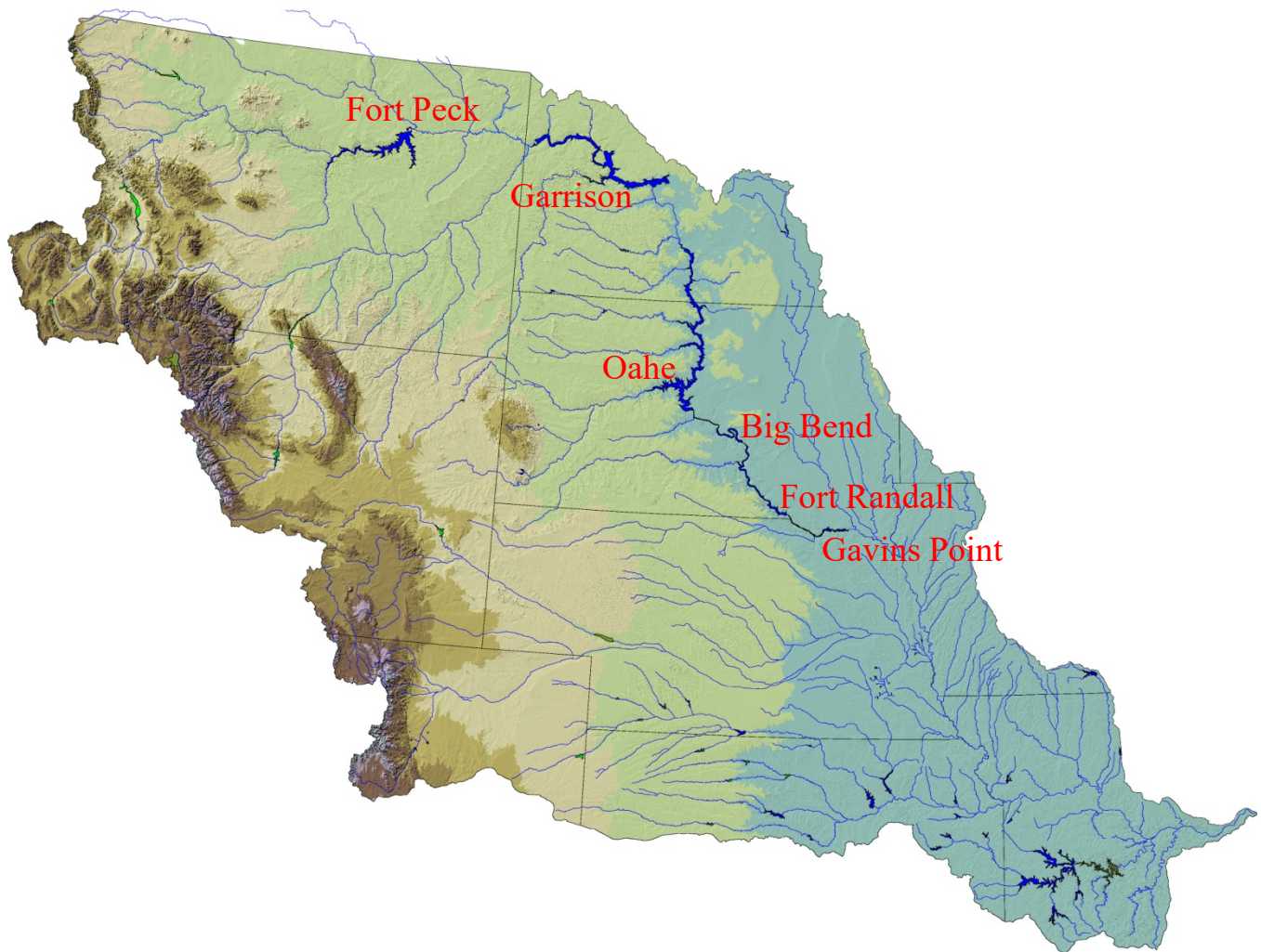




**US Army Corps
of Engineers** ®
Northwestern Division

Missouri River Incremental Flows Below Gavins Point Technical Report



Missouri River Basin Water Management Division
Omaha, Nebraska

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Missouri River Incremental Flows Below Gavins Point

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List of Acronyms

Corps	U.S. Army Corps of Engineers
DRM	Daily Routing Model
kcfs	1,000 cubic feet per second
LD	Lower Decile
LQ	Lower Quartile
LRS	Long Range Study
MAF	million acre feet
MRBWM	Missouri River Basin Water Management
System	Missouri River Mainstem Reservoir System
UD	Upper Decile
UQ	Upper Quartile
USBR	U.S. Bureau of Reclamation
USGS	U.S. Geological Service
WY	Wyoming

I. Introduction

A. Purpose and Scope

The purpose of this report is to update the incremental flows at key locations for the Missouri River below Gavins Point. Results of this analysis include the development of statistical data for daily and monthly reach inflows for seven conditions of statistical significance. In addition, the average monthly flow data for each reach, as well as the summation of reaches at key locations, was sorted and ranked by month and year.

The report titled "Monthly Maximum and Minimum Mean Daily Flow Estimates, Missouri River Below Gavins Point Dam, MRD-RCC Technical Study N-72" was published in November 1972. That study defined the relationship between mean monthly values and corresponding maximum and minimum mean daily flows for each month of the period of record. At that time, data available from long-term studies consisted only of the mean monthly Gavins Point releases and the mean monthly incremental inflows between Gavins Point and the downstream location. Since that time, daily flow records have been accumulated so that an analysis could be performed with a more detailed dataset.

The report titled "Missouri River Incremental Flows Below Gavins Point Dam, RCC Technical Report JY-05" was published in July 2005. That report was based on the incremental flow information for the period from 1898 to 2002. The July 2014 report included the additional years from 2003 through 2012. As discussed in the next section, this updated report uses data from 1930 to 2019.

The Missouri River Mainstem Reservoir System (System) HEC-ResSim planning model (ResSim model) is used to simulate and evaluate alternative System regulation for all authorized purposes under a widely varying long-term hydrologic record. The ResSim model uses daily input data to simulate System reservoir regulation. The daily data used in the ResSim model was used to produce the basic incremental flow data used in this report's analysis and is discussed in more detail in the Data Source and Preparation section.

This study update was completed by the Missouri River Basin Water Management (MRBWM) office, U.S. Army Corps of Engineers (Corps) and is published as MRBWM Technical Report "Missouri River Incremental Flows Below Gavins Point, May 2021".

B. Data Source and Preparation

Computer model simulation studies have been used by the MRBWM office since the 1960s to simulate the regulation of the System using a long-term hydrologic record. The Daily Routing Model (DRM) was used to model alternatives during the Missouri River Master Manual Review and Update (Master Manual Review) study that led to the 2004 and 2006 Master Manual updates. In the prior technical reports on daily incremental flows below Gavins Point the DRM input dataset was used as the basis for the analysis. Since the completion of the July 2014 version of this report, the MRBWM office has replaced the DRM with the ResSim model for performing

operational studies. The ResSim model was developed and used as part of recent studies, including the Missouri River Recovery Management Plan Environmental Impact Statement, which led to the 2018 update of the Master Manual. Previous to the DRM, the Long Range Study (LRS) model, which used a monthly time-step, was used for regulation studies.

The historic dataset used for the DRM was developed from the MRBWM database, U.S. Geological Survey (USGS) gaging records, and the LRS model database for reservoir evaporations prior to 1967. Daily records are available for the six System dams since their respective dates of closure, and daily flow data is available for the majority of gaging stations since 1930. Prior to 1930, there is general lack of daily records in the basin. For the Master Manual Review representative daily data were constructed to cover the period from 1898 to 1929. As a result, a 100-year record of daily data, extending from 1898 through 1997, was used in evaluating alternatives for the Corps' Final Environmental Impact Statement. To build the incremental inflow dataset for the DRM, multiple correlations were performed on the flows from the upstream station to the downstream station for the period of regulation data available at that time. The appropriate routing coefficients were selected for each of the reaches. These routing coefficients were then used to build the DRM annual input files. More information on this process can be found in the DRM Programmer's and Technical Manual.

The period-of-record datasets used in the ResSim model were developed using data from the MRBWM database, USGS gaging records, U.S. Bureau of Reclamation (USBR) depletions, DRM evaporation, and Kansas River HEC-ResSim model. Historic reach inflow datasets were calculated from observed data (MRBWM database and USGS gaging records) and then combined with USBR depletions and the Kansas River HEC-ResSim model output to create homogeneous reach inflow datasets representative of current basin conditions.

Since the Master Manual Review, 23 more years have been added to the observed period-of-record, including an extended drought period from 2000-2007 and historic flood years (2011 and 2019). Due to the additional years with varied runoff conditions and the nature of the estimated flows prior to 1930, current and future System regulation studies will rely solely on data from 1930-present. As previously noted, the ResSim dataset used in this study ranges from 1930-2019.

The ResSim model extents span from the Missouri River near Landusky, MT to the Ohio-Mississippi River confluence, including portions of some tributaries. Although the model covers a large portion of the basin, the main computation points are the six mainstem dams, four Missouri River streamgaging stations between mainstem dams (Landusky, MT; Wolf Point, MT; Culbertson, MT and Bismarck, ND), and nine Missouri River streamgaging locations below the System (Sioux City, IA; Omaha, NE; Nebraska City, NE; Rulo, NE; St. Joseph, MO; Kansas City, MO; Waverly, MO; Boonville, MO and Hermann, MO). The ResSim model does not include incremental flow data from Hermann to St. Louis. Reference can be made to the previous technical report for results in that reach.

A script associated with the ResSim model calculates the incremental inflows. With the script, flows are routed from upstream to downstream to calculate the incremental flow between each gage using routing parameters. DRM routing parameters were verified and used in the ResSim

model. Although the routing parameters have been verified, they are calibrated for specific magnitudes of flows and some differences from actual incremental flows can occur. In developing the ResSim model incremental dataset for study purposes some smoothing was performed using a centered-moving average. The period-averages associated with centered-moving average calculation varied between locations as well as for different periods. This study uses the ResSim model incremental flows for each of the reaches below Gavins Point listed in Table 1.

As previously noted, daily USGS records are not available for the entire period of record. Daily flow record availability dates at each gage are presented in Table 1.

Table 1
Daily Flow Record Availability

Gaging Station	Date Range of Available Daily Records
Gavins Point	Aug. 1955-current
Missouri River at Sioux City, IA	Oct. 1928-Sep. 1931, and Oct. 1938-current
Missouri River at Omaha, NE	Sept. 1928-current
Missouri River at Nebraska City, NE	Sept. 1928-current
Missouri River at Rulo, NE	Oct. 1949-current
Missouri River at St. Joseph, MO	Oct. 1928-current
Missouri River at Kansas City, MO	Oct. 1928-current
Missouri River at Waverly, MO	Oct. 1928-current
Missouri River at Boonville, MO	Oct. 1925-current
Missouri River at Hermann, MO	Oct. 1928-current

Note: Availability is for USGS data except for Gavins Point, which is from the Corps' Missouri River Basin Water Management database.

Due to the differences in the datasets, analysis was performed on both the ResSim model period of record, 1930 to 2019, and the period for which actual daily data was available, which varies for a few of the reaches. The dataset produced by the ResSim model was imported into the Microsoft Excel software package where sorting and calculations were performed with a combination of Excel built-in functions and Visual Basic macros.

C. Missouri River Basin – Recent Runoff Conditions

The basin has experienced a wide range of runoff conditions since the July 2014 report was prepared, which included data through 2012. For example, runoff above Sioux City, IA during 2018 was 42.1 million acre feet (MAF), 163 percent of average, the fourth highest runoff year on record (1898-2019). Runoff above Sioux City in 2019 was 60.9 MAF, the second highest on record, just slightly below the record runoff of 61.0 MAF in 2011. Although 2011 was a record runoff above Sioux City, IA, runoff volume measured at Hermann, MO was higher in 2010 and 2019. Runoff in the lower Missouri River basin in 2019, from Sioux City, IA to Hermann, MO, totaled 91.6 MAF, 218 percent of average. Figure 1 shows the variability in runoff for the period 2000-2019 in the Missouri River basin.

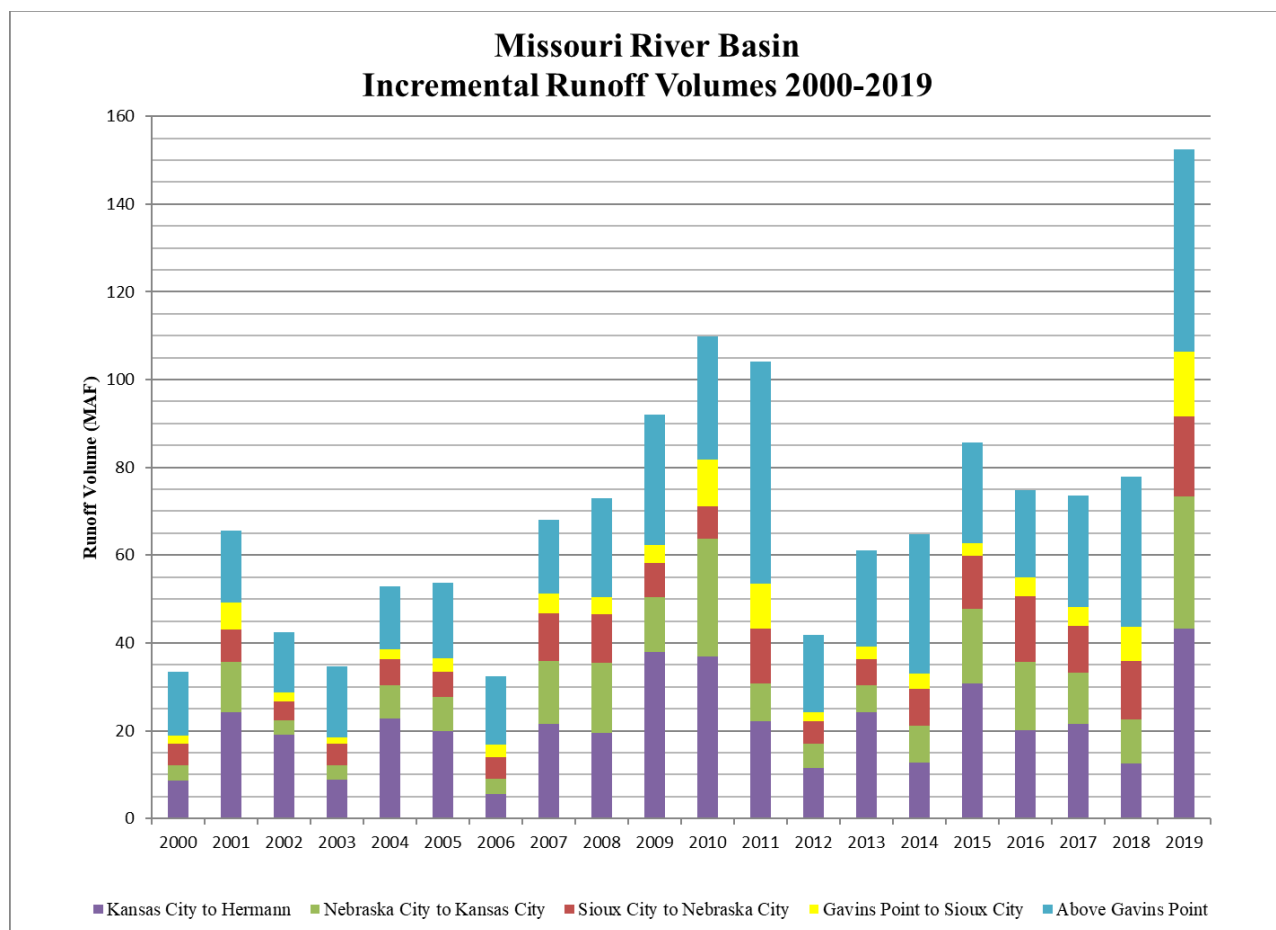


Figure 1. Missouri River Basin Incremental Runoff Volumes

II. Incremental Flows by Reach

A. General

The System, intervening river reaches, and lower river reaches extend from Fort Peck in eastern Montana downstream to the confluence with the Mississippi River at St. Louis, as shown on Plate 1. Plate 2 presents the usual time of travel of within-bank, open-water flows for the Missouri River and its major tributaries. It should be noted that these are general approximations that may be affected by many factors. For purposes of scheduling System releases, approximate open water travel times from Gavins Point are 1.5 days to Sioux City, 3 days to Omaha, 3.5 days to Nebraska City, 5.5 days to Kansas City, and 10 days to the mouth of the Missouri River. A detailed description of the basin and basin characteristics can be found in Chapter III of the Master Manual.

The incremental flow dataset produced by the ResSim model was used to develop statistical data for reach incremental flows for seven conditions of statistical significance implied by their titles: minimum, Lower Decile (LD), Lower Quartile (LQ), Median, Upper Quartile (UQ), Upper Decile (UD), and maximum. For each reach the data were sorted and ranked on the basis of a single day and for all days in each month. Table 2 through Table 11 indicate the incremental flow value for the five conditions from LD to UD using daily data for each month. Graphical depictions of the data are shown on Plate 3 through Plate 11. Each of these plates contains two graphs. The top graph shows the daily incremental flows for the five statistical conditions from LD to UD and includes an inset with the maximum and minimum flows added. The lower graph shows the statistical monthly incremental flow for the five statistical conditions, as shown in Table 2 through Table 11, plus the mean monthly flow. Monthly average data for the 1930 to 2019 period was also computed for each reach and are shown as ranked tables on Plate 12 through Plate 20.

As an example, in the reach from Gavins Point to Sioux City, all of the days in January were ranked for the period 1930 to 2019. The January Median incremental flow value using all days in the month was 0.6 thousand cubic feet per second (kcfs), as shown in Table 2 and in the bottom graph on Plate 3. The top graph of Plate 3 shows the variation of the single-day values (ranking of all January 1's, etc.). All of the days in January were also ranked for the period from 1956 to 2019, and the Median incremental flow value was 1.0 kcfs as shown in Table 2. Next, all of the monthly averages were ranked in ascending value order by month and year as shown on Plate 12.

Note that a few of the incremental flows are shown as being negative values. In winter periods, short-term changes in flows due to ice formation and temporary ice blockages can cause negative incremental flow values. In addition, as noted earlier, the incremental flows are computed by applying routing coefficients to actual flow values. Application of these general routing coefficients to all flow conditions may also result in negative incremental flows. For example, during flood periods, flows can exceed channel capacity and produce longer travel times between gages than would normally be expected. In some cases, the negative flow values may be a result of the average monthly depletion values being applied to daily incremental flows.

B. Missouri River Reach – Gavins Point to Sioux City

Construction of Gavins Point Dam began in 1952. Dam closure was made in July 1955. Daily flow records from Gavins Point are available beginning in August 1955 and are stored in the MRBWM database. Missouri River flow data at Sioux City, IA from October 1938 to the present are available from the USGS. Analysis of the incremental flow data was performed on the 64-year period from 1956 to 2019 and the 90-year period from 1930 to 2019 (see Table 2). See Plate 3 for graphical depictions of statistical data for 1930-2019.

Table 2
Daily Incremental Flows by Month
Gavins Point to Sioux City (kcfs)

Month	Lower Decile		Lower Quartile		Median		Upper Quartile		Upper Decile	
	1930-2019	1956-2019	1930-2019	1956-2019	1930-2019	1956-2019	1930-2019	1956-2019	1930-2019	1956-2019
January	-1.0	-0.9	-0.1	0.2	0.6	1.0	1.6	2.0	2.8	3.1
February	-0.3	-0.2	0.2	0.5	1.1	1.4	2.2	2.5	3.8	3.9
March	0.1	0.6	1.2	1.4	2.9	3.1	6.0	6.0	12.7	13.5
April	0.0	0.9	1.2	2.0	3.4	4.2	8.8	10.8	20.7	25.6
May	0.1	0.8	1.3	1.9	3.3	4.0	7.7	8.7	13.1	15.5
June	-0.3	0.9	1.4	2.0	3.8	4.5	7.7	8.2	12.8	14.0
July	-0.6	0.3	0.6	1.3	2.2	3.0	4.8	5.6	9.7	11.2
August	-0.2	0.1	0.5	1.0	1.8	2.2	3.2	3.7	5.5	6.0
September	-0.3	0.0	0.4	0.9	1.5	1.9	2.9	3.2	4.5	4.9
October	-0.2	0.1	0.3	0.9	1.4	1.9	2.8	3.4	5.3	5.8
November	0.0	0.5	0.6	1.1	1.6	2.0	3.0	3.5	4.6	5.1
December	-0.8	-0.3	0.2	0.7	1.1	1.5	2.2	2.8	3.9	4.3

Note: Negative values are discussed in Section II-A, page 5.

The main tributaries in this reach are the James, Vermillion, and Big Sioux rivers, all left bank tributaries. The James River enters the Missouri River downstream of Yankton, SD and has a drainage area of approximately 20,942 square miles and includes portions of North and South Dakota. The Vermillion River enters the Missouri River near Vermillion, SD and has a drainage area of approximately 2,302 square miles within east central South Dakota. The Big Sioux River enters the Missouri River near Sioux City, IA and has a drainage area of approximately 8,424 square miles including portions of South Dakota, Minnesota, and Iowa. Figure 2 shows the three main tributary basins of this reach. The Missouri River reach between Gavins Point and Sioux City is primarily un-channelized. The channelized reach begins at river mile 735.

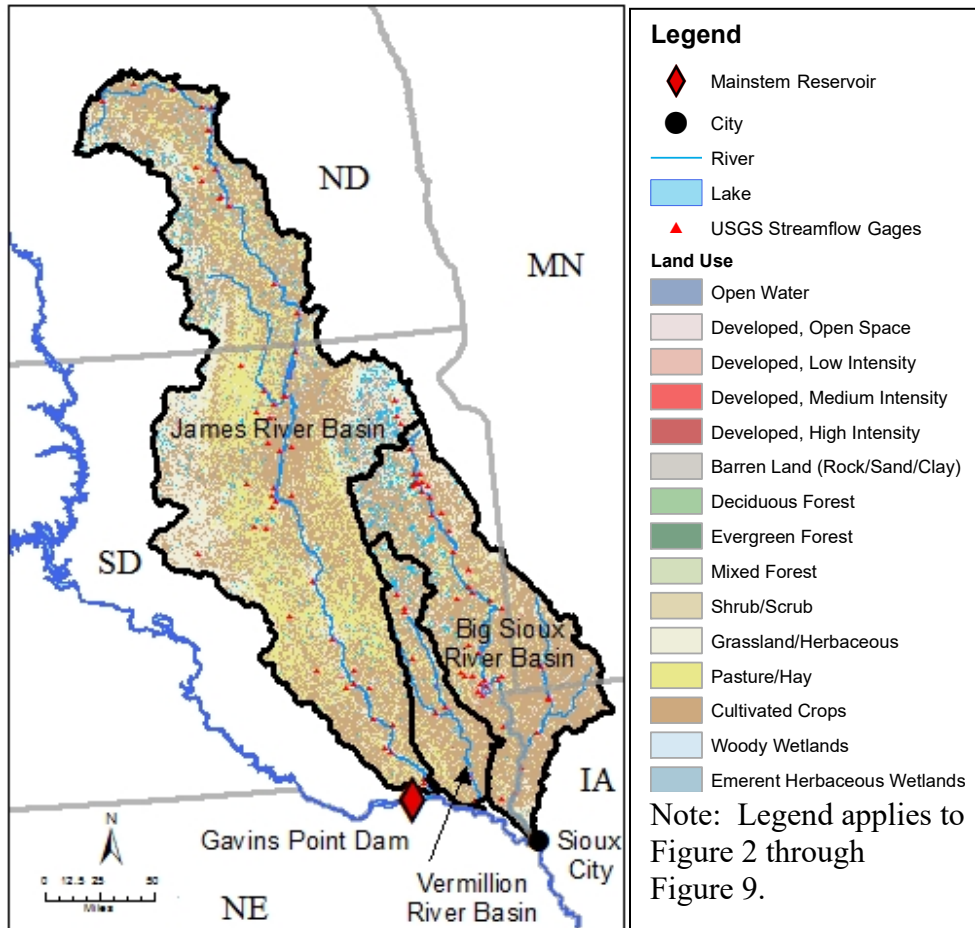


Figure 2. Gavins Point to Sioux City Tributary Basins

C. Missouri River Reach – Sioux City to Omaha

As shown in Table 1, Missouri River at Sioux City flow data are available from the USGS for October 1928 to September 1931 and from October 1938 to the present. Missouri River at Omaha flow data are available since September 1928. The 1931-1938 gap in the Sioux City dataset was synthetically derived using methods from the “Upper Mississippi River System Flow Frequency Study”, published January 2004. These methods were similar to those that were used in the construction of the dataset used in the DRM for the period prior to 1929. Analysis of the incremental flow data was performed on the 90-year period from 1930 to 2019 (see Table 3). See Plate 4 for graphical depictions of statistical data for 1930-2019.

Table 3
Daily Incremental Flows by Month
Sioux City to Omaha (kcfs)

Month	Lower Decile	Lower Quartile	Median	Upper Quartile	Upper Decile
	1930-2019	1930-2019	1930-2019	1930-2019	1930-2019
January	-0.8	0.2	1.2	2.7	4.4
February	-0.2	0.6	1.7	3.5	5.9
March	-0.2	1.2	3.1	6.2	10.9
April	-1.0	0.9	2.7	6.4	11.3
May	-0.8	0.6	3.0	7.0	11.3
June	-1.4	1.0	3.9	8.3	14.7
July	-0.6	0.6	2.8	5.9	9.9
August	-0.4	0.4	1.7	3.7	6.5
September	-0.3	0.4	1.3	3.3	5.8
October	-0.3	0.3	1.4	3.4	6.0
November	-0.4	0.4	1.5	3.7	5.9
December	-0.7	0.3	1.4	3.2	5.1

Note: Negative values are discussed in Section II-A, page 5.

The main tributaries in this reach are the Floyd, Little Sioux, Soldier, and Boyer rivers, all left bank tributaries. The Little Sioux river basin is the largest in northwest Iowa and drains approximately 2,625 square miles within Iowa and 232 square miles in Minnesota. The Floyd, Soldier and Boyer rivers are small tributaries that drain approximately 902, 407 and 871 square miles of western Iowa, respectively. The Missouri River reach between Sioux City and Omaha is part of the channelized reach that extends to the mouth of the Missouri River near St. Louis. Figure 3 shows the main tributary basins of this reach.

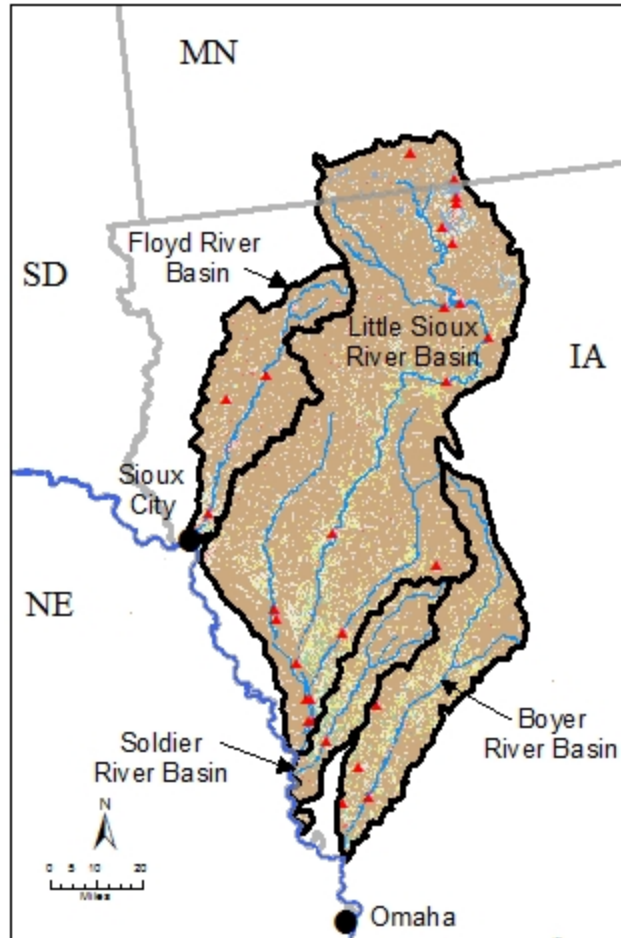


Figure 3. Sioux City to Omaha Tributary Basins

D. Missouri River Reach – Omaha to Nebraska City

As shown in Table 1, Missouri River at Omaha flow data from September 1928 to the present are available from the USGS. Daily flow data at Nebraska City, NE are available since September 1928. Analysis of the incremental flow data was performed on the 90-year period from 1930 to 2019 (see Table 4). See Plate 5 for graphical depictions of statistical data for 1930-2019.

Table 4
Daily Incremental Flows by Month
Omaha to Nebraska City (kcfs)

Month	Lower Decile 1930-2019	Lower Quartile 1930-2019	Median 1930-2019	Upper Quartile 1930-2019	Upper Decile 1930-2019
January	0.8	2.1	3.8	5.6	7.5
February	2.1	3.8	5.9	8.7	12.5
March	4.0	5.6	8.0	11.2	18.3
April	3.0	4.7	6.8	10.0	15.4
May	2.7	4.4	7.2	11.6	19.0
June	2.2	4.2	7.8	14.7	24.4
July	0.8	1.9	4.2	7.9	13.6
August	0.7	1.5	2.9	5.3	9.0
September	0.9	1.6	3.0	5.2	8.2
October	1.5	2.3	3.5	5.9	8.8
November	2.4	3.2	4.3	6.3	8.1
December	1.2	2.7	4.3	6.2	8.0

The main tributaries in this reach are the Platte River and Weeping Water Creek. The Platte River is a major right bank tributary to the Missouri River draining an area of approximately 85,370 square miles of northeast Colorado, southeast Wyoming, and most of central Nebraska. In eastern Nebraska, major tributaries to the Platte River are Salt Creek and the Elkhorn and Loup rivers. Weeping Water Creek is a right bank tributary located in southeast Nebraska and has a drainage area of approximately 241 square miles. This Missouri River reach is also part of the channelized reach. Figure 4 shows the main tributary basins of this reach.

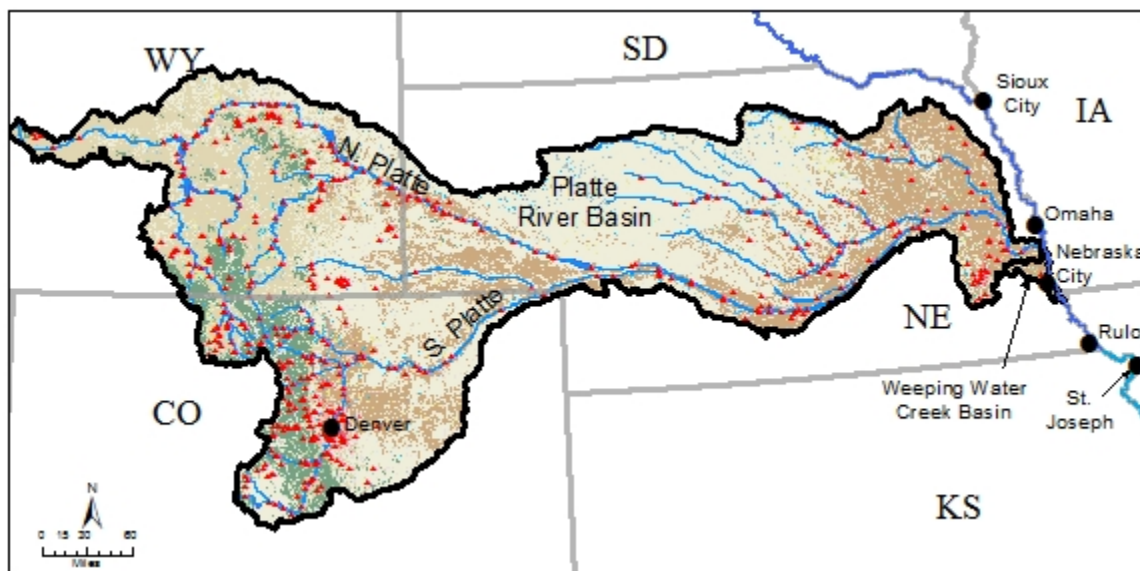


Figure 4. Omaha to Nebraska City Tributary Basins

E. Missouri River Reach – Nebraska City to Rulo

As shown in Table 1, Missouri River at Nebraska City flow data are available from September 1928 to the present from the USGS. However, flow data at Rulo, NE are only available since October 1949. Analysis of the incremental flow data was performed on the 70-year period from 1950 to 2019 and the 90-year period from 1930 to 2019 (see Table 5). See Plate 6 for graphical depictions of statistical data for 1930-2019.

Table 5
Daily Incremental Flows by Month
Nebraska City to Rulo (kcfs)

Month	Lower Decile		Lower Quartile		Median		Upper Quartile		Upper Decile	
	1930- 2019	1950- 2019	1930- 2019	1950- 2019	1930- 2019	1950- 2019	1930- 2019	1950- 2019	1930- 2019	1950- 2019
January	-0.3	-0.2	0.2	0.4	0.8	1.0	1.8	2.1	3.2	3.5
February	-0.3	-0.2	0.2	0.4	1.1	1.4	2.4	2.6	4.4	4.8
March	-0.6	-0.3	0.4	0.7	1.7	2.1	3.6	4.2	6.8	7.5
April	-0.5	-0.1	0.5	0.8	1.6	2.1	3.8	4.5	7.3	8.0
May	-0.3	0.0	0.7	1.1	2.2	2.8	5.4	6.5	10.8	12.0
June	-0.7	-0.2	0.7	1.1	2.6	3.1	6.2	6.9	12.6	13.8
July	-0.1	0.1	0.6	1.0	1.8	2.3	4.0	4.9	8.6	9.8
August	-0.1	-0.1	0.4	0.6	1.1	1.5	2.6	3.1	5.5	6.2
September	0.0	0.1	0.4	0.6	1.1	1.4	2.5	3.2	5.6	6.5
October	0.0	0.1	0.3	0.6	1.0	1.4	2.4	2.9	5.3	5.9
November	0.0	0.2	0.4	0.7	1.2	1.5	2.4	2.7	4.0	4.5
December	-0.3	-0.1	0.3	0.5	0.9	1.2	2.0	2.4	3.9	4.4

Note: Negative values are discussed in Section II-A, page 5.

The main tributaries in this reach are the Nishnabotna, Little Nemaha, and Tarkio rivers. The Nishnabotna River is a left bank tributary located approximately 20 miles downstream of Nebraska City and has a total drainage area of 3,123 square miles. The Tarkio River is a left bank tributary located approximately 55 miles downstream of Nebraska City and has a total drainage area of 1,131 square miles. The Little Nemaha river, located in southeast Nebraska, is a right bank tributary that has a drainage area of approximately 793 square miles. This Missouri River reach is part of the channelized reach. Figure 5 shows the main tributary basins of this reach.

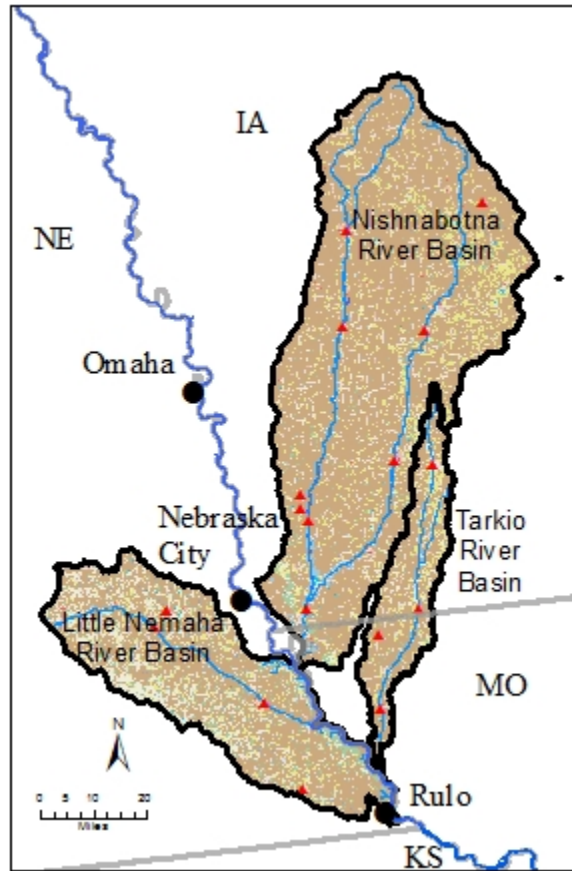


Figure 5. Nebraska City to Rulo Tributary Basins

F. Missouri River Reach – Rulo to St. Joseph

As shown in Table 1, Missouri River at Rulo flow data are available from October 1949 to the present from the USGS. Flow data at St. Joseph, MO is available since October 1928. Analysis of the incremental flow data was performed on the 70-year period from 1950 to 2019 and the 90-year period from 1930 to 2019 (see Table 6). See Plate 7 for graphical depictions of statistical data for 1930-2019.

Table 6
Daily Incremental Flows by Month
Rulo to St. Joseph (kcfs)

Month	Lower Decile		Lower Quartile		Median		Upper Quartile		Upper Decile	
	1930-2019	1950-2019	1930-2019	1950-2019	1930-2019	1950-2019	1930-2019	1950-2019	1930-2019	1950-2019
January	-0.9	-0.8	0.0	0.1	1.0	1.1	2.3	2.4	4.2	4.3
February	-1.0	-0.7	0.1	0.2	1.2	1.4	3.1	3.3	5.5	5.5
March	-1.4	-0.7	0.2	0.4	1.5	1.7	3.9	4.0	7.4	7.3
April	-1.7	-0.9	0.0	0.3	1.5	1.7	3.8	4.2	7.5	7.9
May	-1.2	-0.6	0.5	0.9	2.3	2.7	5.6	6.1	10.6	11.8
June	-1.8	-1.0	0.5	0.9	2.5	2.8	6.0	5.9	12.1	11.6
July	-0.9	-0.5	0.5	0.7	1.8	2.0	4.2	4.7	8.5	8.9
August	-0.6	-0.6	0.3	0.4	1.3	1.5	3.0	3.4	5.8	6.0
September	-0.8	-0.8	0.2	0.2	1.1	1.2	2.7	3.0	5.6	6.3
October	-0.4	-0.4	0.2	0.4	1.0	1.3	2.5	2.7	4.4	4.8
November	-0.3	-0.3	0.3	0.4	1.1	1.3	2.5	2.7	4.1	4.5
December	-0.5	-0.4	0.2	0.4	1.1	1.3	2.5	2.9	4.6	5.0

Note: Negative values are discussed in Section II-A, page 5.

The main tributaries in this reach are the Big Nemaha and Nodaway rivers. The Big Nemaha River is a right bank tributary that drains 1,926 square miles in southeastern Nebraska and northeastern Kansas. The Nodaway River is a left bank tributary that flows from southwest Iowa through the northwest corner of Missouri and has a drainage area of 1,935 square miles. This Missouri River reach is part of the channelized reach. Figure 6 shows the main tributary basins of this reach.

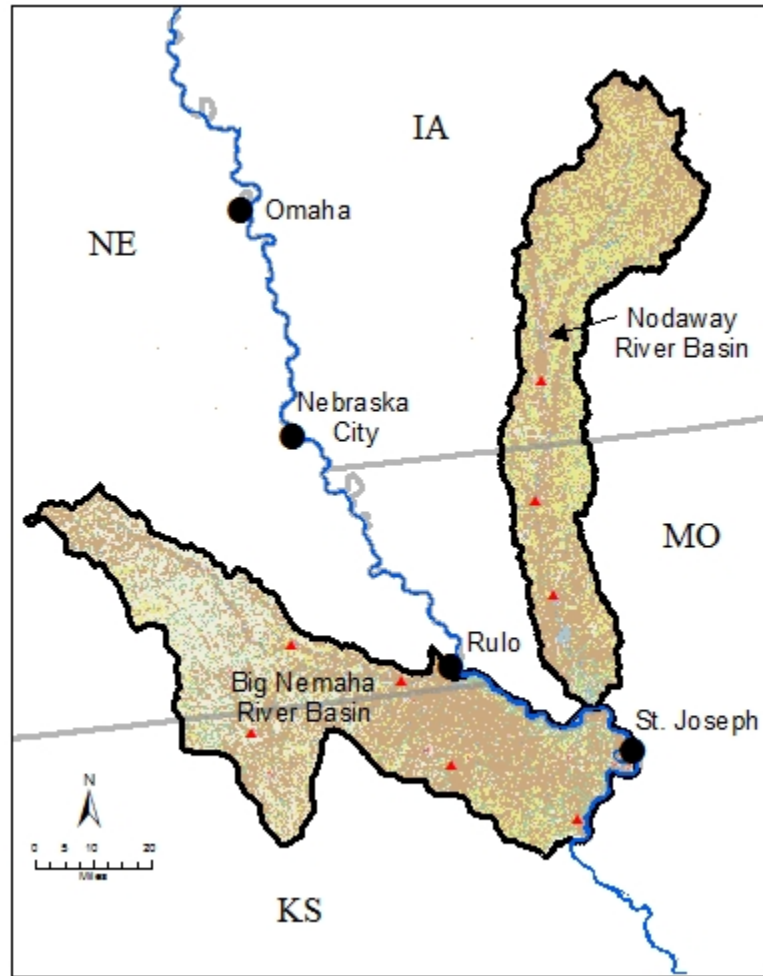


Figure 6. Rulo to St. Joseph Tributary Basins

G. Missouri River Reach – St. Joseph to Kansas City

As shown in Table 1, Missouri River at St. Joseph flow data are available from October 1928 to the present from the USGS. Flow data for Kansas City, MO are also available since October 1928. Analysis of the incremental flow data was performed on the 90-year period from 1930 to 2019 (see Table 7). See Plate 8 for graphical depictions of statistical data for 1930-2019.

Table 7
Daily Incremental Flows by Month
St. Joseph to Kansas City (kcfs)

Month	Lower Decile 1930-2019	Lower Quartile 1930-2019	Median 1930-2019	Upper Quartile 1930-2019	Upper Decile 1930-2019
January	0.2	1.2	2.4	4.8	8.4
February	0.5	1.5	3.3	7.3	12.4
March	0.8	2.1	5.0	10.9	23.6
April	0.9	2.7	5.4	13.3	29.5
May	1.6	3.8	8.7	18.5	35.0
June	1.7	4.5	11.8	24.8	44.3
July	1.0	2.8	6.9	16.0	32.1
August	0.5	1.7	4.3	9.4	18.0
September	0.3	1.8	3.9	9.1	19.7
October	0.4	1.3	2.9	7.1	18.0
November	0.6	1.4	3.1	6.2	14.3
December	0.6	1.5	3.2	6.1	11.7

The main tributaries in this reach are the Platte and Kansas rivers. The Kansas River is a major right bank tributary to the Missouri River draining an area of approximately 60,580 square miles of the northern half of Kansas, much of southern Nebraska, and a part of northeastern Colorado. The Kansas River basin contains numerous major impoundments including seven Corps' reservoirs and eleven Bureau of Reclamation reservoirs. The Platte River is a left bank tributary that flows through southwest Iowa into Missouri and has a drainage area of 2,503 square miles. This Missouri River reach is part of the channelized reach. Figure 7 shows the main tributary basins of this reach.

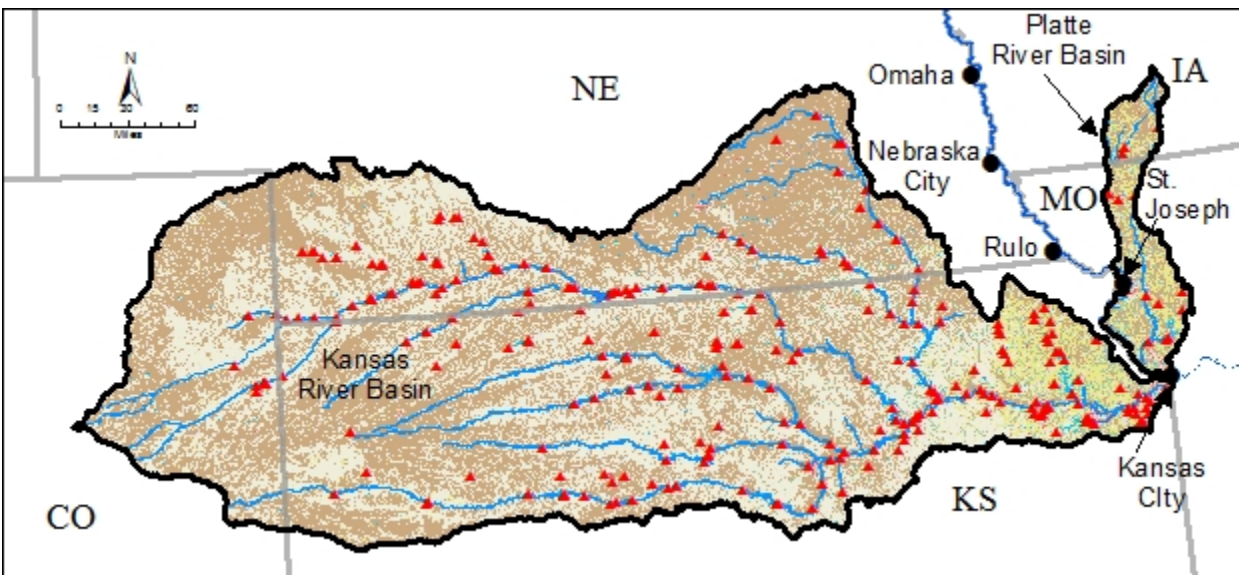


Figure 7. St. Joseph to Kansas City Tributary Basins

As previously noted, this reach contains numerous major impoundments. During the periods shown in Table 7, these projects were constructed and filled, which impacted the incremental flow. For comparison, the data was also analyzed for the 40-year period from 1980 to 2019 (see Table 7b), following construction and fill of these projects.

Table 7b
Daily Incremental Flows by Month
St. Joseph to Kansas City (kcfs)

Month	Lower Decile	Lower Quartile	Median	Upper Quartile	Upper Decile
	1980-2019	1980-2019	1980-2019	1980-2019	1980-2019
January	0.8	1.5	2.9	5.6	8.8
February	0.8	1.8	1.8	8.0	11.8
March	1.1	2.3	2.3	10.6	21.4
April	1.0	2.9	2.9	15.5	33.7
May	1.7	3.8	3.8	23.9	40.8
June	1.6	4.7	4.7	26.4	44.8
July	0.9	2.9	2.9	18.1	35.4
August	0.4	1.7	1.7	11.5	23.1
September	0.5	1.7	1.7	8.4	18.8
October	0.3	1.3	1.3	7.7	20.7
November	0.6	1.4	1.4	6.6	15.9
December	0.8	1.9	1.9	9.3	14.9

H. Missouri River Reach – Kansas City to Waverly

As shown in Table 1, Missouri River at Kansas City flow data are available from October 1928 to the present from the USGS. Flow data are also available at Waverly, MO since October 1928. Analysis of the incremental flow data was performed on the 90-year period from 1930 to 2019 (see Table 8). See Plate 9 for graphical depictions of statistical data for 1930-2019.

There are no major tributaries in this reach. This Missouri River reach is part of the channelized reach.

Table 8
Daily Incremental Flows by Month
Kansas City to Waverly (kcfs)

Month	Lower Decile 1930-2019	Lower Quartile 1930-2019	Median 1930-2019	Upper Quartile 1930-2019	Upper Decile 1930-2019
January	-1.1	-0.2	0.7	1.7	3.2
February	-1.5	-0.3	0.7	2.0	4.1
March	-2.0	-0.7	0.8	2.7	5.4
April	-2.0	-0.5	1.1	3.2	7.1
May	-2.0	-0.8	1.0	3.7	9.2
June	-2.0	-1.2	0.8	4.2	9.8
July	-2.0	-0.7	0.8	2.5	6.2
August	-2.0	-0.8	0.5	1.8	3.7
September	-2.0	-0.7	0.5	2.0	4.4
October	-1.8	-0.6	0.4	1.7	3.5
November	-1.6	-0.3	0.5	1.6	3.4
December	-1.0	-0.1	0.8	2.0	3.6

Note: Negative values are discussed in Section II-A, page 5.

I. Missouri River Reach – Waverly to Boonville

As shown in Table 1, Missouri River at Waverly flow data from October 1928 to the present are available from the USGS. Flow data are also available at Boonville, MO since October 1925. Analysis of the incremental flow data was performed on the 90-year period from 1930 to 2019 (see Table 9). See Plate 10 for graphical depictions of statistical data for 1930-2019.

