-	-	x	-	-
03262000	Loramie Creek at Lockington	-	x	-	-	-	-	-

Table 6.--Ohio current-purpose gaging stations--Continued

Station number	Station name	Purpose: Account-ing	Opera-tion	Fore-cast-ing	Dis-posal	Water quality	Compact or legal	Research or special studies
03262700	Great Maimi River at Troy	-	x	-	-	x	-	-
03263000	Great Miami River at Taylorsville	-	x	-	-	-	-	-
03264000	Greenville Creek near Bradford	-	-	-	-	x	-	-
03265000	Stillwater River at Pleasant Hill	-	x	-	-	x	-	-
03266000	Stillwater River at Englewood	-	x	-	-	-	-	-
03267000	Mad River near Urbana	-	-	-	-	x	-	-
03267800	Mad River at Eagle City	-	x	-	-	-	-	-
03267950	Buck Creek near New Moorefield	-	x	-	-	-	-	-
03267960	East Fork Buck Creek near New Moorefield	-	x	-	-	-	-	-
03269500	Mad River near Springfield	-	x	x	-	-	-	-
03270000	Mad River near Dayton	-	x	-	-	x	-	-
03270500	Great Miami River at Dayton	-	x	x	-	-	-	-
03271500	Great Miami River at Miamisburg	-	-	-	-	x	-	-
03271800	Twin Creek near Ingomar	-	x	-	-	x	-	-
03272000	Twin Creek near Germantown	-	x	-	-	-	-	-
03272800	Sevenmile Creek at Collinsville	-	-	-	-	x	-	-
03274000	Great Miami River at Hamilton	x	-	x	-	x	-	-
04183500	Maumee River at Antwerp	-	x	-	-	-	-	-
04184500	Bean Creek at Powers	-	x	-	-	-	-	-
04185000	Tiffin River at Stryker	-	-	-	-	x	-	-
04186500	Auglaize River near Fort Jennings	-	x	-	-	x	-	-
04187500	Ottawa River at Allentown	-	-	-	-	x	-	-
04189000	Blanchard River near Findlay	-	x	x	-	x	-	-
04181500	Auglaize River near Defiance	-	x	-	-	x	-	-
04193500	Maumee River at Waterville	x	-	-	-	x	-	-
04195500	Portage River at Woodville	-	-	-	-	x	-	-
04196000	Sandusky River near Bucyrus	-	x	-	-	x	-	-
04196500	Sandusky River near Upper Sandusky	-	-	x	-	x	-	-
04196800	Tymochtee Creek at Crawford	-	x	-	-	x	-	-
04197000	Sandusky River near Mexico	-	-	x	-	x	-	-
04198000	Sandusky River near Fremont	x	-	x	-	x	-	-
04199000	Huron River at Milan	-	-	x	-	x	-	-
04199500	Vermilion River near Vermilion	-	-	x	-	x	-	-
04200500	Black River at Elyria	x	-	x	-	x	-	-
04201500	Rocky River near Berea	-	-	x	-	x	-	-
04202000	Cuyahoga River at Hiram Rapids	-	x	-	-	-	-	-
04204000	Little Cuyahoga River at Mogadore	-	x	-	-	-	-	-
04206000	Cuyahoga River at Old Portage	-	-	x	-	-	-	-
04207500	Ohio Canal at Independence	x	-	-	-	-	-	-
04208000	Cuyahoga River at Independence	x	-	x	-	x	-	-
04209000	Chagrin River at Willoughby	-	-	x	-	x	-	-
04212000	Grand River near Madison	x	-	x	-	x	-	-
04212500	Ashtabula River near Ashtabula	-	-	-	-	x	-	-
04213000	Conneaut Creek at Conneaut	-	-	-	-	x	-	-

TABLE 7.--BASIN AND STREAMFLOW CHARACTERISTICS AT OHIO GAGING STATIONS

(VALUE 0.B. INDICATES UNDETERMINED CHARACTERISTIC)

STA. NO.	STATION NAME	AREA	SLOPE	LENGTH	LAKES	ELEV	FORESTS	PRECIP
03086500	MAHONING R. AT ALLIANCE	89.20	10.40	16.10	0.90	1096.	13.00	37.00
03088000	DEER CREEK AT LIMAVILLE	31.90	6.79	9.81	0.50	1090.	5.30	37.00
03089500	MILL CR. NR. BERLIN CTR.	19.10	11.10	8.71	0.60	1100.	25.30	37.00
03090500	MAH. R. NR. BERLIN CTR.	248.00	28.20	30.40	2.40	1100.	9.50	36.50
03092000	KALE CR. NR. PRICETOWN	21.90	11.40	10.60	0.20	962.	30.70	38.00
03092500	W. BR. MAH. R. NR. NEW. FALLS	96.30	11.70	18.70	3.70	1034.	12.90	37.00
03093000	EAGLE CR. AT PHALANX STATION	97.60	10.70	18.90	0.10	974.	16.90	38.00
03096000	MOSQUITO CREEK AT NILES	139.00	5.15	35.80	5.60	931.	16.00	36.50
03098500	MILL CREEK AT YOUNGSTOWN	66.30	7.71	19.10	0.20	1031.	12.30	37.00
03109500	L. BEAVER CR. NR. E. LIVERPOOL	496.00	8.29	52.00	0.10	922.	14.90	39.50
03110000	YELLOW CR. NR. HAMMONDSVILLE	147.00	9.81	28.90	-0.00	835.	44.10	40.00
03111500	SHORT CREEK NR. DILLONVALD	123.00	14.40	25.80	-0.00	846.	13.50	39.00
03114000	CAPTINA CR. AT ARMSTRONG MILLS	134.00	16.00	26.20	-0.00	927.	8.30	41.00
03115500	LITTLE MUSKINGUM RIVER AT FAY	259.00	4.30	57.40	-0.00	728.	35.40	41.50
03117500	SANDY CREEK AT WAYNESBURG	253.00	7.61	25.60	-0.00	1042.	10.00	37.50
03119000	SANDY CREEK AT SANDYVILLE	481.00	7.28	35.20	-0.00	1021.	16.30	37.50
03122500	TUSCARAWAS RIVER NEAR DOVER	1405.00	4.48	71.70	0.60	1006.	10.70	37.00
03123000	SUGAR CR. ABOVE BEACH CITY DAM,	160.00	6.66	33.20	-0.00	1023.	5.30	37.50
03125000	HOME CREEK NEAR NEW PHILADELPHIA	1.64	62.00	1.97	-0.00	920.	17.10	39.00
03130500	TOUBY RUN AT MANSFIELD	5.44	39.60	4.39	-0.00	1307.	12.50	38.00
03134000	JEROME FORK AT JEROMEVILLE	120.00	9.56	18.50	-0.00	1020.	0.90	35.00
03136000	MOHICAN RIVER AT GREER	948.00	2.91	75.80	0.30	983.	3.00	36.50
03136500	KOKOSING RIVER AT MOUNT VERNON	202.00	10.10	31.10	-0.00	1134.	2.30	37.00
03137000	KOKOSING RIVER AT MILLWOOD	455.00	7.57	50.50	-0.00	1042.	2.10	38.00
03138500	WALHONDING RIVER AT NELLIE	1505.00	3.02	98.00	0.20	943.	3.20	39.00
03139000	KILLBUCK CREEK AT KILLBUCK	462.00	3.69	40.10	-0.00	878.	6.70	37.00
03140000	MILL CREEK NEAR COSHOCTON	27.20	21.10	10.40	-0.00	872.	5.10	39.50
03142200	SALT FORK NEAR CAMBRIDGE	55.60	6.18	22.70	-0.00	846.	14.20	39.50
03142500	WILLS CREEK AT BIRDS RUN	730.00	1.50	79.20	0.80	792.	9.90	39.00
03144000	WAKATOMIKA CREEK NR. FRAZEYSBURG	140.00	10.30	31.60	-0.00	830.	5.00	39.00
03144500	MUSKINGUM RIVER AT DRESDEN	5993.00	1.98	154.00	0.40	846.	7.00	39.50
03146500	LICKING RIVER NEAR NEWARK	537.00	10.70	45.00	0.60	985.	1.40	39.00
03147000	LICKING RIVER AT TOBOSO	672.00	8.21	51.40	0.80	958.	2.00	39.00
03149500	SALT CREEK NEAR CHANDLERSVILLE	75.70	8.98	23.80	-0.00	775.	9.40	38.50
03156000	HUNTERS RUN AT LANCASTER	10.00	31.30	8.11	-0.00	940.	14.00	39.00
03156400	HOCKING RIVER AT LANCASTER	48.20	19.80	13.20	-0.00	902.	1.00	39.00
03157000	CLEAR CREEK NEAR ROCKBRIDGE	89.00	9.20	22.50	-0.00	852.	9.20	39.00
03157500	HOCKING RIVER AT ENTERPRISE	459.00	10.60	29.20	-0.00	851.	5.60	39.00
03159500	HOCKING RIVER AT ATHENS	943.00	3.50	55.00	-0.00	724.	11.30	39.50
03201800	SANDY RUN NEAR LAKE HOPE	4.99	35.60	4.17	-0.00	785.	85.80	39.00
03202000	RACCOON CREEK AT ADAMSVILLE	585.00	2.81	71.60	0.10	658.	21.90	40.00
03217500	SCIOTO RIVER AT LARUE	255.00	2.50	64.90	-0.00	962.	0.60	34.50
03218000	LITTLE SCIOTO RIVER ABOVE MARION	72.40	4.30	50.50	-0.00	949.	0.30	35.50
03219500	SCIOTO RIVER NEAR PROSPECT	567.00	1.53	70.70	-0.00	938.	0.40	35.00
03220000	MILL CREEK NEAR BELLEPOINT	178.00	5.22	45.30	-0.00	996.	0.10	37.00
03223000	OLENTANGY RIVER AT CLARIDON	157.00	6.75	36.60	-0.00	1060.	0.40	35.50
03224500	WHETSTONE CREEK NEAR ASHLEY	98.70	11.70	29.60	-0.00	1091.	0.90	35.50
03225500	OLENTANGY RIVER NEAR DELAWARE	393.00	3.89	58.80	-0.00	998.	0.50	35.50
03228000	SCIOTO BIG RUN AT BRIGGSDALE	11.00	30.10	6.78	-0.00	821.	7.30	35.50
03228500	BIG WALNUT CR. AT CENTRAL COLLEGE	190.00	10.60	37.70	-0.00	990.	1.30	36.50