Table 9
Daily Incremental Flows by Month
Waverly to Boonville (kcfs)

Month	Lower Decile 1930-2019	Lower Quartile 1930-2019	Median 1930-2019	Upper Quartile 1930-2019	Upper Decile 1930-2019
January	-0.2	0.8	2.3	5.4	12.1
February	0.1	1.4	3.7	9.6	22.1
March	0.5	2.4	6.3	15.0	35.3
April	0.3	2.2	6.2	17.3	41.6
May	0.8	3.0	7.9	20.1	45.3
June	0.0	2.2	6.9	19.8	46.2
July	-0.2	1.2	3.3	9.5	27.0
August	-0.1	1.0	2.6	6.3	12.7
September	-0.3	0.8	2.2	5.5	15.7
October	-0.2	0.6	1.8	5.1	15.7
November	0.2	1.0	2.3	4.8	12.5
December	0.3	1.2	2.5	5.7	13.5

Note: Negative values are discussed in Section II-A, page 5.

The main tributaries in this reach are the Grand, Chariton and Blackwater rivers. The Grand River is a left bank tributary that flows from south-central Iowa into Missouri and has a drainage area of 7,883 square miles. The Chariton River is a left bank tributary that flows from south-central Iowa into Missouri, draining an area of 2,566 square miles. The Blackwater River is a right bank tributary that drains an area of 2,783 square miles in west-central Missouri. This Missouri River reach is part of the channelized reach. Figure 8 shows the main tributary basins of this reach.

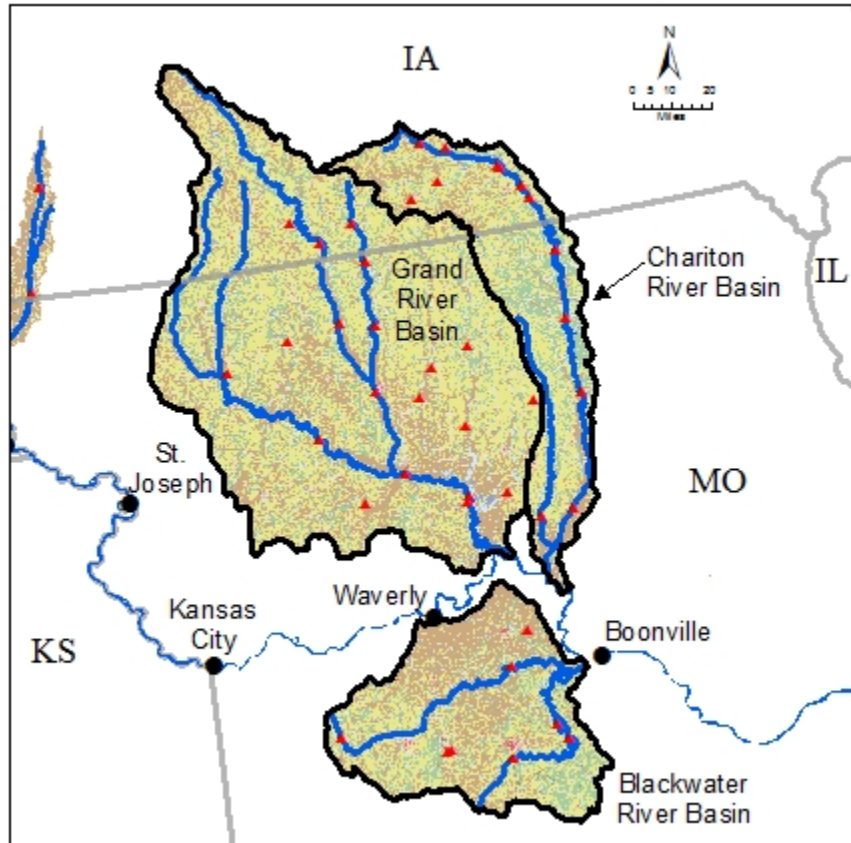


Figure 8. Waverly to Boonville Tributary Basins

J. Missouri River Reach – Boonville to Hermann

As shown in Table 1, Missouri River at Boonville flow data from October 1925 to the present are available from the USGS. Flow data are available at Hermann, MO since October 1928. Analysis of the incremental flow data was performed on the 90-year period from 1930 to 2019 (see Table 10). See Plate 11 for graphical depictions of statistical data for 1930-2019.

Table 10
Daily Incremental Flows by Month
Boonville to Hermann (kcfs)

Month	Lower Decile 1930-2019	Lower Quartile 1930-2019	Median 1930-2019	Upper Quartile 1930-2019	Upper Decile 1930-2019
January	1.7	3.6	8.7	19.8	38.2
February	2.4	5.9	12.1	25.2	41.7
March	3.2	7.5	16.9	33.1	54.6
April	3.6	8.9	20.0	40.0	61.3
May	3.5	7.5	18.6	40.1	67.5
June	2.3	5.7	15.5	37.1	63.0
July	1.9	3.9	8.1	19.4	48.2
August	0.6	2.6	5.2	10.5	22.8
September	0.6	2.5	5.2	10.6	24.5
October	1.2	2.3	4.8	11.1	28.2
November	1.5	2.6	5.6	15.9	40.8
December	2.0	3.6	7.6	17.0	35.4

The main tributaries in this reach are the Osage and Gasconade rivers. The Osage River is a right bank tributary that flows through Kansas and west-central Missouri to join the Missouri River near Jefferson City, MO. It has a drainage area of 15,088 square miles. The upper Osage River is called the Marais des Cygnes River basin. There are seven major impoundments in the basin. The Lake of the Ozarks is a hydroelectric power project of AmerenUE, a private energy services company. There are six Corps' reservoirs in the basin, including Harry S Truman, the largest flood control project in the Corps' Kansas City District. The Gasconade River is a right bank tributary that drains an area of 3,582 square miles in south-central Missouri. This Missouri River reach is part of the channelized reach. Figure 9 shows the main tributary basins of this reach.

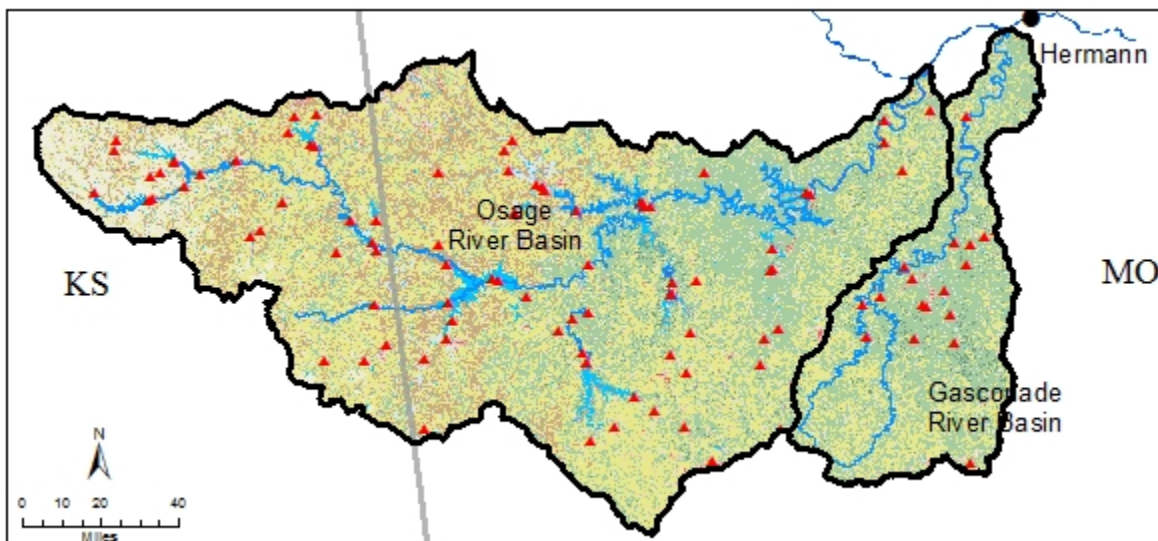


Figure 9. Boonville to Hermann Tributary Basins

As previously noted, this reach contains numerous major impoundments. During the periods shown in Table 10, these projects were constructed and filled, which impacted the incremental flow. For comparison, the data was also analyzed for the 40-year period from 1980 to 2019 (see Table 10b), following construction and fill of these projects.

Table 10b
Daily Incremental Flows by Month
Boonville to Hermann (kcfs)
1980-2019

Month	Lower Decile	Lower Quartile	Median	Upper Quartile	Upper Decile
	1980-2019	1980-2019	1980-2019	1980-2019	1980-2019
January	2.2	2.9	6.2	21.0	43.8
February	2.4	4.7	4.7	16.4	35.1
March	2.4	4.5	4.5	23.9	41.8
April	7.4	9.8	9.8	31.3	45.9
May	3.5	8.0	8.0	43.5	61.5
June	0.7	4.9	4.9	36.7	55.1
July	1.4	2.8	2.8	29.9	58.3
August	-0.5	1.9	1.9	27.1	46.2
September	-2.0	1.4	1.4	10.4	26.5
October	0.9	1.7	1.7	11.3	18.7
November	1.4	2.0	2.0	6.6	13.2
December	2.2	3.0	3.0	10.7	32.7

Note: Negative values are discussed in Section II-A, page 5.

K. Ranking of Average Monthly Incremental Flows by Reach

For this section, monthly average incremental flows were calculated and then ranked from lowest to highest for each month. Results are listed on Plate 12 through Plate 20.

III. Summation of Incremental Flows

A. General

This section is similar in format to Section II. However, for this analysis, the data represents a summation of incremental inflows from Gavins Point to each key location rather than each individual reach as in Section II. Again, the data were sorted and ranked for a single day and for all days in each month for the seven statistical conditions. Table 11 through Table 20 indicate the incremental flow value for the five statistical conditions from LD to UD using daily data for each month. Note that these tables are not a summation of the data from the tables in the previous section. Graphical depictions of the data are shown on Plate 21 through Plate 29. Each of these plates contains two graphs. The top graph shows the daily incremental flows for the five statistical conditions from LD to UD and includes an inset with the maximum and minimum flows added. The lower graph shows the statistical monthly incremental flow for the five statistical conditions, as shown in Table 11 through Table 20, plus the mean monthly flow. The monthly average data was sorted and ranked after summing the data from Gavins Point to each key location. The data for the 1930 to 2019 period for each location are shown as ranked tables on Plate 30 through Plate 38.

Note that a few of the incremental flows are shown as being negative values. In winter periods, short-term changes in flows due to ice formation and temporary ice blockages can cause negative incremental flow values. In addition, as noted earlier, the incremental flows are computed by applying routing coefficients to actual flow values. Application of these general routing coefficients to all flow conditions may also result in negative incremental flows. For example, during flood periods, flows can exceed channel capacity and produce longer travel times between gages than would normally be expected. In some cases, the negative flow values may be a result of the average monthly depletion values being applied to daily incremental flows.

B. Missouri River – Gavins Point to Sioux City

In this reach, the analysis is the same as in Section II. It is repeated here for consistency. Construction of Gavins Point Dam began in 1952. Dam closure was made in July 1955. Daily flow records from Gavins Point are available beginning in August 1955 and are stored in the MRBWM database. Missouri River at Sioux City flow data from October 1938 to the present are available from the USGS. Analysis of the incremental flow data was performed on the 64-year period from 1956 to 2019 and the 90-year period from 1930 to 2019 (see Table 11). See Plate 21 for graphical depictions of statistical data for 1930-2019.

Table 11
Daily Incremental Flows by Month
Gavins Point to Sioux City (kcfs)

Month	Lower Decile		Lower Quartile		Median		Upper Quartile		Upper Decile	
	1930-2019	1956-2019	1930-2019	1956-2019	1930-2019	1956-2019	1930-2019	1956-2019	1930-2019	1956-2019
January	-1.0	-0.9	-0.1	0.2	0.6	1.0	1.6	2.0	2.8	3.1
February	-0.3	-0.2	0.2	0.5	1.1	1.4	2.2	2.5	3.8	3.9
March	0.1	0.6	1.2	1.4	2.9	3.1	6.0	6.0	12.7	13.5
April	0.0	0.9	1.2	2.0	3.4	4.2	8.8	10.8	20.7	25.6
May	0.1	0.8	1.3	1.9	3.3	4.0	7.7	8.7	13.1	15.5
June	-0.3	0.9	1.4	2.0	3.8	4.5	7.7	8.2	12.8	14.0
July	-0.6	0.3	0.6	1.3	2.2	3.0	4.8	5.6	9.7	11.2
August	-0.2	0.1	0.5	1.0	1.8	2.2	3.2	3.7	5.5	6.0
September	-0.3	0.0	0.4	0.9	1.5	1.9	2.9	3.2	4.5	4.9
October	-0.2	0.1	0.3	0.9	1.4	1.9	2.8	3.4	5.3	5.8
November	0.0	0.5	0.6	1.1	1.6	2.0	3.0	3.5	4.6	5.1
December	-0.8	-0.3	0.2	0.7	1.1	1.5	2.2	2.8	3.9	4.3

Note: Negative values are discussed in Section III-A, page 21.

C. Missouri River – Gavins Point to Omaha

As shown in Table 1 and discussed in previous sections, the daily flow data with the shortest record in the reaches from Gavins Point to Omaha are the Gavins Point releases. Analysis of the incremental flow data was performed on the 64-year period from 1956 to 2019 and the 90-year period from 1930 to 2019 (see Table 12). See Plate 22 for graphical depictions of the statistical data for 1930-2019.

Table 12
Summation of Daily Incremental Flows by Month
Gavins Point to Omaha (kcfs)

Month	Lower Decile		Lower Quartile		Median		Upper Quartile		Upper Decile	
	1930-2019	1956-2019	1930-2019	1956-2019	1930-2019	1956-2019	1930-2019	1956-2019	1930-2019	1956-2019
January	-1.0	-0.9	-0.1	0.2	0.6	1.0	1.6	2.0	2.8	3.1
February	-0.3	-0.2	0.2	0.5	1.1	1.4	2.2	2.5	3.8	3.9
March	0.1	0.6	1.2	1.4	2.9	3.1	6.0	6.0	12.7	13.5
April	0.0	0.9	1.2	2.0	3.4	4.2	8.8	10.8	20.7	25.6
May	0.1	0.8	1.3	1.9	3.3	4.0	7.7	8.7	13.1	15.5
June	-0.3	0.9	1.4	2.0	3.8	4.5	7.7	8.2	12.8	14.0
July	-0.6	0.3	0.6	1.3	2.2	3.0	4.8	5.6	9.7	11.2
August	-0.2	0.1	0.5	1.0	1.8	2.2	3.2	3.7	5.5	6.0
September	-0.3	0.0	0.4	0.9	1.5	1.9	2.9	3.2	4.5	4.9
October	-0.2	0.1	0.3	0.9	1.4	1.9	2.8	3.4	5.3	5.8
November	0.0	0.5	0.6	1.1	1.6	2.0	3.0	3.5	4.6	5.1
December	-0.8	-0.3	0.2	0.7	1.1	1.5	2.2	2.8	3.9	4.3

Note: Negative values are discussed in Section III-A, page 21.

D. Missouri River – Gavins Point to Nebraska City

As shown in Table 1 and discussed in previous sections, the daily flow data with the shortest record in the reaches from Gavins Point to Nebraska City are the Gavins Point releases. Analysis of the incremental flow data was performed on the 64-year period from 1956 to 2019 and the 90-year period from 1930 to 2019 (see Table 13). See Plate 23 for graphical depictions of statistical data for 1930-2019.

Table 13
Summation of Daily Incremental Flows by Month
Gavins Point to Nebraska City (kcfs)

Month	Lower Decile		Lower Quartile		Median		Upper Quartile		Upper Decile	
	1930-2019	1956-2019	1930-2019	1956-2019	1930-2019	1956-2019	1930-2019	1956-2019	1930-2019	1956-2019
January	0.7	1.4	2.9	3.9	5.7	6.8	9.3	10.2	12.7	14.2
February	2.9	4.1	5.6	6.4	9.0	9.8	13.7	14.4	20.1	21.1
March	6.6	7.2	9.4	9.7	14.3	14.5	24.3	24.6	38.6	40.2
April	4.8	7.2	8.3	9.8	13.0	16.0	25.2	31.0	48.9	53.8
May	4.5	6.6	8.4	10.3	14.6	17.1	25.4	28.9	41.1	46.9
June	4.1	6.2	8.5	10.0	16.8	18.9	29.6	31.7	47.4	50.8
July	2.1	3.2	4.4	5.5	9.4	11.6	18.0	20.1	30.6	35.0
August	2.1	2.8	3.7	4.3	6.3	7.6	11.9	13.2	18.5	20.6
September	2.0	2.6	3.5	4.2	5.9	7.1	10.6	12.2	17.6	19.5
October	2.4	3.5	3.9	5.4	6.7	8.0	11.0	13.5	18.8	21.5
November	3.6	5.2	5.3	6.6	7.5	8.9	11.5	14.3	17.3	18.8
December	0.8	2.9	3.9	5.7	6.6	8.2	10.4	11.9	15.2	16.8

E. Missouri River – Gavins Point to Rulo

As shown in Table 1 and discussed in previous sections, the daily flow data with the shortest record in the reaches from Gavins Point to Rulo are the Gavins Point releases. Analysis of the incremental flow data was performed on the 64-year period from 1956 to 2019 and the 90-year period from 1930 to 2019 (see Table 14). See Plate 24 for graphical depictions of statistical data for 1930-2019.

Table 14
Summation of Daily Incremental Flows by Month
Gavins Point to Rulo (kcfs)

Month	Lower Decile		Lower Quartile		Median		Upper Quartile		Upper Decile	
	1930-2019	1956-2019	1930-2019	1956-2019	1930-2019	1956-2019	1930-2019	1956-2019	1930-2019	1956-2019
January	1.0	2.0	3.6	4.9	6.6	7.9	11.1	12.1	14.6	15.7
February	3.2	4.7	6.3	7.4	10.4	11.4	15.7	16.9	23.7	25.6
March	7.2	8.0	10.6	11.3	16.4	17.4	27.5	28.2	45.5	49.0
April	5.7	8.4	9.3	11.3	14.9	19.5	30.0	36.2	54.7	59.9
May	5.1	7.7	9.5	12.1	17.2	20.7	30.9	35.6	50.4	57.4
June	5.0	7.5	10.2	11.8	20.1	22.7	36.7	39.7	59.6	65.3
July	2.8	4.0	5.4	7.0	11.7	14.3	22.6	25.5	38.3	46.6
August	2.6	3.5	4.5	5.4	8.0	9.4	14.2	16.2	22.3	26.6
September	2.6	3.4	4.1	5.2	7.4	9.2	13.3	15.0	22.9	26.5
October	2.8	4.4	4.6	6.2	8.0	9.7	13.7	16.5	23.0	26.1
November	4.0	6.0	6.2	7.7	8.7	10.7	14.4	16.7	20.6	22.2
December	1.2	3.8	4.5	6.5	7.6	9.3	12.7	14.6	17.8	19.9

F. Missouri River – Gavins Point to St. Joseph

As shown in Table 1 and discussed in previous sections, the daily flow data with the shortest record in the reaches from Gavins Point to St. Joseph are the Gavins Point releases. Analysis of the incremental flow data was performed on the 64-year period from 1956 to 2019 and the 90-year period from 1930 to 2019 (see Table 15). See Plate 25 for graphical depictions of statistical data for 1930-2019.

Table 15
Summation of Daily Incremental Flows by Month
Gavins Point to St. Joseph (kcfs)

Month	Lower Decile		Lower Quartile		Median		Upper Quartile		Upper Decile	
	1930-2019	1956-2019	1930-2019	1956-2019	1930-2019	1956-2019	1930-2019	1956-2019	1930-2019	1956-2019
January	0.9	2.2	3.9	5.5	7.8	9.5	12.8	14.3	18.0	19.8
February	3.5	5.2	7.2	8.5	12.2	13.2	18.6	19.8	27.1	29.3
March	7.7	8.8	11.5	12.3	18.6	20.2	30.8	31.9	53.2	56.6
April	6.4	9.2	10.0	12.3	17.5	22.0	34.0	41.1	60.5	65.6
May	5.8	8.9	11.1	13.9	19.7	24.8	36.3	40.8	60.0	68.8
June	5.7	8.9	11.7	14.0	23.5	26.3	43.0	45.6	71.3	77.3
July	3.7	5.4	6.7	8.5	13.4	17.2	26.9	30.0	46.1	52.2
August	3.1	4.0	5.5	6.5	9.4	11.3	17.5	19.2	28.4	31.6
September	2.9	3.8	4.9	5.9	8.9	10.8	16.1	18.0	27.5	31.9
October	3.1	5.1	5.3	7.2	9.1	11.4	15.7	19.4	26.5	30.3
November	4.6	6.8	6.9	8.5	9.9	12.2	17.0	19.3	23.6	25.6
December	1.6	4.3	5.1	7.4	8.8	11.0	14.7	16.9	21.9	23.9

Note: Negative values are discussed in Section III-A, page 21.

G. Missouri River – Gavins Point to Kansas City

As shown in Table 1 and discussed in previous sections, the daily flow data with the shortest record in the reaches from Gavins Point to Kansas City are the Gavins Point releases. Analysis of the incremental flow data was performed on the 64-year period from 1956 to 2019 and the 90-year period from 1930 to 2019 (see Table 16). See Plate 26 for graphical depictions of statistical data for 1930-2019.

Table 16
Summation of Daily Incremental Flows by Month
Gavins Point to Kansas City (kcfs)

Month	Lower Decile		Lower Quartile		Median		Upper Quartile		Upper Decile	
	1930-2019	1956-2019	1930-2019	1956-2019	1930-2019	1956-2019	1930-2019	1956-2019	1930-2019	1956-2019
January	1.9	3.5	6.0	7.6	10.6	12.4	17.0	19.2	24.4	26.5
February	5.3	7.0	9.4	10.5	15.9	17.7	25.8	27.9	41.0	45.0
March	9.9	10.6	14.7	15.6	25.0	26.8	40.8	42.5	72.9	79.3
April	9.1	11.1	13.5	16.6	23.6	29.8	52.0	60.5	84.3	91.0
May	9.2	12.1	16.3	19.4	31.2	37.1	55.5	63.2	89.1	96.9
June	11.0	13.1	19.1	22.2	38.6	41.7	67.9	70.5	110.9	110.4
July	6.5	7.9	10.5	12.9	22.4	27.9	43.6	47.6	75.8	79.8
August	5.0	5.6	8.6	9.5	15.3	18.1	26.2	28.3	43.7	47.2
September	4.3	5.1	7.7	8.8	14.4	15.9	24.5	27.9	46.0	52.4
October	5.1	6.6	7.5	9.4	12.6	15.6	23.5	27.2	45.5	52.5
November	6.2	8.6	9.1	11.4	13.3	16.4	22.5	26.3	37.2	40.8
December	3.3	6.4	7.4	10.2	12.3	15.0	20.3	24.2	31.9	35.7

H. Missouri River – Gavins Point to Waverly

As shown in Table 1 and discussed in previous sections, the daily flow data with the shortest record in the reaches from Gavins Point to Waverly are the Gavins Point releases. Analysis of the incremental flow data was performed on the 64-year period from 1956 to 2019 and the 90-year period from 1930 to 2019 (see Table 17). See Plate 27 for graphical depictions of statistical data for 1930-2019.

Table 17
Summation of Daily Incremental Flows by Month
Gavins Point to Waverly (kcfs)

Month	Lower Decile		Lower Quartile		Median		Upper Quartile		Upper Decile	
	1930-2019	1956-2019	1930-2019	1956-2019	1930-2019	1956-2019	1930-2019	1956-2019	1930-2019	1956-2019
January	2.1	4.0	6.3	8.4	11.2	13.6	18.4	20.8	25.9	27.9
February	5.6	7.7	10.0	11.3	16.8	18.4	27.5	29.9	44.3	48.2
March	10.2	10.8	15.1	16.1	26.4	28.6	42.9	45.1	76.6	81.9
April	8.8	11.6	14.4	17.3	25.0	31.7	54.7	64.1	89.1	96.8
May	9.6	13.3	16.8	20.0	32.8	39.5	58.5	66.1	95.1	102.9
June	10.9	13.5	19.8	23.2	39.2	43.3	72.2	74.7	118.7	118.8
July	6.8	8.4	11.0	13.7	23.6	29.5	46.3	50.9	78.7	85.1
August	5.1	5.9	8.9	10.0	15.8	18.4	26.7	29.5	46.1	49.9
September	4.4	5.2	7.7	9.4	15.2	16.4	25.7	29.3	49.1	57.9
October	4.8	6.7	7.5	9.5	13.4	16.8	24.6	29.0	48.1	54.5
November	6.3	8.8	9.5	11.8	13.8	17.1	23.2	26.6	39.0	43.8
December	3.6	7.0	7.7	10.8	12.8	16.0	21.5	25.0	35.1	38.7

I. Missouri River – Gavins Point to Boonville

As shown in Table 1 and discussed in previous sections, the daily flow data with the shortest record in the reaches from Gavins Point to Boonville are the Gavins Point releases. Analysis of the incremental flow data was performed on the 64-year period 1956 to 2019 and the 90-year period from 1930 to 2019 (see Table 18). See Plate 28 for graphical depictions of statistical data for 1930-2019.

Table 18
Summation of Daily Incremental Flows by Month
Gavins Point to Boonville (kcfs)

Month	Lower Decile		Lower Quartile		Median		Upper Quartile		Upper Decile	
	1930-2019	1956-2019	1930-2019	1956-2019	1930-2019	1956-2019	1930-2019	1956-2019	1930-2019	1956-2019
January	3.5	5.1	8.0	10.4	14.3	16.6	23.3	25.3	36.4	40.9
February	6.9	9.3	12.1	13.9	21.5	23.2	37.5	40.5	62.6	66.4
March	12.0	12.6	18.7	19.8	34.0	36.2	59.8	64.4	112.0	122.8
April	11.2	14.4	18.0	22.6	33.9	41.5	73.7	86.2	125.8	135.9
May	12.9	16.3	22.2	25.9	44.7	52.1	79.7	91.8	138.3	150.8
June	13.3	15.9	24.8	28.5	48.4	52.3	94.0	97.8	160.6	160.6
July	8.4	9.6	12.9	16.4	29.1	35.0	57.3	64.2	106.0	113.5
August	6.6	7.4	10.7	12.0	19.5	22.5	33.0	37.2	58.3	65.9
September	5.7	6.8	9.5	10.9	18.1	20.2	32.9	38.5	65.2	75.1
October	5.9	7.9	8.8	10.7	15.6	19.5	30.5	35.6	63.8	77.0
November	7.1	10.0	10.8	14.0	16.8	21.1	28.5	35.3	52.7	57.8
December	4.8	9.0	10.0	13.4	16.3	19.9	27.3	30.9	47.2	51.8

J. Missouri River – Gavins Point to Hermann

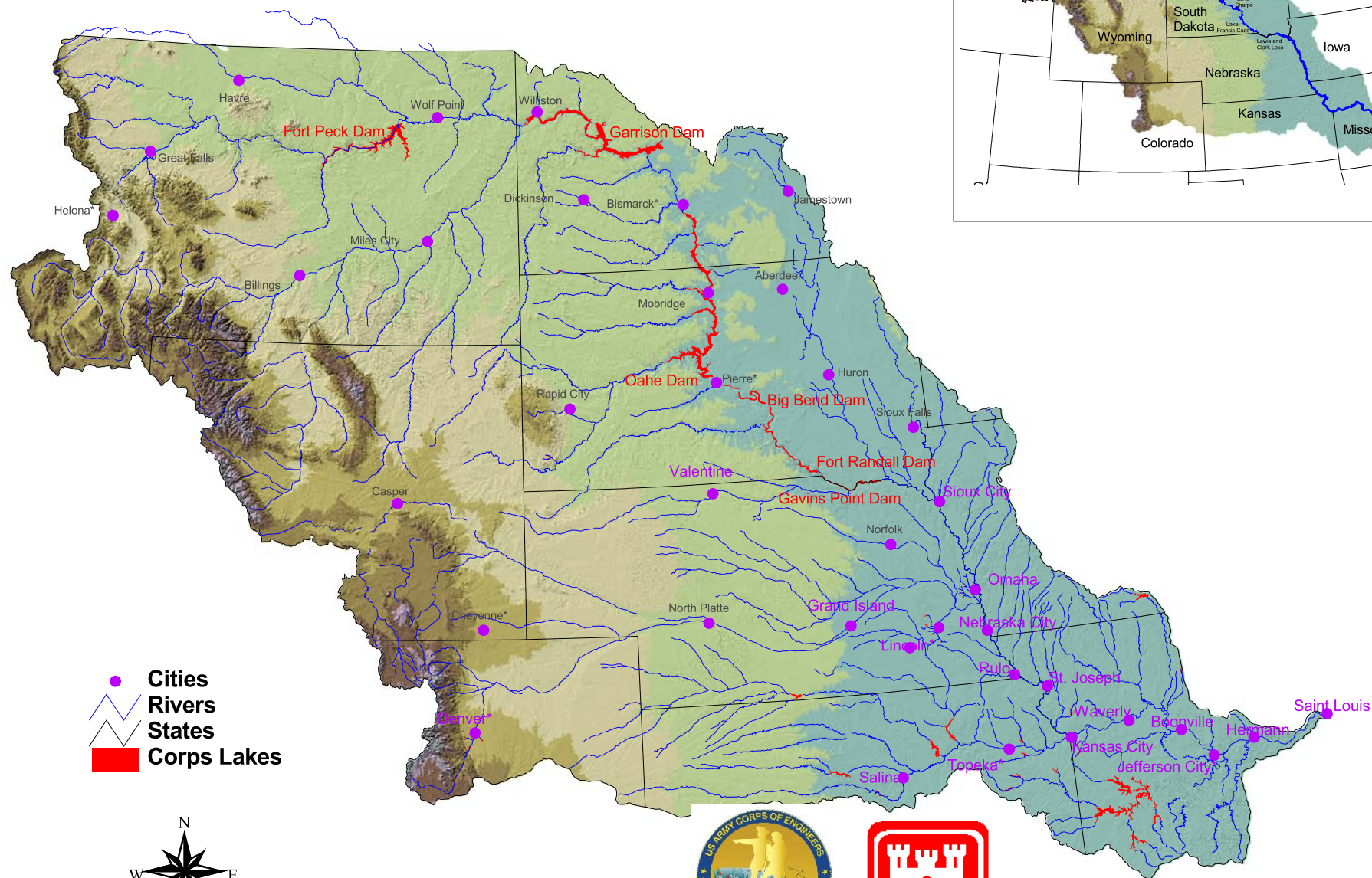
As shown in Table 1 and discussed in previous sections, the daily flow data with the shortest record in the reaches from Gavins Point to Hermann are the Gavins Point releases. Analysis of the incremental flow data was performed on the 64-year period from 1956 to 2019 and the 90-year period from 1930 to 2019 (see Table 19). See Plate 29 for graphical depictions of statistical data for 1930-2019.

Table 19
Summation of Daily Incremental Flows by Month
Gavins Point to Hermann (kcfs)

Month	Lower Decile		Lower Quartile		Median		Upper Quartile		Upper Decile	
	1930-2019	1956-2019	1930-2019	1956-2019	1930-2019	1956-2019	1930-2019	1956-2019	1930-2019	1956-2019
January	8.5	9.6	13.8	15.8	24.8	26.8	41.7	43.6	71.9	78.7
February	12.7	14.1	20.0	21.4	34.8	37.3	64.6	69.2	99.0	103.6
March	19.1	19.6	30.3	30.9	54.9	57.9	93.6	102.9	154.7	171.6
April	19.4	22.4	30.9	38.3	58.9	71.1	112.2	123.9	179.8	188.1
May	20.6	24.3	34.1	38.9	70.0	80.5	124.9	137.2	188.6	199.5
June	19.6	23.2	34.7	41.1	73.7	81.7	130.1	131.7	215.2	211.8
July	12.3	14.4	19.5	23.9	40.0	47.6	77.6	88.0	147.7	154.9
August	9.9	10.7	15.6	16.9	26.0	29.4	44.7	49.4	76.8	83.7
September	9.5	10.3	13.7	15.7	24.5	27.3	43.2	48.1	84.0	95.7
October	9.0	10.3	13.2	14.5	21.5	24.2	42.3	50.9	94.3	107.9
November	10.2	12.4	15.0	18.4	24.8	28.5	46.0	55.8	90.8	99.1
December	9.3	12.3	15.0	18.9	25.5	29.9	43.3	52.4	79.8	88.6

K. Ranking of Summation of Average Monthly Incremental Flows

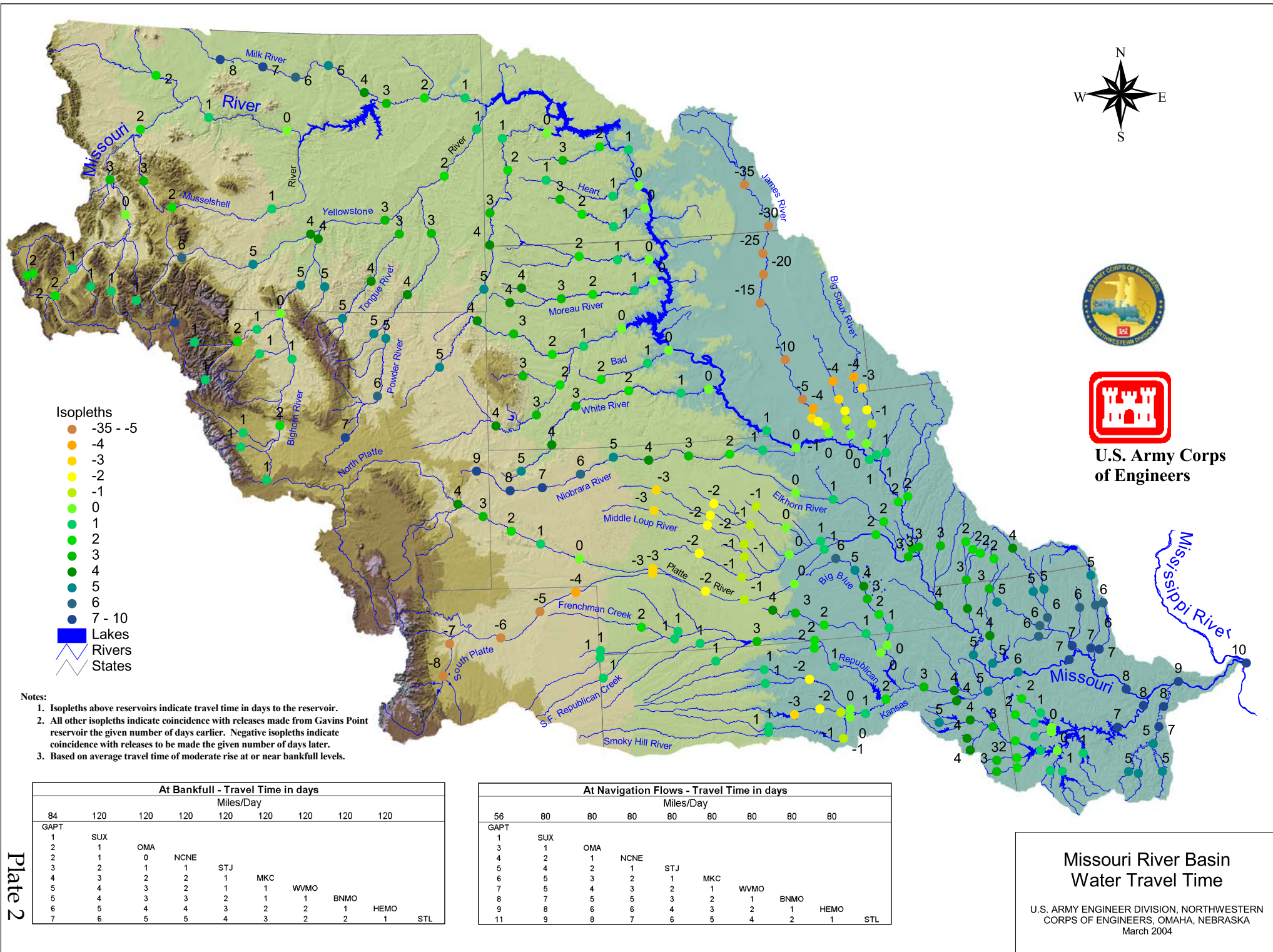
For this section, total incremental flows from Gavins Point to each key location were used. Average monthly incremental flows were calculated and then ranked from lowest to highest for each month. Results are listed on Plate 30 through Plate 38.



**U.S. Army Corps
of Engineers**

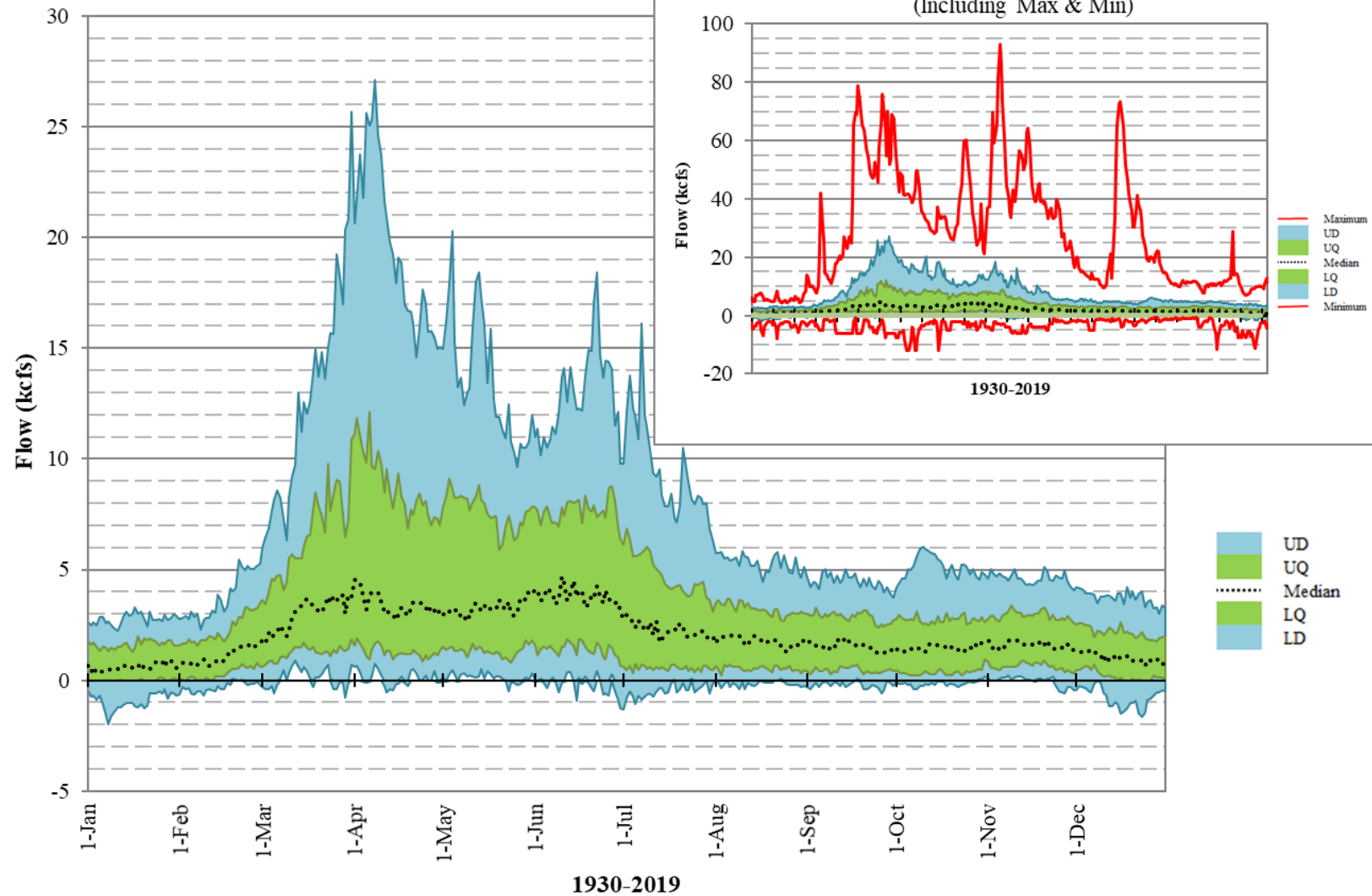
**Missouri River Basin
General Location Map**

U.S. ARMY ENGINEER DIVISION, NORTHWESTERN
CORPS OF ENGINEERS, OMAHA, NEBRASKA
July 2005



Gavins Point to Sioux City

Daily Incremental Flows



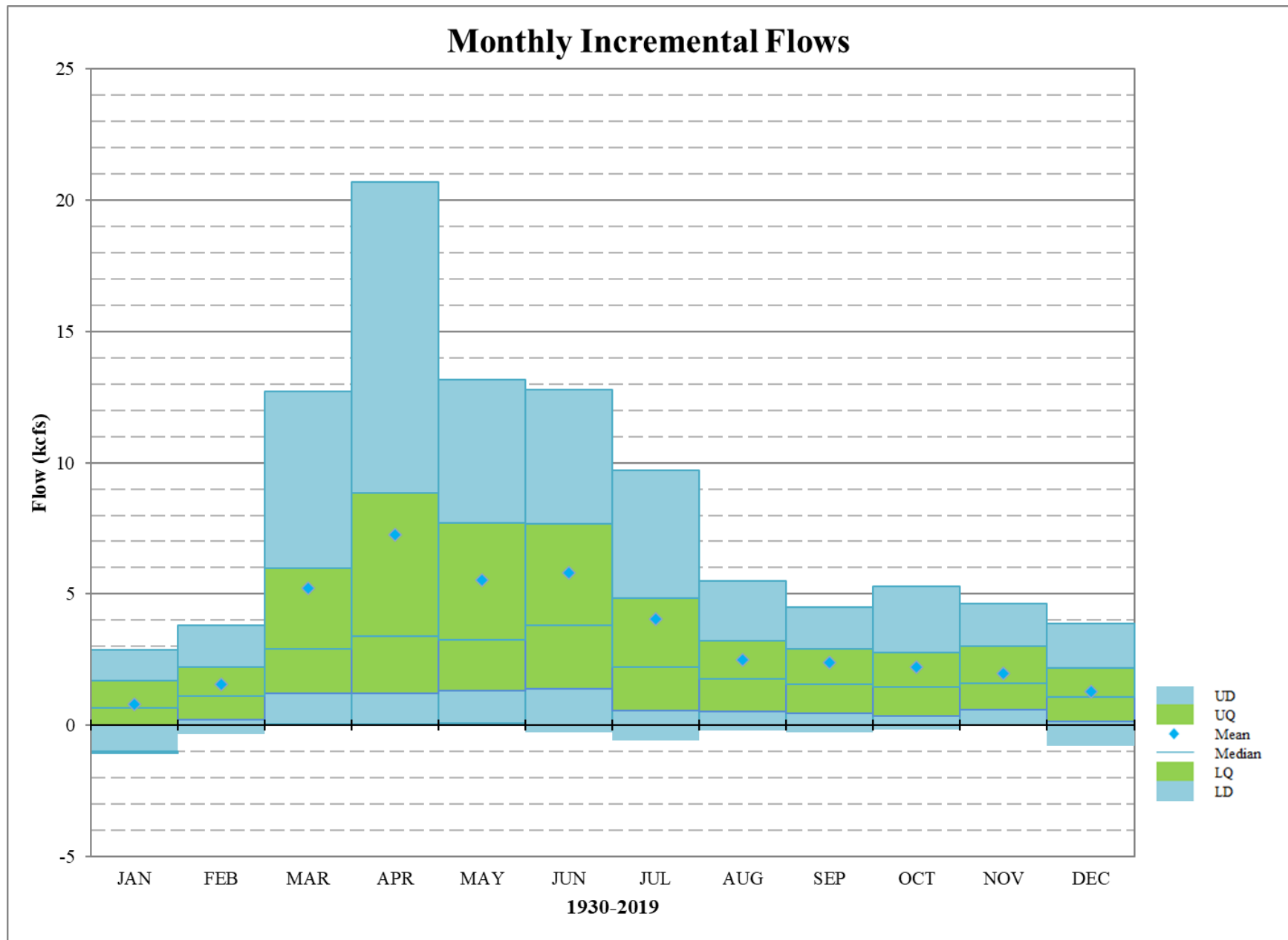
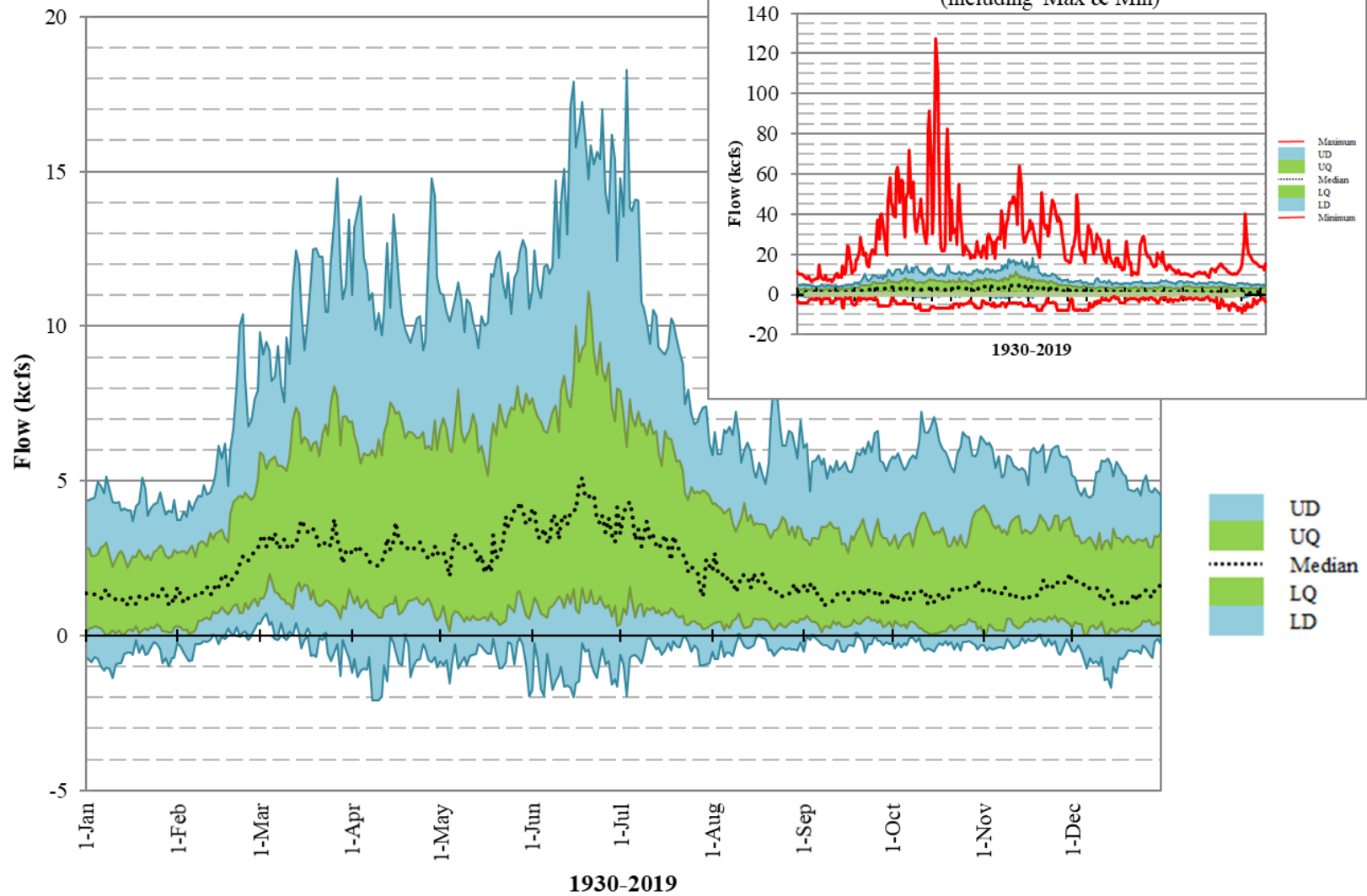


Plate 3. Gavins Point to Sioux City Daily and Monthly Incremental Flows
MRBWM Technical Report – Incremental Flows Below Gavins Point, May 2021