TABLE 7.--BASIN AND STREAMFLOW CHARACTERISTICS AT OHIO GAGING STATIONS--CONTINUED

STA. NO.	I24,2	SOIL	PEAK, 2	PEAK, 5	PEAK, 10	PEAK, 25	PEAK,50	MEAN Q	OCT Q	NOV Q
03086500	2.30	2.82	2517.	4316.	5798.	8025.	9955.	79.42	22.37	28.77
03088000	2.30	2.82	1055.	1242.	1334.	0.B	0.B	32.00	7.21	13.09
03089500	2.30	2.82	907.	1324.	1620.	2017.	2327.	16.80	4.37	5.39
03090500	2.30	2.82	5641.	7644.	8596.	0.B	0.B	211.20	39.71	88.00
03092000	2.30	2.82	1105.	1716.	2254.	3121.	3926.	20.62	5.52	8.53
03092500	2.30	2.82	2579.	3842.	4771.	6048.	7074.	95.88	35.12	49.84
03093000	2.30	2.82	2330.	3375.	4130.	5300.	6400.	102.30	39.21	54.98
03096000	2.30	2.58	1590.	2452.	3039.	3786.	0.B	112.30	11.08	42.14
03098500	2.30	2.70	1624.	2954.	4116.	5949.	7610.	58.35	19.37	20.20
03109500	2.50	3.07	10290.	15360.	18880.	23440.	26920.	504.80	164.70	273.10
03110000	2.50	2.70	3590.	5200.	6374.	7980.	9266.	157.70	39.17	65.38
03111500	2.50	2.50	3300.	4780.	5600.	6750.	7600.	120.80	41.93	52.83
03114000	2.50	2.50	5652.	8410.	10330.	12850.	0.B	148.50	32.78	80.16
03115500	2.60	2.66	7641.	11160.	13650.	16960.	0.B	344.00	158.50	251.40
03117500	2.30	3.28	3615.	5674.	7359.	9898.	12120.	251.10	77.10	104.30
03119000	2.30	3.30	7305.	10560.	12520.	14780.	0.B	500.00	201.40	309.40
03122500	2.30	3.33	15700.	21800.	25000.	29200.	0.B	1394.00	542.20	910.60
03123000	2.30	2.87	2101.	3477.	4641.	6444.	0.B	129.70	32.64	43.46
03125000	2.30	3.33	127.	204.	249.	298.	328.	1.22	0.23	0.46
03130500	2.30	2.96	378.	596.	757.	976.	0.B	4.73	0.96	2.33
03134000	2.30	2.82	2550.	3430.	3870.	4360.	0.B	100.40	26.20	52.61
03136000	2.30	2.82	10700.	14470.	16380.	18280.	0.B	866.40	298.20	588.50
03136500	2.30	2.34	4351.	6852.	8803.	11620.	0.B	184.90	40.31	72.29
03137000	2.30	2.44	9920.	17800.	24840.	36220.	46760.	470.00	109.90	229.70
03138500	2.30	2.63	18430.	31910.	44510.	65810.	0.B	1420.00	457.90	953.80
03139000	2.30	3.02	3602.	6754.	10110.	16510.	23440.	376.00	90.87	135.20
03140000	2.30	3.33	1353.	2671.	3883.	5869.	7724.	26.19	5.22	9.52
03142200	2.30	3.00	1758.	2768.	3364.	0.B	0.B	53.14	5.71	16.12
03142500	2.30	3.33	6982.	11430.	15570.	0.B	0.B	779.80	181.00	453.90
03144000	2.30	3.23	4079.	7190.	9619.	13070.	15890.	144.60	30.48	62.07
03144500	2.30	3.28	44890.	78060.	110100.	165800.	0.B	5874.00	1850.00	3851.00
03146500	2.30	3.06	10980.	17240.	21710.	27630.	32220.	536.10	110.70	230.80
03147000	2.30	3.05	12930.	20900.	26660.	34370.	40370.	677.50	171.20	345.40
03149500	2.40	3.33	3286.	4169.	4744.	5466.	0.B	89.18	17.59	51.40
03156000	2.40	3.00	792.	1124.	1320.	0.B	0.B	8.71	2.14	2.95
03156400	2.40	2.85	1539.	2374.	2876.	0.B	0.B	38.20	10.18	15.93
03157000	2.40	2.70	2800.	4750.	6220.	8700.	10900.	82.67	20.61	34.77
03157500	2.50	2.74	8343.	15270.	20030.	25920.	30110.	438.60	86.19	169.70
03159500	2.50	2.70	12700.	19400.	24770.	32720.	39560.	1029.00	215.00	556.00
03201800	2.50	2.66	808.	1938.	3124.	0.B	0.B	5.75	0.64	2.66
03202000	2.60	2.66	6518.	9408.	11430.	14100.	16170.	644.80	105.40	287.20
03217500	2.60	3.51	5444.	8520.	10580.	13160.	0.B	213.70	82.80	91.86
03218000	2.50	3.51	1094.	1870.	2563.	3687.	4736.	49.03	3.31	14.65
03219500	2.50	3.51	5983.	8742.	10580.	12900.	14610.	436.90	114.80	180.30
03220000	2.50	3.51	4304.	6881.	9062.	12450.	15480.	147.30	15.00	56.36
03223000	2.40	3.37	2888.	4236.	5244.	6653.	0.B	143.80	10.55	53.50
03224500	2.40	3.33	2530.	3585.	4370.	0.B	0.B	88.12	11.21	41.05
03225500	2.40	3.44	7032.	11120.	14610.	20060.	24980.	353.90	106.70	205.40
03228000	2.50	3.51	1170.	1890.	2490.	3420.	0.B	10.66	0.35	3.52
03228500	2.50	3.16	7008.	10360.	12560.	15290.	0.B	187.10	11.12	71.55

TABLE 7.-- BASIN AND STREAMFLOW CHARACTERISTICS AT OHIO GAGING STATIONS--CONTINUED

STA. NO.	DEC Q	JAN Q	FEB Q	MAR Q	APR Q	MAY Q	JUNE Q	JULY Q	AUG Q	SEPT Q
03086500	68.50	123.00	155.70	199.10	143.30	101.00	49.27	30.71	24.32	10.92
03088000	30.41	53.09	65.84	69.86	47.13	45.93	29.24	9.48	9.28	5.53
03089500	14.72	26.01	34.08	43.45	31.26	23.12	8.56	6.78	3.26	1.44
03090500	210.10	377.40	338.90	542.90	416.00	210.10	94.95	79.39	97.72	44.75
03092000	18.69	35.10	41.82	52.67	37.99	26.00	10.73	6.59	3.32	1.61
03092500	96.58	162.10	169.00	226.00	175.40	106.80	55.78	35.72	25.32	16.75
03093000	100.50	159.80	187.00	236.00	195.10	113.10	61.78	40.62	26.10	18.93
03096000	109.90	225.00	197.70	299.00	244.80	104.80	57.61	26.17	22.63	11.67
03098500	44.10	84.95	111.70	140.60	118.30	84.84	30.15	23.75	16.58	8.56
03109500	454.30	751.10	846.80	1171.00	930.70	654.50	341.40	213.10	158.80	118.30
03110000	127.60	234.00	285.40	388.70	328.80	217.80	101.90	47.17	38.56	25.91
03111500	89.61	161.90	205.30	279.90	239.40	162.70	92.93	55.79	39.13	34.23
03114000	162.10	216.00	256.30	374.90	269.70	178.70	73.15	52.40	62.43	28.87
03115500	440.90	521.90	605.00	724.10	470.70	355.40	212.80	108.00	207.70	83.79
03117500	198.30	359.00	446.50	596.90	472.40	340.70	187.10	114.50	73.56	54.13
03119000	483.70	738.50	769.80	1009.00	742.70	570.40	427.70	298.40	259.50	204.40
03122500	1471.00	2645.00	2189.00	2552.00	1958.00	1392.00	938.00	809.40	758.80	589.80
03123000	95.19	222.10	253.70	300.00	241.30	157.30	106.40	53.75	37.19	21.17
03125000	1.08	1.99	2.35	3.09	2.47	1.34	0.91	0.43	0.22	0.22
03130500	4.04	7.67	7.86	10.82	9.60	5.48	3.14	2.13	1.47	1.40
03134000	98.72	168.90	171.10	224.40	174.80	111.10	85.24	49.59	27.85	18.61
03136000	1014.00	1390.00	1304.00	1794.00	1309.00	1015.00	558.00	484.90	365.10	290.80
03136500	143.20	222.70	296.70	493.40	367.30	235.80	146.50	96.30	65.62	44.71
03137000	440.30	763.60	776.30	1043.00	822.50	540.80	405.50	233.00	163.60	130.10
03138500	1679.00	2374.00	2149.00	2885.00	2130.00	1660.00	949.30	759.80	595.30	472.60
03139000	253.50	544.70	590.10	865.10	715.30	486.20	366.60	194.20	187.90	94.61
03140000	20.77	39.94	49.65	63.91	52.13	31.10	21.74	12.08	5.90	3.86
03142200	45.63	70.84	109.50	157.10	109.80	60.01	22.98	25.76	9.68	8.14
03142500	799.40	1654.00	1047.00	1635.00	1208.00	905.50	433.40	221.00	589.10	226.20
03144000	115.40	237.70	253.00	337.50	296.60	169.40	111.10	66.90	39.64	21.98
03144500	6939.00	9257.00	8630.00	12059.99	9535.00	6602.00	3717.00	2860.00	3067.00	2217.00
03146500	465.30	835.00	977.30	1277.00	999.50	574.10	440.40	302.10	154.50	93.53
03147000	688.30	1187.00	1209.00	1312.00	1144.00	716.30	596.00	368.30	263.70	160.30
03149500	66.70	123.60	159.30	196.10	166.20	109.40	92.54	45.34	30.19	16.75
03156000	7.25	10.45	13.84	22.65	17.74	10.88	5.79	5.33	3.46	2.37
03156400	29.97	46.87	59.90	96.54	72.05	40.97	29.22	29.16	17.35	11.49
03157000	73.15	115.20	142.00	189.20	153.20	94.80	62.57	51.39	35.51	23.07
03157500	345.50	670.20	748.10	1025.00	838.00	522.70	310.30	255.90	175.60	134.20
03159500	1073.00	1757.00	1761.00	2142.00	1711.00	1220.00	783.20	477.00	384.80	309.70
03201800	5.01	7.44	9.13	16.37	13.00	6.82	1.60	3.86	1.87	0.74
03202000	620.10	989.00	1223.00	1569.00	1208.00	849.90	383.20	234.70	184.30	116.00
03217500	214.80	436.10	349.50	440.40	352.70	219.60	211.90	80.76	57.46	33.51
03218000	37.65	84.42	92.22	129.70	101.70	53.37	49.62	14.58	6.45	3.70
03219500	377.10	791.50	745.90	1016.00	858.50	421.80	364.20	177.90	108.70	105.70
03220000	117.70	287.70	291.10	362.90	284.70	148.70	129.50	34.65	30.88	17.62
03223000	125.90	287.00	276.00	352.40	279.60	149.70	108.70	46.72	26.13	17.17
03224500	69.10	122.80	161.10	254.70	173.50	88.76	70.29	36.37	18.47	14.92
03225500	380.10	674.70	658.90	739.80	576.50	336.40	292.00	120.00	74.26	101.80
03228000	10.87	26.05	22.79	16.72	20.28	10.14	7.84	5.35	3.30	1.37
03228500	193.50	361.50	378.10	400.00	325.70	161.00	201.70	94.68	42.18	16.96

TABLE 7.-- BASIN AND STREAMFLOW CHARACTERISTICS AT OHIO GAGING STATIONS--CONTINUED

STA. NO.	SD Q	OCT SD	NOV SD	DEC SD	JAN SD	FEB SD	MAR SD	APR SD	MAY SD	JUNE SD
03086500	25.46	40.20	27.92	76.61	112.40	94.03	96.35	66.71	91.00	58.16
03088000	8.55	5.74	9.03	30.25	42.01	27.81	31.06	22.88	19.79	33.08
03089500	5.74	11.13	5.90	18.28	23.54	22.43	21.69	15.64	22.11	11.04
03090500	76.03	36.86	86.21	194.40	494.30	239.10	313.60	224.60	166.90	67.50
03092000	6.92	13.19	10.66	22.62	32.24	27.94	26.85	21.24	19.72	15.44
03092500	30.07	62.34	45.57	100.40	140.10	96.68	107.20	86.88	76.89	55.56
03093000	32.49	63.11	42.67	91.60	130.30	100.40	93.22	107.80	76.73	60.05
03096000	45.36	21.93	64.47	106.50	245.00	131.50	160.80	140.60	99.26	86.05
03098500	19.45	39.39	17.12	45.66	77.02	74.29	64.73	55.47	79.06	34.11
03109500	151.80	245.30	288.50	401.70	684.50	509.70	508.10	428.50	427.50	273.70
03110000	42.86	47.60	65.75	114.90	181.00	165.60	183.20	127.20	138.90	92.72
03111500	33.62	40.46	39.51	75.41	128.20	111.50	152.20	111.00	82.22	46.00
03114000	46.64	65.79	87.98	128.70	131.80	142.30	202.70	151.30	154.70	87.73
03115500	106.80	156.90	253.10	310.00	291.80	422.40	338.40	227.90	263.50	332.60
03117500	65.36	99.33	84.19	187.00	304.90	247.00	267.30	194.20	200.90	151.80
03119000	142.00	171.90	242.20	385.60	689.00	351.70	439.80	313.10	346.50	371.40
03122500	455.40	565.00	807.80	1360.00	2286.00	1170.00	1259.00	775.40	950.00	754.20
03123000	40.84	39.90	41.38	96.78	208.90	157.20	138.90	135.40	116.80	140.70
03125000	0.37	0.37	0.51	1.11	2.05	1.57	1.81	1.35	0.98	1.05
03130500	1.25	0.56	1.96	4.24	7.53	4.64	5.71	5.70	4.37	4.36
03134000	39.10	41.26	51.14	104.30	192.40	91.11	116.20	97.07	108.20	125.00
03136000	307.50	378.70	516.80	969.10	1184.00	696.00	883.30	693.60	749.50	518.10
03136500	50.53	18.69	45.02	159.40	253.50	195.10	292.80	222.90	157.30	128.30
03137000	159.90	98.24	203.70	410.90	748.30	427.60	598.50	462.40	354.70	423.80
03138500	525.10	579.20	853.10	1476.00	1899.00	1158.00	1494.00	1157.00	1239.00	957.10
03139000	126.40	69.56	85.37	224.30	607.60	354.30	439.80	337.20	293.20	444.60
03140000	7.36	9.87	10.32	21.32	38.88	28.43	36.70	27.68	19.50	25.74
03142200	10.03	11.01	14.27	35.55	44.12	62.67	110.90	80.53	54.49	21.42
03142500	329.80	312.70	619.60	547.00	1561.00	623.30	921.10	581.80	794.50	668.00
03144000	40.33	33.09	52.08	104.50	268.80	138.40	199.20	150.80	101.30	106.00
03144500	2013.00	2454.00	3766.00	6012.00	6690.00	4612.00	5690.00	4180.00	4505.00	3286.00
03146500	161.70	78.31	171.20	471.60	823.10	557.90	820.50	585.60	403.50	329.10
03147000	240.80	221.60	322.00	673.40	1184.00	673.20	768.80	693.80	525.00	503.00
03149500	23.61	24.61	64.27	51.70	148.10	104.30	128.50	92.91	93.58	70.68
03156000	1.71	1.38	1.46	6.83	7.27	7.13	16.18	10.74	6.64	4.35
03156400	6.52	6.27	9.01	22.54	27.90	33.44	73.57	41.58	22.97	25.77
03157000	24.98	7.33	18.49	63.75	90.62	76.35	131.50	85.64	60.03	57.93
03157500	129.30	49.13	130.00	295.20	686.20	428.30	673.70	478.20	381.90	260.10
03159500	300.80	252.80	685.70	955.80	1498.00	1004.00	988.60	976.40	852.20	772.10
03201800	1.36	0.66	2.99	4.26	5.95	6.39	11.47	5.95	4.72	2.11
03202000	204.40	165.50	405.30	599.60	722.80	798.60	812.30	655.20	584.40	440.70
03217500	89.24	158.70	107.00	262.10	450.30	244.50	244.80	224.40	203.30	228.50
03218000	18.05	5.41	19.40	50.19	113.40	57.90	80.68	77.87	46.93	77.46
03219500	166.10	286.20	211.50	505.90	937.80	497.90	630.50	645.60	397.20	443.50
03220000	56.12	25.88	76.82	152.20	349.40	222.90	244.00	237.10	126.70	190.30
03223000	43.90	11.14	63.54	153.10	320.90	176.90	234.10	193.50	140.60	189.40
03224500	20.17	10.04	39.67	85.14	164.60	103.50	177.90	134.60	72.33	77.86
03225500	137.80	238.00	235.20	409.70	749.90	348.80	395.00	348.90	366.10	403.60
03228000	4.42	0.77	5.20	14.68	24.41	16.27	10.72	14.39	10.76	12.77
03228500	77.45	10.30	68.22	209.40	386.80	210.40	235.30	185.40	136.30	206.60

TABLE 7.--BASIN AND STREAMFLOW CHARACTERISTICS AT OHIO GAGING STATIONS--CONTINUED

STA. NO.	JULY SD	AUG SD	SEPT SD	MIN7,2	MIN7,10	MIN7,20	VOL7,2	VOL7,10	VOL7,50
03086500	48.87	47.91	14.71	1.15	0.0	0.0	693.	1137.	1551.
03088000	10.72	11.88	2.26	2.51	1.69	1.47	246.	345.	0.B
03089500	13.36	6.70	2.01	0.16	0.0	0.0	158.	259.	355.
03090500	91.24	129.80	55.59	4.30	2.66	2.32	1833.	2941.	0.B
03092000	15.45	7.29	3.04	0.08	0.0	0.0	192.	301.	418.
03092500	40.33	33.94	16.84	6.70	4.71	4.31	730.	1086.	1351.
03093000	50.92	31.65	16.59	8.88	5.95	5.37	705.	1115.	1520.
03096000	33.86	35.41	26.05	0.13	0.0	0.0	898.	1589.	0.B
03098500	48.11	33.68	10.15	0.58	0.20	0.15	502.	835.	0.B
03109500	251.10	240.50	206.80	28.90	18.18	16.21	3403.	5512.	7441.
03110000	52.02	49.17	36.47	4.34	1.61	1.20	1105.	1648.	2028.
03111500	36.74	27.56	23.29	12.85	7.11	5.94	755.	1177.	1412.
03114000	81.12	130.10	53.57	0.33	0.0	0.0	1209.	1891.	0.B
03115500	141.10	237.30	110.80	4.36	0.0	0.0	2509.	3904.	0.B
03117500	112.90	88.73	45.97	24.69	16.48	14.93	1623.	2533.	3270.
03119000	207.00	291.40	195.50	92.79	67.05	59.92	3040.	4941.	0.B
03122500	569.00	1089.00	682.40	224.30	160.80	144.40	8662.	14530.	0.B
03123000	57.81	48.75	17.83	6.24	2.66	2.07	984.	1771.	0.B
03125000	0.76	0.27	0.36	0.0	0.0	0.0	11.	18.	24.
03130500	1.75	1.19	1.50	0.27	0.11	0.08	33.	57.	0.B
03134000	77.38	49.71	18.00	4.00	2.46	2.19	859.	1430.	0.B
03136000	518.10	518.60	268.70	119.00	82.71	74.03	5636.	9053.	0.B
03136500	82.82	53.16	32.55	22.77	15.03	13.57	1294.	2593.	0.B
03137000	186.00	181.60	166.10	59.30	41.32	37.50	3157.	5852.	8253.
03138500	691.70	857.80	509.80	188.20	130.10	117.50	8896.	14210.	0.B
03139000	167.00	359.90	64.10	42.18	28.00	25.40	2366.	4564.	6977.
03140000	14.61	7.39	7.36	0.30	0.09	0.06	197.	355.	502.
03142200	45.05	16.47	16.41	0.0	0.0	0.0	571.	867.	0.B
03142500	295.40	1043.00	300.00	17.30	4.94	3.33	5183.	10140.	0.B
03144000	58.02	40.99	19.66	6.63	3.35	2.79	1119.	2006.	2694.
03144500	2210.00	5643.00	2718.00	721.40	474.00	418.90	33220.	54260.	0.B
03146500	274.80	145.70	61.04	54.79	38.96	35.53	3970.	6994.	8956.
03147000	311.10	325.90	195.90	72.59	51.47	46.87	4564.	8372.	10960.
03149500	49.76	29.69	23.72	0.86	0.16	0.10	675.	1048.	0.B
03156000	8.01	4.37	2.41	0.89	0.52	0.47	0.B	0.B	0.B
03156400	45.83	22.25	9.66	4.14	2.12	1.81	322.	558.	0.B
03157000	61.49	41.95	13.65	11.52	8.08	7.39	597.	1014.	1248.
03157500	274.90	226.80	137.80	41.07	29.16	27.34	3193.	6033.	8170.
03159500	316.00	422.00	359.70	77.37	43.10	34.96	6730.	11570.	16060.
03201800	5.68	4.54	1.38	0.0	0.0	0.0	55.	87.	0.B
03202000	284.90	290.90	185.70	13.73	3.44	2.29	4587.	7397.	9670.
03217500	99.11	81.96	53.37	5.28	3.09	2.75	1863.	3045.	0.B
03218000	21.09	16.53	10.34	0.0	0.0	0.0	433.	844.	1362.
03219500	225.30	150.20	283.50	14.75	8.60	7.55	3820.	6269.	7980.
03220000	40.40	57.22	26.18	1.20	0.26	0.17	1516.	2542.	0.B
03223000	52.74	57.96	33.39	1.53	0.34	0.22	1219.	2218.	0.B
03224500	44.17	25.19	20.51	1.25	0.05	0.0	727.	1580.	0.B
03225500	123.10	132.90	240.00	2.79	0.46	0.27	3012.	4777.	0.B
03228000	9.47	6.50	3.26	0.0	0.0	0.0	110.	173.	0.B
03228500	97.30	112.70	44.65	1.14	0.29	0.20	1669.	2780.	0.B

TABLE 7.--BASIN AND STREAMFLOW CHARACTERISTICS AT OHIO GAGING STATIONS--CONTINUED

STA. NO.	STATION NAME	AREA	SLOPE	LENGTH	LAKES	ELEV	FORESTS	PRECIP
03229000	ALUM CREEK AT COLUMBUS	189.00	6.92	52.00	-0.00	888.	1.30	37.00
03229500	BIG WALNUT CREEK AT REES	544.00	8.14	47.70	-0.00	919.	1.20	37.00
03230000	SCIOTO RIVER NEAR CIRCLEVILLE	2635.00	3.08	131.00	0.10	784.	0.70	36.50
03230500	BIG DARBY CREEK AT DARBYVILLE	534.00	3.87	70.50	-0.00	905.	0.70	37.00
03231000	DEER CREEK AT WILLIAMSPORT	333.00	5.90	58.40	-0.00	879.	0.80	37.50
03231500	SCIOTO RIVER AT CHILLICOTHE	3849.00	2.74	163.00	-0.00	793.	0.80	37.00
03232000	PAINT CREEK NEAR GREENFIELD	249.00	4.14	55.70	-0.00	980.	0.60	38.50
03232500	ROCKY FORK NEAR BARRETTS MILLS	140.00	21.30	17.30	-0.00	916.	-0.00	43.50
03234000	PAINT CREEK NEAR BOURNEVILLE	807.00	5.42	86.40	-0.00	875.	2.90	40.00
03234500	SCIOTO RIVER AT HIGBY	5131.00	2.67	177.00	-0.00	756.	2.50	37.00
03235000	SALT CREEK AT TARLTON	11.50	28.60	7.73	-0.00	961.	9.70	39.50
03235500	TAR HOLLOW CR. AT TAR HOL.ST.PARK	1.35	140.00	1.67	-0.00	897.	97.00	39.50
03236000	SALT CREEK NEAR LONDONDERRY	268.00	7.54	38.10	-0.00	756.	34.50	39.50
03237500	OHIO BRUSH CREEK NEAR WEST UNION	387.00	8.30	45.90	-0.00	673.	9.00	42.00
03238500	WHITEOAK CREEK NEAR GEORGETOWN	222.00	7.92	44.40	-0.00	838.	3.90	41.50
03240000	LITTLE MIAMI RIVER NEAR OLDTOWN	129.00	13.20	26.40	-0.00	965.	1.30	38.00
03240500	N. FK. MASSIES CR. AT CEDARVILLE	28.90	6.98	13.90	-0.00	1073.	1.30	38.50
03241000	S. FK. MASSIES CR. NEAR CEDARVILLE	17.10	7.17	10.80	-0.00	1025.	2.30	38.50
03241500	MASSIES CREEK AT WILBERFORCE	63.20	14.20	20.50	-0.00	988.	1.00	38.50
03242000	L. MIAMI RIVER AT SPRING VALLEY	361.00	9.80	43.50	-0.00	915.	2.60	38.50
03242500	L. MIAMI RIVER NEAR FT. ANCIENT	677.00	7.96	65.60	-0.00	868.	4.00	40.00
03245500	LITTLE MIAMI RIVER AT MILFORD	1203.00	6.48	94.60	-0.00	782.	4.70	43.50
03246500	E. FK. L. MIAMI R. AT WILLIAMSBURG	237.00	5.27	52.70	-0.00	928.	1.30	42.50
03247500	E. FK. L. MIAMI R. AT PERINTOWN	476.00	6.93	80.30	-0.00	782.	3.90	42.50
03260700	BOKENGEHALAS CR. NEAR DEGRAFF	36.30	28.60	13.70	0.20	1180.	-0.00	35.50
03260800	STONY CREEK NEAR DEGRAFF	59.10	22.80	19.00	0.10	1131.	0.20	35.50
03263000	G. MIAMI R. AT TAYLORSVILLE	1149.00	3.47	82.00	0.50	893.	1.70	37.00
03264000	GREENVILLE CR. NR. BRADFORD	193.00	5.79	37.30	-0.00	1042.	3.30	37.50
03265000	STILLWATER RIVER AT PLEASANT HILL	503.00	3.06	43.20	-0.00	949.	2.00	37.00
03266000	STILLWATER RIVER AT ENGLEWOOD	650.00	4.11	62.60	-0.00	894.	2.00	37.00
03266500	MAD RIVER AT ZANESFIELD	7.31	49.80	4.85	-0.00	1304.	27.40	36.00
03267000	MAD RIVER NEAR URBANA	162.00	14.30	22.00	-0.00	1124.	0.50	37.00
03268000	BUCK CREEK AT NEW MOOREFIELD	67.30	20.20	12.70	-0.00	1117.	1.20	38.00
03268500	BEAVER CREEK NEAR SPRINGFIELD	37.30	15.70	16.00	-0.00	1088.	2.50	38.00
03269500	MAD RIVER NEAR SPRINGFIELD	490.00	8.32	40.40	-0.00	1030.	0.70	37.50
03270000	MAD RIVER NEAR DAYTON	635.00	6.99	58.10	-0.00	968.	0.80	37.50
03271000	WOLF CREEK AT DAYTON	69.50	18.50	18.40	-0.00	843.	0.90	38.00
03271500	GREAT MIAMI RIVER AT MIAMISBURG	2711.00	3.18	107.00	0.20	843.	1.70	37.50
03272000	TWIN CREEK NEAR GERMANTOWN	275.00	9.27	44.00	-0.00	907.	3.90	39.00
03273500	FOUR MILE CREEK NEAR HAMILTON	311.00	14.50	41.70	0.30	866.	8.80	40.00
03274000	GREAT MIAMI RIVER AT HAMILTON	3630.00	3.40	139.00	0.20	794.	1.70	38.50
04183500	MAUMEE RIVER AT ANTWERP	2128.00	1.55	152.00	0.50	794.	3.80	34.50
04184500	BEAN CREEK AT POWERS	206.00	6.63	52.00	-0.00	826.	2.40	32.50
04185000	TIFFIN RIVER AT STRYKER	410.00	5.33	75.00	-0.00	843.	1.50	33.00
04187500	OTTAWA RIVER AT ALLENTOWN	160.00	3.90	40.20	0.30	872.	0.70	36.00
04189000	BLANCHARD RIVER NEAR FINDLAY	346.00	3.69	46.60	-0.00	832.	2.50	35.00
04189500	BLANCHARD RIVER AT GLANDORF	644.00	3.21	77.90	-0.00	795.	2.10	35.00
04193500	MAUMEE RIVER AT WATERVILLE	6329.00	1.27	231.00	-0.00	752.	2.60	34.50
04195500	PORTAGE RIVER AT WOODVILLE	428.00	2.80	32.80	-0.00	672.	2.50	33.00
04196000	SANDUSKY RIVER NEAR BUCYRUS	88.80	7.37	29.40	-0.00	1098.	1.10	36.00