Sioux City to Omaha

Daily Incremental Flows



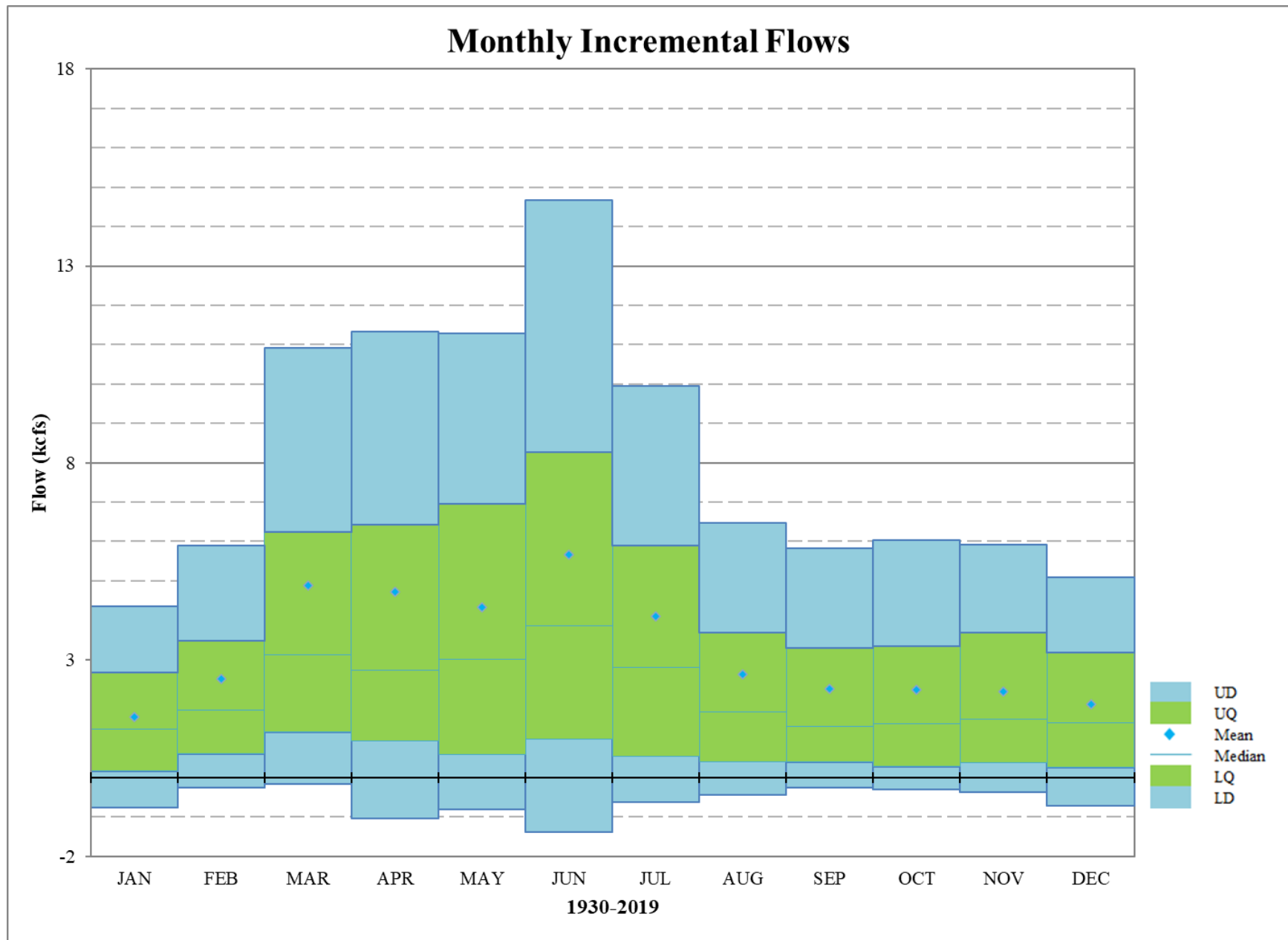
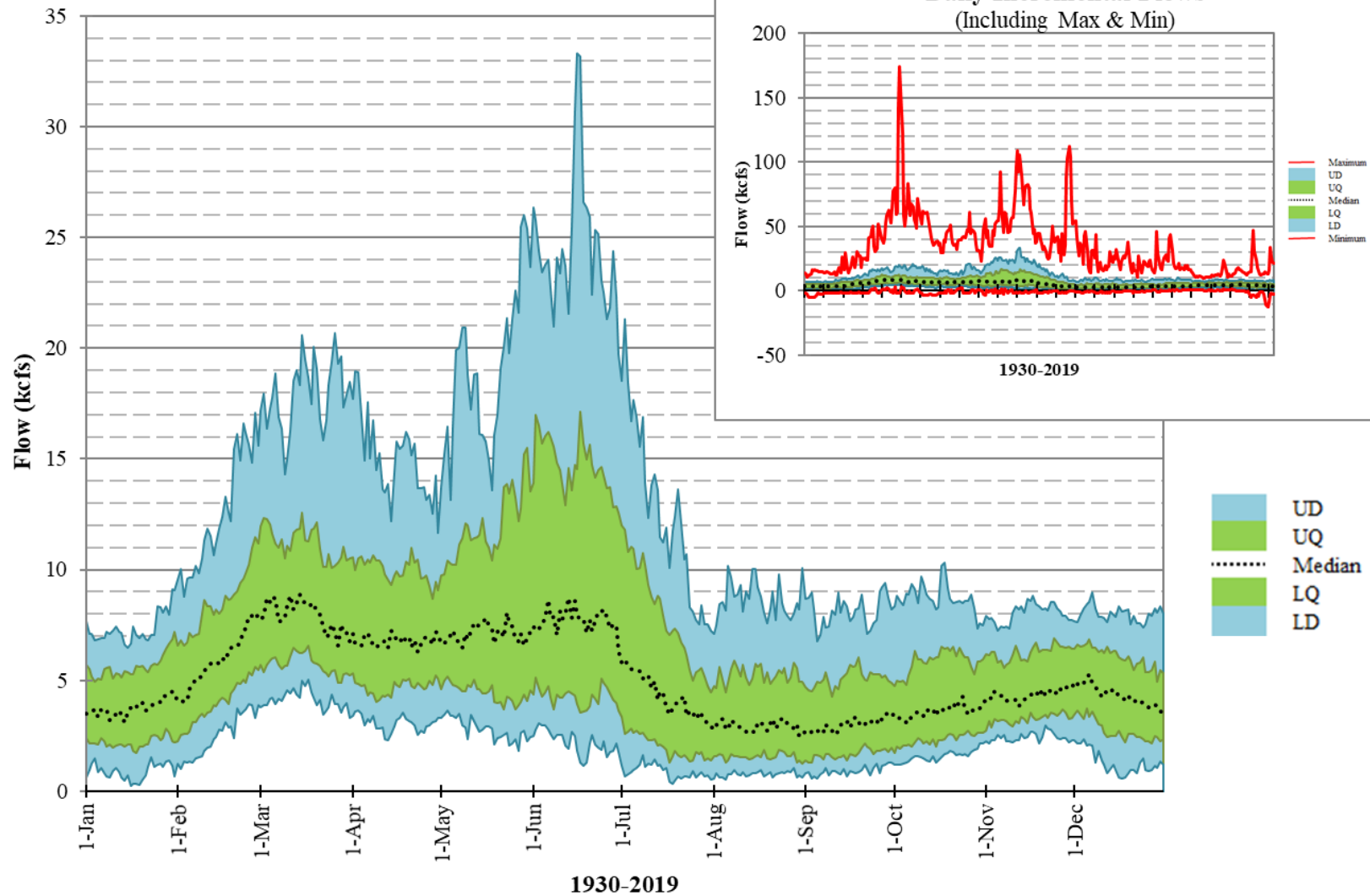


Plate 4. Sioux City to Omaha Daily and Monthly Incremental Flows
MRBWM Technical Report – Incremental Flows Below Gavins Point, May 2021

Omaha to Nebraska City

Daily Incremental Flows



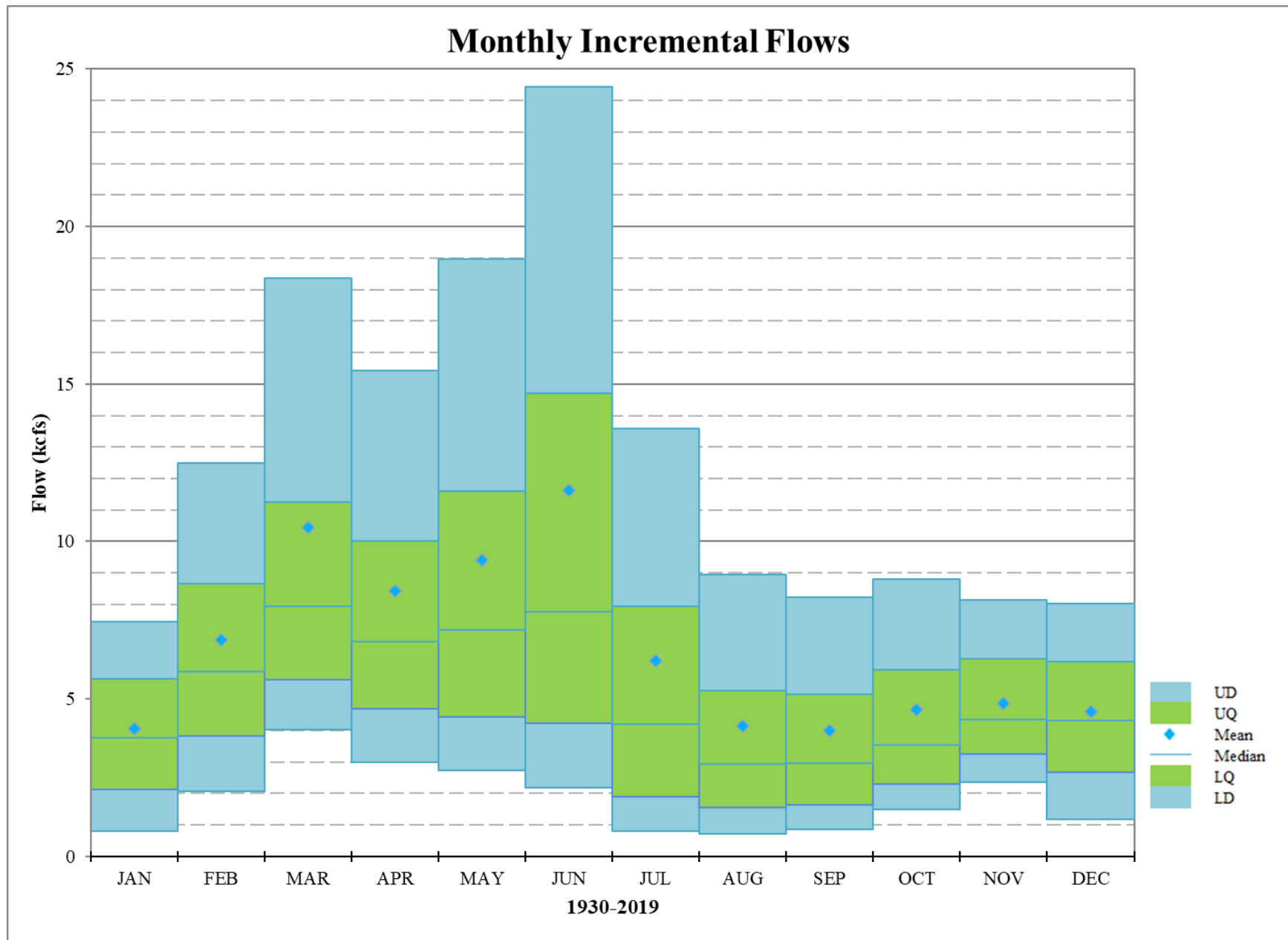
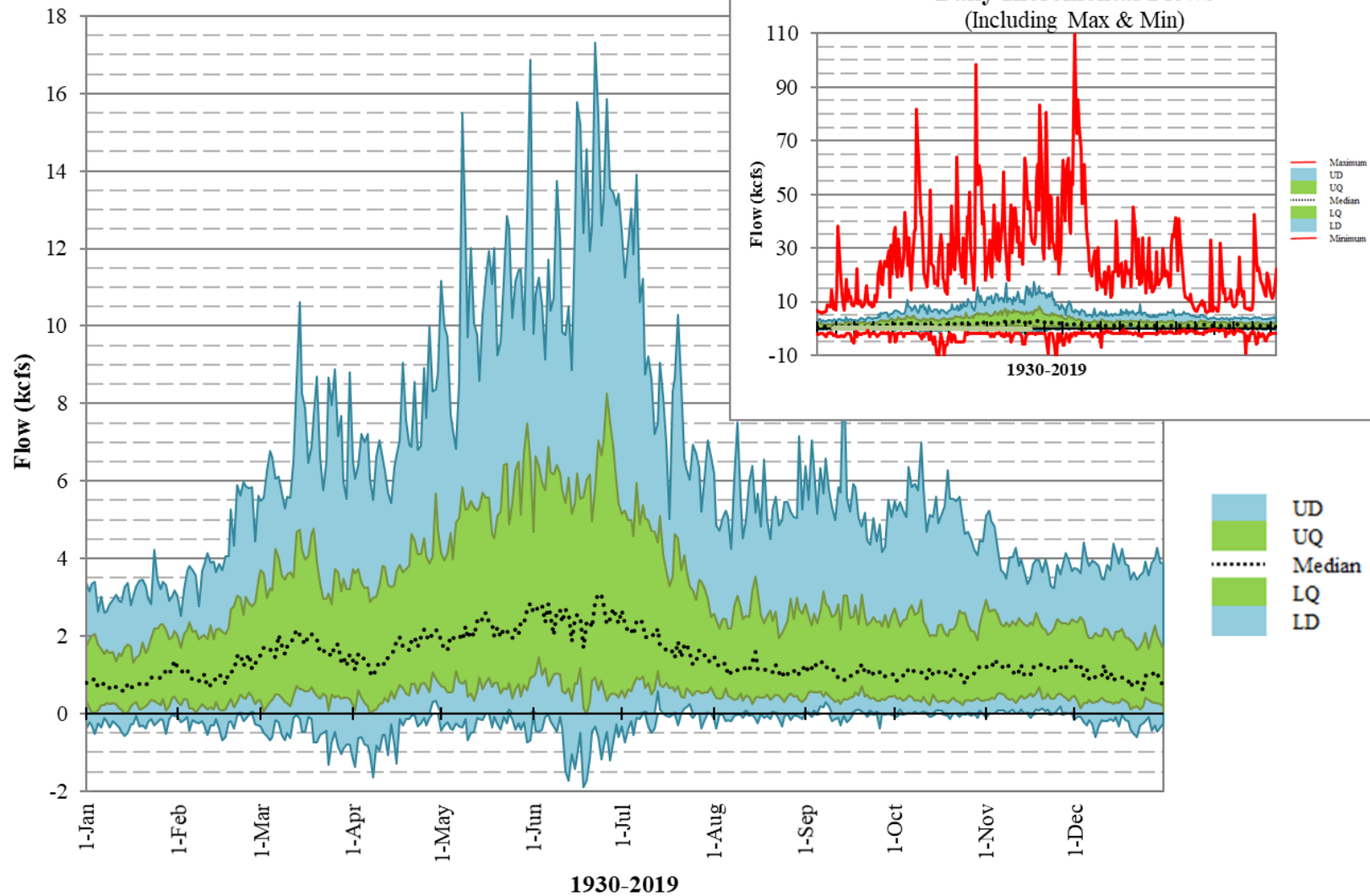


Plate 5. Omaha to Nebraska City Daily and Monthly Incremental Flows
MRBWM Technical Report – Incremental Flows Below Gavins Point, May 2021

Nebraska City to Rulo

Daily Incremental Flows



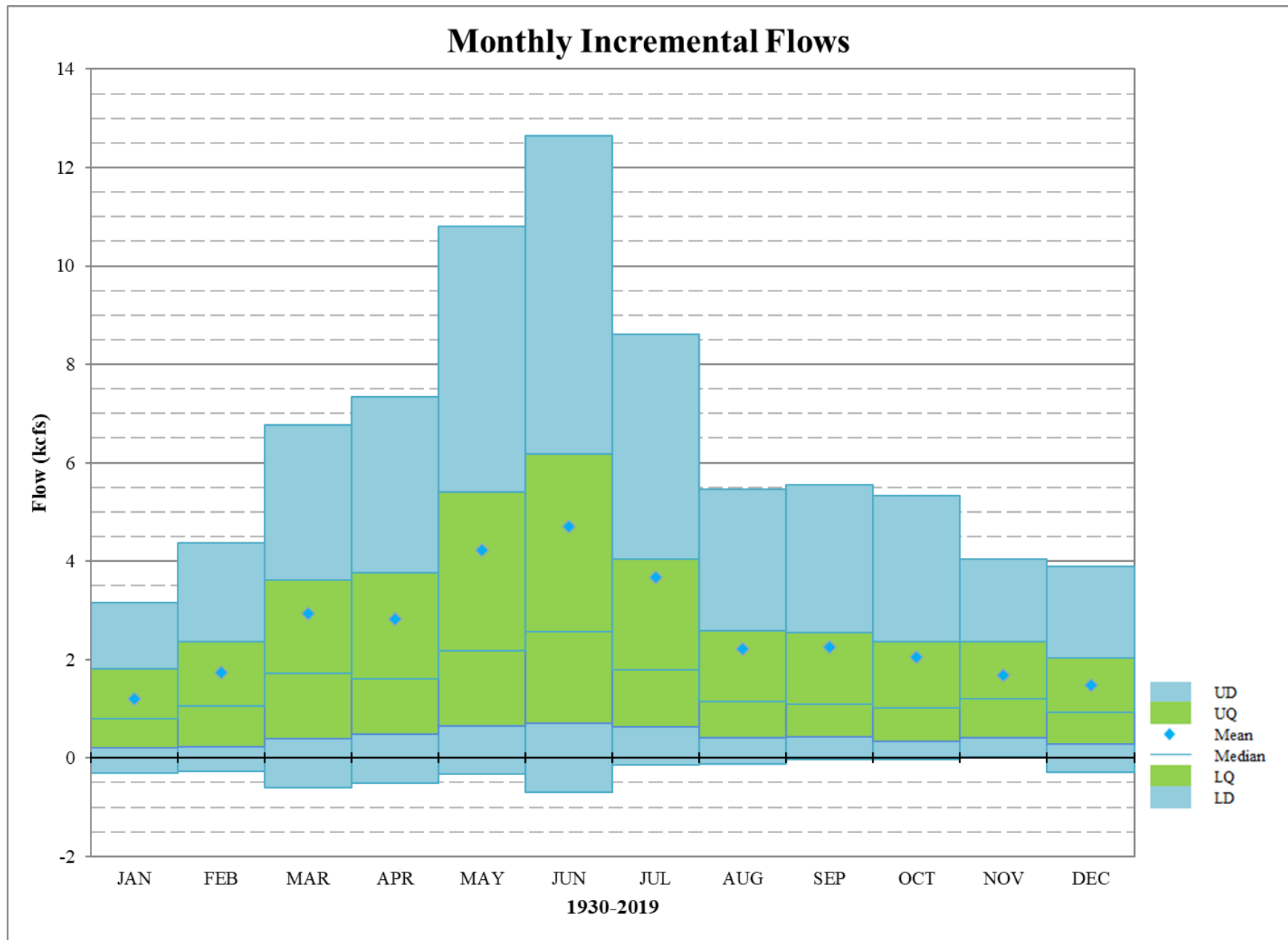
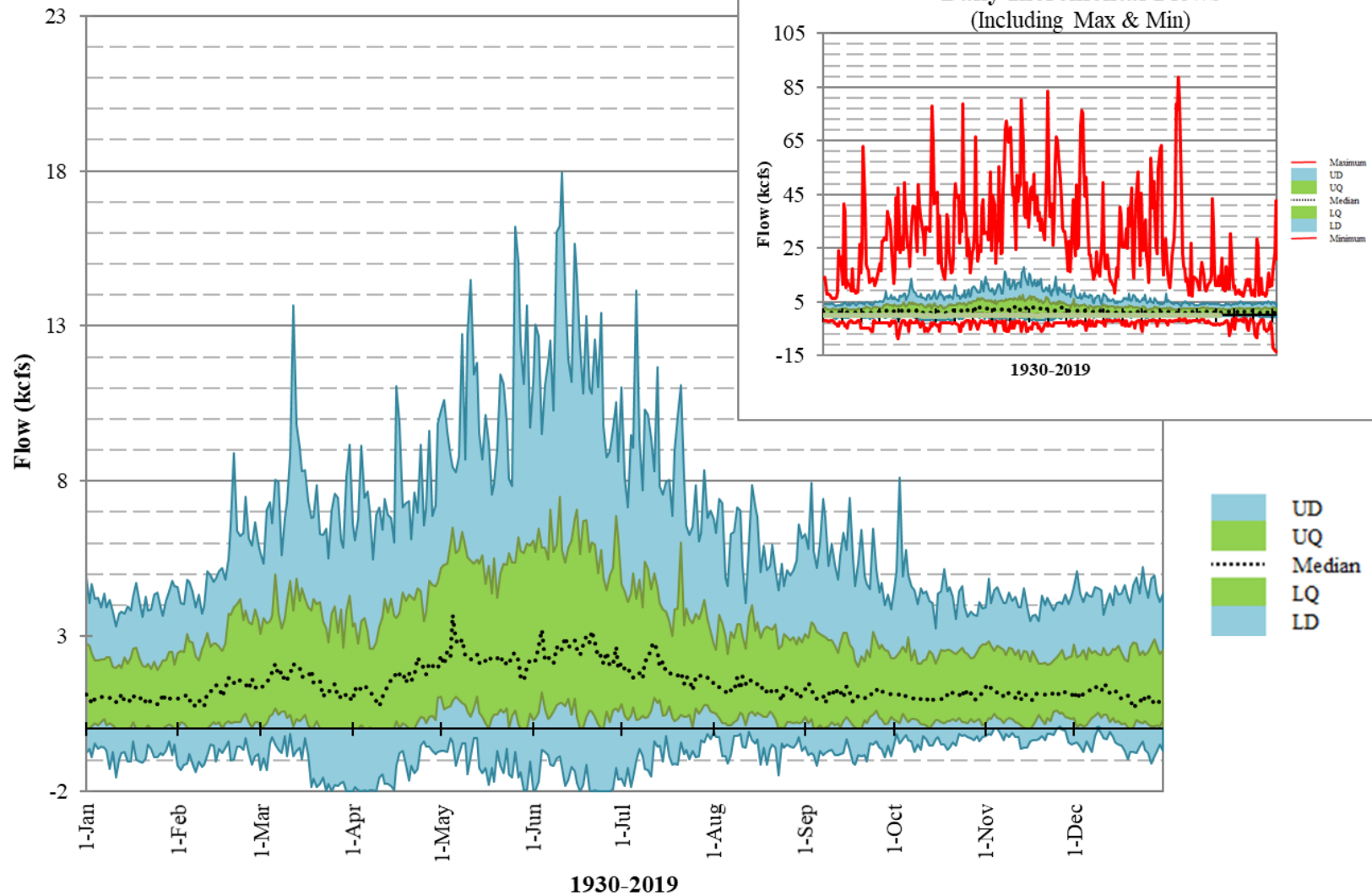


Plate 6. Nebraska City to Rulo Daily and Monthly Incremental Flows
MRBWM Technical Report – Incremental Flows Below Gavins Point, May 2021

Rulo to St. Joseph

Daily Incremental Flows



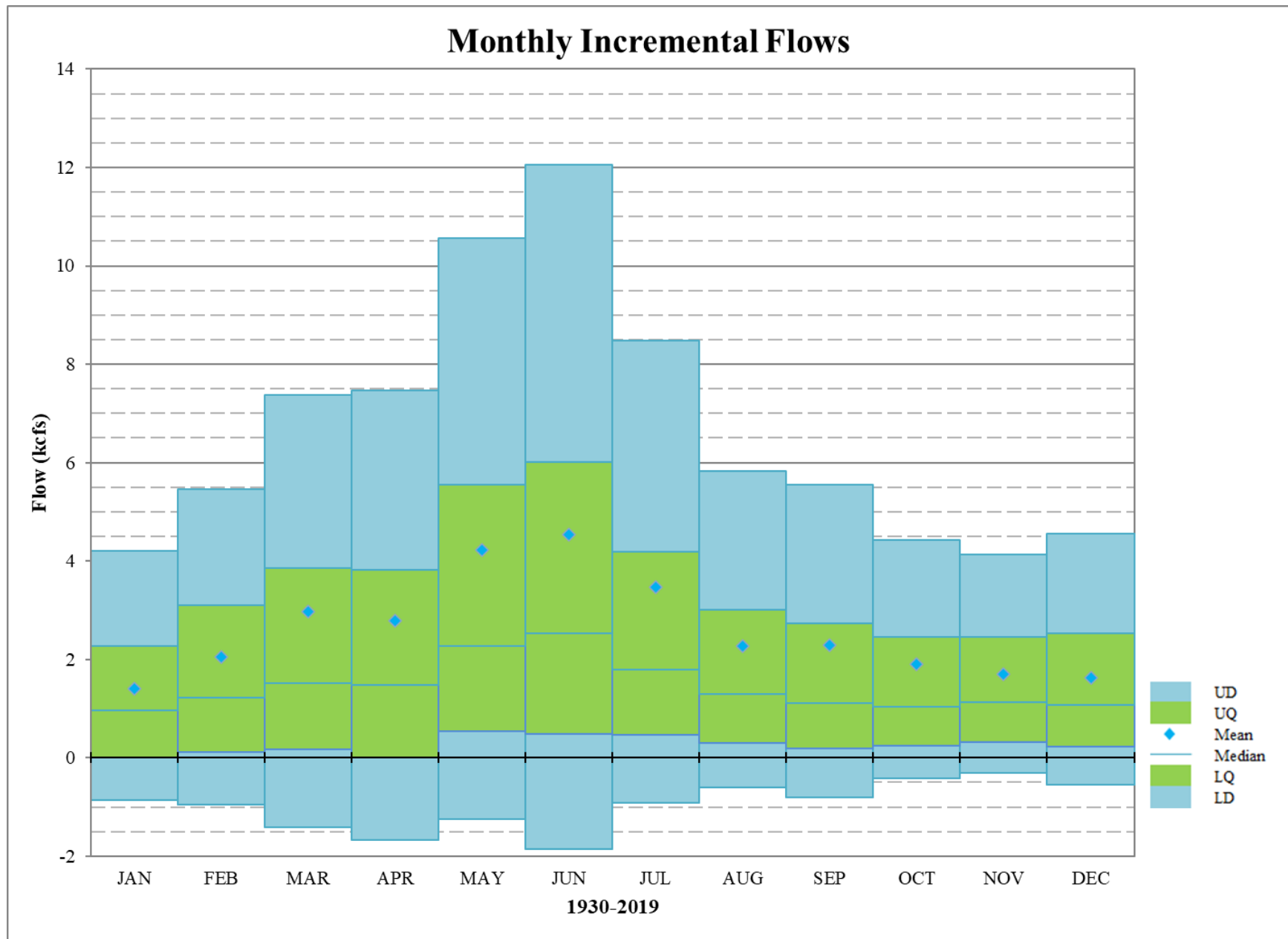
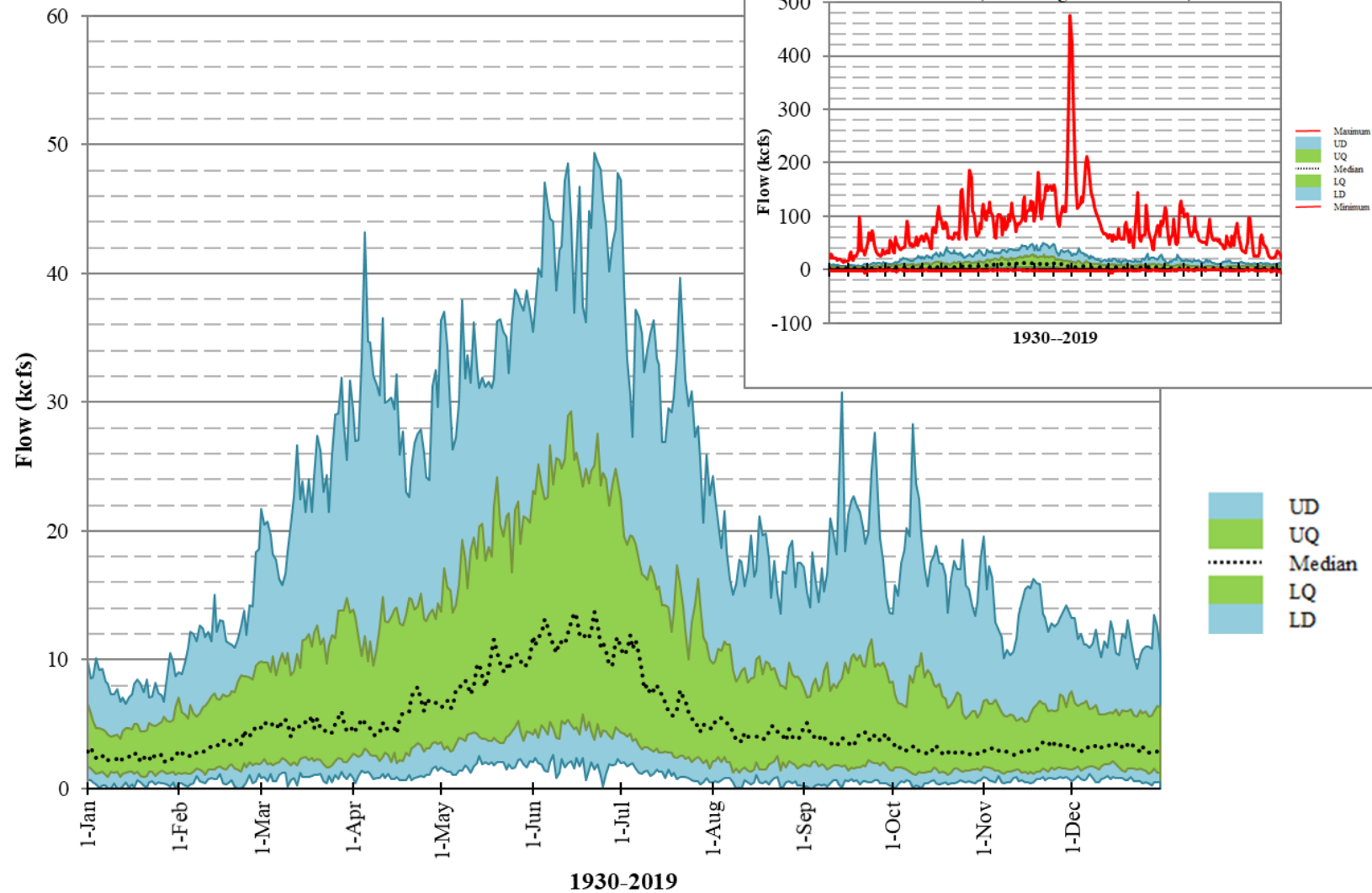


Plate 7. Rulo to St. Joseph Daily and Monthly Incremental Flows
MRBWM Technical Report – Incremental Flows Below Gavins Point, May 2021

St. Joseph to Kansas City

Daily Incremental Flows



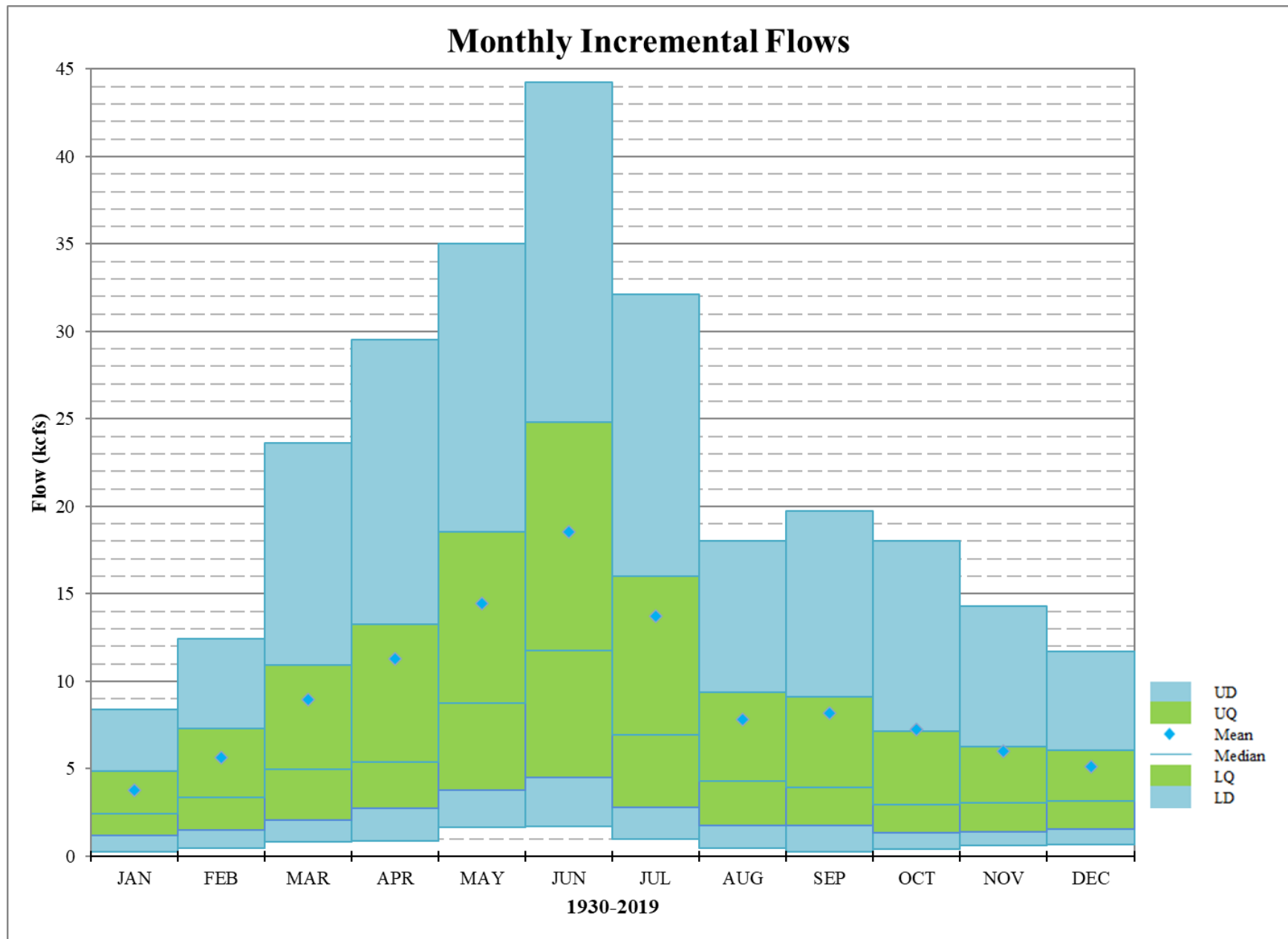
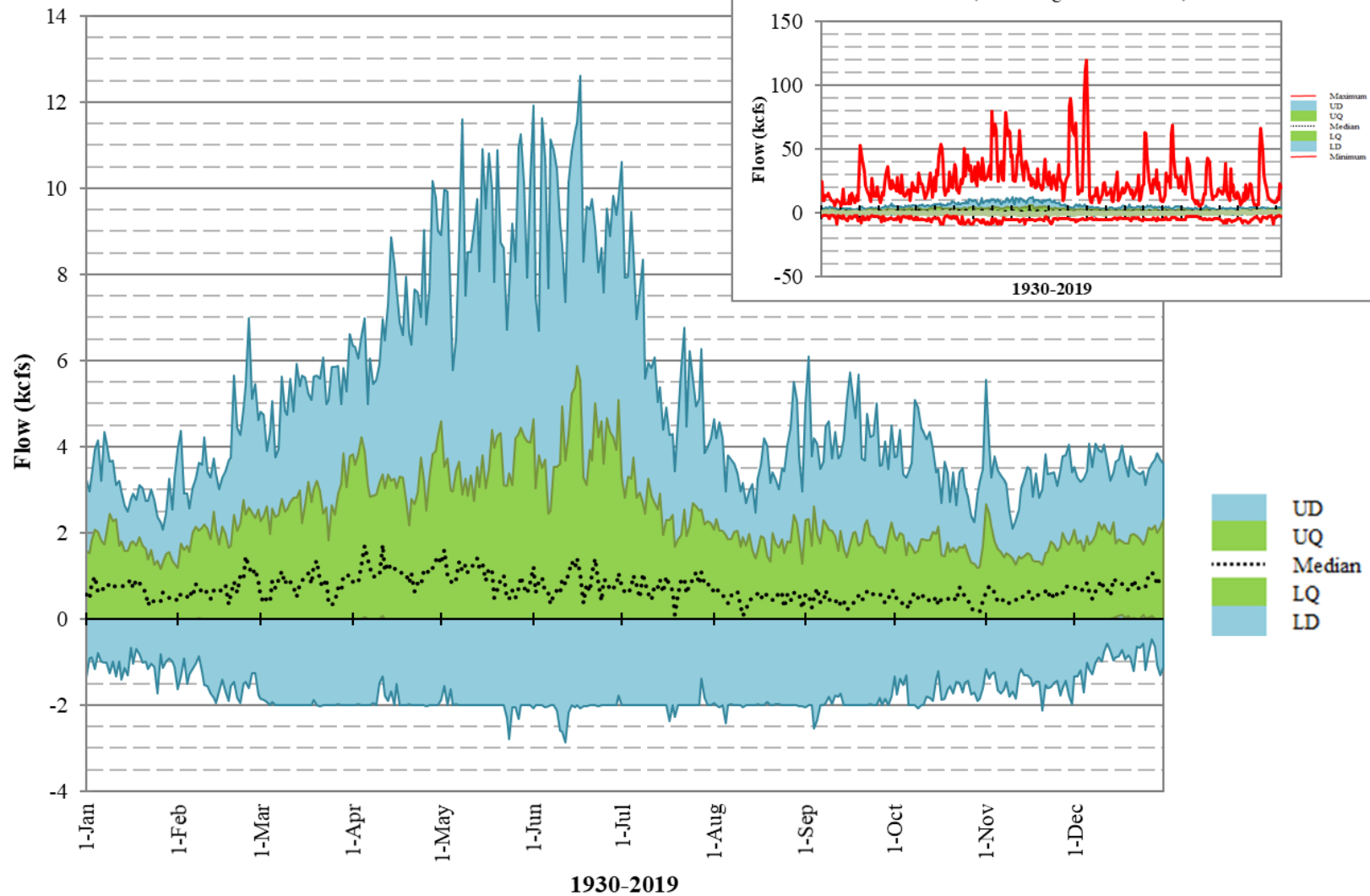


Plate 8. St. Joseph to Kansas City Daily and Monthly Incremental Flows
MRBWM Technical Report – Incremental Flows Below Gavins Point, May 2021

Kansas City to Waverly

Daily Incremental Flows



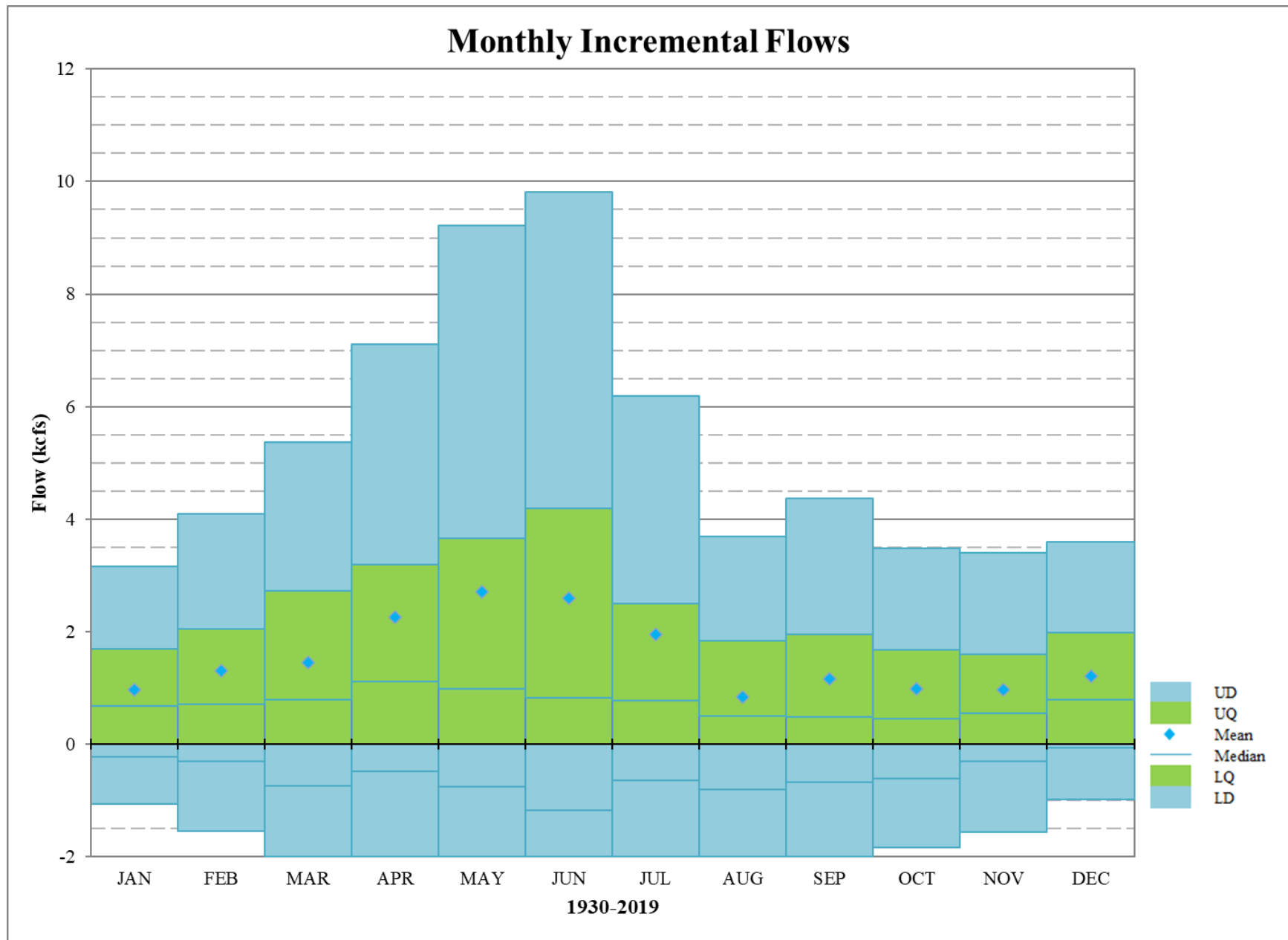
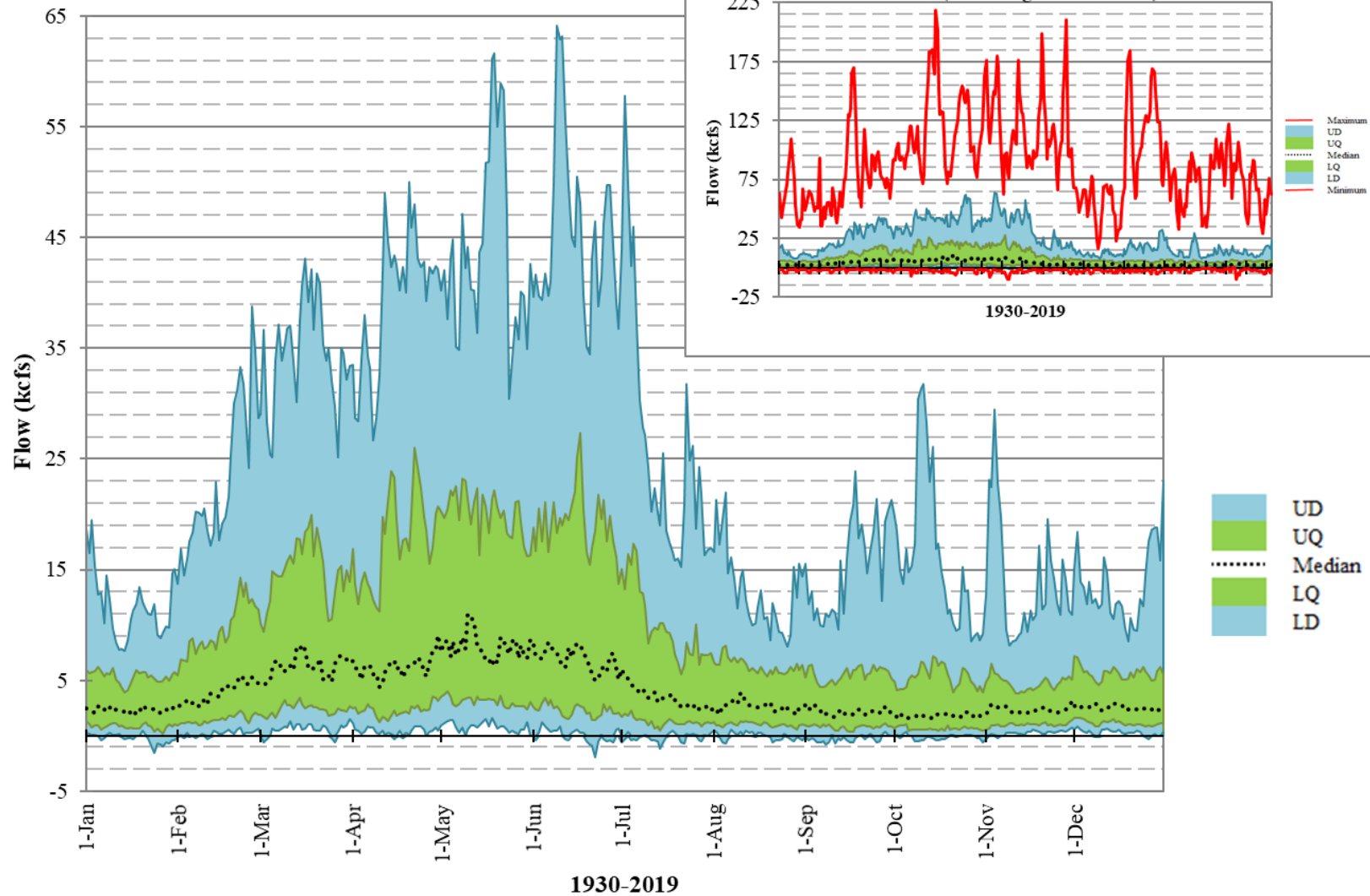


Plate 9. Kansas City to Waverly Daily and Monthly Incremental Flows
MRBWM Technical Report – Incremental Flows Below Gavins Point, May 2021

Waverly to Boonville

Daily Incremental Flows



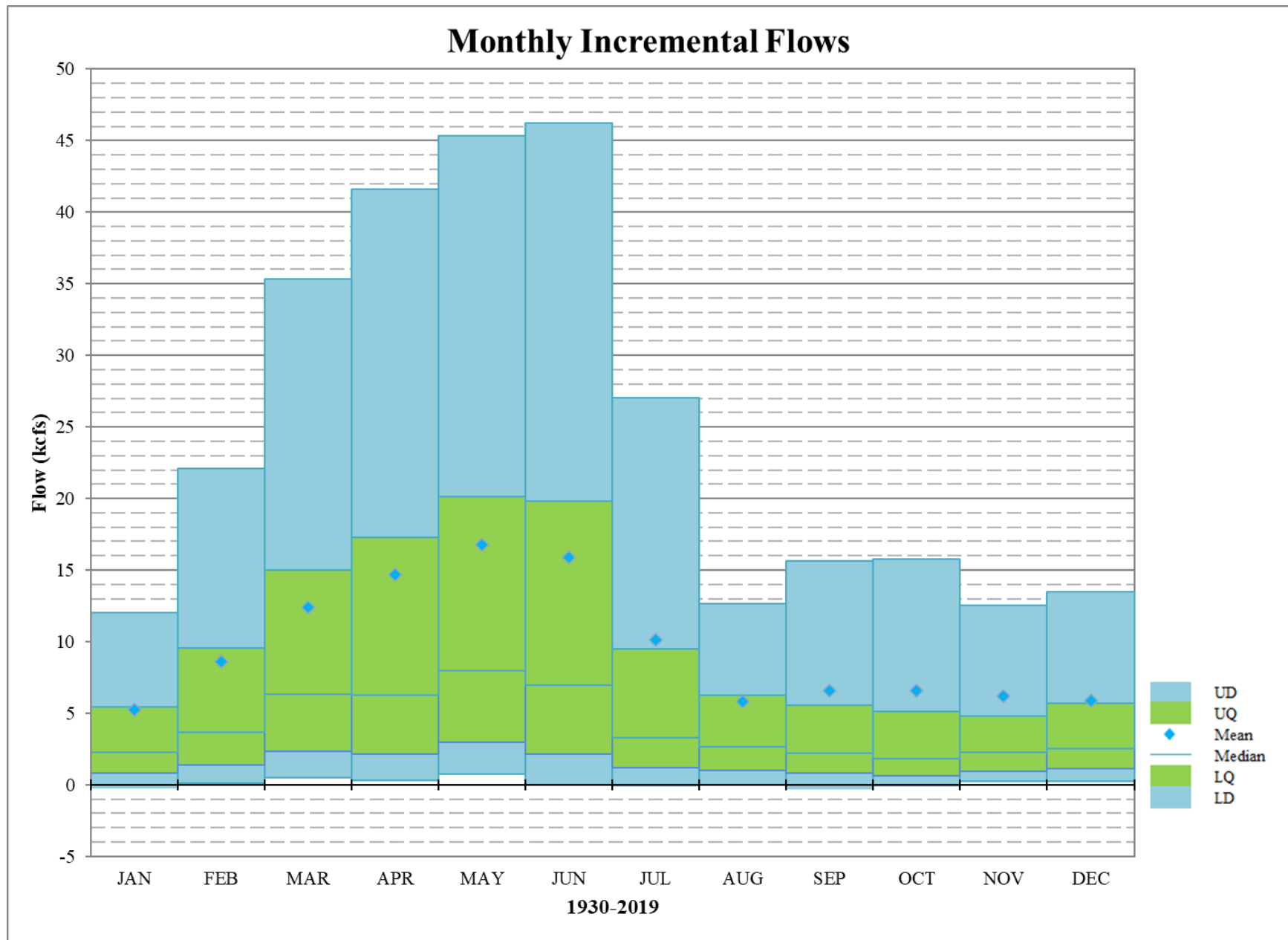
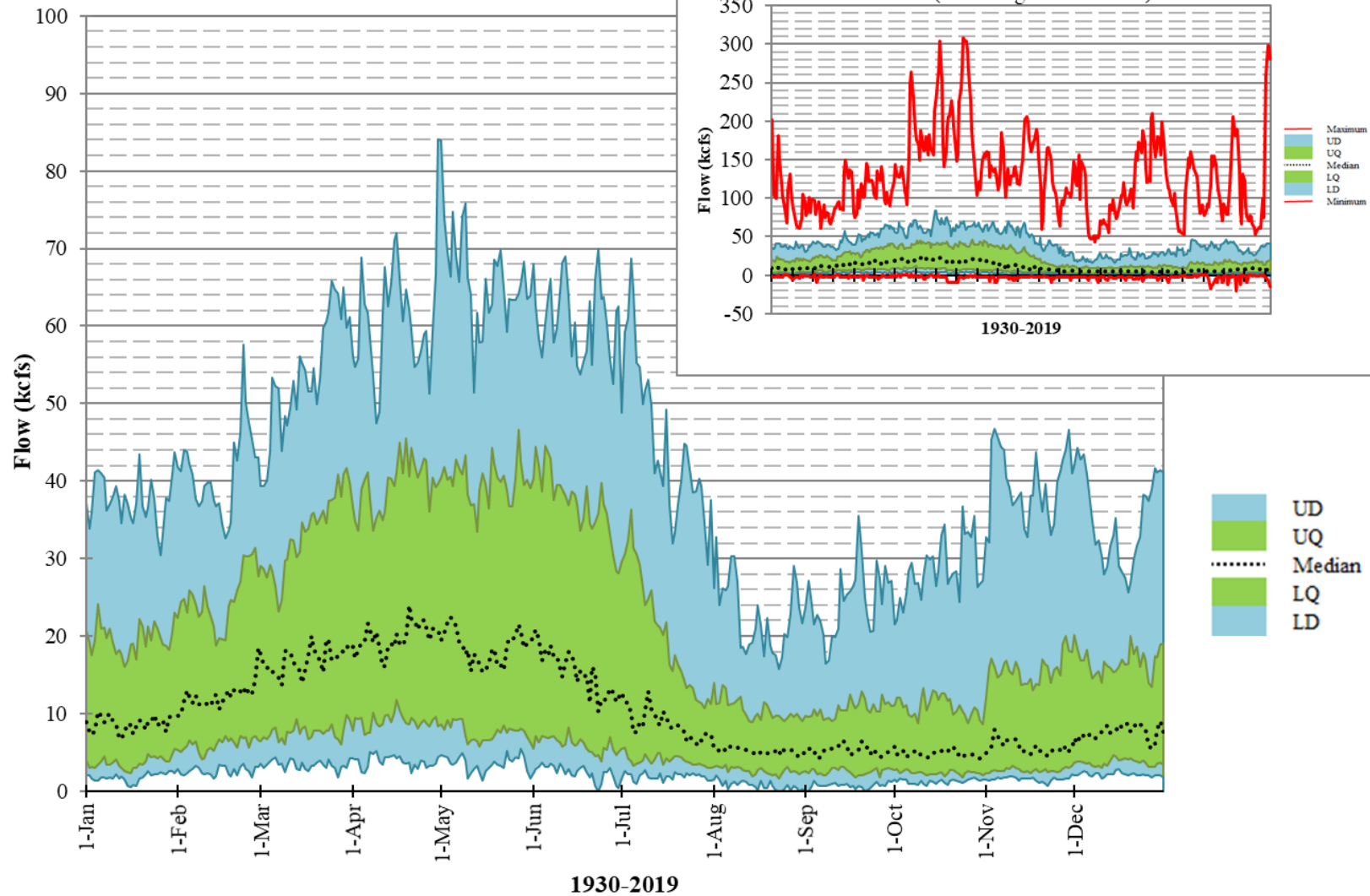


Plate 10. Waverly to Boonville Daily and Monthly Incremental Flows
MRBWM Technical Report – Incremental Flows Below Gavins Point, May 2021

Boonville to Hermann

Daily Incremental Flows



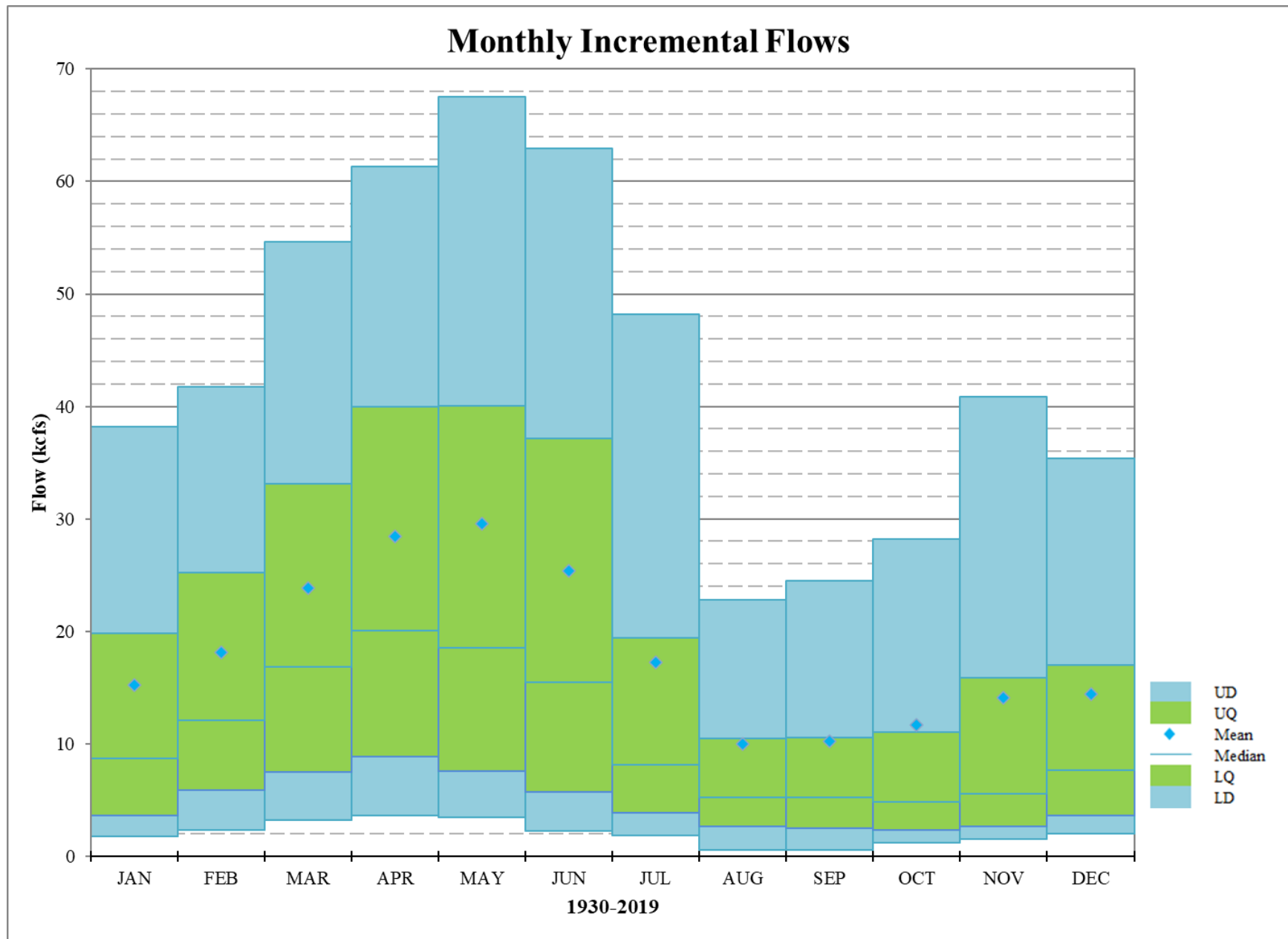


Plate 11. Boonville to Hermann Daily and Monthly Incremental Flows
MRBWM Technical Report – Incremental Flows Below Gavins Point, May 2021

Gavins Point to Sioux City
Ranking of Average Monthly Flows (kcfs)

Rank	Jan	Year	Feb	Year	Mar	Year	Apr	Year	May	Year	Jun	Year	Jul	Year	Aug	Year	Sep	Year	Oct	Year	Nov	Year	Dec	Year
1	-1.2	1952	-0.3	1956	-1.0	1943	-1.8	1943	-1.4	1955	-0.9	1956	-3.0	1947	-1.2	1955	-1.2	1955	-0.7	1943	-0.5	1943	-1.3	1950
2	-0.7	2004	-0.2	1930	0.0	1934	-0.6	1950	-0.2	1931	-0.8	1955	-1.5	1943	-0.2	1988	-0.8	1943	-0.5	1955	-0.4	2012	-1.1	1968
3	-0.6	1970	-0.1	1942	0.2	1991	-0.5	1955	-0.2	1940	-0.2	1933	-0.8	1988	-0.2	1989	-0.6	2012	-0.5	2012	-0.1	1930	-0.6	1989
4	-0.6	1971	-0.1	1936	0.3	1933	-0.4	1990	-0.2	1956	-0.2	1941	-0.7	1955	-0.1	2012	-0.4	1990	-0.4	1989	-0.1	1969	-0.5	1990
5	-0.4	1977	-0.1	1939	0.4	1990	0.1	1931	0.0	1934	-0.1	1989	-0.6	1953	0.0	1946	-0.3	1989	-0.2	1990	-0.1	1936	-0.5	1943
6	-0.4	1951	0.0	1955	0.4	1931	0.2	1991	0.1	1981	0.3	1935	-0.5	1942	0.1	1954	-0.2	1954	-0.2	1988	0.1	1939	-0.4	1940
7	-0.3	1988	0.0	1937	0.6	1981	0.2	1934	0.4	1968	0.4	1988	-0.3	1989	0.1	1931	-0.1	1931	0.0	1937	0.1	1933	-0.3	2000
8	-0.2	1982	0.0	1932	0.7	1964	0.3	1935	0.5	1935	0.5	1936	-0.2	1956	0.1	1991	0.1	1981	0.0	1934	0.1	1934	-0.3	1944
9	-0.2	1955	0.1	1940	0.9	1935	0.4	1981	0.5	1939	0.6	1939	0.0	1933	0.1	1936	0.1	1991	0.0	1935	0.2	1945	-0.2	1953
10	-0.1	1934	0.1	1933	1.0	1968	0.5	1939	0.7	1933	0.7	1977	0.0	1930	0.2	1990	0.1	1934	0.0	1931	0.2	1940	-0.2	1949
11	-0.1	1968	0.1	1934	1.0	1975	0.6	1968	0.7	1989	0.8	1968	0.1	1968	0.2	1968	0.1	1937	0.1	1936	0.2	1932	-0.2	1983
12	-0.1	1950	0.1	1961	1.0	1940	0.8	1933	0.7	1936	0.9	1938	0.1	1935	0.2	1941	0.2	1935	0.1	1945	0.2	1935	-0.1	1938
13	-0.1	1957	0.2	1990	1.1	2005	0.8	1938	0.8	1932	0.9	1931	0.2	1932	0.2	1934	0.2	1940	0.1	1953	0.3	1951	-0.1	1941
14	-0.1	1969	0.2	1935	1.1	1998	0.9	1963	0.9	1946	0.9	1932	0.2	1931	0.3	1933	0.3	1998	0.1	1991	0.3	1931	0.0	1947
15	0.0	1933	0.2	1938	1.1	1959	0.9	1936	0.9	1974	1.1	1981	0.2	1936	0.3	1981	0.3	1968	0.1	1932	0.3	1989	0.0	1961
16	0.0	1930	0.3	1960	1.2	1963	1.0	1974	1.1	1938	1.2	1992	0.3	1981	0.3	2003	0.3	1956	0.1	1939	0.3	1937	0.0	1935
17	0.0	1962	0.3	2004	1.2	2000	1.5	1992	1.2	1941	1.3	1937	0.3	1940	0.3	2000	0.3	1974	0.3	1954	0.4	1987	0.0	1937
18	0.0	1940	0.3	1998	1.3	1958	1.6	1932	1.2	1991	1.4	1934	0.3	1937	0.4	1945	0.4	2003	0.3	1933	0.4	1955	0.0	1960
19	0.0	1935	0.4	1950	1.3	1965	1.6	1961	1.3	1977	1.4	1946	0.3	1946	0.4	1935	0.5	1988	0.3	1949	0.5	1954	0.1	1930
20	0.0	1936	0.4	1972	1.4	1937	1.6	1959	1.4	1988	1.6	1940	0.5	1977	0.4	1937	0.5	1939	0.3	1959	0.5	1990	0.1	1964
21	0.0	1937	0.4	1959	1.7	2003	1.6	1977	1.4	1992	1.6	2002	0.5	1941	0.5	1938	0.6	1932	0.4	2003	0.6	1953	0.1	1958
22	0.0	1960	0.5	1989	1.7	1957	1.7	1942	1.4	1990	1.6	1987	0.5	1959	0.5	1932	0.6	1987	0.4	1987	0.7	1959	0.1	1939
23	0.0	1938	0.6	1962	1.8	1969	1.7	1957	1.5	1958	1.7	1958	0.5	1970	0.6	1940	0.6	1953	0.5	1998	0.7	1938	0.1	1932
24	0.0	1961	0.6	2014	1.9	1974	1.7	1954	1.5	1963	1.8	1963	0.6	1934	0.8	1973	0.6	1945	0.5	1940	0.7	1974	0.1	1945
25	0.1	1997	0.6	1965	2.0	2015	1.7	2000	1.6	1967	2.0	1959	0.6	2012	0.8	1987	0.7	1977	0.6	1942	0.8	1991	0.2	1931
26	0.1	1942	0.7	1964	2.2	1967	1.7	1988	1.7	1975	2.1	1964	0.9	2002	0.9	1942	0.8	1947	0.6	1969	0.8	1956	0.2	2013
27	0.1	1932	0.7	1931	2.2	2002	1.8	1956	1.8	1954	2.4	1973	0.9	1939	1.0	1939	0.8	1970	0.7	1958	0.9	1961	0.2	1946
28	0.2	2014	0.7	1963	2.2	1947	1.8	1967	1.9	1971	2.4	1990	1.0	1990	1.0	1982	0.9	1959	0.7	1974	1.0	1968	0.3	1934
29	0.2	1972	0.7	1975	2.4	2013	1.8	1975	1.9	1937	2.5	1974	1.2	1963	1.0	1958	0.9	1963	0.8	1960	1.0	1994	0.3	1996
30	0.2	1944	0.8	1953	2.4	1942	1.8	2004	2.3	1964	2.6	1930	1.3	2006	1.1	1997	0.9	1941	0.9	1930	1.0	1952	0.3	1942
31	0.2	1931	0.8	1941	2.5	1956	1.9	1958	2.3	1957	2.6	2000	1.3	1985	1.1	1959	1.1	1973	0.9	1981	1.0	1958	0.3	1952
32	0.2	1946	0.9	1978	2.5	2014	2.0	2003	2.5	2014	2.6	1960	1.5	1974	1.1	1947	1.1	2000	1.0	1952	1.0	1963	0.3	1936
33	0.3	1953	0.9	1949	2.6	1960	2.1	1941	2.5	1980	2.7	1975	1.5	1991	1.2	1956	1.1	1997	1.0	1956	1.1	2003	0.4	1962
34	0.3	1967	0.9	1979	2.7	1989	2.1	1930	2.6	1959	2.8	1970	1.6	2000	1.3	1948	1.1	1936	1.1	1997	1.1	1988	0.4	1988
35	0.3	1945	0.9	1969	2.8	1977	2.2	1989	2.7	1973	2.8	1980	1.6	1964	1.3	1970	1.1	1958	1.1	1963	1.2	2006	0.4	1963
36	0.3	1941	0.9	2013	3.1	1999	2.3	2015	2.8	2002	2.8	1953	1.6	1966	1.3	1977	1.2	1982	1.1	2000	1.2	1960	0.4	1967
37	0.3	1959	1.0	1968	3.1	2006	2.4	1964	2.9	1943	2.9	1982	1.8	1975	1.4	1985	1.2	1946	1.1	1947	1.2	1947	0.4	1933
38	0.3	1958	1.0	1951	3.2	1988	2.4	1937	2.9	1961	3.0	1961	1.9	1954	1.4	2002	1.4	1930	1.2	1996	1.2	1944	0.4	1957
39	0.4	1954	1.0	1958	3.3	1941	2.8	1940	3.1	2003	3.0	1976	1.9	1960	1.5	1969	1.4	2008	1.2	1977	1.2	1950	0.4	1948
40	0.4	1996	1.1	1997	3.4	1980	2.9	1982	3.1	2004	3.0	2003	1.9	1987	1.5	1974	1.4	2007	1.2	1970	1.3	1962	0.5	1954
41	0.4	1943	1.1	2003	3.6	1992	2.9	1971	3.2	2015	3.1	1966	1.9	1950	1.5	1998	1.5	1948	1.3	1962	1.3	1985	0.6	1976
42	0.4	1949	1.1	1991	3.7	1982	3.0	1946	3.2	1982	3.2	1949	2.0	1938	1.6	2006	1.5	1969	1.3	1950	1.4	1941	0.6	1991
43	0.4	1991	1.2	2005	3.7	1932	3.1	2014	3.2	1966	3.6	2006	2.1	1980	1.6	1965	1.5	1962	1.4	1994	1.4	1973	0.6	1956
44	0.4	1993	1.2	1957	3.8	1976	3.3	1972	3.2	1970	3.8	1985	2.2	1961	1.6	1949	1.5	1952	1.4	1976	1.5	1957	0.7	1951

45	0.5	1978	1.2	1985	4.1	2009	3.3	1945	3.4	1976	4.1	1942	2.2	1958	1.6	1952	1.5	1950	1.5	1967	1.6	2013	0.7	1955
46	0.5	1992	1.2	2000	4.1	1938	3.4	2013	3.4	1948	4.4	1969	2.3	1949	1.7	1950	1.5	1961	1.5	1941	1.6	1976	0.8	2003
47	0.6	1990	1.2	1995	4.1	1954	3.4	1944	3.4	1987	4.5	2012	2.4	1948	1.8	1966	1.6	1966	1.6	1961	1.6	1997	0.9	2012
48	0.6	1939	1.3	2008	4.1	1944	3.5	2012	3.5	1930	4.5	1991	2.4	1976	1.8	1963	1.6	2002	1.6	1938	1.6	2002	0.9	1969
49	0.6	2007	1.3	1981	4.3	1996	3.5	1980	3.7	2000	4.6	1978	2.5	1982	2.0	1943	1.7	1967	1.7	1966	1.7	1966	1.0	1959
50	0.6	1948	1.4	1987	4.3	2004	3.7	1966	3.8	1945	4.8	2015	2.5	1973	2.0	2008	1.9	1994	1.7	2006	1.7	1996	1.1	2002
51	0.6	1965	1.4	1970	4.3	1955	3.7	1953	4.0	1949	4.9	1948	2.6	2003	2.1	2004	1.9	2006	1.8	2001	1.7	1967	1.1	1966
52	0.7	1964	1.4	1988	4.4	1939	3.8	2002	4.3	2005	4.9	1952	2.7	1965	2.2	1967	1.9	1957	1.8	1968	1.7	1999	1.2	1997
53	0.7	2005	1.5	1974	4.5	1966	3.9	1970	4.3	1950	5.5	2004	2.8	2017	2.2	1930	1.9	1949	1.8	1973	1.8	2000	1.2	1972
54	0.7	1975	1.5	2015	4.6	1936	4.0	2005	4.3	1942	5.5	1965	3.0	1967	2.2	1976	2.0	1971	1.9	2002	1.9	1965	1.2	2006
55	0.7	1976	1.5	1977	4.7	1962	4.1	1976	4.5	1998	5.8	1998	3.0	1945	2.4	1957	2.0	1965	2.0	1964	1.9	1975	1.2	1994
56	0.8	1979	1.6	1967	4.7	2012	4.9	1973	4.7	1965	5.8	1957	3.4	2004	2.4	1961	2.0	1933	2.2	2014	1.9	2004	1.3	2004
57	0.8	1999	1.6	1986	4.8	1970	5.4	1949	5.2	1985	5.8	1943	3.4	1998	2.4	1980	2.0	1964	2.2	2013	1.9	1970	1.3	2008
58	0.8	1966	1.7	1943	4.9	1951	5.5	2017	5.4	1960	6.1	1967	3.7	1971	2.5	1964	2.1	1980	2.2	1948	2.0	1942	1.5	1981
59	0.8	1963	1.7	1947	4.9	1995	6.2	1996	5.5	1962	6.1	2017	4.0	2005	2.6	2016	2.1	1938	2.2	1957	2.0	1981	1.5	1973
60	0.8	2013	1.7	1993	5.1	1953	6.4	2008	5.6	1978	6.4	1997	4.1	1986	2.6	1994	2.2	1996	2.2	2015	2.0	2014	1.5	1992
61	0.8	1989	1.7	1946	5.3	1961	6.8	1947	5.7	2013	6.4	1979	4.1	1997	2.7	1971	2.4	2013	2.3	2004	2.2	1949	1.5	2014
62	0.9	1974	1.8	2001	5.5	1952	7.3	2016	5.8	1953	6.5	1944	4.1	2008	2.9	1996	2.4	1960	2.3	1972	2.2	1977	1.7	1965
63	1.0	1985	1.8	1948	5.6	2008	7.6	1998	6.0	1947	6.6	1947	4.2	2007	2.9	1986	2.5	2015	2.3	1975	2.2	1948	1.7	1974
64	1.0	2003	1.9	1945	5.7	2001	8.2	2009	6.2	1996	7.0	2009	4.2	2016	3.0	2017	2.5	1976	2.4	1971	2.3	2005	1.8	1987
65	1.0	1956	1.9	2018	5.7	2017	8.3	1965	6.4	2006	7.5	1971	4.5	1972	3.0	2013	2.6	2001	2.5	2008	2.4	1964	1.9	2007
66	1.0	1995	2.0	1999	5.9	1971	8.9	1994	6.9	1951	7.8	2013	4.6	2015	3.0	1975	2.6	2004	2.5	1951	2.7	2007	1.9	1977
67	1.3	2001	2.0	2007	6.4	2016	9.4	1999	7.1	1994	7.8	2016	4.9	1994	3.0	2005	2.6	1983	2.5	1944	2.8	1983	1.9	2009
68	1.4	1947	2.1	1954	6.5	1972	9.6	1948	7.3	1983	7.8	2007	5.0	1969	3.1	1960	2.8	1975	2.5	1980	2.9	2008	2.0	1970
69	1.4	2000	2.1	2010	6.5	1987	9.9	1987	7.6	2008	7.8	1950	5.1	1957	3.1	2007	2.8	2017	2.6	1985	3.0	1946	2.0	1985
70	1.5	2008	2.1	2002	6.8	1950	10.2	1985	7.9	1969	7.9	1972	5.1	2013	3.3	1944	2.9	1942	2.7	1983	3.1	2001	2.0	1995
71	1.7	1987	2.1	1992	6.9	1984	11.3	1979	8.1	1999	8.3	1994	5.4	1979	3.4	1953	2.9	2005	2.7	1965	3.2	2016	2.1	1984
72	1.7	1981	2.1	1944	7.4	1946	11.7	1978	8.4	2012	8.4	1954	5.7	1992	3.5	2001	3.0	2009	2.7	1999	3.3	2015	2.2	1980
73	1.7	2009	2.3	1996	8.2	1945	11.8	2007	8.5	1979	9.1	1999	5.9	1952	3.5	1972	3.0	1972	3.4	2009	3.4	1972	2.3	2005
74	1.7	1998	2.3	2012	8.4	1948	12.0	2006	8.6	1972	9.4	1986	6.1	1978	3.6	1962	3.3	1944	3.9	1979	3.4	1980	2.3	1999
75	1.8	2015	2.6	1982	8.6	1949	12.4	2018	9.7	2017	9.9	1951	6.3	1996	3.9	2014	3.3	1985	4.1	2016	3.4	1992	2.4	1971
76	1.8	1986	2.8	1980	8.6	2018	12.9	1951	10.0	2009	10.0	1945	6.3	2001	4.0	1999	3.4	2014	4.2	1946	3.6	1971	2.7	1975
77	1.9	1994	3.0	1973	8.7	1993	15.0	1983	10.5	1952	10.3	2001	7.1	2014	4.1	1983	3.6	1995	4.3	1992	3.9	2017	2.7	1998
78	2.0	2002	3.1	1984	9.2	1979	17.8	1952	10.6	1944	10.4	1983	8.2	1995	4.1	2015	3.6	1984	4.3	1978	4.0	1984	3.0	2017
79	2.1	2018	3.3	2019	9.2	1978	17.8	1993	11.4	2010	10.8	2005	8.7	1999	4.2	2009	4.1	1999	4.3	2005	4.2	1993	3.0	2001
80	2.1	1980	3.3	2006	9.9	1985	19.3	1995	11.9	2018	11.4	1996	8.9	2009	4.3	1992	4.2	1992	4.4	1982	4.4	1978	3.1	1993
81	2.2	2010	4.0	1976	11.0	1986	20.1	2010	12.1	2016	13.7	2008	9.5	1962	4.4	1951	4.3	1978	4.6	2007	4.5	1986	3.2	1986
82	2.2	1984	4.1	1952	11.7	1997	21.0	1986	14.0	2007	13.8	1962	9.8	1983	5.3	1978	4.4	2016	4.9	1993	4.6	1995	3.3	1978
83	2.8	1973	4.1	2009	12.4	1973	28.1	1969	15.1	1993	15.4	2011	10.3	1951	5.4	1984	4.7	1979	5.1	2011	4.8	2011	3.6	2016
84	2.8	2016	4.6	1966	13.8	1930	28.2	1962	15.2	1984	17.4	2018	12.6	1944	6.1	1979	5.5	1951	6.0	1984	5.1	2009	4.0	2015
85	2.9	2017	4.6	2016	13.8	2007	28.6	1984	17.8	1986	18.5	2014	13.3	1984	6.4	1995	5.7	2011	6.2	1995	5.2	1998	4.1	1979
86	2.9	2006	4.7	1994	14.0	1994	28.8	1960	19.1	2001	18.6	1993	17.3	2018	6.4	2018	7.6	1993	7.9	1986	5.3	2010	4.3	2011
87	3.0	1983	4.7	1983	15.4	1983	30.9	2001	19.2	1997	18.7	1995	18.2	2019	9.9	2011	9.8	1986	8.0	2017	5.7	1979	4.4	2010
88	3.4	2012	5.6	2017	18.1	2011	33.5	2011	25.4	2011	21.6	2019	20.7	2011	13.8	1993	12.8	2010	13.0	2010	6.3	1982	6.2	1982
89	3.9	2011	6.4	1971	26.6	2010	36.8	2019	27.5	1995	23.5	2010	22.9	2010	14.1	2019	14.0	2018	13.3	2018	7.1	2018	6.7	2018
90	4.1	2019	7.1	2011	36.3	2019	38.3	1997	32.3	2019	33.3	1984	40.5	1993	20.1	2010	31.2	2019	15.1	2019	10.7	2019	10.5	2019

Plate 12. Gavins Point to Sioux City Ranking of Average Monthly Flows

MRBWM Technical Report - Missouri River Incremental Flows Below Gavins Point, May 2021

Sioux City to Omaha
Ranking of Average Monthly Flows (kcfs)

Rank	Jan	Year	Feb	Year	Mar	Year	Apr	Year	May	Year	Jun	Year	Jul	Year	Aug	Year	Sep	Year	Oct	Year	Nov	Year	Dec	Year
1	-1.3	1954	-0.2	1968	-1.6	1943	-3.5	1948	-3.6	1943	-3.9	1933	-3.1	1933	-4.5	1944	-0.6	1946	-1.4	1947	-1.1	1949	-1.3	1933
2	-1.0	1971	-0.2	1936	0.0	1968	-0.9	1959	-2.5	1934	-1.7	1936	-2.2	1946	-0.6	1970	-0.4	1933	-1.1	1946	-1.0	1947	-0.9	1943
3	-0.8	1972	-0.2	1959	0.4	1934	-0.6	1944	-2.4	1950	-1.6	1952	-0.6	1932	-0.3	1946	-0.2	1947	-0.6	1940	-0.7	1942	-0.7	1932
4	-0.7	1969	-0.1	1939	0.5	1964	-0.3	1957	-2.2	1952	-1.5	1948	-0.2	1935	-0.3	1957	-0.1	1949	-0.2	1953	-0.7	1936	-0.7	1989
5	-0.5	1937	0.0	1957	0.6	1931	-0.2	1934	-1.0	1939	-1.2	1946	-0.2	1941	-0.1	1955	-0.1	1956	-0.2	1958	-0.7	1933	-0.7	1944
6	-0.4	1959	0.0	1969	0.7	1966	0.0	1933	-0.6	1948	-0.2	1931	-0.1	1952	-0.1	1932	-0.1	1958	-0.1	1930	-0.4	1945	-0.5	1947
7	-0.4	1960	0.1	1937	0.8	1946	0.1	1968	-0.2	1933	0.1	1956	0.0	1961	-0.1	1956	0.0	1967	0.0	1948	-0.1	1937	-0.4	1955
8	-0.4	1936	0.2	1940	0.8	1940	0.1	1939	-0.1	1958	0.2	1958	0.0	1936	0.0	1958	0.2	1953	0.1	1936	0.0	1967	-0.4	1956
9	-0.3	1938	0.2	1931	1.0	2014	0.2	1946	-0.1	1940	0.2	1938	0.1	1938	0.0	1936	0.2	1930	0.1	1935	0.1	1934	-0.3	1934
10	-0.2	1948	0.3	1935	1.1	1957	0.2	1931	0.0	1931	0.3	1930	0.1	1958	0.0	1941	0.3	1971	0.1	1934	0.1	1938	-0.2	1948
11	-0.2	1967	0.3	1967	1.2	1935	0.3	1938	0.2	1941	0.5	1939	0.2	1968	0.1	1971	0.3	1959	0.1	1932	0.1	1939	-0.2	1977
12	-0.2	1957	0.4	1975	1.2	1959	0.5	1956	0.2	1968	0.5	1970	0.2	1931	0.2	1930	0.3	1942	0.1	1933	0.1	1946	-0.2	1958
13	-0.1	1978	0.5	1956	1.4	2006	0.5	1935	0.3	1967	0.6	1934	0.3	1970	0.3	1933	0.3	1952	0.1	1937	0.2	1964	-0.2	1935
14	-0.1	1953	0.5	1977	1.4	1947	0.7	1930	0.4	1957	0.7	1964	0.4	1966	0.3	1967	0.3	1970	0.2	1963	0.2	1968	-0.1	1931
15	0.0	1940	0.6	1933	1.4	2003	0.7	1932	0.4	1961	0.8	1976	0.4	1974	0.3	1976	0.3	1935	0.2	1945	0.2	1966	-0.1	1938
16	0.2	1955	0.7	1950	1.5	2005	0.8	1964	0.4	1935	0.8	1935	0.4	1949	0.4	1934	0.4	1976	0.2	1942	0.3	1980	0.0	1949
17	0.2	1956	0.8	1976	1.5	2002	0.8	1958	0.6	1977	0.9	1966	0.4	1930	0.4	1938	0.4	1948	0.2	1967	0.3	1948	0.0	1961
18	0.2	1968	0.8	2001	1.5	1981	0.8	1940	0.6	1956	0.9	1955	0.5	1956	0.4	1964	0.4	1934	0.2	1939	0.3	1935	0.1	1937
19	0.2	1939	0.8	1989	1.7	1960	0.8	1967	0.7	1936	1.0	1977	0.7	1963	0.4	1968	0.5	1960	0.2	1931	0.3	1951	0.1	1967
20	0.3	1935	0.8	1958	1.7	1976	0.9	1963	0.7	1947	1.1	1968	0.7	1980	0.4	1931	0.5	1966	0.3	1944	0.3	1940	0.2	1970
21	0.3	1975	0.9	1942	1.7	1956	1.0	1977	0.8	1971	1.2	1949	0.7	1964	0.5	1965	0.5	2002	0.3	1955	0.3	1950	0.2	1964
22	0.3	1966	0.9	1960	1.8	2013	1.0	1942	0.9	1955	1.6	1932	0.8	1965	0.5	1952	0.6	1939	0.3	1949	0.4	1944	0.2	1978
23	0.3	1945	0.9	2013	2.1	2015	1.0	2014	1.0	1930	1.7	1937	1.0	1976	0.5	2012	0.6	1940	0.3	1964	0.5	1969	0.2	1966
24	0.3	1962	0.9	1947	2.1	1970	1.4	1954	1.1	1953	1.9	1972	1.2	1960	0.7	1961	0.6	2012	0.3	1966	0.5	1965	0.2	1976
25	0.3	1944	1.0	1954	2.2	1958	1.4	1970	1.1	1966	1.9	1978	1.2	1967	0.8	1959	0.7	1974	0.3	1956	0.5	1978	0.2	1969
26	0.4	1949	1.1	1932	2.2	1974	1.4	1936	1.2	1949	1.9	1941	1.2	1957	0.9	1974	0.8	1968	0.4	1950	0.6	1943	0.2	1939
27	0.4	1958	1.1	1934	2.3	1941	1.5	1941	1.2	1954	2.1	2006	1.3	2006	0.9	1980	0.8	1937	0.5	1970	0.6	1932	0.3	1953
28	0.4	1941	1.1	1978	2.3	1954	1.7	1966	1.2	1963	2.1	1989	1.3	1977	0.9	1960	0.8	1963	0.5	1943	0.7	1976	0.3	1942
29	0.4	1931	1.2	1979	2.4	1977	1.8	2003	1.4	1970	2.4	1940	1.3	1939	0.9	1972	0.9	1945	0.5	1957	0.7	1930	0.3	1930
30	0.5	1932	1.2	2014	2.5	1990	1.8	1976	1.5	1976	2.5	1965	1.4	1959	1.0	1947	0.9	2013	0.6	1960	0.8	1958	0.4	1936
31	0.5	1947	1.2	1964	2.9	1967	1.8	1990	1.6	1946	2.5	1988	1.4	1940	1.0	1935	0.9	1954	0.6	1959	0.9	1974	0.5	1940
32	0.6	1930	1.3	1955	2.9	1955	1.9	1972	1.7	1937	2.5	1961	1.4	2002	1.0	1948	0.9	1957	0.6	1969	0.9	1963	0.5	1945
33	0.6	1943	1.3	2002	3.2	1942	1.9	1981	1.7	1978	2.6	1973	1.5	2012	1.1	1973	0.9	1961	0.6	1951	1.0	1962	0.6	1965
34	0.6	1976	1.4	1972	3.2	1952	2.0	2002	2.1	2014	3.1	1943	1.6	1971	1.1	1966	0.9	1944	0.7	1952	1.0	1931	0.6	1968
35	0.6	1970	1.5	2007	3.2	1980	2.0	1950	2.2	1944	3.5	1974	1.7	1979	1.1	1963	1.0	1932	0.7	2012	1.0	1956	0.8	1946
36	0.7	1979	1.5	1941	3.2	2000	2.1	1971	2.2	1989	3.6	1981	1.7	1950	1.1	2005	1.0	1991	0.8	1971	1.0	1970	0.8	1971
37	0.7	1950	1.5	1951	3.3	1989	2.2	1937	2.3	1980	3.9	1979	2.0	1948	1.2	1939	1.0	2005	0.9	1976	1.0	1941	0.8	1963
38	0.7	1981	1.5	2006	3.3	1937	2.3	1989	2.8	1981	4.0	2002	2.0	1934	1.2	1949	1.1	1950	0.9	1974	1.0	1971	0.8	1974
39	0.7	1961	1.5	1953	3.4	1953	2.5	2004	2.9	1938	4.1	1969	2.1	1973	1.3	1969	1.1	1936	0.9	1941	1.0	1955	0.8	1951
40	0.7	1982	1.6	1944	3.4	1972	2.5	2012	3.1	2000	4.4	2009	2.4	1937	1.4	1954	1.1	2000	1.1	1972	1.1	2006	0.9	1957
41	0.7	1963	1.6	1938	3.4	1939	2.7	1974	3.1	1965	4.4	1960	2.4	1972	1.4	2013	1.2	1980	1.2	1975	1.2	2005	0.9	1959
42	0.7	1934	1.6	1973	3.4	1996	2.7	1961	3.1	1964	4.5	2000	2.4	1989	1.4	2003	1.2	2001	1.2	2013	1.2	2012	1.0	1980
43	0.7	2013	1.6	1981	3.5	2009	2.9	1980	3.2	1932	4.6	2012	2.4	1975	1.5	1977	1.2	1955	1.2	1978	1.3	1953	1.0	2005
44	0.8	1942	1.8	1963	3.5	2012	2.9	2000	3.4	1959	4.6	2005	2.6	1954	1.5	2001	1.2	1931	1.2	1965	1.3	1952	1.0	1952

45	0.9	1974	1.8	2003	3.6	1998	2.9	1978	3.5	1969	4.8	1980	2.7	1953	1.6	1978	1.2	1972	1.2	1938	1.4	1961	1.0	1954
46	1.0	1933	1.9	1990	3.8	1963	3.3	1945	3.5	2012	4.8	1957	2.7	1955	1.6	1950	1.2	1943	1.3	2000	1.4	2001	1.1	1960
47	1.0	2014	1.9	1930	3.9	1975	3.3	2009	3.6	2002	4.9	2007	2.8	2013	1.6	1953	1.2	1977	1.3	1962	1.6	1960	1.1	1981
48	1.1	1977	2.0	1949	4.1	1999	3.3	1953	3.6	2009	4.9	1959	3.0	1988	1.7	2006	1.2	1973	1.4	2003	1.6	2000	1.1	1950
49	1.1	1965	2.1	1962	4.2	1950	3.3	1973	3.7	1973	4.9	2003	3.1	2007	1.8	1975	1.2	1941	1.5	1977	1.6	2002	1.1	1962
50	1.1	1964	2.3	1970	4.3	1988	3.4	2005	3.7	1972	5.0	1950	3.2	2001	2.2	1988	1.4	1964	1.5	1981	1.6	2013	1.3	2012
51	1.3	1946	2.3	2004	4.3	2004	3.6	1955	3.7	1988	5.0	1985	3.3	1981	2.2	1942	1.5	1969	1.5	1980	1.7	1973	1.3	2006
52	1.4	2002	2.3	1974	4.3	1991	3.6	2013	4.3	2004	5.1	1971	3.5	2005	2.3	1940	1.6	2003	1.7	2002	1.7	1959	1.4	1941
53	1.4	2004	2.5	1965	4.4	1932	3.7	2015	4.7	1962	5.2	1963	3.7	1978	2.3	1989	1.7	2006	1.8	2001	1.9	2011	1.6	1983
54	1.5	2003	2.5	2015	4.4	1933	3.8	1947	4.7	1974	5.7	1942	3.9	1991	2.4	2002	1.7	1975	1.9	1968	1.9	1954	1.7	2003
55	1.5	1991	2.7	2012	4.6	1930	4.0	1988	4.8	2003	5.7	1947	3.9	1945	2.4	1991	1.8	2019	1.9	2006	2.0	1957	1.8	1975
56	1.6	2001	2.7	1945	4.7	2001	4.3	1982	4.8	2011	5.9	1992	4.1	1985	2.4	2004	2.0	2009	1.9	1961	2.1	1977	1.9	2002
57	1.7	2007	2.7	1998	4.9	1944	4.9	1994	4.9	1990	6.1	2004	4.2	2000	2.4	1985	2.0	1990	2.0	1991	2.1	1981	2.1	2008
58	1.8	1952	2.8	2010	5.2	2017	5.1	1996	4.9	1942	6.5	1987	4.7	2004	2.5	1943	2.0	1988	2.1	1988	2.4	2003	2.1	1973
59	1.8	1951	2.9	2008	5.4	1992	5.3	1943	5.3	1994	6.5	1982	4.9	1942	2.6	1962	2.1	1965	2.3	1989	2.6	2014	2.2	1990
60	1.8	1998	3.0	2018	5.5	1982	5.7	2011	5.7	1960	6.5	2011	4.9	2017	2.8	2008	2.2	2008	2.3	1954	2.6	1972	2.2	2004
61	1.8	2005	3.0	1961	5.7	1936	5.8	2017	5.9	1998	6.6	2015	5.2	2015	2.8	1981	2.4	1981	2.5	1979	2.7	1989	2.2	1972
62	1.9	2009	3.1	2019	5.8	2011	5.9	2006	6.1	2015	6.6	1962	5.6	1990	3.3	2000	2.7	1998	2.7	1999	2.7	1990	2.3	2013
63	1.9	2006	3.2	1986	5.9	1938	6.4	1997	6.2	2005	6.6	2017	5.8	1943	3.3	1990	2.9	2017	2.7	1990	2.7	1988	2.3	2001
64	2.0	1989	3.2	1946	5.9	1985	6.7	2008	6.3	2006	6.8	1975	6.0	2009	3.5	2009	3.0	1999	2.8	1973	3.1	1985	2.4	1987
65	2.4	2012	3.3	1980	6.1	1969	6.8	1992	6.3	1979	7.4	2001	6.1	1997	3.6	1997	3.0	1995	3.0	2005	3.1	1975	2.5	2007
66	2.5	2008	3.3	1988	6.3	2008	6.8	2018	6.5	2013	7.6	1951	6.2	1951	3.7	2019	3.5	1997	3.3	2011	3.2	1991	2.5	2000
67	2.5	1990	3.6	1993	6.5	1987	6.9	1991	6.5	2010	8.0	1945	6.4	2016	3.8	1979	3.6	1989	3.4	1987	3.3	2004	2.7	1988
68	2.7	1986	3.7	2000	6.6	1995	7.6	2001	6.8	1975	8.2	1953	6.4	1962	3.8	2017	3.8	2007	3.6	2009	3.5	1997	3.1	1997
69	2.8	2015	3.8	1999	6.6	1949	7.8	1962	6.8	1945	9.4	2013	6.6	1969	3.9	1982	3.9	1979	4.0	2008	3.8	2017	3.3	2017
70	2.8	1988	3.9	1987	7.0	2018	8.0	1995	6.9	1996	9.5	1997	6.7	1944	4.1	2016	4.0	1983	4.2	2004	3.9	1999	3.5	1985
71	2.9	2010	4.0	1966	7.4	2007	8.3	1975	7.0	1982	9.5	1986	6.8	2008	4.2	1983	4.0	1978	4.2	1998	3.9	2008	3.5	1979
72	3.0	1995	4.1	1991	7.6	1994	8.4	1949	7.1	1987	9.7	1954	7.0	1995	4.2	2014	4.3	1996	4.2	1983	4.1	1996	3.6	2009
73	3.0	2018	4.1	2005	7.7	1945	8.4	1979	7.2	1992	10.3	1944	7.6	2003	4.5	1995	4.5	1962	4.4	1995	4.1	1995	3.6	1999
74	3.4	1973	4.1	1995	7.8	1965	9.2	1998	8.4	2008	10.5	1994	8.2	1998	4.6	1986	4.5	1951	4.5	2014	4.3	1987	3.8	1991
75	3.5	1993	4.4	1971	8.0	1948	9.3	1985	8.5	1997	10.6	1990	8.4	1986	4.7	2007	4.6	1985	4.7	1994	4.5	1994	3.8	1994
76	3.5	1980	4.5	1992	8.0	1951	9.4	2010	8.9	1951	11.2	1995	8.4	1999	4.7	1945	4.8	1984	4.7	2015	4.7	2019	4.0	2014
77	3.7	1994	4.5	1943	8.1	1978	10.3	1999	9.2	1985	11.4	2016	8.4	1987	5.0	1937	4.8	1994	4.8	1997	4.8	2016	4.1	2011
78	4.0	2000	4.6	1994	8.5	1997	10.4	2007	9.3	1999	11.7	2018	8.5	1947	5.6	1994	4.9	2010	4.8	1984	4.9	2009	4.7	1992
79	4.1	1984	4.7	1948	8.7	1984	10.6	1987	9.3	2018	12.0	1998	8.5	2019	5.7	1998	5.0	1982	4.8	1985	4.9	2010	4.7	1982
80	4.2	1992	4.7	1982	8.8	1971	10.8	2019	9.4	1991	12.6	1999	8.6	1992	5.9	1984	5.0	2004	4.9	1996	5.1	1993	4.9	1998
81	4.2	2011	5.3	1952	8.9	1961	11.1	1960	10.5	2001	12.9	1967	8.8	1982	6.0	1992	5.2	1986	6.3	2010	5.2	2007	4.9	2010
82	4.2	1999	5.4	2017	9.9	2016	11.8	2016	11.3	2019	13.2	1991	9.4	2014	6.2	2018	5.4	1987	6.3	1982	5.7	1983	5.1	1995
83	4.2	1996	5.6	2009	10.3	1973	12.0	1986	11.5	2017	13.2	1996	9.8	1994	6.3	1999	5.7	2014	6.4	2016	6.5	1998	5.3	1993
84	4.4	2019	5.6	1996	11.4	1986	12.8	1951	12.1	1995	13.3	2010	10.2	1984	6.3	1987	6.1	1992	6.4	1993	6.9	1992	5.5	1986
85	4.8	1985	5.8	1985	12.4	1962	14.0	1952	13.1	1993	13.7	2014	11.5	1996	7.6	2015	6.5	2016	7.1	2017	7.0	1979	5.6	1996
86	5.0	2017	6.8	2011	12.9	1993	15.7	1969	14.3	1986	15.9	2019	12.5	2011	9.3	1951	7.4	2015	8.0	2007	7.5	1986	5.6	2016
87	5.3	1987	8.7	1984	15.9	2010	16.2	1965	14.3	1983	17.1	2008	12.7	1983	11.4	1993	7.7	1938	8.2	1986	7.6	1984	6.0	2019
88	5.5	1997	9.3	1983	17.6	1983	16.8	1984	14.5	1984	19.6	1983	13.8	2010	12.4	1996	7.7	2011	9.5	1992	7.7	2018	6.5	2018
89	5.6	1983	9.6	1997	17.9	1979	17.7	1993	14.6	2007	20.4	1993	13.9	2018	14.0	2010	9.4	1993	10.1	2019	7.8	1982	7.2	1984
90	7.9	2016	10.4	2016	22.3	2019	21.6	1983	17.9	2016	26.4	1984	29.3	1993	15.6	2011	11.5	2018	12.4	2018	9.0	2015	15.7	2015