TABLE 7.--BASIN AND STREAMFLOW CHARACTERISTICS AT OHIO GAGING STATIONS--CONTINUED

STA. NO.	I24,2	SOIL	PEAK, 2	PEAK, 5	PEAK, 10	PEAK, 25	PEAK, 50	MEAN Q	OCT Q	NOV Q
03229000	2.50	3.16	4339.	6949.	9216.	12820.	16110.	164.20	41.64	83.89
03229500	2.50	3.16	12000.	16480.	18970.	21660.	23380.	499.10	122.60	289.70
03230000	2.60	3.44	35180.	58820.	74850.	94870.	0.B	2238.00	287.00	648.50
03230500	2.60	3.51	8624.	14700.	19630.	26910.	33130.	422.90	91.79	162.60
03231000	2.70	3.51	8746.	16400.	23300.	34440.	44760.	280.60	54.39	107.20
03231500	2.70	3.48	42800.	66700.	81200.	94400.	101700.	3376.00	808.00	1601.00
03232000	2.80	3.51	5142.	9162.	12230.	16460.	19850.	219.50	38.92	83.11
03232500	2.80	3.51	5945.	9069.	11290.	14230.	0.B	157.10	23.42	66.77
03234000	2.80	3.51	19550.	31040.	40260.	53880.	65550.	776.90	142.20	300.60
03234500	2.80	3.44	48990.	82890.	110200.	150500.	184900.	4396.00	654.70	1278.00
03235000	2.70	3.16	1130.	1880.	2520.	3320.	0.B	10.36	0.75	3.38
03235500	2.70	2.66	123.	204.	260.	332.	0.B	1.21	0.03	0.21
03236000	2.80	2.66	10570.	13900.	16190.	19190.	0.B	298.60	26.54	85.93
03237500	2.90	2.74	21840.	31850.	39290.	49620.	58020.	439.30	64.20	203.70
03238500	2.90	2.34	9775.	13900.	16760.	20510.	23410.	241.70	38.51	116.10
03240000	2.70	3.51	2401.	5642.	9241.	16220.	0.B	96.49	23.05	42.99
03240500	2.70	3.51	663.	1493.	2398.	0.B	0.B	26.14	4.42	11.69
03241000	2.70	3.51	615.	1243.	1956.	3394.	0.B	18.06	1.84	6.86
03241500	2.70	3.51	1328.	3193.	5172.	8811.	0.B	52.90	9.10	22.96
03242000	2.70	3.51	9683.	17350.	22590.	29040.	33630.	369.60	139.10	217.90
03242500	2.70	3.51	18600.	33100.	42200.	54000.	0.B	698.00	142.60	295.00
03245500	2.80	3.16	30490.	45970.	56640.	70450.	0.B	1149.00	294.90	558.80
03246500	2.80	2.34	9800.	15250.	19000.	23550.	0.B	259.00	38.90	85.29
03247500	2.80	2.34	20360.	27920.	32540.	37960.	41740.	534.70	98.50	257.20
03260700	2.70	3.51	705.	1174.	1554.	0.B	0.B	28.06	8.30	13.33
03260800	2.70	3.51	1081.	2074.	2872.	0.B	0.B	44.21	13.89	19.37
03263000	2.80	3.51	0.B	0.B	0.B	0.B	0.B	939.70	264.80	424.00
03264000	2.80	3.51	3318.	5661.	7558.	10360.	12760.	168.50	46.08	82.91
03265000	2.80	3.51	10520.	17220.	21900.	27940.	32470.	440.90	122.10	240.70
03266000	2.80	3.51	0.B	0.B	0.B	0.B	0.B	559.90	145.80	239.40
03266500	2.70	3.51	475.	850.	1110.	1450.	0.B	7.68	2.15	3.55
03267000	2.70	3.51	2586.	4409.	5684.	7316.	8529.	136.70	76.14	84.80
03268000	2.70	3.51	1773.	2725.	3792.	5891.	0.B	65.64	29.05	39.64
03268500	2.70	3.51	1990.	2981.	3825.	5144.	0.B	38.98	9.38	16.79
03269500	2.70	3.51	7750.	12800.	17500.	23200.	27500.	476.70	237.30	312.20
03270000	2.70	3.51	0.B	0.B	0.B	0.B	0.B	604.20	295.00	384.50
03271000	2.70	3.51	4200.	6400.	7850.	0.B	0.B	55.56	6.46	16.16
03271500	2.70	3.51	0.B	0.B	0.B	0.B	0.B	2273.00	872.20	1388.00
03272000	2.80	3.51	6200.	7850.	8650.	9400.	9950.	258.50	53.61	133.50
03273500	2.80	3.51	14930.	23040.	28310.	34720.	0.B	298.90	40.73	107.50
03274000	2.80	3.51	0.B	0.B	0.B	0.B	0.B	3067.00	821.60	1393.00
04183500	2.70	3.33	13700.	18400.	21500.	25000.	27000.	1625.00	528.20	869.20
04184500	2.60	3.51	2102.	3073.	3607.	4166.	4512.	153.00	42.88	78.32
04185000	2.60	3.51	3480.	5150.	6100.	7200.	8000.	299.20	78.88	158.90
04187500	2.70	3.51	2899.	4292.	5229.	6418.	7305.	120.30	40.20	58.57
04189000	2.60	3.51	5076.	8279.	10480.	13290.	15370.	230.70	54.20	104.90
04189500	2.60	3.51	8390.	2360.	15190.	18980.	0.B	594.60	204.50	317.90
04193500	2.60	3.30	49030.	5600.	81830.	95770.	105200.	4457.00	1235.00	2227.00
04195500	2.50	3.04	6100.	8777.	10500.	12610.	14130.	298.00	62.41	134.20
04196000	2.50	3.16	2441.	4057.	5494.	7819.	9985.	80.37	28.57	51.44

TABLE 7.--BASIN AND STREAMFLOW CHARACTERISTICS AT OHIO GAGING STATIONS--CONTINUED

STA. NO.	DEC Q	JAN Q	FEB Q	MAR Q	APR Q	MAY Q	JUNE Q	JULY Q	AUG Q	SEPT Q
03229000	192.10	268.30	278.10	337.20	269.60	178.40	173.90	69.02	46.72	38.65
03229500	589.30	794.60	802.20	1029.00	768.10	581.50	482.20	248.90	174.90	123.10
03230000	1338.00	4065.00	4093.00	5006.00	4389.00	2384.00	2671.00	1044.00	659.30	408.70
03230500	361.50	742.20	771.00	962.30	776.50	487.90	371.40	167.90	127.40	73.17
03231000	234.40	476.90	520.10	705.70	523.60	322.80	200.60	100.50	71.43	63.16
03231500	3103.00	6379.00	5592.00	6888.00	5893.00	3617.00	3111.00	1620.00	1179.00	849.80
03232000	207.80	404.10	415.00	502.80	377.10	263.70	161.10	93.95	49.07	47.23
03232500	132.60	282.10	320.70	351.40	282.80	144.30	138.10	64.50	48.04	41.39
03234000	695.40	1262.00	1415.00	1900.00	1397.00	849.80	484.10	380.60	332.80	195.30
03234500	2754.00	8178.00	7411.00	9464.00	8693.00	5236.00	3930.00	2315.00	1836.00	1191.00
03235000	11.38	22.95	22.65	18.78	19.04	10.04	4.93	5.73	3.34	1.97
03235500	0.82	1.94	2.36	3.36	3.33	1.67	0.37	0.24	0.12	0.12
03236000	192.90	395.30	567.00	728.40	711.90	377.80	282.10	94.49	78.89	64.85
03237500	463.40	804.60	828.40	1074.00	692.50	475.80	245.00	204.10	129.50	104.50
03238500	245.40	449.50	483.00	571.00	396.40	229.40	148.30	98.24	76.59	61.19
03240000	63.46	112.90	154.60	241.70	190.70	124.80	78.25	49.48	52.99	26.67
03240500	19.25	31.81	46.00	68.73	48.28	30.25	19.59	14.75	14.12	5.95
03241000	12.61	21.82	33.25	47.66	33.57	22.91	15.74	9.70	9.45	2.19
03241500	37.21	66.22	91.36	134.40	100.50	66.56	42.08	28.21	28.03	10.42
03242000	344.40	648.50	615.80	635.20	560.10	434.40	344.70	196.40	169.90	143.80
03242500	555.70	1223.00	1361.00	1414.00	1271.00	780.50	674.40	303.80	211.10	192.00
03245500	996.50	1550.00	1912.00	2460.00	2245.00	1501.00	953.70	699.50	371.90	286.50
03246500	224.10	572.90	505.40	757.10	435.00	228.90	67.97	54.28	42.68	108.30
03247500	542.40	1084.00	1024.00	1241.00	880.50	484.40	290.60	261.30	159.20	116.30
03260700	23.04	34.57	37.83	68.02	55.01	34.75	23.72	18.05	12.04	8.59
03260800	34.59	59.04	63.08	106.30	84.33	49.20	46.92	24.44	17.09	13.71
03263000	794.60	1660.00	1518.00	1985.00	1723.00	1038.00	892.70	464.80	291.50	254.80
03264000	148.60	273.50	270.00	336.60	316.60	200.20	177.30	84.51	49.38	43.67
03265000	375.70	670.00	719.40	976.80	874.30	416.60	464.30	218.30	108.90	126.10
03266000	459.50	1012.00	922.60	1176.00	1066.00	630.90	553.20	287.60	147.20	101.90
03266500	5.60	12.16	11.68	15.83	15.99	9.97	6.60	4.23	2.62	2.01
03267000	102.20	175.70	196.40	220.20	208.90	165.80	143.20	107.80	86.36	77.03
03268000	52.67	86.99	95.74	94.60	96.03	82.11	82.03	55.80	41.20	33.58
03268500	33.17	66.33	70.83	67.89	62.83	44.20	46.06	23.61	17.76	10.98
03269500	396.10	665.50	683.40	780.80	722.10	562.60	491.20	361.30	282.20	239.20
03270000	493.40	883.60	896.30	1018.00	920.80	722.80	590.20	434.00	339.10	290.30
03271000	36.88	103.30	110.60	115.30	105.40	51.41	70.52	23.49	17.20	14.38
03271500	1987.00	3190.00	3128.00	4647.00	4019.00	2817.00	2031.00	1504.00	892.60	851.40
03272000	232.60	498.40	461.90	527.10	452.20	278.80	219.60	130.90	72.43	53.56
03273500	225.70	607.10	613.00	684.00	585.60	257.30	266.90	111.30	51.69	58.39
03274000	2350.00	5106.00	4976.00	6353.00	5795.00	3720.00	2778.00	1690.00	1137.00	805.30
04183500	1565.00	2327.00	2432.00	3619.00	3339.00	2225.00	1123.00	693.90	417.70	404.60
04184500	133.30	181.00	258.20	365.90	336.00	216.70	96.00	77.23	28.20	29.05
04185000	318.60	362.50	495.70	752.90	646.60	390.50	171.50	123.70	46.24	56.52
04187500	121.70	207.60	189.50	262.30	225.10	118.30	99.38	52.51	30.87	42.11
04189000	227.50	395.90	388.30	538.20	429.30	242.70	194.50	107.10	40.09	55.42
04189500	553.80	1146.00	1220.00	1339.00	958.80	694.10	262.80	118.80	84.40	275.20
04193500	4095.00	7214.00	6974.00	10139.99	9226.00	6182.00	3189.00	1708.00	835.60	596.30
04195500	274.00	494.60	465.70	699.70	617.30	406.70	239.70	116.90	37.91	36.26
04196000	91.85	148.20	144.50	175.30	125.30	79.49	60.91	34.27	14.05	14.28