Plate 13. Sioux City to Omaha Ranking of Average Monthly Flows

MRBWM Technical Report - Missouri River Incremental Flows Below Gavins Point, May 2021

Omaha to Nebraska City
Ranking of Average Monthly Flows (kcfs)

Rank	Jan	Year	Feb	Year	Mar	Year	Apr	Year	May	Year	Jun	Year	Jul	Year	Aug	Year	Sep	Year	Oct	Year	Nov	Year	Dec	Year
1	0.1	1937	1.5	1936	3.7	1991	2.3	1990	1.7	1989	2.1	1989	0.4	1976	0.4	1953	0.6	1976	0.9	1991	2.0	1939	0.5	1990
2	0.4	1968	1.7	1978	3.9	1981	2.5	1989	2.2	1934	2.2	1981	0.5	1974	0.4	1934	0.7	1990	1.1	1990	2.4	1975	1.3	1943
3	0.6	1977	2.4	1940	4.0	1996	2.9	1981	2.4	1955	2.4	1988	0.8	1981	0.5	1955	0.7	1991	1.3	1940	2.4	1941	1.4	1945
4	0.8	1936	2.8	1979	4.8	1990	3.1	1942	2.6	1997	2.5	2006	1.0	2002	0.6	1941	0.8	1971	1.7	2003	2.6	1988	1.5	1955
5	1.3	1940	3.1	1939	4.8	1956	3.4	1955	3.0	1981	2.6	1948	1.0	1936	0.7	1930	1.1	1940	1.7	1939	2.6	1937	1.6	1989
6	1.5	1991	3.5	1981	4.8	1967	3.5	1982	3.1	1967	3.0	1976	1.3	1940	0.7	1936	1.1	1980	1.7	1989	2.6	1936	1.7	1963
7	1.6	1957	3.5	1990	5.0	1977	3.7	1940	3.1	1941	3.0	1936	1.4	1934	0.9	1931	1.1	1939	1.7	1974	2.6	1950	1.8	1956
8	1.6	1979	3.6	1938	5.0	1943	3.8	1948	3.2	1990	3.2	1956	1.5	1988	1.2	1981	1.1	2012	1.7	1936	2.7	1978	1.8	1940
9	1.9	1935	3.8	1975	5.1	1957	3.8	1956	3.6	2000	3.2	1934	1.5	1954	1.3	1935	1.1	1953	1.8	1975	2.7	1956	1.8	1932
10	2.3	1951	3.8	1957	5.2	2005	3.8	1991	3.6	1940	3.5	1992	1.5	1975	1.3	1971	1.2	1955	1.9	1980	2.7	2003	1.9	1944
11	2.4	1941	3.9	1989	5.2	1941	4.0	1967	3.6	1994	3.6	2000	1.6	2006	1.3	1979	1.2	1956	2.2	1956	2.7	1940	1.9	1934
12	2.4	1970	4.0	1992	5.6	2014	4.1	1992	3.7	1946	4.0	1939	1.6	2012	1.4	2001	1.3	1974	2.2	1937	2.7	1976	2.1	1939
13	2.4	1971	4.2	1937	5.6	1968	4.2	1996	3.8	1956	4.0	2002	1.7	1980	1.4	1970	1.3	1988	2.2	1978	2.9	1980	2.2	1936
14	2.5	1948	4.4	1956	5.6	2003	4.3	1943	3.8	1939	4.1	1972	2.0	1941	1.5	1962	1.4	2000	2.2	1943	3.0	1943	2.3	1985
15	2.5	2003	4.4	1955	5.7	2006	4.3	1946	3.8	1943	4.2	1931	2.1	1955	1.6	1933	1.5	1975	2.3	1994	3.0	1955	2.7	1950
16	2.6	1969	4.5	1933	5.7	1992	4.5	2004	3.9	2006	4.3	1933	2.3	1939	1.7	1967	1.5	2004	2.3	2012	3.0	1944	2.8	1937
17	2.6	1982	4.5	2006	5.8	1935	4.5	2000	3.9	1948	4.5	1968	2.4	1991	1.8	2006	1.5	1947	2.3	1976	3.0	1948	2.8	1958
18	2.6	1975	4.6	1942	5.8	2013	4.5	1937	3.9	1992	4.7	1974	2.5	1956	1.8	1978	1.6	2005	2.5	1988	3.2	1991	2.9	2000
19	2.6	1967	4.6	2004	5.9	2000	4.5	1936	4.1	1968	4.7	1979	2.5	1970	1.9	1972	1.7	2002	2.5	1953	3.2	1989	2.9	1980
20	2.7	1963	4.8	1944	6.0	1976	4.5	1941	4.4	1975	4.8	1970	2.6	1987	1.9	1947	1.9	2003	2.5	1944	3.2	1945	3.0	2003
21	2.7	1978	4.9	1951	6.1	1934	4.8	1935	4.4	1937	5.0	1994	2.6	1968	1.9	1943	1.9	1969	2.5	1942	3.2	1938	3.1	1935
22	2.7	2004	5.0	2013	6.1	2002	4.8	1938	4.7	1991	5.0	1941	2.6	1963	1.9	1976	2.0	2013	2.6	1947	3.3	1952	3.1	1976
23	2.8	1942	5.0	1941	6.3	1970	4.9	2002	4.9	1966	5.0	1938	2.6	1931	2.0	2012	2.0	1994	2.7	1935	3.4	1966	3.1	1942
24	2.9	1950	5.1	1967	6.4	1964	5.0	1934	5.0	1963	5.1	2012	2.7	1946	2.0	1938	2.0	1979	2.7	1938	3.4	1990	3.2	1991
25	2.9	1956	5.1	1965	6.6	1946	5.2	1968	5.1	1988	5.2	1977	2.7	1997	2.1	1949	2.0	1954	2.7	1995	3.5	1934	3.2	1974
26	2.9	1960	5.3	1969	6.8	2015	5.2	1976	5.3	1947	5.3	2003	2.8	1966	2.1	2002	2.1	1945	2.7	1997	3.5	1999	3.4	1949
27	2.9	1992	5.3	1977	6.9	1942	5.2	2003	5.4	1932	5.4	1958	2.8	1977	2.1	1937	2.2	1978	2.7	1996	3.6	1995	3.5	1966
28	3.0	1954	5.3	1991	7.0	1999	5.3	1988	5.5	1936	5.5	1997	3.1	2013	2.2	1957	2.2	1967	2.8	1948	3.6	1964	3.5	2012
29	3.1	1955	5.4	2003	7.0	1954	5.4	1972	5.6	1970	5.6	1955	3.1	2003	2.2	1980	2.3	1981	2.8	1992	3.6	2005	3.6	2013
30	3.1	1988	5.4	1964	7.1	1940	5.4	1997	5.9	1976	5.8	1937	3.2	1989	2.2	1963	2.4	1950	2.8	1934	3.6	1974	3.6	1996
31	3.1	1958	5.5	2014	7.3	1930	5.6	1957	6.0	2009	6.0	1966	3.4	1985	2.3	1968	2.4	1936	2.8	1941	3.7	1994	3.6	1988
32	3.1	1990	5.6	1985	7.4	1995	5.7	2014	6.2	2002	6.1	1978	3.5	2000	2.4	1964	2.4	1937	2.9	1958	3.7	2012	3.6	1975
33	3.2	1972	5.6	1980	7.6	1989	5.7	1994	6.5	1958	6.8	1975	3.6	1961	2.5	1946	2.5	1943	2.9	1979	3.7	1987	3.7	1954
34	3.2	1980	5.7	1961	7.7	2009	5.8	1939	6.6	1969	6.8	1950	3.6	1992	2.5	1939	2.5	1970	2.9	2005	3.8	2002	3.7	1960
35	3.2	1997	5.7	1958	7.7	1975	6.6	1977	6.9	1931	6.9	2004	3.9	2005	2.5	1966	2.5	1968	2.9	1971	3.9	2006	3.7	1962
36	3.3	1930	5.8	1993	7.8	1931	6.6	1954	7.2	2014	6.9	1985	4.0	1953	2.6	2013	2.7	1995	3.0	2004	3.9	1931	3.7	1978
37	3.3	1947	5.9	1963	7.9	1997	6.7	1975	7.4	1957	7.2	1969	4.1	1972	2.6	1961	2.8	1934	3.0	1931	3.9	1953	3.8	1941
38	3.3	1943	5.9	1934	7.9	1988	6.7	1963	7.5	1961	7.5	1986	4.1	2007	2.6	1965	2.8	1999	3.1	2002	4.0	1942	3.9	1967
39	3.4	1993	6.0	1972	8.1	1947	7.0	1947	7.6	1977	7.6	1959	4.2	1990	2.7	1988	2.9	1959	3.1	1999	4.2	1954	3.9	2002
40	3.4	1961	6.0	1949	8.4	2004	7.0	2005	7.7	1954	7.7	1963	4.2	1937	2.8	2003	3.0	1941	3.1	1966	4.2	2004	3.9	1995
41	3.5	1996	6.0	2001	8.4	2012	7.1	1966	7.7	1938	8.0	1946	4.4	1932	3.0	1983	3.0	1931	3.2	1955	4.3	1983	3.9	1992
42	3.5	1959	6.0	1947	8.5	1972	7.2	1961	7.8	2012	8.1	1940	4.4	1996	3.1	1984	3.0	1944	3.3	1945	4.3	1967	3.9	2005
43	3.5	1994	6.2	2002	8.6	1961	7.2	1932	8.0	2004	8.4	2001	4.7	2017	3.1	1942	3.1	1946	3.4	1964	4.3	1963	3.9	2004
44	3.5	2005	6.2	1945	8.7	1938	7.3	1964	8.1	1979	9.0	1961	4.9	1959	3.1	1974	3.2	1998	3.4	1933	4.3	1957	3.9	1938

45	3.6	1981	6.2	1996	8.7	1955	7.3	2013	8.2	2013	9.2	2013	5.0	1948	3.2	2000	3.2	1961	3.5	1981	4.4	1935	4.0	1968
46	3.7	1964	6.3	2008	8.7	1939	7.4	1971	8.2	2005	9.4	1993	5.1	1978	3.2	1956	3.3	1966	3.5	1963	4.4	1997	4.1	1964
47	3.7	1932	6.3	1935	8.8	1944	7.5	1953	8.4	1964	9.6	1953	5.2	1935	3.3	1989	3.4	1935	3.6	1987	4.4	1933	4.1	1961
48	3.7	1949	6.4	1960	9.2	2017	7.8	1933	8.4	1986	9.9	1987	5.2	2001	3.3	1948	3.6	1952	3.6	2000	4.5	1981	4.2	1982
49	3.7	1944	6.4	1995	9.2	1982	7.9	2006	9.0	1978	10.0	1990	5.2	1933	3.4	2005	3.7	1932	3.6	1954	4.5	1949	4.2	1970
50	3.8	1965	6.6	1994	9.4	1998	8.0	2009	9.1	2003	10.7	1954	5.3	1964	3.5	1945	3.7	1997	3.7	1967	4.6	1992	4.2	1994
51	3.8	1939	6.6	1946	9.4	1933	8.0	1979	9.3	1962	10.8	2005	5.6	1979	3.5	1991	3.7	1963	3.8	2006	4.7	1985	4.3	1948
52	3.9	1962	6.6	1950	9.5	1966	8.1	2015	9.4	1993	11.0	1991	5.7	2009	3.6	1985	3.9	1957	4.0	1972	4.8	1947	4.4	2008
53	3.9	2013	6.7	2000	9.6	1980	8.1	2012	9.6	1942	11.0	2017	5.7	1938	3.7	1977	4.0	2008	4.0	1952	4.8	1971	4.5	1959
54	4.0	1966	6.7	1959	9.8	2016	8.2	1970	9.7	2018	11.3	2009	6.3	1971	3.7	2009	4.0	1992	4.1	1949	4.8	1932	4.7	2009
55	4.0	1938	6.7	1962	10.2	1958	8.2	1931	9.7	1974	12.2	1930	6.4	2004	3.7	1986	4.0	1984	4.2	2001	4.9	1982	4.7	2006
56	4.0	1946	7.0	1948	10.2	2008	8.3	1950	9.8	2010	12.9	1980	6.4	1930	3.9	1940	4.2	2001	4.3	1950	4.9	1958	4.7	1971
57	4.1	1985	7.2	1976	10.4	1959	8.6	1959	9.9	1945	13.1	1952	6.5	1952	4.7	2017	4.3	1996	4.4	1957	4.9	1969	4.8	1953
58	4.1	2014	7.4	1986	10.5	1945	8.6	1985	10.0	1998	13.4	2018	6.5	1942	4.7	1944	4.3	1958	4.6	1932	4.9	2014	4.8	1957
59	4.1	1945	7.4	1968	10.5	1953	8.8	1930	10.0	1980	13.5	1965	6.6	1995	4.7	1960	4.3	1985	4.6	1959	5.0	2001	4.9	1999
60	4.2	2000	7.5	1988	10.6	1985	9.5	2018	10.5	1933	13.7	1942	6.8	1957	4.8	1959	4.4	2006	4.7	1977	5.1	1959	5.0	1952
61	4.2	1989	7.6	1997	10.6	2011	9.6	1993	10.6	1949	13.9	2007	6.8	1982	4.9	2008	4.4	1949	4.7	1960	5.2	1996	5.1	1947
62	4.2	1995	7.7	1953	10.9	1974	9.6	1951	11.3	1996	14.0	1932	6.9	1960	5.0	1975	4.4	1948	5.1	1998	5.3	1979	5.1	1981
63	4.3	2007	7.9	1954	11.2	1994	9.7	1945	11.4	1953	14.2	1957	7.0	1944	5.4	1932	4.4	1964	5.2	1970	5.3	2013	5.2	1979
64	4.5	1934	8.0	2010	11.2	1986	9.7	2008	11.9	1935	14.5	1996	7.0	1973	5.7	2004	4.6	1982	5.2	1961	5.3	1960	5.2	1969
65	4.5	1976	8.4	1970	11.4	1937	9.8	2017	11.9	1985	14.5	1943	7.4	1994	5.7	1958	4.6	1962	5.3	1962	5.3	1962	5.3	1933
66	5.0	1998	8.4	2018	11.6	1960	9.9	1995	11.9	1952	14.8	2011	7.5	1943	5.7	1969	4.6	1960	5.4	1969	5.4	1970	5.3	1951
67	5.0	2006	8.4	1987	12.4	2007	9.9	2010	12.4	1950	15.1	1999	7.7	1969	6.0	2018	4.8	2009	5.5	1985	5.5	2000	5.7	2001
68	5.1	2001	8.5	1982	12.6	1983	10.2	1980	12.6	1972	15.1	1949	8.5	1962	6.2	1994	4.9	1987	5.7	1968	6.0	1968	5.7	1946
69	5.2	2018	8.5	2005	12.8	1963	10.7	1958	13.6	1965	15.3	1971	8.5	1967	6.2	1992	5.0	1972	6.6	2010	6.0	1961	5.8	1972
70	5.5	2008	8.6	2007	13.4	2018	11.0	1974	13.7	1999	15.4	1960	8.6	2014	6.2	1997	5.1	1933	6.9	2009	6.3	1993	5.8	1931
71	5.6	2002	8.6	1966	13.5	1950	11.0	2019	14.1	1987	16.3	1964	8.8	1949	6.5	2019	5.6	2017	7.0	1983	6.9	1977	6.0	1977
72	5.6	1986	8.8	2012	13.5	1965	11.1	1986	14.2	2008	16.7	1998	9.1	1999	6.7	1995	6.1	1938	7.0	2015	6.9	1946	6.0	1997
73	5.8	1931	9.0	1931	14.1	2001	11.2	1949	14.6	1951	16.7	1982	10.1	1945	6.9	2014	6.4	1989	7.0	1984	6.9	1984	6.1	2017
74	5.9	1999	9.1	1932	14.1	1952	11.7	1969	14.7	2015	16.8	1962	10.2	2008	7.0	1954	6.5	2007	7.1	1993	7.0	2017	6.1	1998
75	5.9	2011	9.2	1999	15.0	1971	11.9	1965	14.7	2001	16.8	2014	10.2	1965	7.1	2016	6.7	2011	7.2	1982	7.0	2007	6.3	1987
76	5.9	2009	9.3	1943	15.1	1932	12.1	1962	14.9	1982	17.1	1973	10.3	1984	7.1	1973	6.9	1942	7.6	2014	7.3	1998	6.4	1973
77	6.0	2015	9.4	1998	16.0	1951	12.9	2001	14.9	2011	18.0	2016	10.3	2015	7.3	2007	7.1	1973	7.9	2013	7.4	1951	6.7	2007
78	6.0	1933	9.4	2015	16.9	1936	13.0	1952	15.2	1971	18.2	2019	10.6	2016	7.4	1950	7.2	1930	8.1	2016	7.5	1965	6.8	1965
79	6.1	1953	9.8	2019	17.2	1984	13.3	1999	15.5	1959	18.9	1995	10.6	1986	7.6	1982	7.3	1977	8.2	1951	7.7	1972	6.9	2016
80	6.5	1983	10.6	2009	17.4	1962	13.3	2007	16.2	1995	19.7	1945	11.1	1998	8.0	2010	7.8	1983	8.5	1930	7.7	2016	6.9	2010
81	6.6	1987	11.0	2017	17.7	1948	13.6	2011	16.4	1973	22.8	1951	11.9	1950	8.2	1998	8.2	2014	8.6	2018	7.8	2011	6.9	1993
82	6.8	1984	12.2	1973	17.8	1973	13.9	1944	16.8	1960	23.2	1935	12.2	1951	8.4	1990	8.4	2010	8.7	2008	8.1	2010	6.9	2011
83	6.8	1952	12.3	2011	17.8	1969	14.6	1973	17.1	2007	24.1	1944	12.3	2018	8.5	2015	8.8	1986	9.2	2011	8.2	2018	7.0	1930
84	6.8	2012	12.4	1983	19.3	2010	14.7	2016	17.4	1944	25.0	2015	12.6	1947	8.6	1999	8.9	1951	9.7	1946	8.4	1986	7.3	2014
85	6.9	2010	12.7	1930	20.9	1979	14.9	1998	17.7	1983	26.7	1983	13.8	1958	8.7	1952	8.9	2015	11.0	2007	8.4	2015	7.3	1983
86	7.6	1974	12.9	1952	21.6	1987	16.1	1978	18.2	2019	33.0	1947	14.4	2011	9.1	1987	9.7	2016	11.7	1965	8.5	2009	9.4	1986
87	8.5	2016	13.5	1974	21.6	1978	17.9	1983	18.3	2017	33.3	2008	14.9	2019	9.3	1951	9.7	1993	13.0	2017	9.2	2008	10.3	1984
88	9.1	2017	14.1	2016	22.0	1993	21.1	1987	21.9	1930	38.9	1967	19.4	1983	10.8	1996	10.5	2018	13.9	1986	9.4	1930	14.1	2015
89	9.7	1973	14.3	1971	30.0	1949	26.1	1960	28.9	2016	42.4	1984	21.8	2010	13.2	2011	13.3	1965	13.9	2019	9.5	1973	14.1	2018
90	13.4	2019	16.5	1984	45.4	2019	35.0	1984	35.3	1984	46.1	2010	37.8	1993	16.0	1993	13.3	2019	15.6	1973	11.3	2019	14.4	2019

Plate 14. Omaha to Nebraska City Ranking of Average Monthly Flows

MRBWM Technical Report - Missouri River Incremental Flows Below Gavins Point, May 2021

Nebraska City to Rulo
Ranking of Average Monthly Flows (kcfs)

Rank	Jan	Year	Feb	Year	Mar	Year	Apr	Year	May	Year	Jun	Year	Jul	Year	Aug	Year	Sep	Year	Oct	Year	Nov	Year	Dec	Year
1	-0.6	1959	-0.1	1947	-1.2	1954	-1.5	1954	-1.5	1953	-0.7	1953	-1.0	1953	-0.8	1953	-0.2	1955	-0.4	1953	-0.1	1942	-0.9	1951
2	-0.2	1953	0.1	1956	-0.5	1953	0.0	1934	-0.7	1954	-0.3	1937	-0.1	1977	0.1	1934	0.1	1943	-0.3	1955	0.0	1953	-0.5	1955
3	-0.1	1939	0.1	1934	-0.2	1938	0.0	1935	-0.4	2011	-0.1	1956	0.1	1930	0.1	1955	0.2	2003	0.0	1937	0.0	1939	-0.3	1945
4	0.0	1938	0.1	1964	-0.2	1943	0.1	1949	-0.3	1939	-0.1	1948	0.3	1970	0.1	1941	0.2	1948	0.0	1948	0.0	1933	-0.1	1978
5	0.0	1940	0.1	1940	-0.1	1933	0.1	1940	-0.3	1956	-0.1	1977	0.4	1941	0.1	1930	0.3	1980	0.1	1939	0.1	1936	-0.1	1936
6	0.0	1937	0.2	1938	-0.1	1981	0.2	1957	0.0	1934	0.1	1933	0.4	1934	0.2	1936	0.3	2012	0.1	1940	0.1	1937	-0.1	1937
7	0.1	1948	0.2	1972	0.1	1931	0.2	1930	0.2	1931	0.2	1968	0.4	1936	0.3	1931	0.4	1935	0.1	1943	0.2	1938	0.0	1943
8	0.1	1944	0.2	1931	0.1	1957	0.3	1939	0.2	1933	0.3	1934	0.5	1933	0.3	1981	0.4	1934	0.1	1956	0.2	1980	0.0	1984
9	0.1	1931	0.3	1933	0.1	1934	0.3	1956	0.2	1940	0.3	1940	0.5	1980	0.3	1935	0.4	1939	0.2	1930	0.2	1930	0.1	1938
10	0.1	1969	0.3	1935	0.1	1967	0.3	1950	0.4	1981	0.4	1938	0.6	1963	0.4	1971	0.4	1940	0.2	1933	0.3	1943	0.1	1939
11	0.2	1936	0.3	2006	0.1	1956	0.4	1953	0.5	1980	0.6	1954	0.6	1938	0.5	1979	0.4	2004	0.2	1935	0.3	2012	0.1	1935
12	0.2	1979	0.3	1979	0.3	1947	0.4	1981	0.5	1949	0.9	1970	0.6	1981	0.5	2001	0.5	1945	0.3	1980	0.3	1976	0.2	1940
13	0.2	1930	0.4	1941	0.3	1941	0.4	1931	0.6	1941	1.0	2002	0.7	2006	0.5	1970	0.5	1933	0.3	1971	0.4	1940	0.2	1934
14	0.2	1935	0.4	1959	0.3	2006	0.5	2006	0.7	2014	1.1	1971	0.8	2002	0.5	1962	0.5	1937	0.3	1938	0.4	1944	0.2	1980
15	0.2	1941	0.4	1978	0.4	2003	0.5	2014	0.8	1989	1.2	1930	0.8	1940	0.5	1933	0.5	1970	0.4	1932	0.4	1934	0.2	1944
16	0.2	1955	0.5	1939	0.4	1964	0.6	1941	0.8	1948	1.2	1958	0.8	1954	0.5	1967	0.5	1947	0.4	1947	0.5	1945	0.3	1930
17	0.2	1954	0.5	1981	0.4	1960	0.6	1937	0.8	1967	1.2	1981	0.8	1943	0.6	2006	0.5	1930	0.4	1936	0.5	2001	0.3	1963
18	0.3	1934	0.5	1936	0.6	1930	0.6	1936	0.9	1935	1.2	2006	0.9	1955	0.6	1978	0.6	1971	0.4	1934	0.5	1954	0.3	1933
19	0.3	1971	0.5	1954	0.6	1935	0.6	1948	1.0	1968	1.2	1931	0.9	1937	0.6	1972	0.6	2002	0.4	1978	0.5	1978	0.3	1954
20	0.3	1964	0.5	1957	0.6	1940	0.7	1967	1.0	1930	1.3	1944	0.9	1971	0.7	1947	0.6	1968	0.5	1942	0.5	1932	0.3	1964
21	0.3	1946	0.6	2014	0.6	1966	0.8	1942	1.0	1958	1.4	1985	0.9	2012	0.7	1943	0.6	2013	0.5	2000	0.6	2005	0.4	1948
22	0.4	1961	0.6	1989	0.7	2013	0.8	1958	1.1	1937	1.4	1936	0.9	1946	0.7	1976	0.6	1976	0.5	2012	0.6	1935	0.4	1976
23	0.4	1970	0.6	1977	0.7	2014	0.8	2002	1.1	1977	1.5	1988	1.0	2003	0.8	2012	0.6	1950	0.6	2003	0.6	2013	0.4	1950
24	0.4	1958	0.7	1967	0.8	1972	0.8	1933	1.1	1965	1.6	1979	1.0	1966	0.8	1938	0.6	1966	0.6	1963	0.6	1964	0.4	1967
25	0.4	1947	0.8	1975	0.8	1944	0.8	1968	1.1	1936	1.6	1955	1.0	1931	0.8	1949	0.7	1956	0.7	1945	0.7	1985	0.5	2005
26	0.4	1976	0.8	2003	0.8	2005	0.8	1955	1.1	1946	1.7	1978	1.0	1985	0.9	2002	0.7	2005	0.7	1966	0.7	1968	0.5	1953
27	0.4	1967	0.8	1950	0.9	2002	0.9	1938	1.2	1932	1.7	1939	1.0	1968	0.9	1937	0.7	1967	0.7	1976	0.7	2004	0.5	1932
28	0.4	1968	0.8	1951	0.9	1955	0.9	1943	1.2	1966	2.1	1932	1.1	1948	0.9	1957	0.8	1953	0.7	1982	0.8	1966	0.5	1947
29	0.4	1963	0.8	2004	0.9	1986	0.9	1972	1.2	1943	2.2	1966	1.1	1935	0.9	1980	0.8	1974	0.7	1975	0.8	2006	0.6	1946
30	0.5	1989	0.9	1980	1.0	1968	0.9	1971	1.3	1957	2.2	1946	1.2	1976	0.9	1963	0.9	1942	0.8	1964	0.8	1963	0.6	1960
31	0.5	1981	0.9	1963	1.3	2011	1.0	2003	1.3	2000	2.4	1963	1.3	1957	0.9	1968	0.9	2009	0.8	2002	0.8	1970	0.6	1989
32	0.5	2003	0.9	1948	1.3	1976	1.0	1977	1.4	1938	2.4	1980	1.4	1942	0.9	1964	0.9	1938	0.9	2001	0.9	1955	0.6	2013
33	0.6	1984	0.9	1942	1.4	1985	1.1	1963	1.4	2002	2.6	1961	1.5	1974	1.0	1946	0.9	1991	0.9	1983	0.9	1967	0.6	1983
34	0.6	1943	0.9	1955	1.4	1932	1.2	1966	1.5	1970	2.8	2012	1.5	1956	1.0	1939	0.9	2006	0.9	1944	0.9	1981	0.7	2004
35	0.6	1957	1.0	2015	1.5	2015	1.2	1946	1.6	2006	2.8	1941	1.5	1939	1.0	1966	0.9	1984	0.9	1970	0.9	2002	0.7	2006
36	0.6	1977	1.0	2013	1.6	2012	1.3	1932	1.6	1947	2.8	1935	1.6	1944	1.1	2013	1.0	2017	0.9	1931	1.0	1975	0.7	1942
37	0.6	1962	1.0	1930	1.6	1937	1.4	2018	1.6	1955	2.8	1976	1.7	1932	1.2	1961	1.0	2000	1.0	2004	1.0	1947	0.7	2002
38	0.6	1956	1.1	1960	1.6	1958	1.4	2011	1.8	1963	2.8	1992	1.9	1961	1.2	1965	1.0	1931	1.0	1960	1.0	1965	0.7	1958
39	0.6	1949	1.1	1943	1.6	1977	1.6	1989	1.9	1992	2.9	1942	1.9	1945	1.2	1988	1.1	1981	1.0	1946	1.0	1948	0.8	1990
40	0.7	2013	1.1	1968	1.8	1950	1.6	1951	2.0	2018	2.9	1969	1.9	2007	1.2	2003	1.1	1963	1.0	1969	1.1	1950	0.8	1968
41	0.7	1986	1.2	2002	2.0	2000	1.7	2001	2.1	1961	3.1	2005	2.0	1988	1.3	1983	1.2	1982	1.0	1991	1.1	2011	0.8	1977
42	0.7	1965	1.2	1987	2.0	1980	1.8	2000	2.2	1942	3.1	1986	2.0	1972	1.3	1984	1.2	1932	1.1	1979	1.1	1960	0.8	1965
43	0.7	2006	1.3	1970	2.0	1942	1.8	1970	2.2	1971	3.1	1957	2.0	1960	1.3	1942	1.2	1983	1.1	2006	1.1	1956	0.8	1966
44	0.7	1951	1.3	1965	2.1	2009	1.9	1988	2.3	1964	3.1	1989	2.1	1979	1.4	1974	1.2	1936	1.1	1984	1.1	1979	0.8	1974

45	0.7	1966	1.3	1945	2.2	1989	2.2	1985	2.5	1979	3.1	2000	2.1	2005	1.4	2000	1.2	1985	1.1	2005	1.2	1946	0.8	1962
46	0.7	1982	1.3	1976	2.4	1946	2.2	1959	2.6	2012	3.2	2003	2.2	1991	1.4	1956	1.2	1990	1.2	2013	1.2	2000	0.9	2001
47	0.8	2001	1.4	1946	2.4	1959	2.2	1944	2.8	1976	3.2	1950	2.3	1989	1.4	1989	1.3	1954	1.2	1985	1.3	1971	0.9	2012
48	0.8	2005	1.4	2007	2.5	1990	2.3	1964	2.9	1990	3.4	1960	2.3	1975	1.5	1948	1.3	1949	1.3	1965	1.3	1962	0.9	1941
49	0.8	2012	1.5	2018	2.5	1975	2.3	1976	2.9	1988	3.5	1972	2.6	1949	1.5	2005	1.3	1964	1.3	1949	1.3	1958	0.9	1956
50	0.8	1933	1.5	1944	2.5	1939	2.4	2015	3.0	1985	3.7	2018	2.6	2000	1.6	1945	1.4	1957	1.3	1981	1.4	1984	1.0	1949
51	0.9	2004	1.6	2005	2.6	1951	2.4	2005	3.0	1994	3.9	1975	2.7	1967	1.6	1991	1.4	1969	1.4	1990	1.4	1990	1.0	1969
52	0.9	1978	1.6	1990	2.6	1945	2.4	1982	3.2	1975	3.9	1945	2.8	2013	1.7	1985	1.5	2001	1.4	1967	1.4	1959	1.0	1979
53	0.9	1950	1.6	1999	2.7	1970	2.4	2009	3.3	2003	4.2	1965	2.8	1982	1.7	1977	1.5	1988	1.4	1974	1.4	1991	1.1	1985
54	1.0	2014	1.6	1937	2.7	2017	2.5	2004	3.4	2009	4.3	1959	3.0	2004	1.7	2009	1.5	1979	1.4	1962	1.4	1988	1.1	1957
55	1.0	2011	1.7	1949	2.8	1988	2.5	1986	3.5	1972	4.4	2004	3.1	1951	1.8	1986	1.6	1944	1.4	1989	1.4	1949	1.1	1975
56	1.0	1945	1.8	2012	2.8	1936	2.6	1947	4.3	1944	4.4	1943	3.1	2001	1.9	1940	1.7	2008	1.5	1954	1.5	1974	1.1	1988
57	1.1	1991	1.8	1985	2.9	2004	2.6	1980	4.5	1960	4.9	2017	3.2	1983	1.9	2017	1.8	1941	1.5	2009	1.5	2003	1.1	1961
58	1.1	1972	1.9	1966	2.9	2018	2.7	1990	4.8	2001	5.0	1974	3.6	1950	2.0	1944	2.0	1995	1.6	1957	1.7	1989	1.3	2003
59	1.1	1942	1.9	1986	3.0	1991	2.7	1979	4.9	2005	5.0	2011	3.6	1947	2.0	1960	2.1	2007	1.7	1988	1.7	1969	1.3	2000
60	1.2	1985	1.9	2000	3.2	1995	3.1	2013	5.4	1952	5.0	2007	3.6	1964	2.1	1959	2.1	1960	1.8	1972	1.7	1957	1.3	2017
61	1.2	1990	1.9	2011	3.3	1948	3.1	2019	5.6	1978	5.2	1997	3.7	1959	2.2	2008	2.1	1959	1.9	1968	2.0	1994	1.3	1971
62	1.2	1980	2.0	2017	3.4	2008	3.2	1965	5.7	1962	5.4	2016	3.8	2009	2.3	1975	2.2	1994	1.9	1958	2.1	1983	1.3	2010
63	1.3	2018	2.0	1953	3.6	1949	3.4	1961	6.1	1991	5.4	2009	3.8	1962	2.4	1932	2.3	2019	2.1	1952	2.1	2008	1.4	1959
64	1.4	2002	2.0	2008	3.7	2007	3.4	1994	6.2	1945	5.7	1982	3.9	2017	2.4	2004	2.3	1962	2.3	1987	2.2	2017	1.5	1970
65	1.4	1983	2.0	2010	3.8	1997	3.6	1992	6.2	2013	5.9	1962	4.3	1978	2.5	1958	2.7	1946	2.4	1977	2.2	1941	1.5	1991
66	1.4	1975	2.1	2009	3.9	1984	3.7	1962	6.2	1969	6.0	1952	4.5	1997	2.5	1969	3.1	1997	2.5	1959	2.2	1982	1.6	1995
67	1.4	1952	2.4	1991	3.9	1983	3.8	1945	6.3	1983	6.4	1994	4.9	2016	2.7	2018	3.2	1975	2.7	1994	2.3	1931	1.6	1952
68	1.5	1987	2.4	2019	4.1	2016	4.0	1991	6.4	1959	6.5	1991	5.2	1969	2.9	1994	3.6	1999	2.8	1998	2.5	2019	1.8	1981
69	1.6	2007	2.4	1961	4.1	1961	4.6	1987	6.5	1986	6.7	1983	5.3	1990	3.0	1992	3.7	1998	2.8	2010	2.5	1986	2.0	2009
70	1.6	2015	2.5	1958	4.2	1996	4.8	1974	6.9	1997	6.8	1949	5.5	1995	3.3	1997	3.7	1986	2.9	2008	2.6	2010	2.1	1931
71	2.0	2009	2.7	1992	4.3	1982	4.9	2012	7.0	1987	6.9	2014	5.6	1952	3.7	2019	3.9	1978	2.9	1961	2.6	1961	2.1	2011
72	2.0	1993	2.8	1932	4.3	1999	4.9	1996	7.1	2008	7.1	1990	5.9	1994	3.8	1995	3.9	2010	3.1	1995	2.7	2009	2.3	2007
73	2.1	1999	2.9	1988	4.3	1992	4.9	2017	7.6	2004	7.3	2013	6.1	2008	4.0	2014	4.0	1961	3.1	1950	2.8	2016	2.5	2008
74	2.2	1995	2.9	1984	4.3	1952	5.2	2008	7.6	1974	7.5	1964	6.1	2014	4.0	1954	4.0	1952	3.2	1941	2.9	1995	2.5	2016
75	2.5	2008	3.0	1969	4.9	1994	5.3	2016	7.7	2010	7.7	1987	6.2	2018	4.1	2016	4.1	1965	3.3	1992	3.2	2007	2.6	1972
76	2.5	2000	3.0	1971	4.9	1971	5.4	1975	8.1	1998	7.9	1973	6.3	1965	4.4	1973	4.4	2015	3.3	1997	3.3	1977	2.6	1994
77	2.7	1992	3.1	1995	5.1	1987	5.6	2007	8.4	2015	7.9	1995	6.7	2019	4.4	2007	4.6	1992	3.4	2011	3.4	1987	2.6	1986
78	2.7	2017	3.1	2001	5.5	1963	5.8	2010	8.8	1982	8.9	1967	7.1	2015	4.6	1950	5.2	2016	3.4	2015	3.6	1998	3.0	1998
79	2.7	2010	3.4	1952	5.6	1974	6.0	1995	8.8	1984	9.2	2001	7.3	1984	4.6	1982	5.5	1996	4.1	2017	3.6	2014	3.1	2014
80	2.7	1996	3.9	1974	5.9	1962	6.5	1978	9.9	1973	10.4	1947	7.4	1987	4.7	2010	5.7	1958	4.2	1999	3.8	1952	3.4	1982
81	2.8	1994	4.0	1962	6.1	1965	6.8	1969	10.3	2017	10.5	1996	7.7	1992	4.9	1998	5.7	1972	5.6	1951	3.8	1972	3.6	1999
82	2.8	1960	4.1	1996	6.9	2001	7.0	1983	10.9	1950	10.9	1993	7.7	1996	5.0	1990	5.9	1973	6.2	1996	4.0	1951	3.7	1987
83	3.0	1932	4.3	1983	7.1	1969	7.4	1997	11.0	1951	11.6	1951	7.8	1986	5.4	2015	6.2	1987	6.3	2016	4.0	1992	4.0	1992
84	3.1	1988	4.6	2016	7.2	1998	7.6	1984	11.4	2019	11.9	2015	8.4	1958	5.4	1999	6.3	1977	7.3	1993	4.0	2015	4.3	2019
85	3.3	2019	5.2	1993	7.6	1978	7.8	1952	11.8	1996	11.9	2010	8.9	1973	6.7	1952	6.5	2018	7.4	2014	4.4	1999	4.9	1993
86	3.7	1998	5.5	1994	9.7	1993	8.7	1960	14.3	1999	13.9	1999	8.9	2011	6.8	1987	7.0	2011	7.5	2007	4.5	1997	5.6	1973
87	4.6	1997	5.5	1997	10.9	2019	8.8	1993	14.4	2016	14.0	1984	10.2	2010	7.0	1951	7.4	2014	8.2	1986	4.5	2018	5.9	1997
88	5.7	2016	5.6	1973	13.0	2010	9.6	1998	14.7	1995	18.5	2019	11.1	1998	7.2	1996	8.1	1989	10.1	1973	4.7	1973	6.0	1996
89	5.8	1974	5.9	1998	14.1	1973	11.1	1999	15.2	1993	19.8	1998	11.7	1999	7.7	2011	8.5	1951	10.3	2018	5.6	1993	7.2	2018
90	6.0	1973	6.1	1982	18.1	1979	14.2	1973	24.1	2007	27.4	2008	48.3	1993	16.3	1993	12.3	1993	11.8	2019	8.8	1996	12.5	2015

Plate 15. Nebraska City to Rulo Ranking of Average Monthly Flows
MRBWM Technical Report - Missouri River Incremental Flows Below Gavins Point, May 2021

Rulo to St. Joseph
Ranking of Average Monthly Flows (kcfs)

Rank	Jan	Year	Feb	Year	Mar	Year	Apr	Year	May	Year	Jun	Year	Jul	Year	Aug	Year	Sep	Year	Oct	Year	Nov	Year	Dec	Year
1	-0.7	1955	-1.4	1966	-0.4	1943	-1.7	1950	-1.6	1939	-1.0	1950	-1.8	1954	-2.0	1957	-1.3	1953	-1.3	1954	-2.2	1999	-0.7	1945
2	-0.6	2005	-0.8	2009	-0.3	2002	-1.3	1962	-0.7	1952	-0.8	1952	-1.0	1989	-0.9	1955	-1.2	1957	-0.9	1999	-0.4	2000	-0.6	1954
3	-0.5	1963	-0.7	1944	-0.3	1956	-0.5	2002	-0.3	2000	-0.2	1953	-0.9	1950	0.0	2006	-1.1	1954	-0.8	1953	-0.4	1954	-0.5	1953
4	-0.4	1954	-0.5	1972	-0.3	1954	-0.3	1953	-0.3	1953	-0.2	1933	-0.3	1957	0.1	2004	-0.8	1955	-0.4	1955	-0.2	1942	-0.4	2003
5	-0.4	1959	-0.2	1947	-0.3	1950	-0.3	1989	-0.1	1957	0.2	1948	-0.1	1930	0.1	1934	-0.7	1988	-0.4	1971	0.0	1963	-0.1	1989
6	-0.3	1988	-0.1	1956	-0.1	2005	-0.2	1956	0.0	1950	0.4	1937	0.1	1966	0.1	1995	-0.2	2006	-0.1	1963	0.0	1955	-0.1	1937
7	-0.2	2002	-0.1	1958	0.0	2013	0.0	2001	0.1	1955	0.4	2011	0.4	1963	0.1	1975	0.0	1963	-0.1	1951	0.1	1936	-0.1	1936
8	-0.2	1956	0.1	1979	0.0	1995	0.0	1955	0.1	1934	0.5	1934	0.4	1953	0.1	1941	0.2	2005	-0.1	1957	0.1	1939	-0.1	1955
9	-0.2	2004	0.1	2006	0.0	2014	0.0	1934	0.2	1967	0.5	1963	0.5	2017	0.2	1963	0.3	1991	0.0	1956	0.1	1933	0.0	1943
10	-0.1	1939	0.1	1931	0.1	1933	0.0	2014	0.2	1954	0.6	2018	0.5	1941	0.2	1988	0.3	1990	0.0	1937	0.2	1956	0.1	2016
11	-0.1	1937	0.1	1934	0.2	1931	0.0	2018	0.3	1956	0.7	1938	0.7	1934	0.3	1936	0.3	1952	0.1	1966	0.2	1993	0.1	2004
12	0.0	1938	0.2	2014	0.2	1964	0.2	1935	0.3	1931	0.7	1958	0.7	1991	0.4	1971	0.3	1962	0.1	1939	0.2	1967	0.1	1938
13	0.0	1950	0.2	1952	0.3	1967	0.2	1954	0.3	1989	0.7	1940	0.7	2006	0.4	1935	0.3	1943	0.2	1943	0.2	1937	0.2	1956
14	0.0	1940	0.2	1954	0.3	2007	0.2	1930	0.3	1940	0.9	2006	0.8	2007	0.5	1930	0.4	2003	0.2	1952	0.2	1957	0.2	1935
15	0.0	2013	0.2	1938	0.3	1957	0.3	1940	0.5	1949	0.9	1972	0.8	1959	0.5	1953	0.4	1971	0.2	1948	0.3	1938	0.2	1963
16	0.1	2014	0.2	2013	0.3	1934	0.3	1996	0.6	1933	1.1	1956	0.9	2004	0.5	1967	0.4	1976	0.2	1940	0.3	1962	0.2	1940
17	0.2	1977	0.3	1957	0.3	1953	0.4	1968	0.8	1968	1.1	1981	0.9	1936	0.5	1956	0.4	2012	0.3	1964	0.3	1971	0.2	1939
18	0.2	1957	0.3	1940	0.3	2018	0.7	2004	1.1	1960	1.2	2007	0.9	1955	0.5	1931	0.5	1948	0.3	2000	0.4	2013	0.3	1957
19	0.2	1944	0.3	2003	0.3	1947	0.7	2007	1.1	1941	1.3	1968	1.0	2005	0.5	1962	0.5	1999	0.3	2012	0.4	1930	0.3	1934
20	0.3	1971	0.3	1977	0.3	1968	0.7	1938	1.3	2006	1.4	1966	1.1	1972	0.6	1989	0.5	2000	0.4	1933	0.4	1953	0.4	1930
21	0.3	1936	0.3	1994	0.4	1938	0.7	2000	1.4	2004	1.5	1962	1.2	1975	0.6	1994	0.5	2002	0.4	1935	0.4	1952	0.4	1944
22	0.3	1948	0.4	2018	0.4	2006	0.8	2003	1.4	1948	1.6	1988	1.2	1933	0.7	1991	0.6	1935	0.5	2003	0.5	1960	0.4	2001
23	0.4	1941	0.4	2002	0.5	1941	0.8	1970	1.5	2005	1.7	1989	1.2	1962	0.8	1976	0.6	1995	0.5	2011	0.5	2004	0.5	1993
24	0.4	1979	0.4	2005	0.7	1972	0.9	1966	1.6	1971	1.8	1959	1.2	1994	0.8	1980	0.7	1934	0.5	2016	0.5	2001	0.5	1933
25	0.4	1935	0.4	1933	0.8	2003	0.9	1964	1.7	1937	1.9	1971	1.2	2018	0.8	2012	0.7	1956	0.5	1930	0.6	1964	0.5	2002
26	0.4	1953	0.5	1935	0.8	1944	0.9	1931	1.8	1988	1.9	1957	1.3	1938	0.9	2000	0.7	1960	0.5	1988	0.6	1943	0.5	1999
27	0.4	1951	0.5	1989	0.8	1955	0.9	1957	1.8	1975	2.0	1955	1.3	2012	0.9	1961	0.7	1939	0.6	2013	0.6	1949	0.5	2012
28	0.4	2003	0.5	1967	0.8	1989	0.9	1985	1.8	1970	2.1	2000	1.3	1988	0.9	1933	0.8	1940	0.6	1938	0.6	1951	0.6	1959
29	0.4	1931	0.6	1995	0.8	1951	0.9	1972	1.9	1930	2.2	2004	1.4	1940	1.0	1937	0.8	1968	0.6	1958	0.6	2003	0.6	1971
30	0.5	1989	0.7	1941	0.9	1991	0.9	1949	1.9	1943	2.2	1930	1.4	1971	1.0	2017	0.8	1930	0.6	1936	0.7	1990	0.6	1950
31	0.5	1972	0.7	1988	1.0	1988	0.9	1958	1.9	1977	2.2	1954	1.5	1946	1.0	1966	0.8	1967	0.7	1960	0.7	1944	0.7	1948
32	0.5	1934	0.7	1961	1.1	1940	1.0	1990	2.0	1936	2.3	1936	1.5	1943	1.1	1964	0.8	2017	0.7	1932	0.7	1940	0.7	1969
33	0.5	1961	0.8	1939	1.1	1935	1.0	2006	2.0	2014	2.3	2002	1.5	1974	1.1	1990	0.8	1975	0.7	1990	0.8	2002	0.7	1962
34	0.6	1952	0.8	1968	1.2	1958	1.1	1941	2.0	1966	2.4	1961	1.6	1937	1.2	2013	0.8	1937	0.8	1947	0.8	1995	0.8	2013
35	0.6	1991	0.9	2017	1.2	1930	1.1	1933	2.0	1935	2.4	1985	1.6	1935	1.2	1947	0.9	1974	0.8	1949	0.8	1945	0.8	1990
36	0.6	1930	1.1	2015	1.2	2000	1.2	1951	2.0	2002	2.4	1960	1.8	2002	1.3	2008	0.9	2013	0.8	1934	0.9	1934	0.8	2005
37	0.6	1947	1.2	2004	1.2	1996	1.2	1939	2.0	1946	2.4	1931	1.8	1931	1.3	1943	0.9	1933	0.8	1942	0.9	1958	0.8	1970
38	0.7	1982	1.2	1998	1.3	1977	1.2	1937	2.0	1964	2.5	1944	1.8	1999	1.3	1959	0.9	1966	1.1	1975	0.9	2006	0.9	1932
39	0.7	1969	1.3	1964	1.4	1976	1.2	2005	2.1	2012	2.7	1977	1.9	1956	1.3	2002	1.0	1947	1.1	1995	0.9	2016	0.9	1966
40	0.8	1968	1.3	1991	1.6	1970	1.3	1948	2.2	1932	2.7	1992	1.9	1964	1.3	1972	1.0	2004	1.1	1945	1.0	1970	0.9	1981
41	0.8	1946	1.3	1996	1.8	1969	1.3	1942	2.2	1991	2.8	2005	1.9	2019	1.4	1965	1.1	1945	1.2	1962	1.0	1932	1.0	1947
42	0.8	2001	1.3	2000	1.9	1971	1.4	1936	2.2	1961	2.9	2012	1.9	1948	1.4	2005	1.1	1959	1.2	1968	1.0	1966	1.0	1958
43	0.8	2000	1.4	1936	1.9	1999	1.4	1960	2.2	1994	3.2	2003	2.1	1976	1.4	1938	1.2	1994	1.2	2001	1.0	1968	1.0	2006
44	0.8	1984	1.4	1992	2.0	2011	1.4	1977	2.3	1962	3.3	1939	2.2	1960	1.5	1949	1.3	1983	1.2	1996	1.0	1994	1.1	2017