TABLE 7.-- BASIN AND STREAMFLOW CHARACTERISTICS AT OHIO GAGING STATIONS-CONTINUED

STA. NO.	SD Q	OCT SD	NOV SD	DEC SD	JAN SD	FEB SD	MAR SD	APR SD	MAY SD	JUNE SD
03229000	68.86	108.40	91.50	217.30	278.30	162.10	228.90	179.60	193.60	187.70
03229500	203.80	322.20	304.00	652.70	779.90	481.40	678.40	530.70	533.30	462.50
03230000	762.40	108.70	525.80	1254.00	4814.00	2163.00	3189.00	2803.00	1962.00	2330.00
03230500	179.60	210.50	227.10	447.10	824.40	546.40	667.40	567.50	429.90	488.20
03231000	110.80	114.70	147.10	307.00	538.70	364.00	577.40	356.80	290.20	235.40
03231500	1280.00	1486.00	1928.00	3522.00	7176.00	3067.00	4133.00	3621.00	3174.00	3093.00
03232000	94.00	117.30	110.80	251.30	430.00	290.20	409.20	264.40	258.70	176.70
03232500	44.61	26.98	58.40	131.90	261.10	180.60	223.10	175.90	104.60	96.72
03234000	277.00	328.90	358.60	769.30	1193.00	949.20	1468.00	893.80	816.80	421.10
03234500	1613.00	428.20	943.70	2968.00	10209.99	4722.00	6789.00	5169.00	4732.00	3246.00
03235000	3.27	0.73	3.06	11.27	15.14	12.38	10.13	12.36	8.87	4.35
03235500	0.45	0.11	0.28	0.98	1.87	1.82	2.08	1.62	1.26	0.87
03236000	81.39	19.99	81.49	212.60	335.00	319.10	458.40	415.50	282.10	355.00
03237500	142.60	114.60	214.60	396.70	642.50	602.80	791.40	422.90	482.70	255.80
03238500	85.37	78.01	154.80	234.90	392.30	355.60	425.30	265.90	264.20	167.90
03240000	34.08	14.15	37.25	65.25	119.90	98.81	180.40	123.50	72.13	73.10
03240500	7.20	6.19	13.08	20.69	29.90	25.09	46.74	31.44	20.13	29.19
03241000	5.46	2.97	8.98	16.77	23.04	20.64	36.91	23.15	16.32	23.99
03241500	21.50	9.57	26.23	43.72	66.20	57.60	105.90	69.33	49.46	58.66
03242000	151.90	168.50	190.60	326.10	628.60	409.50	459.80	314.00	400.00	281.80
03242500	286.30	149.20	271.30	628.10	1341.00	788.60	1039.00	761.40	697.80	417.20
03245500	462.50	595.90	528.10	982.50	1336.00	1165.00	2010.00	1464.00	1502.00	743.70
03246500	68.52	78.15	137.70	245.20	441.80	363.30	572.90	252.10	256.60	84.23
03247500	182.20	229.10	343.80	532.40	1110.00	746.90	956.60	603.30	574.90	295.30
03260700	10.38	4.52	7.98	23.73	36.05	26.00	41.67	34.81	23.43	29.93
03260800	15.02	6.54	8.44	31.18	64.33	42.33	68.43	65.33	27.52	80.11
03263000	379.00	465.30	492.40	847.30	1969.00	998.90	1114.00	1173.00	883.30	1087.00
03264000	72.39	38.67	88.71	160.70	343.20	198.60	190.20	210.90	175.40	214.30
03265000	167.60	210.90	353.90	412.10	875.90	476.20	523.20	600.30	299.10	643.10
03266000	247.00	253.70	311.40	524.20	1272.00	669.80	697.00	760.10	582.10	741.20
03266500	2.57	1.17	2.81	5.05	10.74	6.98	9.89	8.88	5.33	7.08
03267000	50.89	52.83	47.81	66.40	170.10	129.30	110.30	99.93	71.17	99.93
03268000	21.64	8.08	16.02	30.44	73.06	52.55	44.03	41.39	29.85	55.72
03268500	13.71	3.73	11.21	27.61	67.66	45.00	36.75	31.45	22.78	47.20
03269500	157.30	156.60	184.00	240.70	634.70	364.30	367.20	361.00	274.70	347.20
03270000	206.80	193.40	219.80	301.70	861.40	490.40	517.70	412.00	370.90	392.20
03271000	21.57	3.31	15.71	29.46	124.30	68.49	77.33	67.99	43.00	85.92
03271500	931.00	1245.00	1447.00	1802.00	3532.00	2140.00	2762.00	2748.00	2236.00	2499.00
03272000	111.40	79.25	190.00	233.00	616.90	302.10	341.30	323.60	243.80	238.60
03273500	135.40	77.69	164.60	260.90	839.00	377.00	502.20	412.80	275.40	285.30
03274000	1278.00	574.10	1331.00	2285.00	6504.00	3370.00	3723.00	3548.00	2911.00	2819.00
04183500	659.20	759.00	875.90	1762.00	2542.00	1822.00	1595.00	2199.00	2064.00	954.70
04184500	75.75	39.12	71.04	131.50	195.50	188.10	180.30	224.40	224.20	102.80
04185000	135.70	81.16	145.90	377.00	395.30	354.10	351.60	462.00	444.70	182.80
04187500	48.50	60.19	63.27	138.10	219.90	154.70	138.70	193.00	101.20	133.60
04189000	101.20	113.90	144.90	292.20	449.20	320.40	319.90	354.00	231.70	268.50
04189500	162.00	340.10	333.30	462.70	927.00	636.90	488.50	774.30	563.60	286.60
04193500	2024.00	1931.00	2621.00	5337.00	8553.00	6347.00	5024.00	6138.00	6043.00	3120.00
04195500	141.00	134.90	206.00	363.00	593.00	418.60	401.30	462.20	406.60	302.10
04196000	30.69	56.99	54.92	101.50	165.10	77.43	84.93	72.27	71.41	98.40

TABLE 7.--BASIN AND STREAMFLOW CHARACTERISTICS AT OHIO GAGING STATIONS--CONTINUED

STA. NO.	JULY SD	AUG SD	SEPT SD	MIN7,2	MIN7,10	MIN7,20	VOL7,2	VOL7,10	VOL7,50
03229000	57.44	70.53	96.06	3.79	1.28	0.89	1428.	2347.	0.B
03229500	209.70	258.00	276.60	17.58	9.15	7.46	3940.	6666.	0.B
03230000	704.10	668.90	369.30	176.00	137.40	129.70	21030.	27900.	0.B
03230500	198.60	187.40	135.10	14.51	4.43	3.00	3643.	6883.	9034.
03231000	85.67	128.80	124.80	7.84	1.95	1.19	2574.	4948.	6812.
03231500	1119.00	1286.00	1116.00	274.30	197.50	180.70	25440.	44640.	56240.
03232000	100.10	78.16	107.70	1.50	0.30	0.18	1836.	3422.	4461.
03232500	53.84	36.99	52.29	6.60	2.85	2.15	1081.	2010.	0.B
03234000	359.60	626.80	333.80	29.33	11.96	9.11	6074.	12110.	17640.
03234500	1358.00	1981.00	1174.00	372.80	285.00	269.60	31960.	58500.	0.B
03235000	7.85	6.29	3.26	0.02	0.0	0.0	81.	122.	0.B
03235500	0.49	0.29	0.28	0.0	0.0	0.0	12.	18.	0.B
03236000	82.06	90.45	92.87	8.67	6.00	5.40	2624.	4395.	0.B
03237500	239.70	212.70	203.80	1.85	0.25	0.13	3624.	6958.	10760.
03238500	107.90	117.30	119.10	0.72	0.01	0.0	2252.	3950.	5820.
03240000	53.07	93.85	26.07	12.47	7.32	6.51	693.	1666.	0.B
03240500	20.50	25.68	11.05	0.88	0.00	0.0	205.	422.	0.B
03241000	14.18	15.89	4.35	0.20	0.0	0.0	163.	325.	0.B
03241500	42.69	51.26	15.25	2.62	0.73	4.94	427.	981.	0.B
03242000	113.50	128.80	139.20	51.84	31.25	27.24	2490.	4650.	0.B
03242500	182.50	125.60	209.70	67.41	38.33	32.94	5250.	9750.	0.B
03245500	666.20	299.80	329.40	71.33	44.77	40.11	8125.	16780.	0.B
03246500	52.53	67.43	230.10	0.52	0.0	0.0	2466.	4845.	0.B
03247500	334.10	248.40	207.20	3.51	0.99	0.69	4649.	9071.	13820.
03260700	21.47	13.03	7.42	4.36	2.72	2.44	189.	380.	0.B
03260800	23.04	16.49	9.90	8.52	5.05	4.59	352.	828.	0.B
03263000	458.60	282.80	530.50	74.55	48.35	44.26	7507.	13380.	17320.
03264000	79.44	53.39	50.57	17.04	9.33	7.93	1377.	2453.	3291.
03265000	218.40	145.20	322.60	23.30	11.34	9.24	4000.	6550.	8750.
03266000	336.90	215.80	140.50	31.16	13.88	10.98	4923.	8212.	9887.
03266500	5.22	2.88	1.49	1.17	0.71	0.63	49.	88.	0.B
03267000	55.32	41.63	45.60	49.06	31.06	27.47	619.	1249.	1836.
03268000	28.96	23.29	17.52	23.82	15.09	13.10	326.	481.	0.B
03268500	19.22	20.51	6.64	6.14	4.30	3.98	289.	501.	0.B
03269500	194.10	150.20	125.00	160.70	117.80	108.20	2405.	4648.	6460.
03270000	252.90	197.20	171.10	187.70	127.30	114.20	3040.	6079.	8601.
03271000	22.98	13.41	26.87	2.42	1.31	1.13	506.	910.	0.B
03271500	1354.00	794.30	1307.00	354.30	227.00	202.30	15110.	31640.	46980.
03272000	179.00	106.50	90.40	9.78	4.08	3.19	2297.	3960.	4918.
03273500	94.46	46.41	112.20	3.34	0.76	0.49	2822.	5244.	0.B
03274000	1438.00	1048.00	568.30	427.70	268.30	236.20	20870.	39760.	53060.
04183500	671.40	449.70	733.10	110.30	66.19	57.37	11100.	15900.	20000.
04184500	119.20	19.33	30.21	12.30	7.25	6.29	1056.	1668.	1987.
04185000	181.90	36.17	75.62	16.40	7.92	6.28	2285.	3400.	4190.
04187500	61.01	21.47	72.89	13.62	7.40	5.90	1010.	1732.	2259.
04189000	195.80	52.16	151.00	5.14	2.02	1.46	2258.	3800.	4768.
04189500	65.74	93.72	641.50	12.84	7.94	6.84	4763.	6983.	0.B
04193500	2215.00	1152.00	715.80	156.80	74.32	59.81	34210.	55670.	67110.
04195500	180.80	78.81	71.94	2.92	1.14	0.87	2673.	4712.	0.B
04196000	53.89	12.38	24.08	1.87	0.99	0.83	697.	1127.	1468.

TABLE 7.-- BASIN AND STREAMFLOW CHARACTERISTICS AT OHIO GAGING STATIONS--CONTINUED

STA. NO.	STATION NAME	AREA	SLOPE	LENGTH	LAKES	ELEV	FORESTS	PRECIP
04196500	SANDUSKY RIVER NEAR UPPER SANDUSKY	298.00	6.58	56.30	-0.00	972.	1.50	35.00
04197000	SANDUSKY RIVER NEAR MEXICO	774.00	4.34	89.90	-0.00	894.	0.70	35.00
04198000	SANDUSKY RIVER NEAR FREMONT	1251.00	4.03	118.00	-0.00	828.	1.70	35.00
04198500	E. BRANCH HURON RIVER NEAR NORWALK	85.50	14.20	28.00	-0.00	818.	3.80	36.00
04199000	HURON RIVER AT MILAN	371.00	9.31	55.10	0.10	814.	3.70	35.50
04199500	VERMILION RIVER NEAR VERMILION	262.00	6.99	64.10	-0.00	827.	8.80	34.50
04200000	E. BR. BLACK RIVER AT ELYRIA	217.00	6.78	59.70	-0.00	894.	9.80	36.00
04200500	BLACK RIVER AT ELYRIA	396.00	6.69	63.40	-0.00	884.	3.40	35.00
04201500	ROCKY RIVER NEAR BEREA	267.00	9.45	30.80	-0.00	874.	6.40	36.50
04202000	CUYAHOGA R. AT HIRAM RAPIDS	151.00	4.70	18.20	1.90	1133.	19.10	41.00
04209000	CHAGRIN R. AT WILLOUGHBY	246.00	12.40	32.60	-0.00	893.	22.40	40.00
04210000	PHELPS CREEK NEAR WINDSOR	25.60	20.70	11.10	-0.00	998.	35.80	39.50
04211000	ROCK CREEK NR. ROCK CREEK	69.20	4.10	20.40	-0.00	858.	18.90	39.50
04211500	MILL CR. NEAR JEFFERSON	82.00	7.56	22.40	-0.00	898.	17.50	40.00
04212000	GRAND RIVER NEAR MADISON	581.00	1.45	52.20	-0.00	777.	17.20	39.50
04212500	ASHTABULA R. NEAR ASHTABULA	121.00	12.80	26.60	-0.00	832.	16.90	40.00
04213000	CONNEAUT CREEK AT CONNEAUT	175.00	7.04	58.60	-0.00	810.	22.30	41.00
03087000	BEACH CREEK NEAR BOLTON	18.80	27.00	9.20	0.40	1150.	13.40	37.00
03092100	HINKLEY CREEK CHARLESTON	10.60	20.50	9.62	0.20	1090.	28.90	37.00
03092600	ORDNANCE CREEK NEAR NEWTON FALLS	0.16	110.00	0.77	-0.00	979.	28.20	37.00
03094900	WALNUT CREEK AT CORTLAND	8.15	15.80	5.49	-0.00	1060.	39.30	37.00
03102900	CLEAR CREEK AT DILLWORTH	1.13	46.50	2.08	2.00	1080.	22.40	38.00
03109000	LISBON CREEK NEAR LISTON	6.19	55.60	5.23	0.60	1100.	15.50	39.00
03115600	BARNS CREEK NEAR SUMMERFIELD	3.53	75.50	3.64	-0.00	907.	26.60	40.00
03116000	TUSCARAWAS RIVER AT CLINTON	165.00	6.21	25.80	1.40	1060.	6.70	37.00
03116100	LITTLE CHIPPEWA CR. NR. SMITHVILLE	16.40	6.50	7.20	0.50	1000.	11.00	37.00
03117000	TUSCARAWAS RIVER AT MASSILLON	526.00	5.35	43.50	0.70	1010.	9.10	37.00
03118000	MIDDLE BR. NIMISHILLEN CR. AT CANT	43.10	7.70	15.00	0.40	1100.	7.90	37.00
03118500	NIMISHILLEN CR. AT N. INDUSTRY	175.00	8.66	25.60	0.20	1120.	7.40	37.00
03119600	JEFFERSON CREEK NR. JEWETT	2.54	49.70	3.03	1.60	1110.	22.20	40.00
03119700	CONOTTON CR. AT JEWETT	14.30	20.90	4.47	0.80	1050.	24.90	40.00
03125700	W. BR. SPENCER CR. AT HENDRYBURG	2.26	45.90	3.18	0.90	1070.	30.10	40.00
03129000	TUSCARAWAS RIVER AT NEWCOMERSTOWN	2443.00	1.94	110.00	0.80	884.	19.10	39.00
03129012	WHITE EYES CR. TRIB. NR. COSHOCTON	0.01	493.00	0.19	-0.00	1100.	-0.00	39.00
03129014	WHITE EYES CR. TRIB. NR. COSHOCTON	0.47	91.90	0.91	-0.00	1010.	31.70	39.00
03129016	WHITE EYES CR. TRIB. NR. COSHOCTON	0.12	372.00	0.57	-0.00	990.	17.20	39.00
03129200	WHETSTONE CR. TRIB. NR. OLIVESBURG	0.24	47.70	0.59	-0.00	1220.	4.20	35.00
03139930	LITTLE MILL CR. TRIB. NR. COSHOCTON	0.54	190.00	1.02	-0.00	1040.	27.50	39.00
03139940	LITTLE MILL CR. TRIB. NR. COSHOCTON	1.44	151.00	1.63	-0.00	1040.	30.60	39.00
03139960	LITTLE MILL CR. TRIB. NR. COSHOCTON	2.38	100.00	2.47	-0.00	996.	26.90	39.00
03139970	LITTLE MILL CR. TRIB. NR. COSHOCTON	0.19	283.00	0.80	-0.00	1020.	26.20	39.00
03139980	LITTLE MILL CR. TRIB. NR. COSHOCTON	4.02	77.80	3.45	-0.00	969.	28.90	39.00
03139990	LITTLE MILL CR. TRIB. NR. COSHOCTON	7.16	47.90	5.27	-0.00	915.	27.40	39.00
03140010	SPOON CR. TRIB. NR. COSHOCTON	0.19	357.00	0.38	-0.00	1100.	11.00	39.00
93140020	SPOON CR. TRIB. NR. COSHOCTON	0.07	258.00	0.42	-0.00	1050.	99.00	39.00
03140030	SPOON CR. TRIB. NR. COSHOCTON	0.04	265.00	0.26	-0.00	1050.	17.00	39.00
03145600	OTTER FK. NR. CENTERBURG	3.17	17.70	3.37	-0.00	1200.	1.70	37.00
03147900	TIMBER RUN NR. ZANESVILLE	10.60	35.70	5.86	0.40	791.	24.50	37.00
03150100	BELL CR. AT MC CONNELSVILLE	1.07	162.00	1.34	-0.00	809.	16.80	39.00
03226200	DELAWARE RUN NR. DELAWARE	5.84	9.80	4.70	0.40	938.	6.30	36.00