45	0.9	2006	1.5	1990	2.0	1966	1.5	1975	2.4	1958	3.3	1993	2.2	2013	1.5	2003	1.4	1950	1.2	2004	1.0	2005	1.1	2000
46	1.0	2015	1.6	1942	2.0	2015	1.5	1971	2.6	1938	3.7	1970	2.3	2003	1.7	2018	1.5	1998	1.2	2006	1.1	1989	1.1	1974
47	1.0	1943	1.6	1978	2.1	2009	1.7	1967	2.7	1981	3.7	1974	2.3	1970	1.8	1939	1.6	1964	1.3	2005	1.1	2012	1.1	1946
48	1.0	1970	1.7	1976	2.1	1932	2.0	1943	2.8	1976	3.8	1932	2.3	2000	1.8	1946	1.6	1942	1.3	2002	1.1	2017	1.2	1949
49	1.2	1949	1.7	1975	2.1	1981	2.2	1994	3.0	1980	3.8	2016	2.4	1968	1.8	1999	1.7	2009	1.3	1978	1.1	1959	1.2	1964
50	1.2	1958	1.8	1950	2.2	2004	2.2	2013	3.0	1947	3.8	1976	2.4	1980	2.0	2007	1.8	1938	1.4	1989	1.1	1935	1.2	1960
51	1.2	1966	1.8	1930	2.4	2016	2.3	1946	3.1	2018	4.0	1978	2.5	1942	2.1	2001	1.8	2019	1.4	2009	1.2	1976	1.2	1988
52	1.2	1964	1.9	1951	2.5	2017	2.4	1959	3.1	1998	4.1	2017	2.5	1977	2.1	1970	1.9	1980	1.5	1991	1.2	2015	1.2	1952
53	1.3	1996	2.0	1943	2.6	1990	2.4	2019	3.3	2003	4.1	1999	2.6	1952	2.2	1978	1.9	1996	1.5	1980	1.2	1997	1.2	1967
54	1.3	2018	2.1	1953	2.7	1992	2.5	1932	3.4	1965	4.2	1973	2.7	1939	2.3	1950	2.0	1931	1.6	1972	1.4	1950	1.2	1985
55	1.3	1967	2.1	1965	2.7	1997	2.6	1963	3.6	1969	4.2	1994	2.8	1961	2.3	1942	2.2	2008	1.6	1944	1.5	1965	1.3	1942
56	1.3	1995	2.1	1959	2.8	1963	2.7	1981	4.1	2016	4.4	1964	2.9	1944	2.4	1968	2.2	1932	1.6	1976	1.6	1991	1.4	1995
57	1.4	2009	2.2	1955	3.1	1937	2.8	1988	4.1	1942	4.5	1946	3.1	1967	2.4	1998	2.3	2001	1.6	1931	1.6	1978	1.5	1968
58	1.4	1965	2.3	1948	3.6	1962	3.0	2015	4.2	1992	5.0	1991	3.2	1932	2.4	1948	2.4	1949	1.7	1946	1.6	1975	1.5	2014
59	1.4	1998	2.3	1971	3.7	1998	3.1	1965	4.2	1990	5.1	2014	3.2	1945	2.6	1960	2.4	1936	1.7	1983	1.6	1974	1.5	1961
60	1.5	1933	2.3	1945	3.8	1961	3.3	2016	4.5	1963	5.3	1969	3.6	1996	2.7	1969	2.4	1944	1.7	1967	1.7	1947	1.7	1941
61	1.6	1992	2.4	2016	3.8	1942	3.6	1991	4.6	1985	5.4	1979	3.6	2001	2.8	1958	2.5	2007	2.0	2008	1.9	1948	1.7	1951
62	1.7	1990	2.5	2007	3.9	2012	3.8	1982	4.9	2013	5.4	1941	3.7	1949	2.9	1945	2.7	1969	2.1	1997	2.0	2007	1.8	1994
63	1.7	1994	2.5	1993	4.0	2010	4.0	1961	5.1	1972	5.5	1997	3.7	2014	2.9	1952	2.8	1997	2.2	1994	2.0	1980	1.8	1978
64	1.8	1997	2.7	2012	4.2	1975	4.1	1969	5.9	2008	5.5	1935	3.7	1990	3.0	1974	2.8	1970	2.2	1981	2.1	1946	1.9	1991
65	1.8	2017	2.7	1946	4.2	1993	4.3	1995	6.1	2010	5.7	1942	3.8	1998	3.4	2009	2.9	1981	2.3	1970	2.1	2014	2.0	1997
66	1.9	1945	2.8	1960	4.2	1959	4.6	1944	6.2	1999	5.7	1975	3.9	2008	3.4	1984	3.0	1979	2.4	1965	2.3	1988	2.0	1983
67	1.9	1975	2.8	2001	4.3	1946	4.7	1979	6.2	2001	5.9	1986	3.9	2009	3.4	1997	3.2	1951	2.5	2015	2.4	2008	2.1	1976
68	2.1	2007	2.8	1970	4.3	1974	4.7	2009	6.6	2009	5.9	1965	4.4	1997	3.4	1983	3.4	1984	2.6	1974	2.4	2018	2.4	2007
69	2.1	2008	2.8	1981	4.4	1984	4.8	2008	6.8	2017	6.1	2001	4.4	1981	3.5	1954	3.5	1941	2.6	2010	2.4	1969	2.5	2008
70	2.2	1942	2.9	1963	4.7	1985	4.8	2012	7.3	2007	6.4	2013	4.7	1985	3.6	1940	3.7	2010	2.7	1984	2.5	2011	2.8	1965
71	2.2	1981	2.9	1937	4.7	1980	4.9	2011	7.6	1944	6.9	1990	5.4	2016	3.7	2014	3.7	1978	2.8	1979	3.2	2019	2.8	1998
72	2.3	2012	3.0	1980	4.9	1936	5.0	1997	7.7	1951	7.3	1980	5.9	2010	3.8	2019	3.8	2018	2.8	1998	3.5	2009	2.8	1980
73	2.7	1976	3.3	1949	5.0	1945	5.1	1980	8.0	1959	7.5	1945	6.0	1987	4.2	1951	4.1	2011	3.0	1969	3.5	1979	2.9	2019
74	2.7	1978	3.4	1987	5.1	1939	5.1	1974	8.3	1974	7.9	1987	6.5	1947	4.2	1944	4.3	1961	3.1	1959	3.7	1987	2.9	2011
75	3.0	1999	3.6	1974	5.2	1982	5.2	1976	8.3	2015	8.0	1995	6.6	1995	4.3	1977	4.3	2015	3.1	1950	3.8	2010	2.9	1975
76	3.2	1993	3.8	2008	5.4	1952	5.3	1947	8.3	1979	8.3	2009	6.7	1969	4.3	1996	4.8	1972	3.3	1987	4.0	1983	3.5	2009
77	3.2	2016	3.9	1999	5.5	1994	6.4	2017	8.6	1993	8.3	1943	6.8	1982	4.4	1932	4.8	2014	3.4	2014	4.0	1941	3.5	1987
78	3.3	1962	4.0	1985	5.6	1948	6.4	2010	8.8	2011	9.0	1996	6.9	1973	4.4	2016	5.3	1946	3.4	1982	4.1	1984	3.7	2010
79	3.4	1987	4.0	2010	5.8	2001	6.4	1992	9.1	1978	9.3	2010	7.1	1983	4.5	2015	5.6	1958	3.4	1977	4.1	1998	3.7	1931
80	3.6	1980	4.2	1986	6.2	1986	6.6	1999	9.2	1997	9.6	1998	7.2	2011	4.7	1992	5.8	2016	3.6	1992	4.1	1985	4.2	1972
81	3.7	1973	4.2	1997	6.5	1949	7.0	1945	9.3	1973	10.0	1983	7.5	1978	4.8	2011	5.8	1986	3.9	2017	4.2	1982	4.2	1977
82	3.9	2019	4.8	1969	6.9	2008	7.1	1987	9.9	1984	10.1	2008	9.1	2015	5.2	1979	5.8	1992	4.2	2007	4.3	1981	4.8	2018
83	4.0	1960	4.8	2019	7.5	1978	7.6	1952	10.0	1996	11.3	1967	9.1	1979	5.7	2010	5.9	1989	4.3	1993	4.5	1931	5.1	1996
84	4.5	1985	5.4	1932	7.8	1965	8.0	1998	10.8	1982	13.2	1951	9.5	1951	5.9	1985	6.1	1985	4.5	1961	4.8	1996	5.1	1979
85	4.5	1974	5.9	2011	8.2	1987	8.0	1986	11.5	1945	13.5	1982	9.9	1958	6.0	1981	7.2	1987	6.0	1941	4.8	1972	5.4	2015
86	4.7	2011	7.2	1984	8.7	1973	8.3	1993	13.1	1986	13.6	1949	10.6	1986	6.6	1986	7.2	1965	6.1	2019	5.0	1973	5.5	1984
87	4.8	2010	8.2	1983	9.2	1960	9.8	1973	14.6	1995	14.7	1984	11.1	1992	7.2	1982	8.0	1982	8.9	1985	5.3	1986	5.7	1992
88	5.4	1983	9.3	1962	14.2	2019	10.1	1978	14.9	1987	15.1	2015	11.1	1965	7.4	1993	9.2	1973	9.3	2018	5.3	1992	6.1	1982
89	6.1	1932	10.4	1973	15.1	1983	11.1	1984	15.9	1983	15.8	2019	11.5	1984	7.6	1973	9.5	1993	9.8	1986	5.4	1961	6.5	1986
90	7.0	1986	11.7	1982	17.6	1979	11.6	1983	22.8	2019	19.4	1947	30.9	1993	10.0	1987	13.2	1977	17.9	1973	9.3	1977	6.8	1973

Plate 16. Rulo to St. Joseph Ranking of Average Monthly Flows

MRBWM Technical Report - Missouri River Incremental Flows Below Gavins Point, May 2021

St. Joseph to Kansas City
Ranking of Average Monthly Flows (kcfs)

Rank	Jan	Year	Feb	Year	Mar	Year	Apr	Year	May	Year	Jun	Year	Jul	Year	Aug	Year	Sep	Year	Oct	Year	Nov	Year	Dec	Year
1	-0.7	1977	-0.6	1970	0.2	1989	0.5	1989	0.2	1989	0.1	1989	-2.0	2011	-1.7	2011	-0.2	1997	-0.2	1991	-0.7	1980	0.0	1976
2	0.0	1940	0.2	1989	0.5	1957	0.8	1996	1.2	2000	1.2	1988	0.8	1980	0.2	1955	-0.1	1976	0.4	1980	0.1	1976	0.3	1988
3	0.0	1957	0.4	2013	0.6	1967	1.0	1950	1.6	1956	1.6	2012	1.5	1934	0.2	2002	-0.1	1971	0.4	1956	0.5	2001	0.4	1937
4	0.3	1979	0.6	1957	0.8	2003	1.0	1981	2.0	1934	1.7	1933	1.5	1933	0.3	1991	0.1	1947	0.5	1979	0.6	1939	0.6	1990
5	0.5	1967	0.8	1964	0.8	1938	1.0	1935	2.0	1955	2.3	1953	1.7	1936	0.5	1988	0.2	1956	0.5	1997	0.6	1988	0.6	1956
6	0.7	1937	0.9	1981	0.9	1981	1.3	1940	2.0	1992	2.6	1956	1.7	1988	0.5	1970	0.2	1991	0.6	1939	0.7	2012	0.7	2000
7	0.7	1970	1.0	1940	1.1	1964	1.3	1956	2.1	1939	2.8	2006	1.8	1953	0.7	1934	0.9	2002	0.6	1999	0.7	1936	0.8	1966
8	0.7	1938	1.2	1967	1.3	1977	1.5	1934	2.5	1965	2.8	1934	1.9	1970	0.8	1975	1.0	1994	0.6	1994	0.8	1991	0.8	1936
9	0.8	2013	1.2	2003	1.7	2002	1.5	1977	2.5	1988	3.1	2003	2.0	1989	0.8	1936	1.1	1939	0.6	1976	1.0	1948	0.8	1939
10	0.9	1939	1.3	1990	1.7	1956	1.9	2000	2.9	1967	3.1	1972	2.1	1978	1.0	1974	1.3	1988	0.6	2000	1.0	1956	0.9	1991
11	1.0	1989	1.3	2002	1.7	1935	2.4	2003	3.0	2003	3.4	1963	2.2	2012	1.2	1964	1.4	1955	0.8	1952	1.1	1947	1.0	1938
12	1.0	2001	1.3	1938	1.8	1934	2.5	1937	3.1	1966	3.4	2018	2.2	2002	1.5	2000	1.6	1975	0.8	1971	1.2	1940	1.1	1955
13	1.0	1935	1.3	1939	1.9	1954	2.6	2015	3.2	1937	3.8	1992	2.3	1940	1.6	1983	1.6	1990	0.8	1947	1.2	1937	1.2	1940
14	1.1	2003	1.3	1934	2.0	1996	2.6	2004	3.7	1980	4.0	1940	2.4	1966	1.6	1997	1.8	1953	0.8	1981	1.3	1999	1.2	1963
15	1.1	1934	1.5	1956	2.0	2013	2.7	1954	3.7	1968	4.1	1937	2.6	1991	1.7	1984	1.8	2000	0.9	1937	1.4	2002	1.4	2002
16	1.1	1956	1.5	1933	2.0	1972	2.8	1972	3.8	2014	4.1	1968	2.7	2003	1.8	1989	1.9	1980	1.0	1948	1.4	1933	1.5	1964
17	1.2	1955	1.7	1947	2.1	1970	2.9	1938	3.9	2018	4.3	2000	2.9	1954	1.8	1953	1.9	1999	1.0	1988	1.4	2000	1.7	2006
18	1.2	1936	1.7	1935	2.2	1991	3.1	2018	4.3	1941	4.5	1931	3.1	2006	1.8	1976	1.9	1983	1.0	1975	1.5	1938	1.7	1999
19	1.3	1961	1.8	2000	2.4	1968	3.5	1966	4.6	1964	4.7	1946	3.2	1985	1.9	1966	2.0	2012	1.3	2002	1.5	1994	1.8	1954
20	1.3	2004	1.9	1992	2.7	1940	3.6	1963	4.8	1977	4.7	1936	3.3	1974	2.0	2003	2.1	1954	1.3	1972	1.5	1955	1.9	2012
21	1.3	1991	2.0	1978	2.7	1941	3.6	1990	4.8	1940	5.1	1976	3.3	2013	2.0	1980	2.2	1937	1.4	1995	1.5	2006	1.9	1934
22	1.4	1963	2.0	2004	2.8	1988	3.6	1985	5.2	1975	5.2	1952	3.4	2000	2.0	2018	2.3	1984	1.5	2012	1.5	1954	2.0	1932
23	1.4	1992	2.1	1965	2.8	1931	3.7	1936	5.2	1946	5.4	1997	3.6	1972	2.1	2012	2.3	1934	1.5	1974	1.6	1949	2.0	1953
24	1.5	2002	2.2	1977	2.9	1933	3.8	1957	5.7	1932	6.0	1979	3.8	1976	2.1	1956	2.3	1981	1.5	1938	1.7	1990	2.0	1933
25	1.5	1981	2.3	1976	2.9	1930	3.9	2011	6.1	1981	6.1	1991	4.1	1955	2.1	1952	2.4	1979	1.6	2003	1.8	1932	2.1	1943
26	1.5	1954	2.4	1954	2.9	2015	4.0	1971	6.1	2004	6.2	1955	4.2	1931	2.2	1947	2.4	1943	1.6	1940	1.9	1943	2.2	2003
27	1.6	1930	2.4	1944	3.0	2014	4.0	1995	6.2	1931	6.4	2002	4.2	1930	2.7	1971	2.4	1936	1.9	1934	1.9	1975	2.3	1952
28	1.6	1996	2.4	2017	3.2	2006	4.2	1967	6.3	1954	7.3	1973	4.4	1997	2.9	1963	2.5	2013	1.9	1990	1.9	2005	2.4	1948
29	1.7	1964	2.4	1995	3.3	2000	4.2	1964	6.6	2012	8.7	1980	4.7	2018	3.4	1978	2.7	1974	1.9	1966	2.1	1953	2.4	1945
30	1.7	1944	2.4	1931	3.4	1950	4.3	1955	6.8	2006	8.9	1998	5.2	1952	3.4	1935	2.8	1966	2.0	2015	2.2	1966	2.5	2013
31	1.7	2011	2.5	2015	3.4	2018	4.4	1930	7.0	1948	9.0	1994	5.4	1963	3.6	1946	2.9	2003	2.1	1932	2.3	2003	2.6	1979
32	1.8	2015	2.7	1991	3.7	1943	4.4	1931	7.1	1972	9.1	1981	5.5	1956	3.8	1933	3.3	2017	2.2	2013	2.4	2014	2.6	1957
33	1.9	1976	2.9	2006	3.7	1966	4.4	2002	7.4	2013	9.3	1966	5.7	1977	4.0	1994	3.3	1948	2.2	1953	2.4	1945	2.6	2005
34	2.0	1948	2.9	1963	3.8	2017	4.5	1933	7.7	1953	9.6	1978	6.0	1938	4.2	2006	3.3	1995	2.3	1964	2.5	2017	2.6	2001
35	2.0	1953	2.9	1946	3.8	1953	4.5	2006	7.9	1997	11.2	1958	6.1	1964	4.3	1969	3.3	1938	2.3	1984	2.5	1971	2.7	1980
36	2.0	2014	3.1	1972	4.2	1976	4.6	1953	8.0	1979	11.3	1959	6.3	1939	4.4	1937	3.3	1963	2.4	2010	2.5	1995	2.8	1989
37	2.1	1933	3.2	1968	4.5	1994	4.6	1946	8.3	1963	12.1	1983	6.9	2007	4.5	1940	3.5	1996	2.5	1943	2.5	1952	2.8	1935
38	2.2	2018	3.3	1953	4.7	2005	4.7	1943	8.4	1998	12.8	1986	7.0	1937	4.7	2001	3.5	1945	2.6	1936	2.7	1989	2.8	1994
39	2.2	1958	3.4	1996	4.7	1995	4.7	1941	8.4	1933	12.9	1948	7.1	1968	4.8	1959	3.7	1940	2.8	1978	2.8	2016	2.9	1958
40	2.2	1980	3.6	1948	4.7	2016	5.1	2014	8.5	1962	13.2	1985	7.1	2005	5.0	1930	3.9	2006	2.8	1933	3.0	1997	2.9	2017
41	2.2	2007	3.6	2018	5.3	1955	5.1	1982	8.6	2011	13.5	1971	7.2	1994	5.0	1949	3.9	1952	3.1	1955	3.0	1934	3.0	1950
42	2.3	1995	3.7	2007	5.7	2007	5.3	2013	8.7	2005	14.1	1950	7.6	1946	5.4	1965	4.7	1968	3.2	1989	3.0	2011	3.2	2004
43	2.3	1982	3.8	1950	6.1	1939	5.7	2005	9.1	1952	14.3	1939	7.9	1941	5.4	1943	4.9	2009	3.4	1963	3.0	1963	3.3	1949
44	2.3	1966	4.0	1941	6.2	1932	5.7	1991	9.2	1991	14.6	1990	8.2	1990	5.5	1932	5.1	1969	3.4	2004	3.1	1960	3.4	1960

45	2.3	1990	4.0	1980	6.6	1992	5.7	1988	9.5	2001	15.0	2013	8.2	1932	5.8	1999	5.2	2004	3.5	2006	3.1	1984	3.4	1974
46	2.4	1951	4.2	1958	6.7	1946	6.0	1939	10.3	1943	15.0	2004	8.6	2014	5.9	1931	5.4	1932	3.7	1960	3.5	2004	3.5	1962
47	2.5	1947	4.3	2014	6.7	1937	6.5	1965	10.7	1957	16.2	1930	8.6	1975	6.0	2014	5.7	1978	3.8	1983	3.5	1950	3.6	2014
48	2.5	1950	4.4	2012	7.0	1975	6.6	1970	11.0	2002	16.3	1960	8.8	2016	6.0	1957	5.8	2015	3.9	1945	3.9	1964	3.6	1930
49	2.9	1975	4.4	1961	7.1	1997	6.9	1949	11.4	1936	16.5	1954	9.0	1971	6.1	1961	5.8	2007	3.9	2001	3.9	1987	3.6	1977
50	2.9	2012	4.9	2011	7.2	1999	7.5	1948	11.5	1985	16.6	2014	9.9	1943	6.2	1939	5.9	1957	4.3	1992	4.0	2013	3.7	1946
51	3.0	1971	5.1	1930	7.5	1951	7.5	1951	11.5	1970	17.0	1932	9.9	1973	6.3	1967	6.1	1964	4.6	2009	4.2	2010	3.7	1951
52	3.1	1931	5.2	1982	7.8	1986	8.0	1974	11.8	1947	17.2	1938	10.0	1983	6.4	1938	6.5	1992	4.6	1935	4.2	1957	3.7	1947
53	3.1	1965	5.3	1975	7.8	2011	8.4	1958	12.4	2008	17.5	1964	10.4	1996	6.4	1972	6.6	1960	4.6	1982	4.2	1969	3.8	1967
54	3.2	1978	5.6	1951	7.8	2012	8.5	1968	12.4	1996	17.9	2011	11.2	2009	6.6	1996	6.9	2005	4.7	2017	4.3	1982	3.8	1995
55	3.4	2000	5.6	1936	8.2	1936	8.5	1932	12.5	1958	18.3	1974	12.2	1961	6.7	1941	6.9	1930	4.8	1969	4.4	1981	4.0	1959
56	3.8	2006	5.8	1988	8.6	1963	8.8	1994	13.7	1994	19.3	1962	12.5	2017	7.1	1979	6.9	1998	4.8	1930	4.4	1983	4.1	1971
57	3.8	1959	6.1	1952	8.6	1959	8.9	1992	14.0	1983	19.6	2017	12.6	1960	7.1	2016	7.0	2011	4.9	1931	4.5	1978	4.1	2010
58	4.0	1941	6.2	1932	8.8	1990	10.1	1986	14.5	1950	20.5	1944	13.2	1942	7.6	2008	7.1	2014	5.2	1954	4.6	1959	4.1	1975
59	4.2	1972	6.2	1966	8.8	1983	10.1	1975	14.7	1976	20.9	1957	13.3	1967	7.8	1960	7.4	1933	5.4	1987	4.6	1930	4.3	1970
60	4.4	1997	6.3	1955	8.9	1947	10.1	1942	14.8	1990	21.6	1977	13.4	1998	8.3	2015	8.1	1931	5.7	1970	4.9	1942	4.5	2016
61	4.4	1999	6.4	2009	9.6	1971	11.1	2012	15.5	1971	22.1	1987	13.4	1959	8.3	2005	8.2	2018	5.9	1957	5.1	1962	4.8	1965
62	4.6	1968	6.6	1997	10.2	1942	11.4	1962	16.3	1949	22.4	1993	13.7	1981	8.7	1954	8.3	1982	6.4	1996	5.1	2015	5.9	1969
63	4.6	1983	6.7	2001	10.4	1974	11.4	2007	16.4	1978	22.6	1969	14.0	2001	8.8	1977	8.4	1967	6.6	2011	5.4	1970	5.9	1983
64	4.7	1945	6.7	1945	10.5	1980	11.6	1959	16.8	1938	22.8	2009	14.3	1979	9.2	1962	8.5	1959	6.7	1944	5.6	2007	6.0	2011
65	4.9	2017	6.8	2016	10.6	1985	11.7	2008	17.0	1960	23.4	1975	14.4	1962	9.2	1945	9.5	1935	6.8	1949	5.6	1935	6.1	1978
66	4.9	1952	7.0	1979	10.9	2009	12.3	2001	20.7	1974	23.6	2010	14.5	1935	9.6	2009	9.5	1970	7.7	1962	6.0	1944	6.2	1981
67	5.0	1985	7.1	1942	11.5	1944	13.0	2016	21.3	1942	24.0	1961	14.6	1999	9.7	1942	10.0	1962	8.1	1958	6.0	1967	6.3	1968
68	5.2	1988	7.5	1983	11.5	2004	13.6	1976	21.3	1959	24.4	1965	14.9	1944	9.9	1995	10.7	1987	8.1	1942	6.2	1974	6.4	1984
69	5.5	2009	8.1	1994	13.0	1965	13.7	1961	21.8	1982	26.0	1996	16.5	1957	10.1	1973	10.8	1946	8.4	2016	6.7	1965	7.2	1942
70	5.6	1943	8.1	1959	13.1	1982	15.1	1952	23.6	1930	26.2	1999	17.3	1947	10.1	2007	11.3	1972	9.2	1946	6.9	1946	7.2	1982
71	5.7	2005	8.3	1987	14.5	1958	15.2	2019	24.0	2009	27.3	1970	17.6	1995	10.1	1948	11.4	2001	9.8	1968	7.2	1968	7.4	1961
72	5.8	1986	8.4	1999	15.4	1998	15.4	1997	24.4	1935	27.7	2005	18.2	1969	10.1	1987	11.5	2010	9.9	2014	7.3	1958	7.5	1931
73	6.0	1984	8.4	1986	15.4	2008	18.1	2009	24.6	1969	27.7	2007	18.4	1987	10.5	2013	12.6	1949	12.1	1965	8.5	1979	7.5	1972
74	6.3	1946	8.8	2010	16.5	2010	21.1	2010	24.7	2017	28.8	2016	18.5	2004	10.5	2004	13.5	1941	12.2	2005	9.7	1972	7.7	2009
75	6.5	1969	8.8	2008	16.6	1961	22.3	1978	25.0	2010	30.7	1984	20.4	1949	11.2	2017	13.6	2008	12.8	1951	9.9	2009	8.1	1987
76	6.6	1987	8.8	1943	16.9	1952	22.8	1998	27.7	1986	31.0	2008	20.8	2008	11.6	1990	14.7	1950	12.9	1967	10.6	1951	8.4	2008
77	6.9	1993	9.5	1960	18.0	2001	23.2	1969	28.6	1973	33.2	1941	24.6	1992	11.8	1981	14.8	1944	13.4	2008	11.1	1996	8.7	1985
78	7.0	1998	9.7	1971	20.1	1960	26.3	2017	29.2	1961	35.1	1942	25.0	1948	12.0	1986	16.1	1985	14.3	2007	11.2	2008	8.9	1941
79	7.1	1962	9.8	1937	20.9	1969	29.4	1999	31.5	1951	36.0	1949	28.0	2010	13.1	1982	17.6	1958	16.1	1950	12.1	1992	9.7	1996
80	7.4	1960	10.2	2005	21.1	1945	30.4	1947	32.0	2015	36.8	1945	29.1	1984	15.0	1998	18.8	1989	16.6	2018	12.9	1985	10.0	1997
81	7.9	1994	10.4	1969	21.3	1987	30.8	1983	32.4	1984	39.2	2001	29.7	1986	18.8	1958	20.0	2016	16.7	1959	13.8	1993	10.5	2007
82	7.9	1942	11.3	1998	21.6	1962	31.4	1980	35.3	1999	46.0	1982	30.0	2015	19.6	2010	21.4	1986	18.3	1977	14.4	2018	11.5	1998
83	8.3	2008	11.4	2019	22.3	1984	35.5	1979	35.5	1944	48.5	2015	31.6	1945	19.7	1985	21.8	1942	19.2	2019	15.5	1986	12.3	1993
84	9.1	1949	11.8	1984	23.0	2019	36.3	1960	39.3	2016	51.1	1935	33.3	1982	20.5	1968	23.4	1965	20.2	1993	16.6	1941	13.2	1986
85	9.2	1932	14.9	1985	23.6	1949	36.8	1984	41.3	2019	52.2	1995	37.6	1958	23.2	1944	23.5	1973	21.8	1961	17.4	1977	15.8	2019
86	9.8	2016	17.5	1974	24.1	1948	39.3	1945	41.4	1987	53.2	1967	37.8	1965	23.9	1992	24.6	1961	22.9	1998	25.2	1931	17.8	1944
87	13.5	2019	20.3	1993	24.6	1978	40.2	1987	42.9	2007	54.2	2019	40.3	1950	24.5	1950	26.8	2019	40.9	1986	27.4	2019	19.0	2015
88	14.4	1973	23.4	1949	28.2	1993	44.2	1993	44.8	1995	57.0	1947	46.7	2019	25.7	1951	39.0	1977	42.8	1941	29.0	1961	22.6	2018
89	14.4	2010	24.4	1973	38.1	1979	47.4	1944	48.5	1993	60.0	1943	94.7	1993	33.0	2019	45.5	1951	43.1	1985	37.8	1998	23.0	1992
90	17.6	1974	29.4	1962	44.7	1973	50.9	1973	48.7	1945	76.6	1951	137.3	1951	68.9	1993	46.9	1993	59.5	1973	42.4	1973	25.3	1973

Plate 17. St. Joseph to Kansas City Ranking of Average Monthly Flows
MRBWM Technical Report - Missouri River Incremental Flows Below Gavins Point, May 2021

Kansas City to Waverly
Ranking of Average Monthly Flows (kcfs)

Rank	Jan	Year	Feb	Year	Mar	Year	Apr	Year	May	Year	Jun	Year	Jul	Year	Aug	Year	Sep	Year	Oct	Year	Nov	Year	Dec	Year
1	-1.2	1986	-1.8	1984	-3.2	1986	-2.0	1981	-4.9	1986	-5.1	1986	-3.9	1944	-4.9	1986	-3.5	1985	-2.7	1983	-4.6	1982	-1.4	1985
2	-1.1	1972	-1.7	1983	-2.0	1981	-2.0	1950	-4.0	1984	-3.0	1944	-2.0	1954	-3.9	1985	-3.1	1984	-2.5	1982	-3.5	1986	-1.2	1986
3	-1.0	1953	-1.7	1987	-1.9	1970	-1.8	1984	-2.7	1944	-1.8	1945	-2.0	1945	-2.1	1948	-2.6	1987	-2.0	1952	-1.8	1945	-1.0	1984
4	-0.9	1980	-1.0	1970	-1.5	1956	-1.7	1949	-2.4	1987	-1.7	1987	-1.9	1949	-2.1	1983	-2.2	1983	-2.0	1945	-1.4	1969	-0.7	1969
5	-0.9	1987	-0.7	1981	-1.1	1985	-1.4	1976	-1.3	1956	-1.3	1956	-1.7	1987	-2.0	1945	-2.0	1945	-1.4	1984	-1.4	1952	-0.7	1976
6	-0.7	1947	-0.7	1985	-1.1	1949	-1.3	1963	-1.2	1954	-1.1	1937	-1.5	1986	-1.9	1987	-1.9	1981	-1.1	1953	-1.2	1979	-0.6	1952
7	-0.6	1945	-0.7	1944	-1.1	1944	-1.1	1956	-1.1	1959	-1.0	1954	-1.4	1958	-1.8	1981	-1.7	1986	-1.1	1957	-1.0	1966	-0.5	1968
8	-0.4	1981	-0.5	1972	-0.8	1984	-0.9	1959	-1.0	1971	-0.9	1949	-1.1	1946	-1.4	1958	-1.7	1952	-1.0	1964	-1.0	1970	-0.5	1987
9	-0.3	1958	-0.5	1953	-0.7	1966	-0.9	1974	-0.5	1939	-0.8	1942	-0.8	1942	-1.3	1959	-1.3	1972	-0.9	1946	-1.0	1987	-0.5	1945
10	-0.3	1983	-0.4	1959	-0.6	1964	-0.7	1988	-0.4	1948	-0.7	1946	-0.8	1984	-1.2	1956	-0.9	1946	-0.9	1986	-1.0	1962	-0.4	1975
11	-0.2	1938	-0.4	1956	-0.6	1959	-0.5	1971	-0.4	1988	-0.6	1959	-0.7	1948	-1.1	1949	-0.7	1957	-0.8	1948	-0.7	1946	-0.2	1963
12	-0.1	1934	-0.3	1971	-0.6	1938	-0.5	1968	-0.4	1950	-0.6	1960	-0.4	1968	-1.0	1957	-0.6	1941	-0.7	1958	-0.6	1958	-0.1	1949
13	-0.1	1956	-0.2	1977	-0.5	1975	-0.5	1986	-0.3	1958	-0.6	1950	-0.4	1950	-0.7	1984	-0.6	1954	-0.7	1954	-0.6	1957	-0.1	1954
14	-0.1	1931	-0.1	1934	-0.5	1939	-0.4	1955	-0.3	1949	-0.5	1976	-0.4	1990	-0.6	1962	-0.5	1966	-0.6	1941	-0.5	1975	-0.1	1977
15	-0.1	1977	0.0	2006	-0.4	1991	-0.3	1966	-0.2	2014	-0.3	1988	-0.3	1956	-0.5	1967	-0.5	1953	-0.6	1940	-0.4	1983	0.0	1958
16	0.0	1969	0.0	1940	-0.4	1983	-0.2	1985	-0.2	1934	-0.2	1934	-0.3	1991	-0.5	1946	-0.4	1948	-0.6	1966	-0.4	1948	0.0	1936
17	0.0	1939	0.0	1945	-0.4	1977	-0.1	1991	-0.2	1947	-0.1	1955	-0.3	1970	-0.4	1980	-0.4	1959	-0.5	1981	-0.2	1943	0.0	1979
18	0.0	1940	0.0	1950	-0.3	1972	-0.1	1954	0.0	1941	-0.1	1981	-0.2	1930	-0.4	1970	-0.3	1955	-0.2	1943	-0.2	1963	0.0	1959
19	0.0	1992	0.1	1931	-0.1	1967	0.1	1934	0.2	2003	-0.1	1985	-0.2	1943	-0.2	1979	-0.3	1956	-0.2	1960	-0.1	1984	0.0	1983
20	0.1	1991	0.1	1946	-0.1	1934	0.1	1940	0.2	1963	0.1	1938	-0.2	2005	-0.2	1947	-0.3	1958	-0.2	1955	-0.1	1980	0.1	1940
21	0.1	1942	0.1	1938	-0.1	1941	0.1	1930	0.3	1967	0.1	1933	-0.1	1966	-0.2	1971	-0.2	1950	-0.1	1947	-0.1	1933	0.1	1937
22	0.1	1996	0.1	1954	-0.1	1933	0.2	1957	0.4	1966	0.2	1971	0.0	2003	-0.1	1954	-0.1	1980	-0.1	1985	-0.1	1981	0.1	1930
23	0.1	1979	0.1	1943	0.0	1953	0.3	2012	0.4	1985	0.2	1975	0.0	1955	-0.1	1941	-0.1	1962	-0.1	2007	0.0	1930	0.1	1939
24	0.1	1933	0.1	1932	0.0	1982	0.3	1931	0.4	1930	0.2	1940	0.0	1980	0.0	1972	-0.1	1944	0.0	2002	0.0	1939	0.2	1953
25	0.1	1935	0.1	1939	0.1	1942	0.3	2003	0.5	1946	0.3	2003	0.0	1976	0.0	1973	-0.1	1976	0.1	1979	0.1	1936	0.3	1938
26	0.2	1930	0.1	1947	0.1	1968	0.4	1937	0.5	1981	0.3	1930	0.0	1988	0.0	1960	0.0	1933	0.1	1939	0.1	1940	0.3	1966
27	0.2	1954	0.1	1991	0.1	1940	0.6	1972	0.5	1942	0.4	1941	0.1	1971	0.0	1953	0.0	1930	0.1	1949	0.1	1953	0.3	1960
28	0.2	1944	0.2	1933	0.1	1963	0.7	1948	0.6	1951	0.4	1936	0.1	1959	0.0	1976	0.0	1990	0.1	1963	0.1	1971	0.3	1988
29	0.3	1984	0.2	1960	0.3	1932	0.7	1935	0.6	1940	0.4	1957	0.1	1953	0.1	1933	0.0	1949	0.1	1980	0.1	1991	0.4	1957
30	0.3	1957	0.2	1964	0.3	1955	0.7	1962	0.6	1979	0.5	1972	0.2	1934	0.1	2007	0.0	1943	0.1	1990	0.2	1932	0.4	1970
31	0.3	1959	0.2	1961	0.4	1935	0.8	1936	0.7	1945	0.5	1958	0.2	1972	0.2	1931	0.1	1967	0.1	1975	0.2	1937	0.4	1933
32	0.3	1948	0.2	1976	0.4	1989	0.8	1939	0.7	1937	0.5	2006	0.2	1941	0.2	1968	0.1	1978	0.2	1976	0.3	1938	0.5	1950
33	0.4	1943	0.2	2004	0.4	2006	0.8	1933	0.7	1931	0.6	2012	0.2	1981	0.2	1935	0.1	1979	0.2	1932	0.3	1968	0.5	1955
34	0.4	1989	0.3	2007	0.5	2003	0.9	1941	0.7	1936	0.6	1968	0.3	1933	0.2	2003	0.2	1968	0.2	1938	0.3	1965	0.5	1991
35	0.4	1997	0.3	1951	0.5	1931	0.9	1970	0.8	1970	0.7	1977	0.3	1938	0.2	1934	0.2	1963	0.2	1937	0.4	2007	0.5	1990
36	0.5	1936	0.4	1996	0.5	1996	0.9	2014	0.8	1960	0.7	1978	0.3	1931	0.3	1930	0.2	1937	0.3	1931	0.4	1959	0.6	1965
37	0.5	1990	0.4	2003	0.5	1971	1.0	1960	0.9	1976	0.7	1948	0.3	1940	0.3	1936	0.2	2002	0.3	1930	0.4	1955	0.6	1956
38	0.5	1950	0.4	1967	0.5	1976	1.0	1989	0.9	1975	0.8	1931	0.4	1936	0.3	1952	0.2	1964	0.3	1956	0.5	2012	0.6	1943
39	0.5	1964	0.5	1963	0.6	1930	1.0	1946	1.0	1957	0.8	1963	0.4	1939	0.3	1966	0.3	1936	0.3	1936	0.5	1956	0.6	1974
40	0.5	1951	0.6	1942	0.6	2005	1.1	1932	1.0	1980	0.9	1952	0.6	1974	0.4	1939	0.3	1982	0.4	2003	0.5	1944	0.6	2006
41	0.5	2009	0.6	1979	0.8	1951	1.1	1943	1.1	1938	0.9	1939	0.6	1957	0.5	1940	0.4	1960	0.4	2013	0.5	1947	0.7	1964
42	0.6	2007	0.6	1957	0.8	1946	1.2	1938	1.1	1965	1.1	1973	0.7	1962	0.5	1978	0.4	1939	0.4	1934	0.6	1950	0.7	2005
43	0.6	2003	0.7	1988	0.8	1957	1.2	1982	1.1	2017	1.2	1974	0.7	2006	0.5	1963	0.4	1931	0.4	1978	0.6	2005	0.7	1962
44	0.6	1949	0.7	1966	0.9	1988	1.2	1969	1.3	1933	1.3	2014	0.8	1975	0.6	1988	0.4	1935	0.4	1951	0.6	1954	0.8	1948

45	0.6	1970	0.8	1992	0.9	1969	1.3	2018	1.3	1955	1.3	1932	0.9	2012	0.6	1964	0.4	1971	0.4	1968	0.6	1988	0.8	1999
46	0.6	2006	0.8	1935	1.1	1943	1.3	1996	1.4	1969	1.3	1983	1.0	1967	0.6	1974	0.4	1934	0.5	1933	0.6	1960	0.8	1973
47	0.7	1937	0.9	1989	1.1	1954	1.3	2006	1.4	1972	1.5	1966	1.0	1932	0.6	1991	0.4	2005	0.5	1959	0.6	1976	0.8	1967
48	0.8	1975	0.9	1958	1.2	1958	1.4	1958	1.5	2006	1.5	1980	1.0	2002	0.7	1969	0.5	1940	0.6	2012	0.6	1978	0.8	1934
49	0.8	1941	1.0	2000	1.2	2014	1.4	1965	1.5	1968	1.7	2004	1.0	1963	0.7	1977	0.5	1932	0.6	1935	0.6	2002	0.9	1932
50	0.9	1961	1.0	1969	1.2	1937	1.4	1964	1.8	1982	1.7	1979	1.3	2013	0.7	1943	0.5	1947	0.6	1962	0.7	2014	0.9	1935
51	0.9	1946	1.1	1980	1.3	1936	1.5	2005	2.0	1991	1.8	1962	1.3	1937	0.7	1942	0.5	1938	0.7	1991	0.7	1972	0.9	1989
52	0.9	2000	1.1	1930	1.4	2018	1.6	1942	2.1	1932	1.8	1961	1.5	1960	0.8	2012	0.8	2000	0.7	1995	0.7	1949	1.0	2012
53	0.9	1976	1.1	2018	1.4	2017	1.7	2004	2.1	1989	1.9	2018	1.6	2018	0.8	1938	0.9	1991	0.7	1944	0.8	2017	1.0	2000
54	1.0	1967	1.2	1978	1.4	1979	1.8	1980	2.1	1964	2.0	1989	1.6	1952	0.9	1932	0.9	2006	0.8	1971	0.9	2003	1.1	2002
55	1.0	1968	1.2	1936	1.7	2015	1.9	1979	2.2	2012	2.0	1992	1.6	2014	1.0	1955	0.9	2017	0.8	1987	0.9	2006	1.1	2008
56	1.0	1963	1.2	1986	1.8	2016	2.2	2000	2.2	1992	2.2	2017	1.7	1979	1.0	1937	1.0	2013	0.8	2005	0.9	2013	1.1	1942
57	1.0	2011	1.3	1948	1.9	1994	2.2	1977	2.3	2000	2.2	1965	1.8	1983	1.0	1961	1.0	1942	0.8	1974	0.9	1967	1.2	1941
58	1.0	1955	1.4	1941	2.0	2013	2.2	2017	2.4	1977	2.4	1994	1.8	1977	1.0	1975	1.2	2007	1.0	1972	1.0	1990	1.2	2010
59	1.0	2013	1.4	2012	2.1	1950	2.4	2015	2.5	1953	2.5	2011	1.9	2007	1.1	2013	1.2	1974	1.0	1988	1.1	1934	1.3	1946
60	1.1	1988	1.4	2017	2.1	1992	2.4	1990	2.7	1994	2.6	1970	2.0	1964	1.1	2002	1.4	1975	1.0	1994	1.1	1935	1.3	1947
61	1.2	2004	1.5	2014	2.1	1960	2.9	2016	2.9	1962	2.7	1947	2.0	2011	1.2	2006	1.4	2012	1.1	1999	1.2	2010	1.4	1980
62	1.2	2015	1.5	1949	2.2	2019	3.0	1951	3.0	2005	2.8	2007	2.1	2004	1.2	1965	1.5	2009	1.2	2011	1.2	1964	1.5	1961
63	1.3	1978	1.5	1955	2.3	2002	3.1	1967	3.1	1998	3.0	2002	2.2	1989	1.4	1990	1.5	1988	1.2	1950	1.3	1941	1.5	1997
64	1.3	1932	1.5	2013	2.3	2004	3.2	1975	3.2	2018	3.0	1991	2.2	2001	1.4	1944	1.5	2011	1.3	1965	1.3	2008	1.5	1978
65	1.4	1974	1.5	2009	2.4	1947	3.4	1947	3.4	1943	3.4	2013	2.3	1978	1.5	1992	1.6	2003	1.4	2006	1.3	1974	1.5	1981
66	1.4	1965	1.5	1968	2.7	2000	3.7	2007	3.8	1983	3.7	1964	2.4	1947	1.5	1994	1.7	1999	1.5	1977	1.4	1977	1.5	1931
67	1.4	2001	1.6	1965	2.8	1993	3.8	1978	4.0	1978	3.9	1953	2.4	1985	1.5	1951	2.0	1995	1.6	2008	1.4	1999	1.6	2009
68	1.5	1966	1.7	1990	3.0	1990	3.8	2011	4.0	2004	4.0	1984	2.6	1935	1.8	1997	2.1	1973	1.7	1961	1.7	2016	1.7	2001
69	1.5	1960	1.7	1975	3.2	1962	4.0	1953	4.1	2011	4.5	1998	2.7	1973	1.9	1989	2.1	1994	1.7	2017	1.7	2011	1.7	2004
70	1.5	2017	1.8	2010	3.2	1980	4.2	2019	4.1	1961	4.6	1943	2.9	2009	1.9	2001	2.1	1992	1.8	1967	1.7	2009	1.8	2003
71	1.6	1971	2.0	2016	3.3	1995	4.3	1995	4.2	2001	4.7	2000	2.9	1994	2.0	1950	2.7	1970	1.9	2000	1.9	1989	1.8	1971
72	1.8	1995	2.1	2015	3.3	2011	4.5	2002	4.2	1935	4.9	2009	3.2	1982	2.0	1999	2.7	1996	1.9	2009	2.0	1951	1.9	2014
73	2.0	1999	2.1	1998	3.4	1974	4.7	2010	4.3	2013	5.1	1951	3.3	1961	2.1	2018	2.8	1969	1.9	1942	2.0	2015	1.9	2016
74	2.1	2018	2.2	1973	3.5	2008	5.0	2013	4.3	1973	5.5	1935	3.6	1997	2.2	2005	2.9	2004	2.0	1989	2.1	1973	2.1	1944
75	2.1	2002	2.6	1995	3.6	2007	5.1	1992	4.5	2008	5.6	1969	3.7	2008	2.6	2000	3.0	2018	2.1	2004	2.2	1995	2.2	2007
76	2.1	1998	2.7	1952	3.8	1965	5.2	1961	4.6	1952	5.7	2005	4.0	2000	2.6	2014	3.1	1997	2.4	1992	2.3	2019	2.3	1982
77	2.2	1994	2.7	2011	4.0	1961	5.6	2008	4.9	2009	5.9	1967	4.1	2010	2.6	2009	3.2	2014	2.4	2015	2.4	1931	2.3	2015
78	2.3	2014	2.9	1994	4.1	2010	5.8	2001	6.5	2007	6.0	2016	5.1	1999	2.9	2004	3.4	2015	2.6	2010	2.6	1985	2.6	2017
79	2.3	2012	3.5	1999	4.2	2012	6.2	1973	6.6	2015	6.0	1997	5.2	1969	3.0	1996	3.8	2001	2.7	2016	2.6	1942	2.6	1951
80	2.6	2010	3.9	1993	4.2	1999	6.7	1944	7.9	1993	6.7	1982	5.6	1998	3.3	2019	3.9	1989	2.7	1970	2.7	2004	2.7	1972
81	2.7	2008	4.0	2002	4.3	1998	6.9	2009	8.3	2010	7.0	2001	5.7	2017	3.3	2008	4.4	2019	3.0	1969	2.8	1994	3.0	1994
82	2.8	1952	4.2	1962	4.3	2001	7.0	1994	9.3	1997	8.3	1993	6.7	1992	3.4	2010	4.7	1951	3.4	1997	2.9	1997	3.1	1995
83	3.0	1962	4.2	1974	4.3	1948	7.1	1998	10.4	1974	8.3	1990	7.2	2016	3.4	1998	4.8	2016	3.8	1996	3.0	2000	3.6	1993
84	3.1	2016	4.3	1937	4.7	1978	7.8	1987	10.4	1996	8.4	2008	7.3	2019	3.5	2011	5.5	1965	4.3	2019	3.3	2018	3.6	2013
85	3.2	2005	4.4	2005	5.2	2009	7.8	1997	10.6	2016	9.6	1999	7.8	1996	3.7	1995	5.6	2008	4.6	2001	3.4	2001	4.1	2011
86	3.6	1985	4.7	2001	5.6	1945	7.8	1993	11.7	2002	10.8	2010	7.9	2015	4.6	1982	6.2	1993	4.8	1993	4.3	1996	4.5	1996
87	3.9	1973	6.0	2019	5.8	1997	8.1	1945	11.8	1990	11.9	1996	8.2	1995	5.0	2015	6.7	1961	5.4	1973	5.0	1993	5.5	2018
88	4.5	1982	7.6	1997	6.0	1952	9.0	1952	15.5	1999	15.0	2019	8.5	1965	5.2	2016	7.1	2010	5.9	2014	6.8	1961	5.5	1998
89	5.0	2019	7.9	2008	6.1	1987	11.2	1983	16.2	2019	17.8	2015	20.4	1951	5.7	2017	7.7	1998	8.4	2018	6.8	1992	6.2	2019
90	5.5	1993	12.1	1982	6.3	1973	12.3	1999	23.9	1995	20.1	1995	22.2	1993	7.4	1993	12.4	1977	12.1	1998	13.4	1998	12.9	1992

Plate 18. Kansas City to Waverly Ranking of Average Monthly Flows

MRBWM Technical Report - Missouri River Incremental Flows Below Gavins Point, May 2021

Waverly to Boonville
Ranking of Average Monthly Flows (kcfs)

Rank	Jan	Year	Feb	Year	Mar	Year	Apr	Year	May	Year	Jun	Year	Jul	Year	Aug	Year	Sep	Year	Oct	Year	Nov	Year	Dec	Year
1	-0.3	1976	-0.3	1954	-0.9	1956	-0.2	1977	0.3	1956	-0.4	1977	-0.1	1977	-0.8	1964	-1.2	1956	-0.5	1956	-0.1	1956	-0.9	1979
2	-0.1	1940	0.2	1934	-0.2	1957	0.1	1956	0.6	1988	0.1	1934	0.1	1985	0.3	1948	-0.4	1963	-0.3	1987	0.1	1976	0.0	1955
3	0.0	1954	0.3	1956	0.6	1964	0.8	2000	0.8	1934	0.4	1988	0.6	1934	0.5	1963	0.4	1938	-0.2	1989	0.2	1933	0.1	1937
4	0.1	1931	0.4	1957	0.9	2000	1.0	2006	0.9	1977	0.8	1956	0.7	1938	0.5	2003	0.5	1954	-0.1	1948	0.3	1943	0.2	1948
5	0.2	1963	0.5	1978	1.1	1934	1.4	1989	1.2	1964	0.8	1933	0.8	1936	0.5	1936	0.5	1966	-0.1	1963	0.3	1963	0.3	1956
6	0.3	1956	0.6	1940	1.3	2003	1.5	1936	1.4	1989	0.9	1936	0.8	1989	0.6	1930	0.5	1988	0.0	1950	0.4	1930	0.4	1954
7	0.3	1934	0.6	1938	1.4	1954	1.8	1943	1.4	1941	1.0	1963	1.0	1988	0.7	2012	0.6	1930	0.1	1979	0.4	1939	0.4	1939
8	0.4	1944	0.8	1964	2.0	2002	1.8	1996	1.8	1980	1.7	2012	1.0	1931	1.0	1976	0.8	1976	0.3	1964	0.5	1937	0.5	1963
9	0.4	1964	0.9	1931	2.0	1941	1.9	1954	2.4	1939	1.8	2018	1.0	1980	1.0	1941	0.8	1953	0.3	1937	0.6	1955	0.7	1960
10	0.5	1981	0.9	1939	2.1	1968	2.0	2003	2.6	1985	1.9	1971	1.2	2006	1.0	1945	0.8	2013	0.4	1976	0.8	1953	0.8	1933
11	0.5	2006	0.9	2006	2.2	1938	2.4	1963	2.8	2000	2.1	1987	1.3	2018	1.0	1975	0.9	2006	0.5	2015	0.9	1964	0.8	1950
12	0.6	2000	1.3	2003	2.2	2006	2.5	1971	3.1	1992	2.4	1992	1.3	1963	1.0	1953	0.9	1948	0.5	1978	1.0	1949	0.9	2013
13	0.6	2018	1.5	2000	2.2	1989	2.5	1930	3.4	2018	2.6	1989	1.4	1976	1.1	2006	1.0	1939	0.5	1939	1.0	1959	0.9	1953
14	0.7	1957	1.7	1976	2.3	1977	2.6	1934	3.4	1936	2.6	1953	1.5	1994	1.2	1988	1.0	1997	0.5	2013	1.0	1948	1.0	2017
15	0.7	1959	1.7	1947	2.5	2017	2.9	1955	3.5	1932	2.7	1940	1.5	1940	1.2	2013	1.1	2017	0.6	1953	1.0	2002	1.0	2005
16	0.7	1936	1.8	1989	2.7	2014	3.1	1962	3.9	1949	3.0	1983	1.6	2012	1.3	1947	1.1	1955	0.7	1975	1.1	1940	1.1	1943
17	0.7	1979	1.8	2017	2.8	1981	3.2	2018	4.5	1965	3.0	1961	1.7	1983	1.4	1942	1.2	2000	0.7	1988	1.2	1975	1.2	2016
18	0.7	1939	1.9	1967	2.9	2015	3.3	1940	4.7	1962	3.2	1980	1.7	1971	1.4	1934	1.2	1940	0.7	1947	1.2	1954	1.3	1936
19	0.7	1938	2.1	1933	3.0	1996	3.4	2016	4.8	1940	3.3	1957	1.7	1954	1.7	1971	1.2	1971	0.8	2006	1.2	1938	1.4	1938
20	0.8	2014	2.2	1963	3.0	1970	3.6	1948	4.9	2014	3.3	1972	1.8	1970	1.8	1954	1.3	1946	0.8	1940	1.2	2006	1.4	2002
21	0.8	1989	2.3	1980	3.2	1967	3.8	1958	5.2	1954	3.6	1937	1.9	2005	1.9	1949	1.3	2012	0.9	1994	1.3	2012	1.4	1995
22	1.0	1953	2.4	2018	3.4	1931	3.8	1935	5.4	1931	3.7	1968	1.9	1959	1.9	2018	1.4	1991	0.9	1995	1.3	1995	1.5	1940
23	1.0	1961	2.4	1981	3.5	1933	4.0	1941	5.5	1957	4.2	2006	2.0	1997	1.9	1931	1.4	2002	0.9	1930	1.4	1936	1.6	1962
24	1.0	1951	2.4	1977	3.6	1930	4.4	1957	5.8	2006	4.6	1986	2.1	1933	1.9	2002	1.4	1937	1.1	1972	1.5	2013	1.6	1930
25	1.0	1977	2.8	1966	3.7	1995	5.0	1974	6.1	1955	4.7	1955	2.2	1930	1.9	1935	1.5	1968	1.1	1935	1.6	2001	1.6	1958
26	1.2	1980	3.2	1953	4.1	1943	5.2	1937	6.2	1971	4.9	2016	2.3	1944	2.0	1938	1.5	1947	1.1	1974	1.6	1988	1.8	1945
27	1.3	2003	3.3	1944	4.2	1980	5.3	1933	6.4	1967	5.1	1944	2.3	1972	2.0	1977	1.7	1958	1.1	1952	1.6	1966	1.8	1988
28	1.3	1930	3.4	2015	4.2	1966	5.4	1972	6.5	1948	5.3	1994	2.5	1964	2.1	1994	1.8	1994	1.2	1932	1.6	1945	1.9	2001
29	1.5	1997	3.6	1987	4.4	1988	5.6	1950	6.9	1963	5.4	1946	2.6	2002	2.1	1974	1.8	1935	1.3	1960	1.7	1932	1.9	1976
30	1.6	1967	3.8	1970	4.7	2005	5.7	2004	7.1	1987	5.5	1930	2.8	1962	2.2	1991	1.8	2005	1.3	1968	1.7	1989	2.0	1935
31	1.6	2002	3.8	2013	4.8	1972	5.8	1966	7.1	1950	5.7	2003	2.8	2003	2.2	1997	1.8	1932	1.4	2003	1.8	2000	2.1	1978
32	1.7	1978	3.8	1972	5.2	1932	6.0	1949	7.3	1930	5.7	1976	2.9	1955	2.2	1972	1.9	1990	1.4	1943	1.8	2016	2.1	2012
33	1.7	1996	3.9	2004	5.5	2018	6.1	1988	7.4	1966	5.8	2017	3.0	1941	2.4	1937	2.1	1950	1.4	2012	1.9	2017	2.1	1966
34	1.7	1945	3.9	2002	5.8	1950	6.1	2015	8.2	1968	6.3	1991	3.1	1952	2.4	1989	2.2	1943	1.5	2000	1.9	2019	2.2	1952
35	1.8	1994	4.1	1996	5.9	1940	6.4	1981	8.6	1947	7.0	1997	3.2	1975	2.5	1983	2.2	1975	1.5	1971	1.9	1952	2.5	1969
36	1.8	2012	4.5	1946	6.3	2016	6.7	1985	9.1	2016	7.4	1938	3.4	1957	2.7	1966	2.2	1962	1.6	1980	2.1	1999	2.6	1999
37	2.1	2015	4.9	1932	7.2	1955	6.9	1932	9.3	1958	8.1	1954	3.6	1966	2.7	1955	2.3	1967	1.7	1966	2.1	1944	2.7	1964
38	2.3	1988	5.0	1968	7.8	1960	7.1	1987	9.6	2003	8.3	1952	3.9	2013	2.7	1957	2.3	1972	1.8	1990	2.1	2003	3.1	2010
39	2.3	2011	5.4	1995	8.2	1953	7.3	1990	10.1	2005	8.5	1932	3.9	1939	2.7	1969	2.4	1952	1.8	1991	2.1	1962	3.1	2007
40	2.4	1958	5.5	2014	8.5	1935	7.7	1980	10.5	1975	9.0	1941	4.0	1953	3.0	1960	2.5	1933	1.9	1938	2.2	1947	3.2	1981
41	2.6	1990	5.5	1961	9.2	1976	7.8	1946	10.6	1952	9.1	1931	4.0	1932	3.1	1967	2.6	1960	2.0	2002	2.2	1950	3.4	2000
42	2.6	2017	5.5	1990	9.2	1992	8.1	1952	11.0	2012	9.3	1965	4.1	2000	3.2	1933	2.7	1974	2.2	1992	2.3	2007	3.4	2006
43	2.6	1947	5.6	1941	9.9	1969	8.2	1938	11.6	1959	9.4	1959	4.2	1943	3.2	1943	2.7	1979	2.5	2005	2.4	2005	3.5	1996
44	2.7	2007	5.8	1952	10.1	1986	8.3	2014	12.2	2004	9.4	2000	4.4	2011	3.3	2000	2.7	2007	2.7	1933	2.5	1990	3.5	1990

45	2.7	1966	5.9	2009	10.1	2007	8.9	2002	12.3	1933	9.7	1985	4.5	1950	3.6	1962	2.8	1985	2.8	1999	2.6	1997	3.6	1989
46	2.8	1948	5.9	2012	10.4	1991	9.1	2005	12.5	1976	9.8	1978	4.8	1968	4.1	1956	2.9	1987	2.8	1996	2.7	1980	3.7	1972
47	3.1	2013	6.0	1958	10.5	1936	9.5	1986	12.7	1953	9.8	1962	5.1	1956	4.2	1946	2.9	1941	3.0	1942	2.8	1996	4.0	1946
48	4.1	1968	6.2	1960	10.8	1951	9.7	1931	12.8	1951	10.7	1975	5.4	1948	4.3	1965	3.1	1995	3.1	1946	3.1	1965	4.0	1959
49	4.3	1992	6.9	1984	11.2	1994	11.0	1995	12.8	1969	10.7	1958	5.7	1937	4.4	1952	3.3	1944	3.2	1944	3.3	1979	4.1	1968
50	4.4	1972	7.4	1948	12.4	1974	11.9	1942	13.1	1972	11.0	2002	5.8	1946	4.5	1985	3.3	1983	3.2	2001	3.4	1971	4.1	1965
51	4.5	1987	7.7	1943	12.7	1999	12.5	1982	13.1	1979	11.2	1960	5.9	1974	4.5	2007	3.4	1957	3.5	1981	3.6	1991	4.1	1994
52	4.6	2004	7.7	1992	12.7	1939	13.7	1964	13.1	1997	12.4	1979	6.8	1991	4.7	1961	3.7	2001	3.6	2011	3.6	1960	4.3	2014
53	4.8	1933	7.8	1991	12.8	1947	13.9	2012	13.5	1938	13.8	1966	7.0	2014	5.1	1996	3.7	1996	3.7	2016	3.6	1987	4.6	1949
54	4.9	1995	7.9	1935	13.3	1949	14.1	2007	14.0	1937	13.9	1973	7.0	1949	5.3	1978	3.8	2015	3.7	2017	3.7	1957	5.1	1974
55	5.1	1970	8.1	1945	13.6	1963	14.1	2019	14.3	1998	14.3	1939	7.1	1945	5.3	1944	4.3	1942	3.9	1934	3.8	2018	5.2	1975
56	5.1	1955	8.5	1965	13.6	1971	14.2	1959	14.9	1946	14.5	1948	8.0	1979	5.4	1939	4.5	1936	3.9	1983	4.1	2011	5.3	1951
57	5.2	1937	8.6	1936	13.9	1958	14.9	1968	15.7	1942	15.2	2011	9.4	2009	5.4	1979	4.6	1984	4.1	1997	4.4	1942	5.5	2019
58	5.3	1943	9.2	2010	14.7	1937	15.2	1939	18.3	2008	15.2	1970	9.5	2007	5.5	1980	4.8	1934	4.1	2007	4.6	1968	5.6	1947
59	5.3	2001	9.3	1988	14.8	1997	15.6	1953	18.5	1961	15.2	1964	9.8	1982	5.6	1984	4.9	1949	4.6	1945	4.6	2014	5.7	1993
60	5.7	1991	9.5	2016	14.8	2012	17.4	1979	20.7	1994	15.4	1999	10.1	2004	5.6	2005	5.1	1977	4.8	1965	4.8	2010	5.8	1991
61	5.9	1984	9.7	2007	15.0	1975	18.0	1976	20.8	2017	15.6	2007	10.9	1992	6.1	1973	5.3	1959	4.9	2004	4.9	1935	5.9	1967
62	6.1	1952	9.8	1994	15.0	1990	19.5	1951	20.9	1981	15.8	2005	10.9	1973	6.2	1968	5.5	2011	4.9	1958	5.2	1946	6.1	2011
63	6.2	1949	10.1	1986	16.5	1944	19.5	2001	21.1	2011	17.3	1950	11.0	1990	6.3	2011	5.6	2003	5.1	1955	5.5	1994	6.5	1944
64	6.2	1942	10.6	1955	16.7	1946	19.9	1992	22.8	2001	17.8	1995	11.1	1996	6.4	2001	5.9	2009	5.2	1951	5.7	1969	6.7	1980
65	6.3	2008	10.7	1979	16.9	1987	21.3	1970	23.1	2015	19.5	1949	12.1	2016	6.7	1986	6.0	1945	5.3	1949	6.7	1981	6.8	1961
66	6.5	1982	11.2	1950	17.3	2004	22.0	2011	25.1	2013	20.3	1951	12.3	1978	6.8	2017	6.0	1981	5.4	1984	7.5	1973	7.2	1977
67	6.7	1935	11.4	1951	17.3	1959	22.0	1991	25.6	1944	21.9	1969	13.0	1961	6.9	2019	6.0	1980	5.5	1957	8.0	1986	7.5	1957
68	6.8	1941	12.1	1993	17.4	1945	22.1	1961	26.1	1983	22.1	1981	13.0	1935	7.1	1970	6.3	2018	5.6	1962	8.1	1970	7.5	2004
69	6.9	1986	12.1	1959	17.9	1983	23.3	1975	26.3	1986	22.4	2014	13.2	1986	7.4	1981	7.1	1964	5.8	1954	8.4	1958	7.8	1970
70	7.1	1971	13.1	1998	18.0	2013	23.4	1969	26.5	1970	22.5	2004	13.6	1984	7.8	1990	7.4	1999	6.5	1936	8.5	1978	8.5	1932
71	7.3	1975	13.3	1930	19.0	1942	24.1	1967	26.8	1993	25.9	1984	14.1	2001	8.0	1959	7.7	1931	9.0	1982	8.9	1993	8.9	1941
72	7.8	1985	14.3	1983	20.2	2019	24.5	2017	27.0	1974	25.9	1998	14.6	2019	8.4	1940	7.7	1989	9.3	1967	9.2	1951	9.0	2003
73	8.0	1969	14.4	1975	20.8	2011	25.6	1965	27.2	1984	26.7	1974	14.6	1967	9.2	1987	8.6	1973	9.5	1931	9.2	1974	9.5	1984
74	8.5	1999	14.8	1969	21.3	1965	25.6	1994	27.7	1945	27.2	1993	14.7	1987	9.8	1992	9.2	1969	10.6	2010	9.6	1982	9.9	1983
75	8.6	1983	15.0	1974	21.6	1948	25.8	2009	29.1	1991	27.3	1942	16.4	1965	9.9	1950	9.4	1978	11.4	2008	9.9	1972	10.3	1997
76	9.2	1962	15.6	2011	24.2	2008	26.1	2010	29.4	1960	28.4	1990	16.7	1960	9.9	1998	9.7	2019	12.6	1959	10.8	1967	10.4	1985
77	9.3	2009	15.8	1971	25.3	1982	27.4	1945	30.4	1982	33.6	2009	17.3	1942	10.2	1999	11.1	2004	15.4	1961	11.2	1934	10.7	1934
78	9.5	1950	16.0	2008	25.5	1952	30.3	1984	30.7	1978	34.7	1996	18.0	1999	10.2	2014	11.8	2016	15.8	1970	11.2	2015	11.3	2009
79	10.5	2019	16.4	2005	25.8	1984	30.9	1997	37.9	1999	34.8	2015	19.2	1998	11.2	2010	14.2	1951	17.6	1977	11.7	2008	11.8	1998
80	12.3	1998	16.4	1999	26.9	1978	33.1	1993	38.1	1973	37.4	1943	22.4	1995	13.6	1982	14.2	1992	19.4	1969	14.5	2004	12.2	1971
81	13.4	1960	17.7	1949	27.0	1962	33.7	1999	38.2	1943	37.5	1945	22.7	2017	13.8	1995	15.2	1998	21.1	1993	15.5	1984	12.2	1942
82	14.8	1993	18.2	2019	28.6	1985	35.8	1998	39.5	1990	41.0	2013	23.4	1947	14.0	2016	19.1	1982	21.2	1941	16.6	1983	13.0	2008
83	15.8	1965	18.3	1942	29.2	1961	36.8	1978	43.3	1935	42.3	1967	26.0	2010	14.5	1951	20.2	1986	21.7	2018	17.4	1941	13.5	2018
84	16.7	2005	21.4	1973	30.1	1998	38.4	2013	45.4	1996	43.9	1982	39.3	2015	14.9	1932	25.3	2014	23.1	2009	22.4	2009	15.9	1987
85	17.5	2010	27.2	1997	30.2	1993	39.1	2008	47.5	2007	45.9	2010	39.4	1981	15.1	2004	29.1	1970	23.4	2014	23.0	1977	16.0	1931
86	18.9	2016	27.5	2001	30.6	2001	39.6	1947	48.3	2009	57.3	2008	40.0	1958	18.4	2015	30.1	1965	27.3	2019	23.4	1998	18.3	1973
87	22.8	1932	30.7	1962	32.4	2009	41.3	1960	49.1	2002	57.5	2019	45.6	2008	20.0	2008	36.7	2010	34.4	1985	27.7	1992	18.7	1986
88	23.2	1973	32.7	1937	33.6	2010	48.6	1983	50.8	2019	58.7	1935	49.1	1951	20.1	2009	37.7	1961	37.6	1998	32.1	1985	23.6	1992
89	25.2	1974	35.8	1985	41.6	1979	49.7	1944	61.0	2010	59.3	2001	52.3	1969	20.7	1958	44.5	1993	43.1	1973	37.3	1931	37.9	2015
90	26.2	1946	41.7	1982	54.8	1973	81.6	1973	68.7	1995	95.1	1947	76.6	1993	49.5	1993	49.1	2008	51.3	1986	48.9	1961	41.5	1982

Plate 19. Waverly to Boonville Ranking of Average Monthly Flows

MRBWM Technical Report - Missouri River Incremental Flows Below Gavins Point, May 2021

Boonville to Hermann
Ranking of Average Monthly Flows (kcfs)

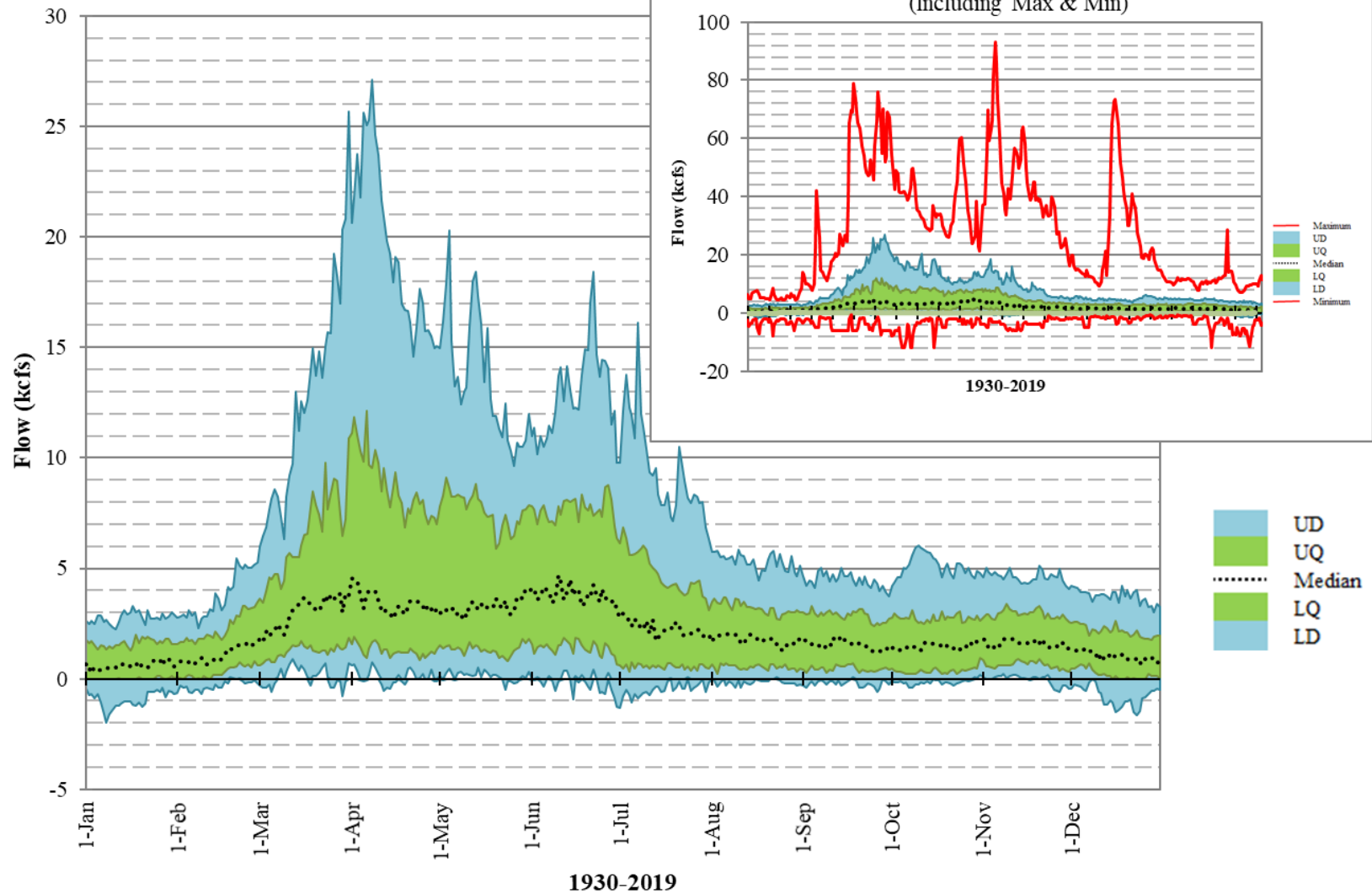
Rank	Jan	Year	Feb	Year	Mar	Year	Apr	Year	May	Year	Jun	Year	Jul	Year	Aug	Year	Sep	Year	Oct	Year	Nov	Year	Dec	Year
1	0.6	1977	1.6	1964	1.0	1954	2.3	1956	1.2	1932	1.0	1932	1.5	2011	0.8	2014	-0.5	2014	-0.2	1963	1.1	1980	0.1	1989
2	1.8	1940	1.7	1954	1.8	1956	2.9	1954	3.4	1936	2.3	1934	2.1	1954	1.0	1999	0.3	1963	0.4	1957	1.3	1956	1.3	2000
3	2.1	2006	2.5	1978	2.7	1967	3.1	1930	4.2	1977	3.4	1936	2.4	1936	1.1	1954	0.5	1957	0.7	1956	1.3	2000	1.6	1939
4	2.1	1964	2.6	1963	3.0	1981	3.4	2006	4.9	1980	3.9	1988	2.4	1972	1.3	2011	1.0	1999	1.0	1980	1.3	1966	1.7	2005
5	2.2	1931	2.6	1961	3.0	1941	4.9	1981	4.9	1934	3.9	1953	2.4	1963	1.4	1930	1.0	2011	1.5	2002	1.3	1952	2.3	1953
6	2.2	1981	2.8	1940	3.2	2014	5.0	1977	5.6	2001	4.0	1972	2.5	1934	1.6	2006	1.1	1959	1.5	1966	1.8	1963	2.4	1962
7	2.5	1963	3.6	2014	3.8	1964	5.1	2000	6.0	2000	4.3	1931	2.6	1988	1.6	1980	1.2	1956	1.8	1964	2.0	2001	2.8	1976
8	2.6	1951	3.8	1956	4.4	2017	5.3	1963	6.0	1965	4.4	2012	2.6	1930	1.8	2012	1.3	1964	1.8	2012	2.1	2006	2.8	1963
9	2.6	2018	3.8	2006	5.3	2006	5.3	1931	6.2	2005	4.5	1960	2.9	2014	1.8	1957	1.8	1983	1.9	2015	2.1	2012	2.8	2002
10	2.7	2001	4.1	2003	6.2	1936	6.3	1932	6.6	1954	5.2	2014	2.9	1940	2.0	1956	1.9	1976	1.9	1979	2.2	2002	2.9	2007
11	2.8	1954	4.1	1996	6.6	1931	6.8	1936	7.2	1989	5.9	2006	3.1	2012	2.1	1936	1.9	2006	1.9	1952	2.4	1939	2.9	2012
12	2.9	2013	4.2	1981	6.7	1996	7.6	1934	7.4	1962	5.9	1963	3.3	1960	2.1	1962	1.9	2012	2.0	1937	2.4	2005	3.0	1980
13	2.9	2003	5.1	1931	8.0	1991	7.8	1971	7.6	1956	6.3	1956	3.3	2018	2.3	1976	2.0	1954	2.1	1987	2.5	1937	3.1	1995
14	3.6	1978	5.6	1977	8.1	1930	8.3	2003	7.6	1955	6.3	1954	3.5	1962	2.4	1955	2.2	1980	2.2	1960	2.7	2007	3.3	1964
15	3.6	1967	5.7	1970	8.3	2016	9.3	1959	7.6	2014	6.4	1959	3.5	2003	2.4	1963	2.6	1960	2.2	2006	2.7	2014	3.3	2017
16	3.7	1957	5.9	2017	8.5	1977	9.6	2016	8.2	1971	7.1	1952	3.7	1931	2.6	1964	2.7	2001	2.3	1939	2.8	1940	3.4	1978
17	3.7	1961	6.1	1934	9.0	1983	11.5	1982	8.5	1930	7.2	1984	3.8	2006	2.6	1941	2.8	1987	2.3	1940	2.8	1953	3.7	1952
18	3.8	1939	6.5	1947	9.3	2015	11.5	1940	9.1	1941	7.6	1962	4.5	1953	2.7	1977	3.0	1955	2.4	1946	2.8	1955	3.9	2013
19	3.8	1934	6.6	1948	9.7	2003	12.9	2005	9.7	1992	8.0	1966	4.7	1952	2.9	1991	3.1	2015	2.6	2000	2.9	1997	3.9	1966
20	4.0	1956	6.7	1967	9.9	1940	13.1	1967	9.9	1982	8.1	1961	4.7	1978	3.0	2018	3.1	1967	2.6	2013	3.0	1978	3.9	1956
21	4.4	1990	6.8	1972	10.3	1932	13.5	1943	10.5	2018	8.1	1930	5.1	1970	3.1	1984	3.1	1952	2.7	2010	3.1	1976	4.0	1940
22	4.6	1953	7.1	1953	10.6	1972	14.7	1991	10.6	1940	8.1	1946	5.3	1971	3.2	1966	3.3	1988	2.7	1978	3.2	1957	4.1	2016
23	5.1	1980	7.1	1965	11.3	1970	15.0	2018	10.8	2015	8.9	2018	5.3	1980	3.5	1959	3.5	1953	2.8	1930	3.2	1930	4.1	1937
24	5.2	1936	7.2	1957	11.3	1934	15.0	1955	11.1	1987	9.0	1944	5.4	1959	3.6	1960	3.6	1946	2.9	2003	3.3	1964	4.4	1955
25	5.4	2017	8.1	1976	12.2	1957	15.2	1962	11.4	1959	9.0	1976	5.4	1933	3.8	1932	3.7	1966	3.1	1953	3.4	1962	4.7	1945
26	5.6	1958	8.1	2013	12.2	2007	15.4	2002	11.5	1948	9.3	1992	5.4	1989	3.8	1986	3.7	2000	3.1	1994	3.5	2011	5.1	1933
27	6.3	1944	9.0	1944	12.5	1992	15.5	1946	12.2	1964	9.4	2000	5.4	1956	3.9	1988	3.7	1943	3.2	2011	3.6	1965	5.4	1947
28	6.4	1938	9.3	1958	12.6	2002	16.5	1948	12.8	1931	9.6	1980	5.7	1946	3.9	1979	3.8	1938	3.5	2007	3.7	1999	5.5	1938
29	6.4	2015	9.5	2015	13.0	1943	16.6	2015	13.5	1952	9.6	1933	5.9	1944	4.0	1931	4.0	1991	3.6	1932	4.0	1932	5.5	1965
30	6.5	1979	10.2	1936	13.2	1995	18.1	1950	16.1	1958	9.8	2004	6.1	1938	4.2	1970	4.0	1937	3.6	2004	4.1	2010	5.6	1970
31	6.5	2002	10.6	2004	13.5	1953	18.1	1933	16.6	1988	10.0	1941	6.2	1991	4.2	2003	4.1	1984	3.7	1988	4.2	1933	5.7	1950
32	6.9	1970	11.4	2000	13.5	1963	18.4	2014	17.4	1997	10.2	1987	6.4	1939	4.3	1972	4.1	2002	3.7	1991	4.2	1979	5.8	1943
33	7.0	1945	11.6	1980	14.0	2000	18.6	1935	17.7	1986	10.2	1939	6.4	1974	4.4	1953	4.4	1932	4.1	1938	4.3	2017	6.3	2006
34	7.1	2012	12.2	1943	14.1	1933	18.8	1989	18.4	2007	10.3	2016	6.5	1937	4.5	2009	4.7	2013	4.4	1971	4.4	1954	6.3	2010
35	7.1	1996	12.5	2012	14.8	2009	19.2	1937	18.9	1949	10.8	1955	7.3	1968	4.5	2010	4.8	1939	4.5	1976	4.5	1990	6.4	1958
36	7.4	1976	13.0	1933	15.2	1966	19.4	1996	19.0	1963	10.8	1971	7.4	1941	4.7	1934	5.0	2018	4.6	1935	4.7	2016	7.0	1979
37	7.8	1965	13.2	1960	15.5	2005	19.9	1953	19.5	1953	11.3	1940	7.5	1964	4.8	1971	5.2	2004	4.8	1997	5.1	1944	7.4	1954
38	8.0	1984	13.6	1983	16.8	1986	20.4	1968	19.5	2016	11.9	2003	7.7	1966	4.8	1938	5.3	1933	4.9	1999	5.2	2013	7.5	1948
39	8.1	1959	13.8	2007	17.5	2001	20.7	2001	19.5	2006	12.2	1991	8.1	1975	4.8	1987	5.4	1962	5.0	1995	5.5	1960	7.7	1930
40	8.5	1968	13.9	1945	17.8	1959	21.1	1986	19.6	2003	12.4	1978	8.2	1955	4.9	1933	5.6	1940	5.1	1989	5.5	1989	7.8	2014
41	8.6	1947	14.0	1991	17.8	1946	21.3	1992	20.8	1967	12.7	1989	8.7	1976	5.2	1940	5.7	1930	5.1	1948	6.1	1943	7.9	1936
42	8.7	1992	14.2	1941	18.0	1965	21.7	1972	20.9	1951	13.6	1958	9.5	2000	5.4	1937	5.7	1935	5.1	1983	6.3	2003	8.3	1957
43	9.0	2014	14.3	1989	18.1	1968	21.7	1976	21.0	1966	14.5	1979	9.5	2005	5.4	1983	5.8	1971	5.2	1981	6.4	1971	8.5	1969
44	9.1	2000	14.8	1935	19.1	1950	22.1	1974	21.2	1975	14.7	1986	9.8	2013	5.5	1939	5.9	1981	5.2	1958	6.4	1958	8.5	1977

45	9.2	2011	15.0	1932	19.4	1942	23.3	1949	21.6	1969	16.4	1975	10.1	2002	5.8	1935	6.2	1947	5.7	1972	7.2	1938	8.6	1999
46	9.8	2008	15.0	1992	19.8	1947	23.4	1958	21.9	1976	20.4	1977	10.2	1983	6.2	1994	6.4	1931	6.1	2005	7.2	2018	8.7	1959
47	10.1	2007	16.6	2018	20.0	1939	23.6	1980	22.8	2012	20.6	1968	10.5	1987	6.6	1965	6.4	1978	6.3	2017	7.3	1945	8.8	1960
48	10.9	1948	16.9	2009	20.5	1937	24.6	2004	23.4	1939	22.8	1973	11.2	1997	6.8	1997	6.5	1936	6.5	1947	7.5	1947	9.2	2008
49	11.2	1960	17.4	1939	20.7	1980	26.9	1964	24.2	1979	23.0	2008	11.3	2017	6.8	2002	6.7	1968	6.5	1982	8.1	1949	9.6	2001
50	11.3	1942	18.1	2016	20.7	1971	27.2	1960	24.2	1998	24.0	1996	11.5	1973	6.8	1945	6.9	1948	6.6	1931	8.2	1959	9.8	2011
51	11.3	1982	18.4	1998	21.3	1938	27.4	2017	25.7	1972	26.4	2005	11.5	2004	7.1	1973	7.0	1990	6.7	1943	8.4	1995	9.9	2019
52	12.3	1966	18.4	1938	21.7	1979	28.1	1951	25.8	1974	27.3	1957	12.6	1994	7.1	1967	7.2	2007	6.9	1974	8.6	1950	10.5	1944
53	13.9	1955	19.2	2011	21.8	1961	28.3	2007	26.8	1991	28.1	2011	12.8	1986	7.3	1961	7.3	1986	7.2	1950	8.6	1975	10.6	1990
54	13.9	1962	19.3	1990	21.8	1989	28.8	1966	26.8	1968	28.6	1964	14.1	1943	7.3	1978	7.5	1979	7.4	1933	9.3	1991	11.0	2018
55	14.3	1989	20.2	1984	22.5	2018	29.0	1995	27.3	2004	28.9	1947	14.3	1961	7.5	1947	7.8	1972	7.6	1990	9.5	1982	11.4	1932
56	14.3	1930	20.5	2002	23.2	1976	29.1	1942	28.2	1981	29.1	1998	15.0	2009	7.6	1974	7.9	2003	8.2	2018	9.9	1934	13.0	1988
57	15.1	1972	20.6	2008	23.7	1960	29.6	2011	28.8	1946	29.4	2017	15.4	1932	7.9	1952	8.1	1973	8.4	2001	9.9	1987	13.3	1981
58	15.2	1987	20.9	1971	25.2	2012	30.4	1999	30.2	1947	29.5	1965	16.4	1965	8.3	1943	8.5	1985	8.5	1934	9.9	1948	13.6	1961
59	15.9	2009	21.4	1959	25.4	1982	30.6	2019	30.2	1985	29.9	2007	16.8	1979	9.4	1942	8.7	1997	8.6	1954	10.1	1931	13.6	1975
60	15.9	1997	22.0	1950	25.7	1969	31.7	1957	31.3	1935	30.3	2010	17.1	1957	9.4	2005	8.7	1995	8.7	2014	10.5	1988	14.4	1991
61	16.0	1986	22.9	1951	27.2	1993	32.9	1997	33.3	1937	31.4	1951	18.1	1996	9.4	1949	9.0	1994	8.9	1968	10.6	2019	15.6	1935
62	18.5	1941	22.9	2001	27.9	1994	33.6	2012	33.5	1993	34.1	1974	18.6	2016	9.5	1969	10.2	2009	9.0	1992	12.3	2008	15.6	2003
63	18.7	1952	23.4	1995	28.0	1948	34.7	1952	33.9	1942	34.3	1967	19.4	1985	9.6	2001	10.9	2017	9.6	1984	12.9	1981	16.2	1946
64	18.8	1983	23.5	1955	29.8	2013	34.7	1979	35.6	1978	38.1	2009	21.0	1999	9.7	2000	11.1	1992	9.7	1967	14.4	1942	17.5	1949
65	19.0	1994	24.0	1962	29.9	1955	35.6	1939	37.6	1950	38.1	1969	22.1	1993	10.6	1975	11.2	1977	9.8	1975	15.4	1970	17.8	1931
66	19.7	1932	24.2	1979	31.8	2019	35.8	1993	39.2	1960	39.0	1999	22.2	2010	11.9	2004	11.4	2016	10.0	1942	15.8	1969	18.0	1997
67	19.9	1933	24.3	1966	31.9	1999	36.2	1938	39.4	2013	39.3	1950	22.6	2001	12.0	2015	11.7	1989	10.3	1962	17.2	2015	18.0	1941
68	21.7	1935	24.9	1946	33.2	2010	36.3	1987	40.6	1984	39.8	2001	24.1	1984	12.1	1996	11.8	1934	10.7	1936	19.4	1936	18.1	1972
69	21.9	1971	25.5	1942	34.5	1935	37.4	2010	41.2	2010	41.4	2002	24.4	1990	12.2	1990	12.2	1996	11.7	2016	22.0	1935	19.9	1974
70	22.7	1991	25.7	1968	35.3	1952	38.3	1975	41.8	2011	42.2	1938	24.4	1935	12.3	2016	13.8	2005	12.1	1961	23.4	1973	20.7	1951
71	22.8	1999	27.5	1988	35.4	1988	39.2	2009	45.3	1933	42.2	1993	24.7	1949	14.7	2008	14.0	1958	12.9	1977	24.5	1968	20.7	1984
72	23.3	2004	28.2	1930	37.0	1949	39.4	1978	45.6	1957	43.3	1970	24.7	1998	15.1	1968	15.3	1944	14.0	1944	25.5	1984	21.7	1934
73	24.5	1975	28.3	1994	38.3	1951	39.7	1961	45.8	1999	43.3	1949	24.9	1950	15.2	1985	15.4	1942	14.6	1955	26.1	1967	22.0	1994
74	27.4	1946	28.3	1993	40.8	2004	43.0	1969	50.2	1996	44.0	1948	25.6	1992	16.2	1989	16.4	1975	15.1	1996	27.8	1977	22.6	2009
75	29.2	1998	28.3	1987	41.4	1944	43.0	1965	51.1	1938	44.2	1997	26.3	1945	17.0	1998	16.8	1998	15.1	1965	30.2	2004	24.1	1998
76	30.1	1995	30.0	1952	41.4	1987	45.3	1990	51.1	2019	44.6	2013	26.8	1942	17.4	1951	17.0	1941	15.2	2008	30.7	1983	27.1	1983
77	32.0	1988	30.1	1982	41.7	1962	45.8	1970	51.4	2008	45.0	2019	27.0	1977	17.7	1944	17.8	1969	17.8	2019	31.2	1994	27.6	1971
78	33.4	2010	31.5	1937	44.5	1958	47.0	2013	52.0	1945	45.2	1982	28.6	1982	19.6	1982	18.6	1982	22.3	1945	34.3	1961	28.0	1996
79	33.5	1937	33.6	1974	45.8	1990	47.9	1998	53.0	2009	47.4	1981	31.6	1947	19.8	1992	19.2	1949	24.0	1970	36.2	1998	29.6	1968
80	34.2	1943	34.1	1997	48.5	1997	48.8	1988	53.3	1944	48.5	1994	33.9	1967	21.1	2017	19.2	1974	24.3	1985	40.2	1996	30.7	1967
81	36.4	1974	34.2	1973	49.4	1978	49.0	1941	54.9	1973	49.7	2015	46.2	1948	22.8	2007	19.9	2010	25.1	1951	41.4	1992	31.8	2004
82	36.7	1969	37.0	2019	51.8	1975	51.3	1983	57.1	1970	49.7	1937	48.5	2008	23.0	1948	21.7	1970	26.4	1959	41.9	1951	32.4	1993
83	37.7	1949	38.9	1986	52.1	1998	52.2	1944	73.6	1983	50.6	1942	48.7	1969	23.2	1981	23.0	1950	30.7	1973	45.6	1972	35.3	1942
84	38.1	1973	39.6	2010	52.3	2011	62.0	1985	73.9	2002	51.0	1983	50.9	2007	27.2	1995	23.2	1945	32.4	1949	46.4	1974	38.2	1987
85	38.4	2019	41.9	1985	56.6	1974	70.1	2008	76.2	1990	59.9	1943	52.6	1958	30.0	1946	27.9	2019	50.4	2009	48.5	1946	39.2	1986
86	40.7	1985	42.2	1969	57.4	1945	73.9	1984	80.2	1994	62.5	1945	54.9	1995	30.3	1950	29.4	1961	52.2	1998	51.4	2009	41.6	1973
87	46.4	1950	46.4	2005	58.6	2008	83.2	1947	82.5	1995	70.8	1990	57.5	2019	37.4	1958	40.3	2008	56.7	1969	56.6	1986	53.7	1992
88	54.6	1993	47.4	1999	64.2	1984	88.1	1994	102.9	2017	78.5	1985	60.3	1981	41.9	2013	47.0	1965	64.6	1993	56.7	1993	66.9	1985
89	55.3	2016	52.1	1949	78.2	1985	98.6	1945	108.4	1961	89.7	1995	62.8	2015	44.7	2019	65.0	1951	80.9	1941	59.0	1985	73.7	1982
90	74.2	2005	57.2	1975	87.5	1973	117.2	1973	137.3	1943	120.4	1935	138.6	1951	71.7	1993	81.6	1993	104.3	1986	60.7	1941	74.4	2015

Plate 20. Boonville to Hermann Ranking of Average Monthly Flows
MRBWM Technical Report - Missouri River Incremental Flows Below Gavins Point, May 2021

Gavins Point to Sioux City

Daily Incremental Flows



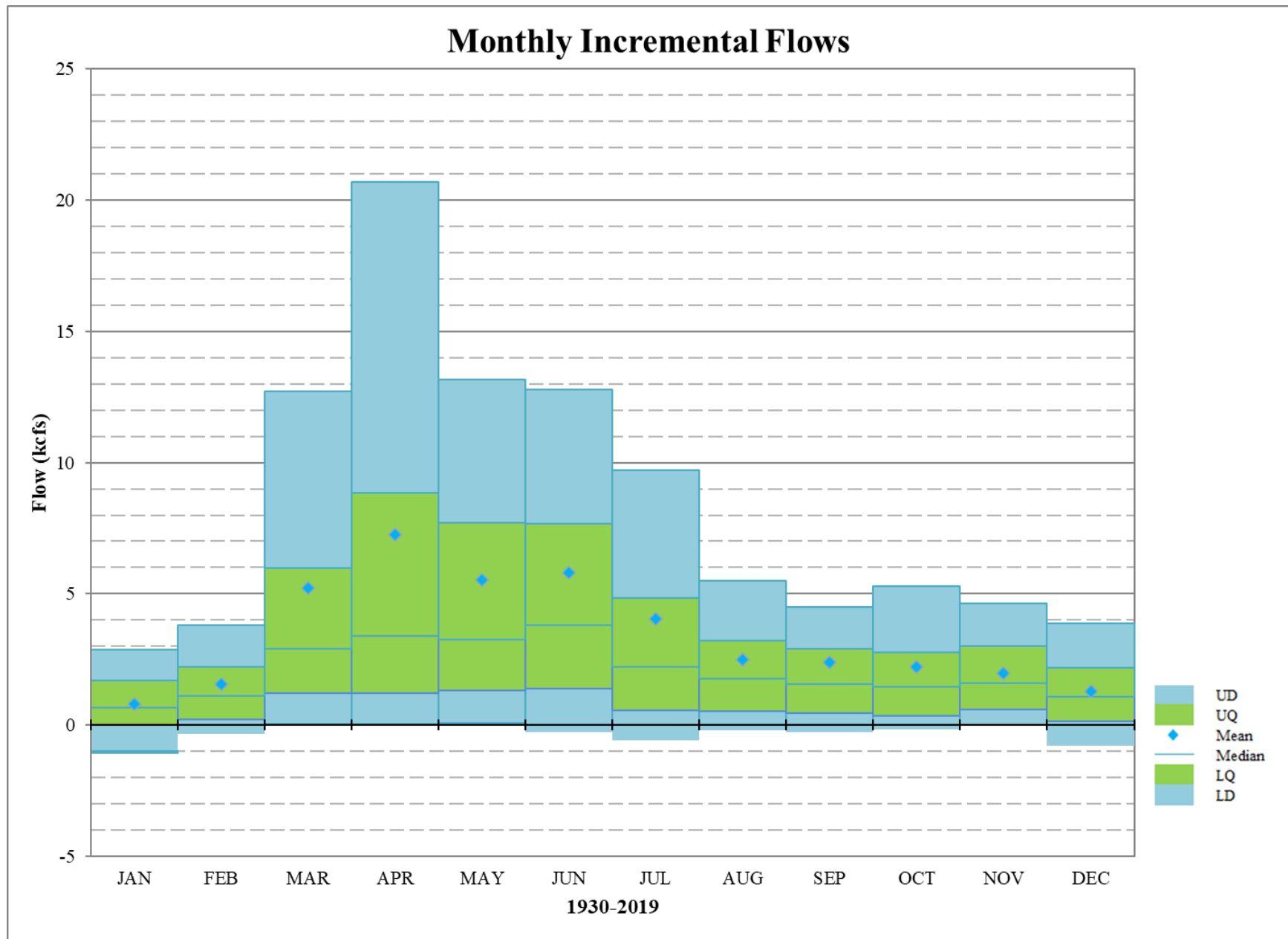
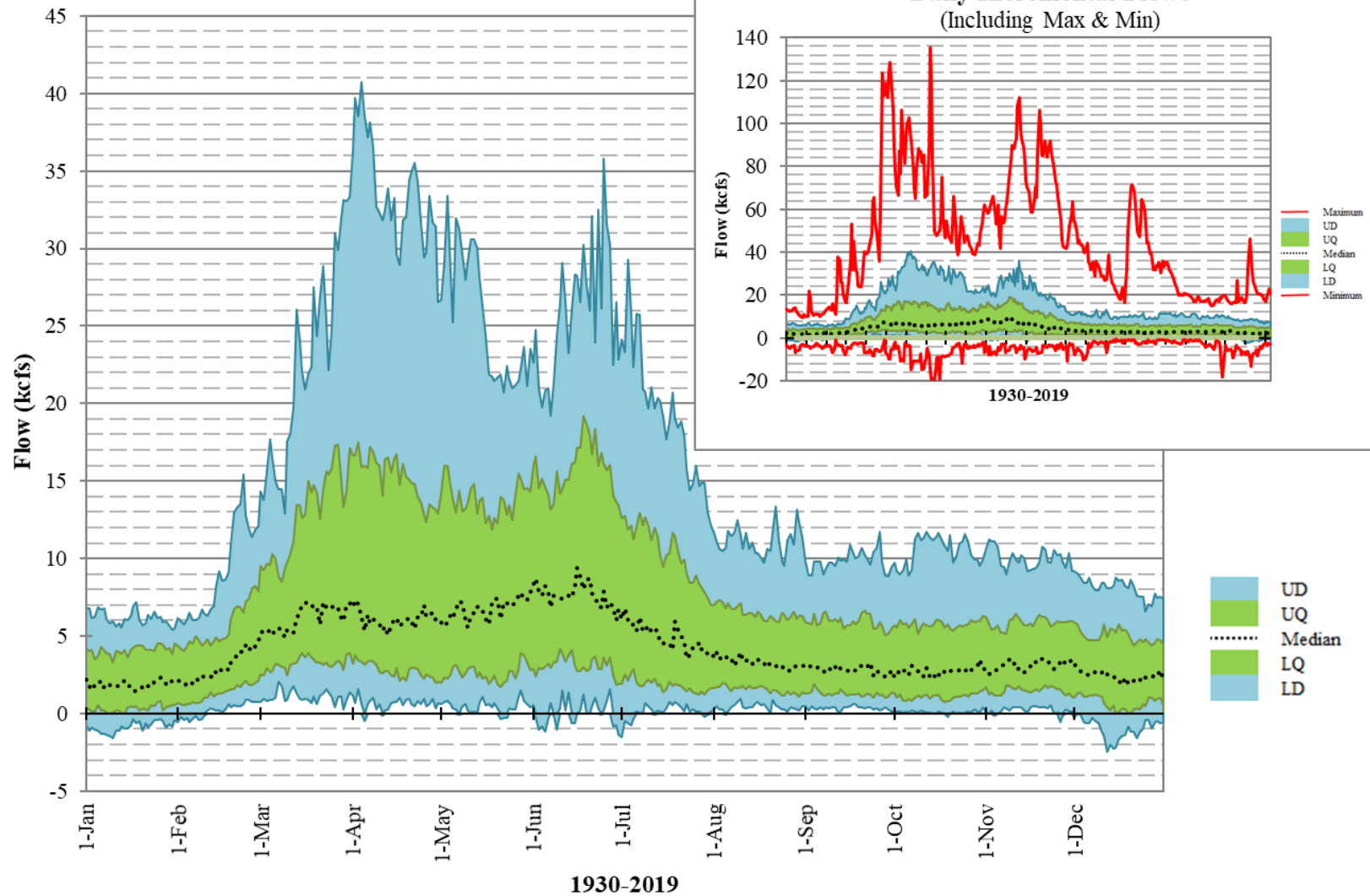