TABLE 7.--BASIN AND STREAMFLOW CHARACTERISTICS AT OHIO GAGING STATIONS--CONTINUED

STA. NO.	I24,2	SOIL	PEAK, 2	PEAK, 5	PEAK, 10	PEAK, 25	PEAK, 50	MEAN Q	OCT Q	NOV Q
04196500	2.50	3.44	4508.	6536.	7875.	9550.	10780.	233.30	53.25	111.50
04197000	2.50	3.47	8056.	11750.	14300.	17640.	20190.	549.40	118.00	237.40
04198000	2.50	3.46	14070.	18870.	21640.	24760.	26840.	906.30	185.70	365.60
04198500	2.30	3.16	2765.	4094.	4845.	0.B	0.B	62.77	39.77	38.26
04199000	2.30	3.16	8243.	12650.	16330.	21950.	0.B	267.20	32.29	129.00
04199500	2.30	2.91	5217.	7297.	8649.	10320.	0.B	213.70	14.07	82.05
04200000	2.30	2.50	4520.	7332.	9576.	12870.	0.B	177.80	58.28	91.13
04200500	2.30	2.47	6940.	10470.	13300.	17510.	21130.	295.50	30.82	99.84
04201500	2.20	2.50	8205.	11770.	14220.	17400.	19820.	241.80	78.38	128.60
04202000	2.20	2.68	0.B	0.B	0.B	0.B	0.B	192.90	82.19	117.20
04209000	2.20	2.91	9335.	14560.	18690.	24720.	29830.	310.90	141.10	232.70
04210000	2.20	2.34	1945.	2898.	3483.	4164.	0.B	35.62	12.04	17.98
04211000	2.20	2.34	2555.	3897.	4847.	6104.	7077.	75.60	21.73	41.95
04211500	2.20	2.34	3480.	5500.	7550.	11700.	17300.	105.20	33.07	76.69
04212000	2.20	2.75	8766.	11710.	13630.	16030.	17810.	645.90	217.20	385.20
04212500	2.10	2.50	4607.	6737.	8184.	10040.	11440.	145.80	67.97	121.30
04213000	2.10	2.50	5962.	8804.	10700.	13100.	14880.	240.10	103.90	214.80
03087000	2.40	2.82	1099.	1588.	1884.	0.B	0.B	0.0 B	0.0 B	0.0 B
03092100	2.40	2.82	356.	498.	560.	630.	0.B	0.0 B	0.0 B	0.0 B
03092600	2.40	2.82	37.	66.	89.	121.	0.B	0.0 B	0.0 B	0.0 B
03094900	2.40	2.34	557.	925.	1175.	1488.	0.B	0.0 B	0.0 B	0.0 B
03102900	2.40	2.82	69.	159.	261.	462.	0.B	0.0 B	0.0 B	0.0 B
03109000	2.50	3.33	397.	688.	934.	1315.	0.B	0.0 B	0.0 B	0.0 B
03115600	2.50	2.66	576.	1226.	1811.	2736.	0.B	0.0 B	0.0 B	0.0 B
03116000	2.40	2.82	1300.	1839.	2166.	2544.	2804.	0.0 B	0.0 B	0.0 B
03116100	2.40	2.82	725.	1106.	1354.	1660.	0.B	0.0 B	0.0 B	0.0 B
03117000	2.40	2.82	3702.	4938.	5770.	6836.	7644.	0.0 B	0.0 B	0.0 B
03118000	2.40	2.82	663.	1076.	1415.	1923.	2364.	0.0 B	0.0 B	0.0 B
03118500	2.40	3.33	2871.	4341.	5447.	6996.	8261.	0.0 B	0.0 B	0.0 B
03119600	2.50	2.50	92.	153.	205.	289.	0.B	0.0 B	0.0 B	0.0 B
03119700	2.50	2.50	469.	734.	938.	1229.	0.B	0.0 B	0.0 B	0.0 B
03125700	2.50	2.50	230.	460.	618.	861.	0.B	0.0 B	0.0 B	0.0 B
03129000	2.40	3.12	14820.	22530.	29990.	42940.	55840.	0.0 B	0.0 B	0.0 B
03129012	2.40	3.33	4.	11.	20.	37.	0.B	0.0 B	0.0 B	0.0 B
03129014	2.40	3.33	119.	278.	419.	636.	824.	0.0 B	0.0 B	0.0 B
03129016	2.40	3.33	32.	79.	121.	199.	275.	0.0 B	0.0 B	0.0 B
03129300	2.40	2.82	49.	80.	101.	125.	0.B	0.0 B	0.0 B	0.0 B
03139930	2.40	3.33	66.	140.	209.	324.	432.	0.0 B	0.0 B	0.0 B
03139940	2.40	3.33	162.	315.	437.	610.	750.	0.0 B	0.0 B	0.0 B
03139960	2.40	3.33	319.	652.	884.	1220.	1500.	0.0 B	0.0 B	0.0 B
03139970	2.40	3.33	28.	71.	114.	185.	251.	0.0 B	0.0 B	0.0 B
03139980	2.40	3.33	465.	897.	1184.	1521.	1747.	0.0 B	0.0 B	0.0 B
03139990	2.40	3.33	746.	1700.	2617.	4152.	5596.	0.0 B	0.0 B	0.0 B
03140010	2.40	3.33	24.	63.	100.	159.	212.	0.0 B	0.0 B	0.0 B
03140020	2.40	3.33	9.	24.	40.	71.	103.	0.0 B	0.0 B	0.0 B
03140030	2.40	3.33	16.	36.	53.	79.	102.	0.0 B	0.0 B	0.0 B
03145600	2.40	3.16	120.	222.	314.	463.	0.B	0.0 B	0.0 B	0.0 B
03147900	2.50	3.33	804.	1273.	1586.	1974.	0.B	0.0 B	0.0 B	0.0 B
03150100	2.50	2.66	289.	565.	767.	1031.	0.B	0.0 B	0.0 B	0.0 B
03226200	2.50	3.51	328.	578.	769.	1035.	0.B	0.0 B	0.0 B	0.0 B

TABLE 7.--BASIN AND STREAMFLOW CHARACTERISTICS AT OHIO GAGING STATIONS--CONTINUED

STA. NO.	SD Q	OCT SD	NOV SD	DEC SD	JAN SD	FEB SD	MAR SD	APR SD	MAY SD	JUNE SD
04196500	87.71	130.10	136.60	269.60	423.00	256.10	299.30	312.50	199.60	235.90
04197000	215.10	278.00	285.00	651.80	1067.00	671.50	770.80	742.90	502.30	571.30
04198000	357.80	422.60	456.90	1007.00	1763.00	1150.00	1269.00	1243.00	875.40	898.20
04198500	28.39	92.65	38.76	54.87	130.20	90.14	68.69	67.36	54.43	21.03
04199000	91.51	36.88	161.70	284.30	415.90	372.80	393.90	425.90	280.20	133.40
04199500	73.33	25.00	92.15	245.50	371.90	305.00	355.70	333.50	230.30	81.31
04200000	84.70	146.70	138.10	334.80	406.10	250.00	250.50	170.60	122.80	150.40
04200500	104.50	57.33	102.70	264.70	538.80	385.60	394.40	459.20	290.00	292.40
04201500	83.51	183.70	156.60	277.60	379.90	287.50	262.50	330.40	191.60	176.90
04202000	50.52	106.60	76.92	144.10	220.60	152.00	172.60	190.40	120.30	87.81
04209000	79.33	217.70	173.80	236.60	326.20	237.40	257.80	293.40	196.60	175.00
04210000	8.15	23.75	16.35	34.21	46.54	36.28	31.96	37.93	21.74	18.32
04211000	23.74	48.46	44.44	74.50	110.40	79.43	83.35	88.28	61.81	52.34
04211500	29.16	76.05	80.42	105.90	126.00	109.80	100.90	113.90	83.18	58.52
04212000	200.40	490.50	440.10	599.90	770.60	640.50	588.40	703.50	492.60	332.60
04212500	39.05	146.30	118.70	154.00	130.60	123.30	118.20	142.60	121.50	83.77
04213000	62.90	197.70	186.70	228.20	232.10	189.80	166.60	189.60	177.50	77.28
03087000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03092100	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03092600	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03094900	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03102900	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03109000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03115600	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03116000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03116100	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03117000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03118000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03118500	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03119600	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03119700	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03125700	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03129000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03129012	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03129014	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03129016	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03129300	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03139930	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03139940	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03139960	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03139970	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03139980	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03139990	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03140010	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03140020	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03140030	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03145600	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03147900	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03150100	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03226200	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B

TABLE 7.--BASIN AND STREAMFLOW CHARACTERISTICS AT OHIO GAGING STATIONS--CONTINUED

STA. NO.	DEC Q	JAN Q	FEB Q	MAR Q	APR Q	MAY Q	JUNE Q	JULY Q	AUG Q	SEPT Q
04196500	230.70	412.20	433.20	562.30	427.40	238.60	169.20	89.43	42.12	41.55
04197000	519.20	974.30	1010.00	1376.00	1016.00	532.60	413.70	208.00	104.00	111.00
04198000	828.10	1601.00	1703.00	2270.00	1714.00	938.30	668.70	317.20	160.80	172.20
04198500	66.25	127.90	121.80	137.10	100.10	48.91	19.51	18.60	11.08	27.42
04199000	232.10	401.50	497.60	718.60	572.60	295.80	149.80	107.10	60.89	23.00
04199500	195.60	325.30	418.30	620.50	482.40	238.60	81.15	66.76	41,37	10.65
04200000	229.80	360.50	336.60	400.90	263.10	141.60	81.83	65.15	46.06	66.40
04200500	230.80	491.70	556.60	799.40	645.10	346.40	200.80	68.71	61.31	31.69
04201500	235.00	397.60	455.80	580.00	504.50	249.20	122.30	62.62	53.56	47.75
04202000	205.20	329.10	312.50	451.50	361.10	213.70	96.26	60.65	54.05	44.53
04209000	337.20	472.80	513.60	691.30	562.30	338.00	194.50	95.60	86.14	78.42
04210000	43.05	58.11	77.31	83.23	61.04	37.46	16.79	6.87	10.94	4.90
04211000	83.19	132.50	148.70	195.50	140.90	81.29	35.59	12.02	12.74	5.16
04211500	138.90	174.90	206.50	258.90	177.30	112.60	43.17	18.03	22.02	17.21
04212000	754.30	1096.00	1251.00	1618.00	1162.00	665.30	252.50	126.50	113.40	143.50
04212500	223.30	233.70	255.80	332.00	244.70	147.60	55.86	20.01	23.06	30.17
04213000	381.60	423.90	411.70	518.30	380.80	228.90	70.76	38.43	47.28	68.65
03087000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03092100	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03092600	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03094900	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03102900	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03109000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03115600	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03116000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03116100	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03117000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03118000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03118500	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03119600	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03119700	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03125700	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03129000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03129012	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03129014	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03129016	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03129300	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03139930	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03139940	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03139960	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03139970	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03139980	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03139990	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03140010	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03140020	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03140030	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03145600	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03147900	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03150100	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B
03226200	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B

STA. NO.	JULY SD	AUG SD	SEPT SD	MIN7,2	MIN7,10	MIN7,20	VOL7,2	VOL7,10	VOL7,50
04196500	119.90	78.43	88.88	4.12	1.45	1.07	1899.	3127.	4192.
04197000	297.80	172.70	267.10	13.42	7.04	5.99	4697.	7755.	10250.
04198000	431.80	264.60	389.80	22.00	10.95	8.94	7902.	12860.	16390.
04198500	22.15	10.10	59.91	2.39	0.60	0.37	531.	1058.	0.B
04199000	145.70	119.10	21.46	7.13	3.98	3.48	2364.	3742.	0.B
04199500	103.50	85.56	14.06	0.92	0.04	0.0	2001.	2849.	0.B
04200000	98.40	119.60	147.70	0.41	0.0	0.0	1736.	3129.	0.B
04200500	108.50	110.40	51.05	6.14	3.27	2.61	2671.	4015.	5025.
04201500	85.82	113.90	115.90	4.21	1.17	0.73	2048.	3095.	3857.
04202000	56.07	75.46	64.24	0.0 B	0.0 B	0.0 B	0.B	0.B	0.B
04209000	65.19	109.70	112.20	0.0 B	0.0 B	0.0 B	0.B	0.B	0.B
04210000	13.97	22.45	8.87	0.46	0.19	0.14	298.	423.	0.B
04211000	22.11	37.83	10.83	0.0	0.0	0.0	692.	957.	1270.
04211500	42.52	53.28	41.66	0.0 B	0.0 B	0.0 B	0.B	0.B	0.B
04212000	191.80	276.40	338.70	4.90	1.03	0.61	4742.	6833.	8143.
04212500	52.27	52.16	89.03	0.0	0.0	0.0	1186.	1626.	1854.
04213000	54.36	85.12	154.90	4.54	1.49	1.06	1799.	2560.	2936.
03087000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.B	0.B	0.B
03092100	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.B	0.B	0.B
03092600	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.B	0.B	0.B
03094900	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.B	0.B	0.B
03102900	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.B	0.B	0.B
03109000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.B	0.B	0.B
03115600	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.B	0.B	0.B
03116000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.B	0.B	0.B
03116100	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.B	0.B	0.B
03117000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.B	0.B	0.B
03118000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.B	0.B	0.B
03118500	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.B	0.B	0.B
03119600	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.B	0.B	0.B
03119700	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.B	0.B	0.B
03125700	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.B	0.B	0.B
03129000	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.B	0.B	0.B
03129012	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.B	0.B	0.B
03129014	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.B	0.B	0.B
03129016	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.B	0.B	0.B
03129300	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.B	0.B	0.B
03139930	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.B	0.B	0.B
03139940	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.B	0.B	0.B
03139960	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.B	0.B	0.B
03139970	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.B	0.B	0.B
03139980	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.B	0.B	0.B
03139990	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.B	0.B	0.B
03140010	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.B	0.B	0.B
03140020	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.B	0.B	0.B
03140030	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.B	0.B	0.B
03145600	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.B	0.B	0.B
03147900	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.B	0.B	0.B
03150100	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.B	0.B	0.B
03226200	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.0 B	0.B	0.B	0.B

TABLE 7.--BASIN AND STREAMFLOW CHARACTERISTICS AT OHIO GAGING STATIONS--CONTINUED

STA. NO.	STATION NAME	AREA	SLOPE	LENGTH	LAKES	ELEV	FORESTS	PRECIP
03230600	HOMINY CREEK AT CIRCLEVILLE	5.66	58.30	4.64	-0.00	808.	5.65	39.00
03231600	E. FK. PAINT CR. NR. SEDALIA	3.82	7.62	5.15	-0.00	1040.	2.10	38.50
03234100	INDIAN CR. AT MASSIEVILLE	9.60	60.90	4.55	0.10	734.	54.20	39.50
03235400	W. BR. TAR HOLLOW CR. AT TAR HOLLOW	0.30	213.00	1.00	-0.00	900.	95.70	39.50
03236100	S. BR. LITTLE SALT CR. AT JACKSON	3.76	36.70	4.05	0.10	724.	24.50	41.50
03239000	LITTLE MIAMI RIVER NR. SELMA	48.90	9.94	12.70	0.04	1080.	5.60	38.50
03239500	N. FK. LITTLE MIAMI R. NR. PITCHIN	28.90	9.43	13.60	-0.00	1070.	5.00	38.50
03241600	SHAWNEE CREEK AT XENIA	4.21	26.10	5.08	0.10	991.	2.20	39.00
03247100	PATTERSON RUN NEAR OWNESVILLE	3.34	31.90	2.77	-0.00	862.	7.00	41.00
03255500	MILL CREEK AT READING'	73.00	7.60	15.90	0.40	592.	13.60	39.00
03258000	W. FK. MILL CREEK AT LOCKLAND	35.60	12.60	14.40	1.60	720.	14.50	39.00
03263100	POPLAR CREEK NR. VANDALIA	3.11	78.00	2.77	-0.00	915.	9.60	37.50
03263200	BRIDGE CREEK NR. GREENVILLE	4.83	11.60	3.52	-0.00	1040.	22.40	37.50
03265100	HOG CREEK TRIB. AT LAURA	0.46	12.90	0.91	-0.00	1000.	14.10	37.00
03269000	BUCK CREEK AT SPRINGFIELD	139.00	15.40	21.90	0.04	1050.	5.20	38.00
03274100	BLAKE RUN NR. REILY	0.29	93.00	0.97	-0.00	946.	7.70	38.00
04176900	HILL DITCH NEAR RICHARDS	3.35	15.70	2.98	-0.00	639.	34.50	31.50
04177400	EAGLE CR. TRIB. NR. MONTPELIER	1.84	15.60	1.79	-0.00	885.	7.10	34.00
04186500	AUGLAIZE RIVER NR. FT. JENNINGS	332.00	3.40	69.10	-0.00	826.	4.00	36.00
04188500	EAGLE CREEK NEAR FINDLAY	55.00	9.31	23.40	-0.00	866.	4.10	35.00
04189100	TIDERISHI CREEK NR. JENERA	4.65	10.40	3.30	-0.00	838.	12.10	35.00
04190500	ROLLER CREEK NR. OHIO CITY	5.14	7.96	2.84	-0.00	823.	10.10	36.00
04191500	AUGLAIZE RIVER NEAR DEFIANCE	2318.00	2.71	103.00	-0.00	795.	3.50	35.00
04196700	ST. JAMES RUN NR. UPPER SANDUSKY	5.29	13.40	3.95	-0.00	875.	3.00	35.00
04197500	HAVENS CR. NR. HAVENS	4.28	10.70	4.06	-0.00	688.	8.40	34.00
04198100	NORWALK CREEK NR. NORWALK	4.92	25.60	2.44	-0.00	900.	14.90	35.50
04200100	PLUM CREEK AT OBERLIN	4.83	13.80	3.58	1.70	823.	11.80	34.50
04208000	CUYAHOGA RIVER AT INDEPENDENCE	707.00	7.13	86.90	1.50	854.	22.40	37.50
04210100	HOSKINS CREEK AT HARTSGROVE	5.11	15.60	6.15	0.80	1120.	67.50	40.00
03237300	W. BR. TURKEY RUN NR. WINCHESTER	0.89	55.30	2.12	-0.00	990.	13.40	42.40

TABLE 7.--BASIN AND STREAMFLOW CHARACTERISTICS AT OHIO GAGING STATIONS--CONTINUED

STA. NO.	I24,2	SOIL	PEAK, 2	PEAK, 5	PEAK, 10	PEAK, 25	PEAK, 50	MEAN Q	OCT Q	NOV Q
03230600	2.60	3.51	685.	1045.	1332.	1756.	0.B	0.0 B	0.0 B	0.0 B
03231600	2.50	3.51	181.	316.	400.	520.	0.B	0.0 B	0.0 B	0.0 B
03234100	2.50	3.51	1140.	2130.	3460.	7040.	0.B	0.0 B	0.0 B	0.0 B
03235400	2.70	2.66	18.	32.	45.	65.	0.B	0.0 B	0.0 B	0.0 B
03236100	2.70	2.66	693.	815.	880.	955.	0.B	0.0 B	0.0 B	0.0 B
03239000	2.70	3.51	1266.	3145.	5079.	8492.	0.B	0.0 B	0.0 B	0.0 B
03239500	2.70	3.51	381.	1015.	1787.	3407.	0.B	0.0 B	0.0 B	0.0 B
03241600	2.70	3.51	509.	727.	798.	868.	0.B	0.0 B	0.0 B	0.0 B
03247100	2.90	3.51	581.	752.	865.	1005.	0.B	0.0 B	0.0 B	0.0 B
03255500	2.90	2.34	3320.	4600.	5380.	6300.	7000.	0.0 B	0.0 B	0.0 B
03258000	2.90	2.34	3810.	5380.	6150.	6850.	0.B	0.0 B	0.0 B	0.0 B
03263100	2.70	3.51	455.	780.	990.	1260.	0.B	0.0 B	0.0 B	0.0 B
03263200	2.80	3.51	402.	650.	722.	818.	0.B	0.0 B	0.0 B	0.0 B
03265100	2.80	3.51	38.	71.	97.	135.	0.B	0.0 B	0.0 B	0.0 B
03269000	2.70	3.51	3130.	5386.	7196.	9849.	12090.	0.0 B	0.0 B	0.0 B
03274100	3.00	3.51	75.	125.	167.	231.	287.	0.0 B	0.0 B	0.0 B
04176900	2.70	2.99	52.	101.	143.	211.	0.B	0.0 B	0.0 B	0.0 B
04177400	2.70	2.99	79.	124.	154.	198.	0.B	0.0 B	0.0 B	0.0 B
04186500	2.70	3.51	4871.	7127.	8504.	10100.	11200.	0.0 B	0.0 B	0.0 B
04188500	2.60	3.51	2129.	3351.	4212.	0.B	0.B	0.0 B	0.0 B	0.0 B
04189100	2.60	3.25	195.	303.	363.	426.	0.B	0.0 B	0.0 B	0.0 B
04190500	2.80	3.51	210.	320.	386.	467.	0.B	0.0 B	0.0 B	0.0 B
04191500	2.70	3.40	24970.	38040.	46780.	57760.	65840.	0.0 B	0.0 B	0.0 B
04196700	2.50	3.51	191.	296.	351.	458.	0.B	0.0 B	0.0 B	0.0 B
04197500	2.50	2.99	146.	213.	252.	294.	0.B	0.0 B	0.0 B	0.0 B
04198100	2.50	3.16	335.	560.	732.	972.	0.B	0.0 B	0.0 B	0.0 B
04200100	2.30	2.34	287.	502.	664.	885.	0.B	0.0 B	0.0 B	0.0 B
04208000	2.30	2.50	7975.	10890.	13080.	16150.	18670.	0.0 B	0.0 B	0.0 B
04210100	2.30	2.50	197.	350.	483.	693.	0.B	0.0 B	0.0 B	0.0 B
03237300	2.80	2.34	253.	480.	656.	0.B	0.B	0.0 B	0.0 B	0.0 B

Table 8.--Ohio complete-record streamflow stations currently in operation.

Station number	Station name	Recommendations: Include in network	Recommendations: Not recommended for inclusion	Types of data: Current purpose	Types of data: Planning and design: Natural flow (minor streams)	Types of data: Planning and design: Regulated flow	Types of data: Long-term trend
03086500	Mahoning River at Alliance	X	-	X	-	-	-
03089500	Mill Creek near Berlin Center	-	X	-	-	-	-
03090500	Mahoning River below Berlin Dam, near Berlin Center	X	-	X	-	X	-
03091500	Mahoning River at Pricetown	X	-	X	-	X	-
03092000	Kale Creek near Pricetown	-	X	-	-	-	-
03092090	West Branch Mahoning River near Ravenna	X	-	X	-	-	-
03092460	West Branch Mahoning River below West Branch Dam, at Wayland	X	-	X	-	X	-
03092500	West Branch Mahoning River near Newton Falls	-	-	-	-	X	-
03093000	Eagle Creek at Phalanx Station	X	-	X	-	-	-
03094000	Mahoning River at Leavittsburg	X	-	X	-	X	-
03095500	Mosquito Creek below Mosquito Creek Dam, near Cortland	X	-	X	-	X	-
03098000	Mahoning River at Youngstown	X	-	X	-	X	-
03098500	Mill Creek at Youngstown	-	X	-	-	-	-
03099500	Mahoning River at Lowellville	X	-	X	-	X	-
03102950	Pymatuning Creek at Kinsman	X	-	X	X	-	-
03109500	Little Beaver Creek near East Liverpool	X	-	X	-	-	X
03110000	Yellow Creek near Hammondsville	X	-	X	-	-	-
03111500	Short Creek near Dillonvale	X	-	X	-	-	-
03114000	Captina Creek at Armstrongs Mills	X	-	X	-	-	-
03115400	Little Muskingum River at Bloomfield	X	-	X	X	-	-
03116000	Tuscarawas River at Clinton	-	X	-	-	-	-
03116200	Chippewa Creek at Easton	X	-	X	-	-	-
03117000	Tuscarawas River at Massillon	X	-	X	-	-	-
03117500	Sandy Creek at Waynesburg	X	-	X	-	-	X
03118000	Middle Branch Nimishillen Creek at Canton	-	X	-	-	-	-
03118500	Nimishillen Creek at North Industry	X	-	X	-	-	-
03120500	McGuire Creek below Leesville Dam, near Leesville	X	-	X	-	X	-
03121500	Indian Fork below Atwood Dam, near New Cumberland	X	-	X	-	X	-
03122500	Tuscarawas River below Dover Dam, near Dover	X	-	X	-	X	-
03123000	Sugar Creek above Beach City Dam, at Beach City	X	-	X	-	-	-
03124000	Sugar Creek below Beach City Dam, near Beach City	X	-	X	-	X	-
03124500	Sugar Creek at Strasburg	X	-	X	-	X	-
03125000	Home Creek near New Philadelphia	-	X	-	-	-	-
03126000	Stillwater Creek at Piedmont, Ohio	X	-	X	-	X	-
03127000	Stillwater Creek at Tippecanoe	X	-	X	-	-	-
03127500	Stillwater Creek at Uhrichsville	X	-	X	-	X	-
03128500	Little Stillwater Creek below Tappan Dam, at Tappan	X	-	X	-	X	-
03129000	Tuscarawas River at Newcomerstown	X	-	X	-	X	-
03130000	Black Fork below Charles Mill Dam, near Mifflin	X	-	X	-	X	-
03130500	Touby Run at Mansfield	-	X	-	-	-	-
03131500	Black Fork at Loudonville	X	-	X	-	X	-
03132000	Clear Fork at Butler	-	-	-	-	X	-
03133500	Clear Fork below Pleasant Hill Dam, near Perrysville	X	-	X	-	X	-
03135000	Lake Fork below Mohicanville Dam, near Mohicanville	X	-	X	-	X	-

Table 8.--Ohio complete-record streamflow stations currently in operation.--Continued

Station number	Station name	Recommendations: Include in network	Recommendations: Not recommended for inclusion	Types of data: Current purpose	Types of data: Planning and design: Natural flow (minor streams)	Types of data: Planning and design: Regulated flow	Types of data: Long-term trend
03136000	Mohican River at Greer	-	X	-	-	-	-
03136500	Kokosing River at Mount Vernon	X	-	X	-	-	-
03137000	Kokosing River at Millwood	X	-	X	-	-	-
03138500	Walhonding River below Mohawk Dam, at Nellie	X	-	X	-	X	-
03139000	Killbuck Creek at Killbuck	X	-	X	-	-	-
03140000	Mill Creek near Coshocton	X	-	X	-	-	X
03140500	Muskingum River near Coshocton	X	-	X	-	X	-
03141500	Seneca Fork below Senecaville Dam, near Senecaville	X	-	X	-	X	-
03142000	Wills Creek at Cambridge	-	-	-	-	X	-
03143500	Wills Creek below Wills Creek Dam, at Wills Creek	X	-	X	-	X	-
03144000	Wakatomika Creek near Frazeysburg	X	-	X	-	-	-
03144500	Muskingum River at Dresden	X	-	X	-	X	-
03145000	South Fork Licking River near Hebron	X	-	X	-	-	-
03146000	North Fork Licking River at Utica	X	-	X	X	-	-
03146500	Licking River near Newark	X	-	X	-	-	-
03147500	Licking River below Dillon Dam, near Dillon Falls	X	-	X	-	X	-
03150000	Muskingum River at McConnelsville	X	-	X	-	X	-
03156000	Hunters Run at Lancaster	X	-	-	X	-	-
03156400	Hocking River at Lancaster	-	X	-	-	-	-
03157000	Clear Creek near Rockbridge	X	-	X	-	-	X
03157500	Hocking River at Enterprise	X	-	X	-	-	-
03159000	Sunday Creek at Glouster	X	-	X	-	-	-
03159500	Hocking River at Athens	X	-	X	-	-	-
03159540	Shade River near Chester	X	-	X	X	-	-
03201800	Sandy Run near Lake Hope	X	-	X	-	-	-
03202000	Raccoon Creek at Adamsville	X	-	X	-	-	X
03218000	Little Scioto River above Marion	-	X	-	-	-	-
03219500	Scioto River near Prospect	X	-	X	-	-	X
03220000	Mill Creek near Bellepoint	X	-	X	-	-	-
03221000	Scioto River below O'Shaughnessy Dam, near Dublin	X	-	X	-	X	-
03223000	Olentangy River at Claridon	X	-	X	-	-	-
03224500	Whetstone Creek near Ashley	-	X	-	-	-	-
03225500	Olentangy River near Delaware	X	-	X	-	X	-
03226800	Olentangy River near Worthington	X	-	X	-	X	-
03227500	Scioto River at Columbus	X	-	X	-	X	-
03228500	Big Walnut Creek at Central College	X	-	X	-	X	-
03228805	Alum Creek at Africa	X	-	X	X	-	-
03229000	Alum Creek at Columbus	X	-	X	-	-	-
03229500	Big Walnut Creek at Rees	X	-	X	-	X	-
03230500	Big Darby Creek at Darbyville	X	-	X	-	-	-
03230800	Deer Creek at Mount Sterling	X	-	X	-	-	-
03230900	Deer Creek near Pancoastburg	X	-	X	-	X	-
03231000	Deer Creek at Williamsport	X	-	X	-	-	-
03231500	Scioto River at Chillicothe	X	-	X	-	X	-

Table 8.--Ohio complete-record streamflow stations currently in operation.--Continued

Station number	Station name	Recommendations		Types of data			
					Planning and design		
		Include in network	Not recommended for inclusion	Current purpose	Natural flow (minor streams)	Regulated flow	Long-term trend
03232000	Paint Creek near Greenfield	X	-	X	-	-	X
03232470	Paint Creek below Paint Creek Dam, near Bainbridge	X	-	X	-	X	-
03232500	Rocky Fork near Barretts Mills	X	-	X	-	X	-
03234000	Paint Creek near Bourneville	X	-	X	-	X	-
03234500	Scioto River at Higby	X	-	X	-	X	-
03235500	Tar Hollow Creek at Tar Hollow State Park	-	X	-	-	-	-
03237280	Upper Twin Creek at McGaw	X	-	X	-	-	X
03237500	Ohio Brush Creek near West Union	X	-	X	-	-	-
03238500	Whiteoak Creek near Georgetown	X	-	X	-	-	-
03240000	Little Miami River near Oldtown	X	-	-	-	-	X
03241500	Massies Creek at Wilberforce	X	-	-	X	-	-
03242050	Little Miami River near Spring Valley	X	-	X	-	-	-
03242150	Caesar Creek near Xenia	X	-	X	-	-	-
03242200	Anderson Fork near New Burlington	X	-	X	-	-	-
03242300	Caesar Creek at Harveysburg	-	X	-	-	-	-
03242350	Caesar Creek near Wellman	X	-	X	-	-	-
03244000	Todd Fork near Roachester	-	X	-	-	-	-
03245500	Little Miami River at Milford	X	-	X	-	-	-
03246200	East Fork Little Miami River near Marathon	X	-	X	-	-	-
03246500	East Fork Little Miami River at Williamsburg	-	X	-	-	-	-
03247050	East Fork Little Miami River near Batavia	X	-	X	-	-	-
03247400	Shayler Run near Perintown	X	-	X	-	-	-
03247500	East Fork Little Miami River at Perintown	X	-	X	-	-	-
03248000	Little Miami River at Plainville	X	-	X	-	-	-
03255500	Mill Creek at Reading	X	-	X	-	X	-
03257500	West Fork Mill Creek at Woodlawn	X	-	X	-	X	-
03259000	Mill Creek at Carthage	X	-	X	-	X	-
03260700	Bokengehalas Creek near DeGraff	-	X	-	-	-	-
03260800	Stony Creek near DeGraff	-	X	-	-	-	-
03261500	Great Miami River at Sidney	X	-	X	-	X	-
03261950	Loramie Creek near Newport	X	-	X	-	-	-
03262000	Loramie Creek at Lockington	X	-	X	-	X	-
03262700	Great Miami River at Troy	X	-	X	-	X	-
03263000	Great Miami River at Taylorsville	X	-	X	-	X	-
03264000	Greenville Creek near Bradford	X	-	X	-	-	-
03265000	Stillwater River at Pleasant Hill	X	-	X	-	-	-
03266000	Stillwater River at Englewood	X	-	X	-	X	-
03266500	Mad River at Zanesfield	-	X	-	-	-	-
03267000	Mad River near Urbana	X	-	X	-	-	X
03267500	Mad River at Tremont City	-	X	-	-	-	-
03267700	Moore Run near Eagle City	-	X	-	-	-	-
03267800	Mad River at Eagle City	X	-	X	-	X	-
03267900	Mad River (St. Paris Pike) at Eagle City	-	X	-	-	-	-

Table 8.--Ohio complete-record streamflow stations currently in operation.--Continued

Station number	Station name	Recommendations: Include in network	Recommendations: Not recommended for inclusion	Types of data: Current purpose	Types of data: Planning and design: Natural flow (minor streams)	Types of data: Planning and design: Regulated flow	Types of data: Long-term trend
03267950	Buck Creek near New Moorefield	X	-	X	-	-	-
03267960	East Fork Buck Creek near New Moorefield	X	-	X	-	-	-
03269500	Mad River near Springfield	X	-	X	-	X	-
03270000	Mad River near Dayton	X	-	X	-	X	-
03270500	Great Miami River at Dayton	X	-	X	-	X	-
03270800	Wolf Creek at Trotwood	-	X	-	-	-	-
03271500	Great Miami River at Miamisburg	X	-	X	-	X	-
03271800	Twin Creek near Ingomar	X	-	X	-	-	-
03272000	Twin Creek near Germantown	X	-	X	-	X	-
03272800	Sevenmile Creek at Collinsville	X	-	X	-	-	-
03274000	Great Miami River at Hamilton	X	-	X	-	X	-
04183500	Maumee River at Antwerp	X	-	X	-	-	-
04184500	Bean Creek at Powers	X	-	X	-	-	-
04185000	Tiffin River at Stryker	X	-	X	-	-	-
04186500	Auglaize River near Fort Jennings	X	-	X	-	-	-
04187500	Ottawa River at Allentown	X	-	X	-	-	-
04189000	Blanchard River near Findlay	X	-	X	-	-	-
04191500	Auglaize River near Defiance	X	-	X	-	-	-
04192500	Maumee River near Defiance	-	X	-	-	-	-
04193500	Maumee River at Waterville	X	-	X	-	-	X
04195500	Portage River at Woodville	X	-	X	-	-	-
04196000	Sandusky River near Bucyrus	X	-	X	-	-	-
04196500	Sandusky River near Upper Sandusky	X	-	X	-	-	-
04196800	Tymochtee Creek at Crawford	X	-	X	-	-	-
04197000	Sandusky River near Mexico	X	-	X	-	-	-
04198000	Sandusky River near Fremont	X	-	X	-	-	X
04199000	Huron River at Milan	X	-	X	-	-	-
04199500	Vermilion River near Vermilion	X	-	X	-	-	-
04200500	Black River at Elyria	X	-	X	-	-	-
04201500	Rocky River near Berea	X	-	X	-	-	-
04202000	Cuyahoga River at Hiram Rapids	X	-	X	-	X	-
04204000	Little Cuyahoga River at Mogadore	X	-	X	-	X	-
04204500	Little Cuyahoga River at Massillon Road, Akron	-	X	-	-	-	-
04205000	Springfield Lake Outlet at Akron	-	X	-	-	-	-
04206000	Cuyahoga River at Old Portage	X	-	X	-	X	-
04207200	Tinkers Creek at Bedford	X	-	-	X	-	-
04207500	Ohio Canal at Independence	X	-	X	-	X	-
04208000	Cuyahoga River at Independence	X	-	X	-	X	-
04209000	Chagrin River at Willoughby	X	-	X	-	-	-
04211500	Mill Creek near Jefferson	-	X	-	-	-	-
04212000	Grand River near Madison	X	-	X	-	-	X
04212500	Ashtabula River near Ashtabula	X	-	X	-	-	-
04213000	Conneaut Creek at Conneaut	X	-	X	-	-	-