Plate 21. Gavins Point to Sioux City Daily and Monthly Incremental Flows
MRBWM Technical Report – Incremental Flows Below Gavins Point, May 2021

Gavins Point to Omaha

Daily Incremental Flows



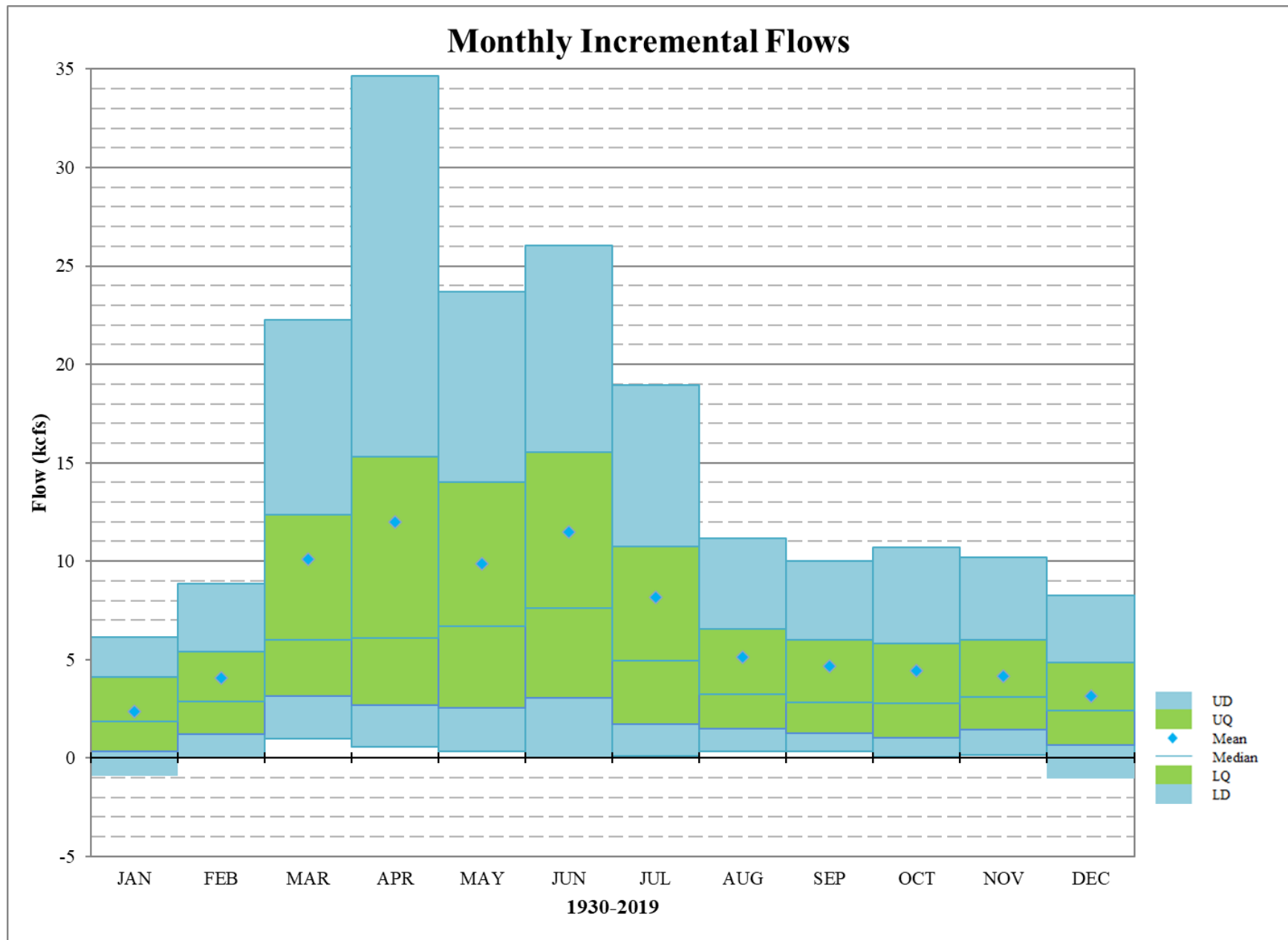
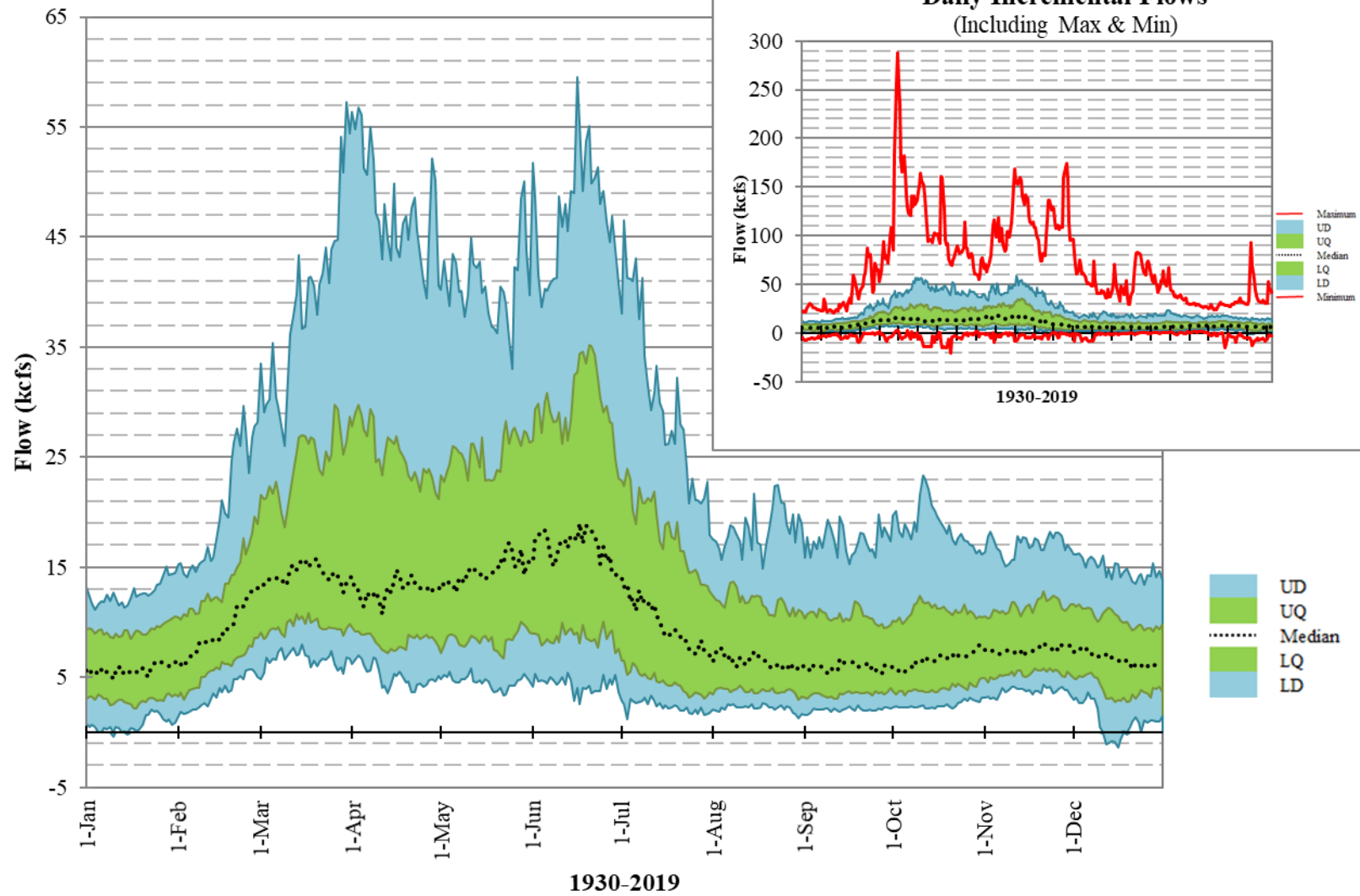


Plate 22. Gavins Point to Omaha Daily and Monthly Incremental Flows
MRBWM Technical Report – Incremental Flows Below Gavins Point, May 2021

Gavins Point to Nebraska City

Daily Incremental Flows



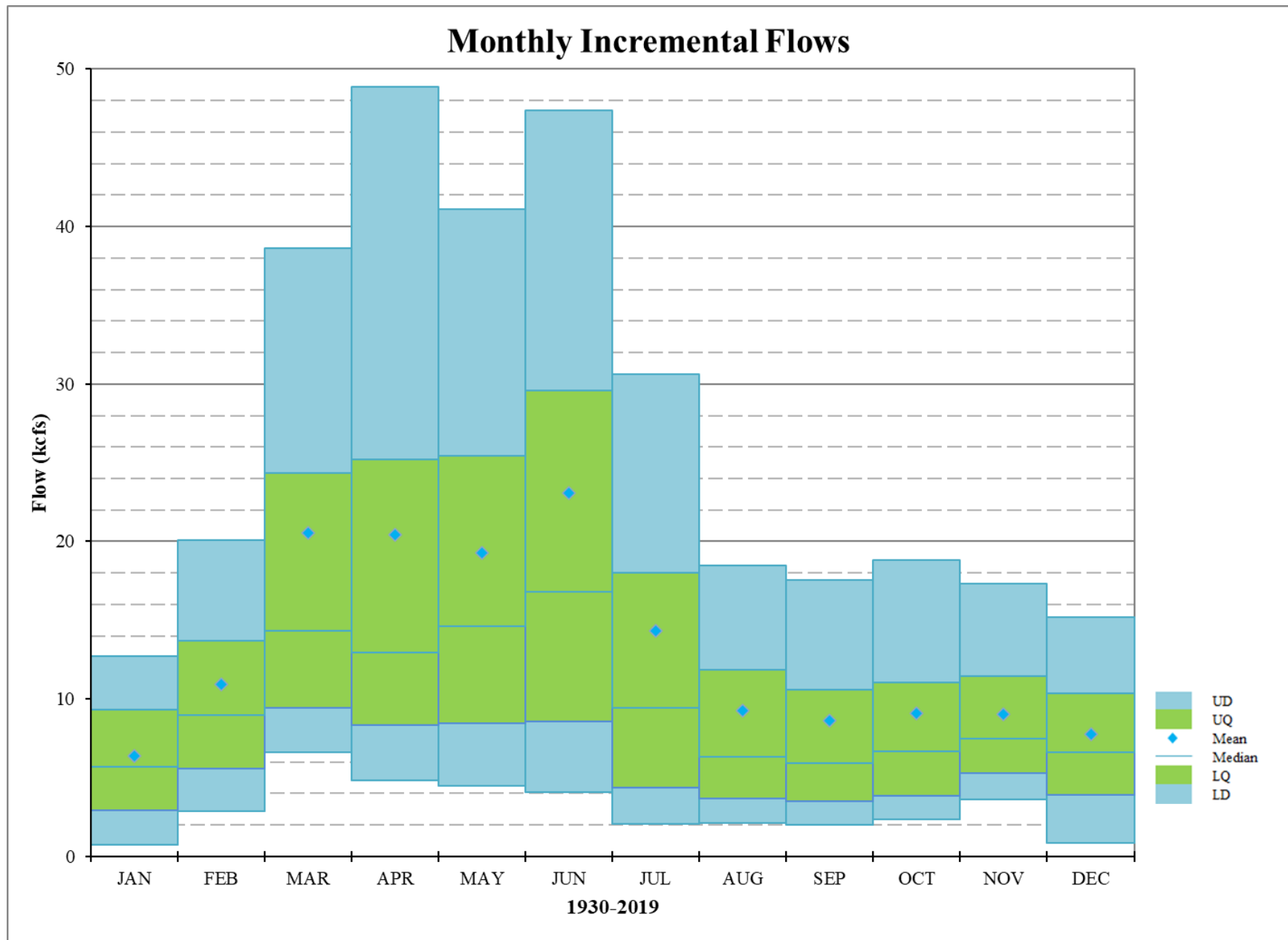
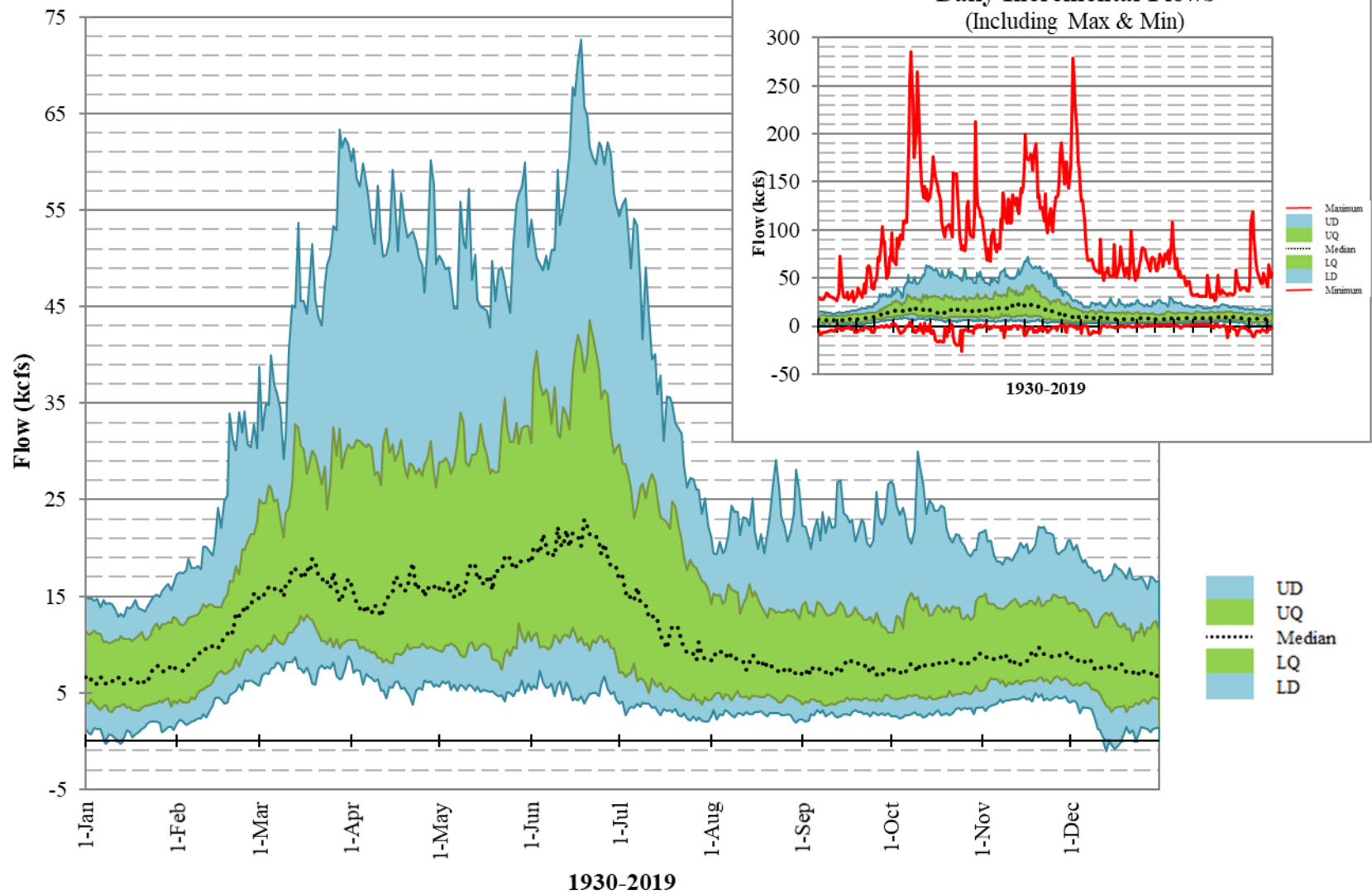


Plate 23. Gavins Point to Nebraska City Daily and Monthly Incremental Flows
MRBWM Technical Report – Incremental Flows Below Gavins Point, May 2021

Gavins Point to Rulo

Daily Incremental Flows



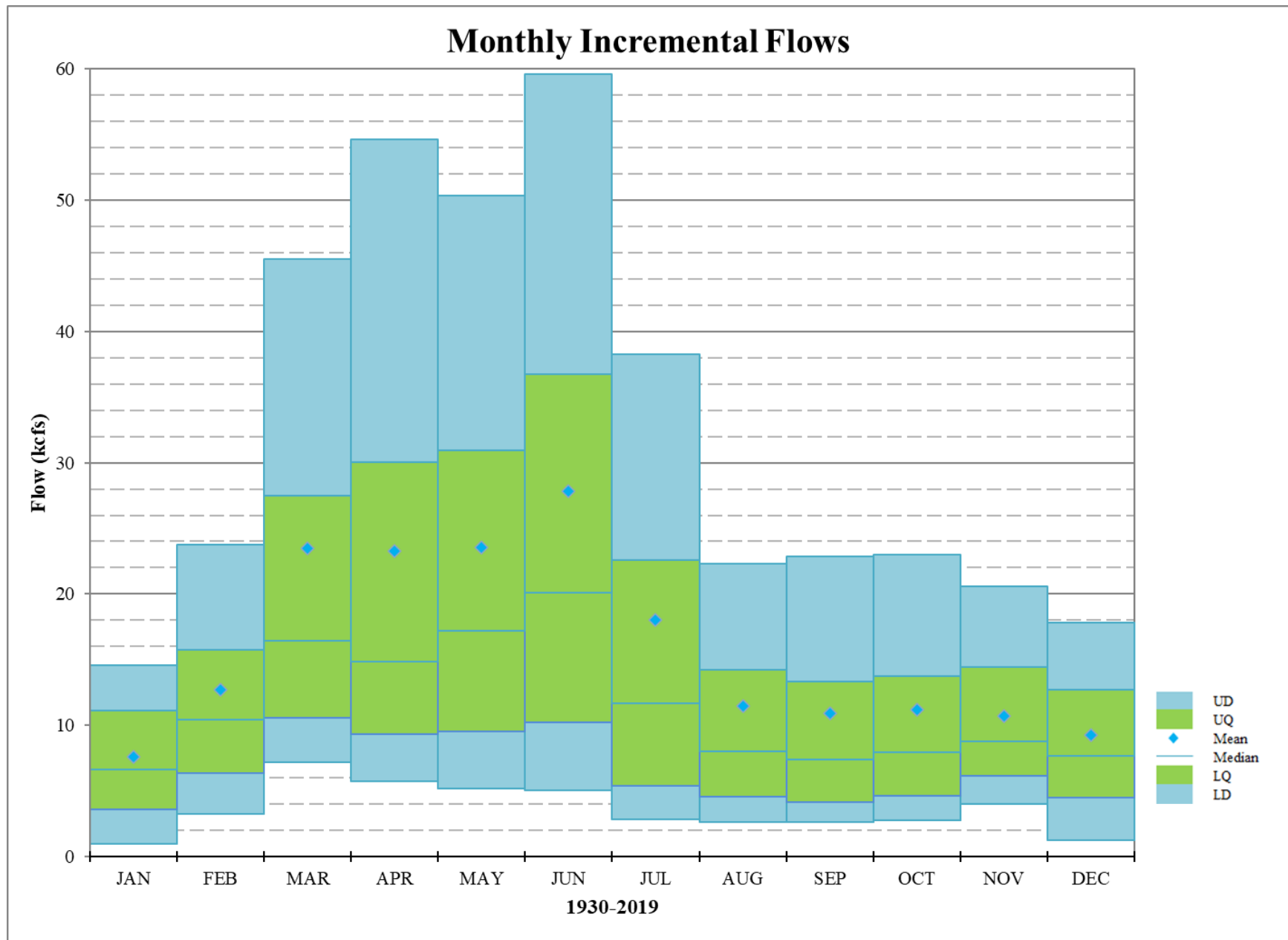
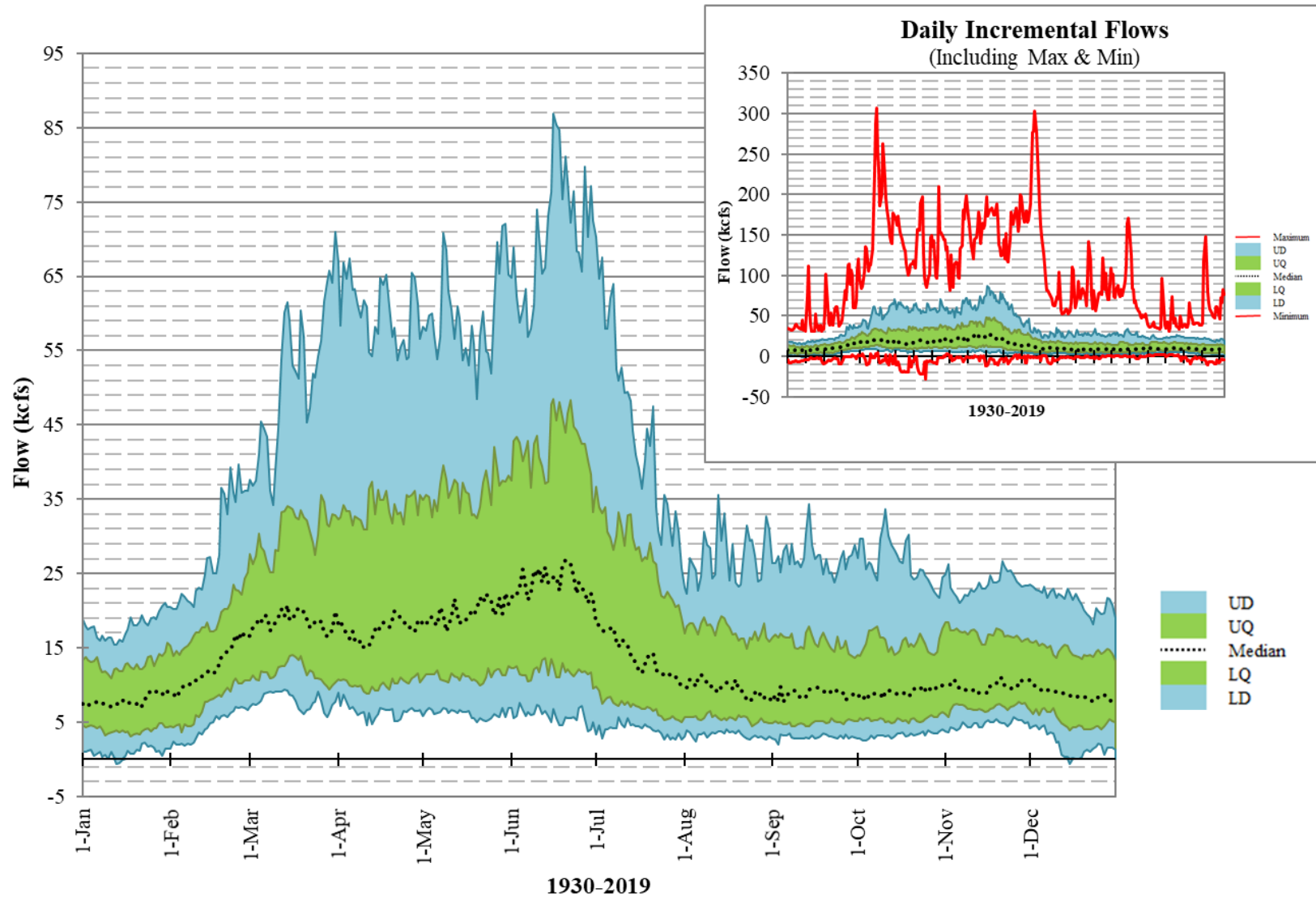


Plate 24. Gavins Point to Rulo Daily and Monthly Incremental Flows
MRBWM Technical Report – Incremental Flows Below Gavins Point, May 2021

Gavins Point to St. Joseph

Daily Incremental Flows



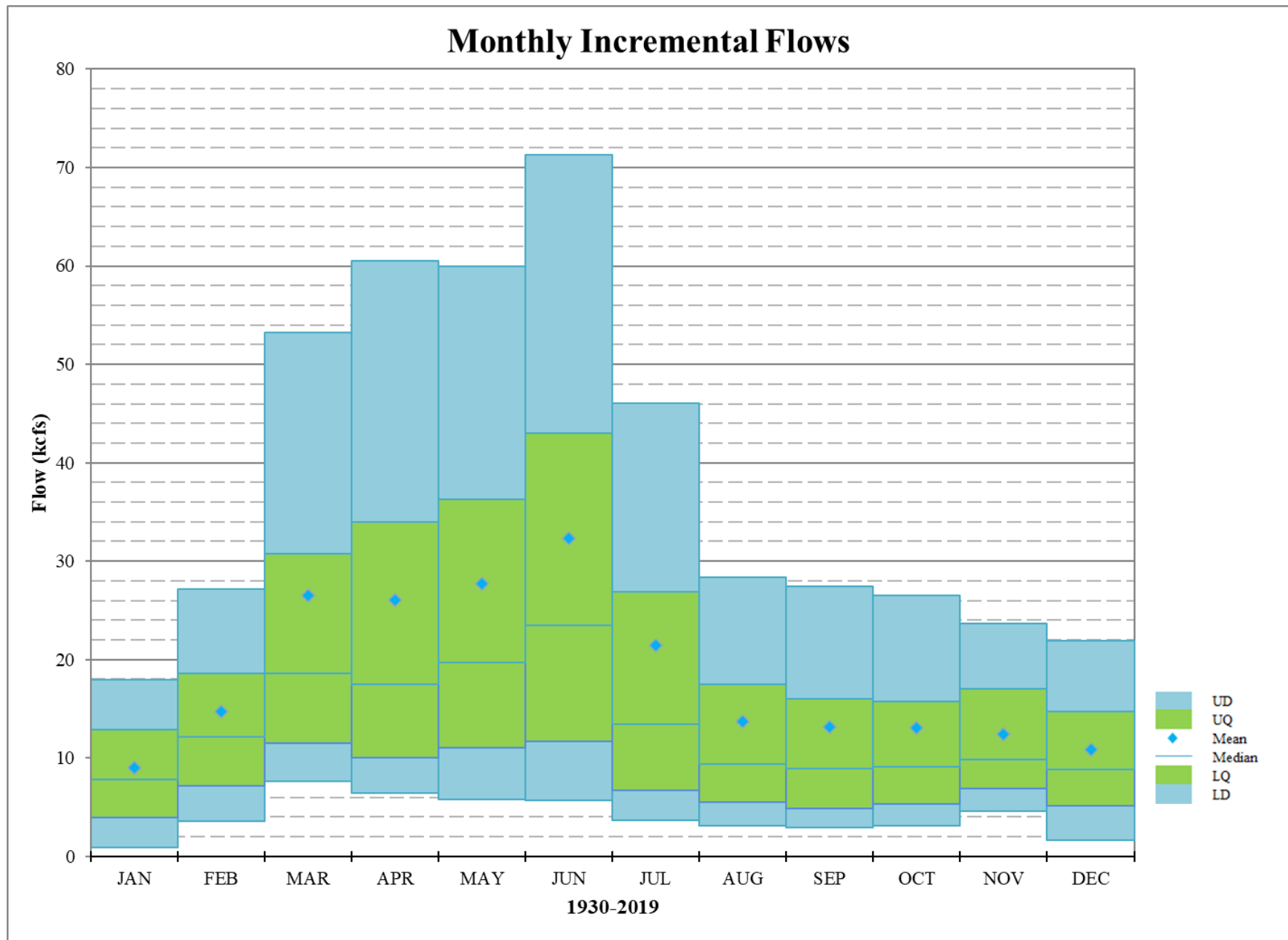
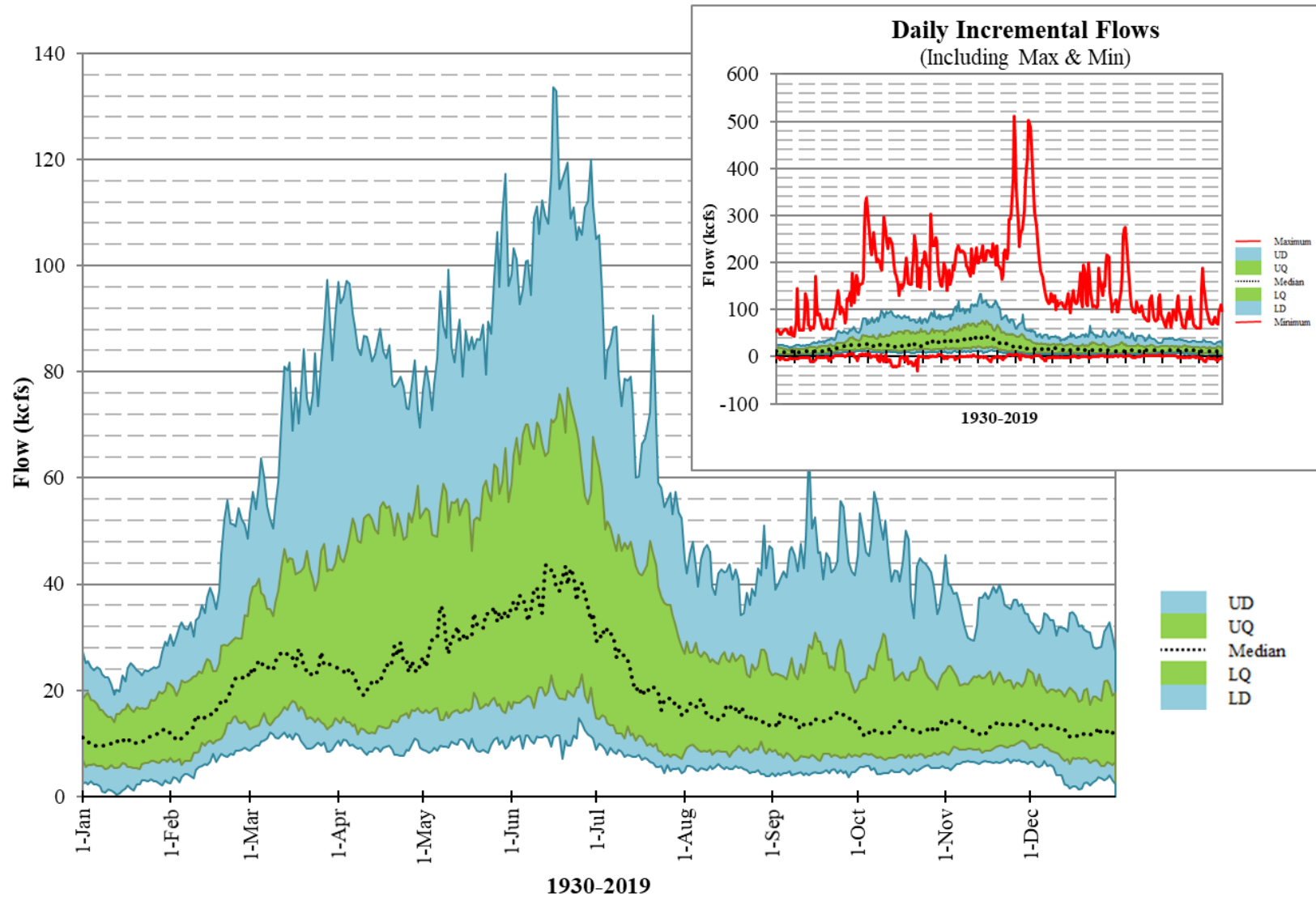


Plate 25. Gavins Point to St. Joseph Daily and Monthly Incremental Flows
MRBWM Technical Report – Incremental Flows Below Gavins Point, May 2021

Gavins Point to Kansas City

Daily Incremental Flows



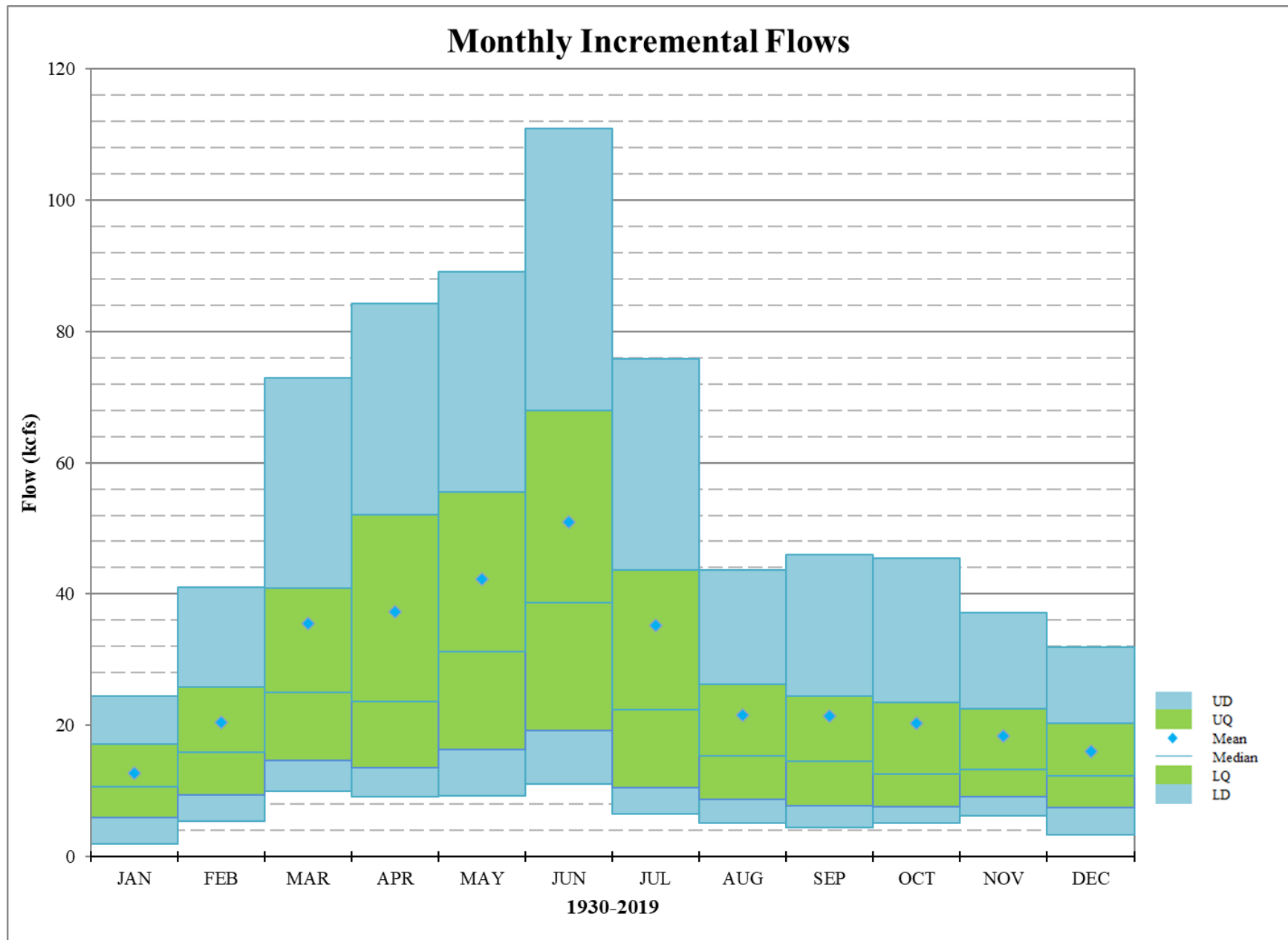
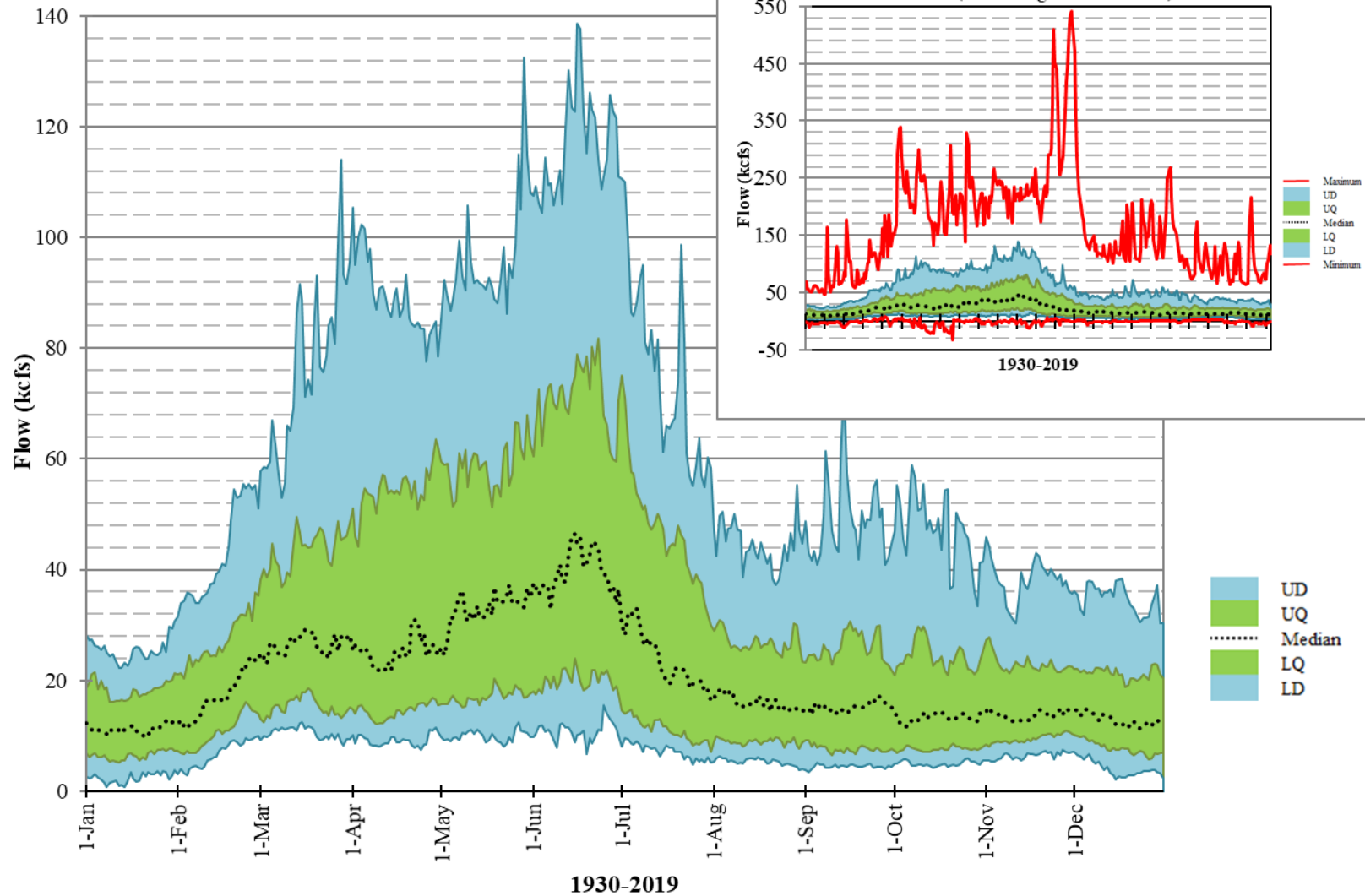


Plate 26. Gavins Point to Kansas City Daily and Monthly Incremental Flows
MRBWM Technical Report – Incremental Flows Below Gavins Point, May 2021

Gavins Point to Waverly

Daily Incremental Flows



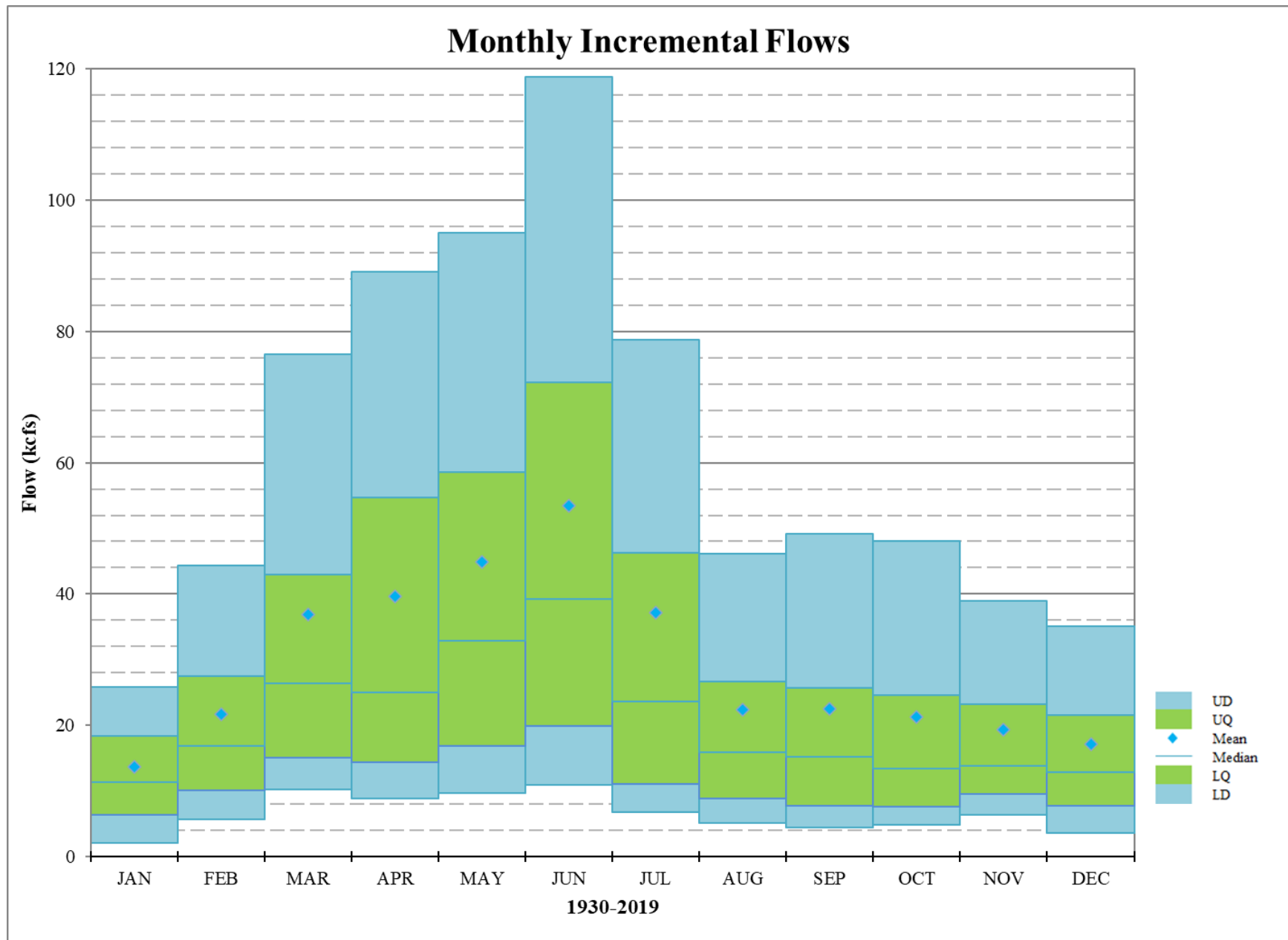
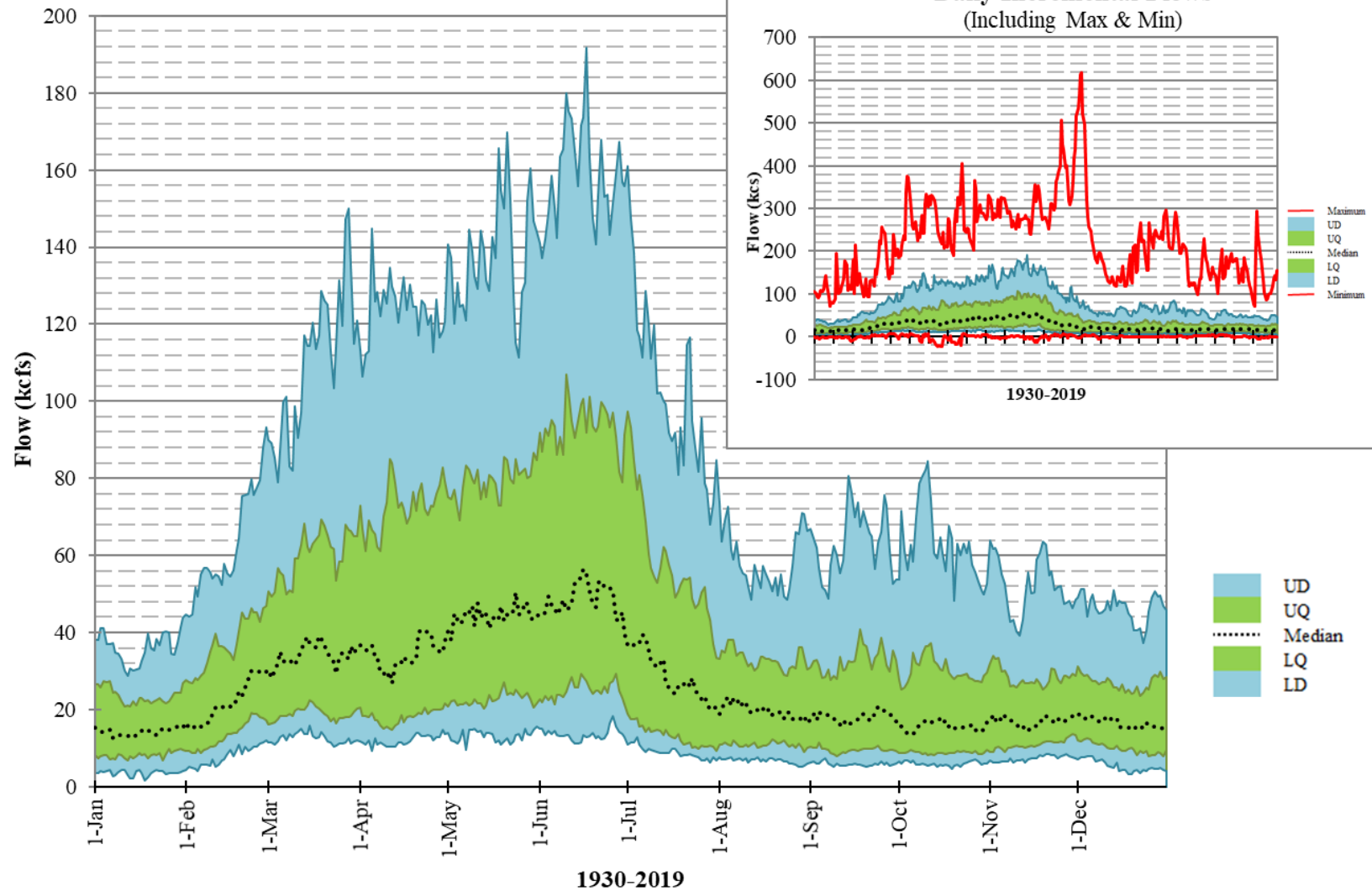


Plate 27. Gavins Point to Waverly Daily and Monthly Incremental Flows
MRBWM Technical Report – Incremental Flows Below Gavins Point, May 2021

Gavins Point to Boonville

Daily Incremental Flows



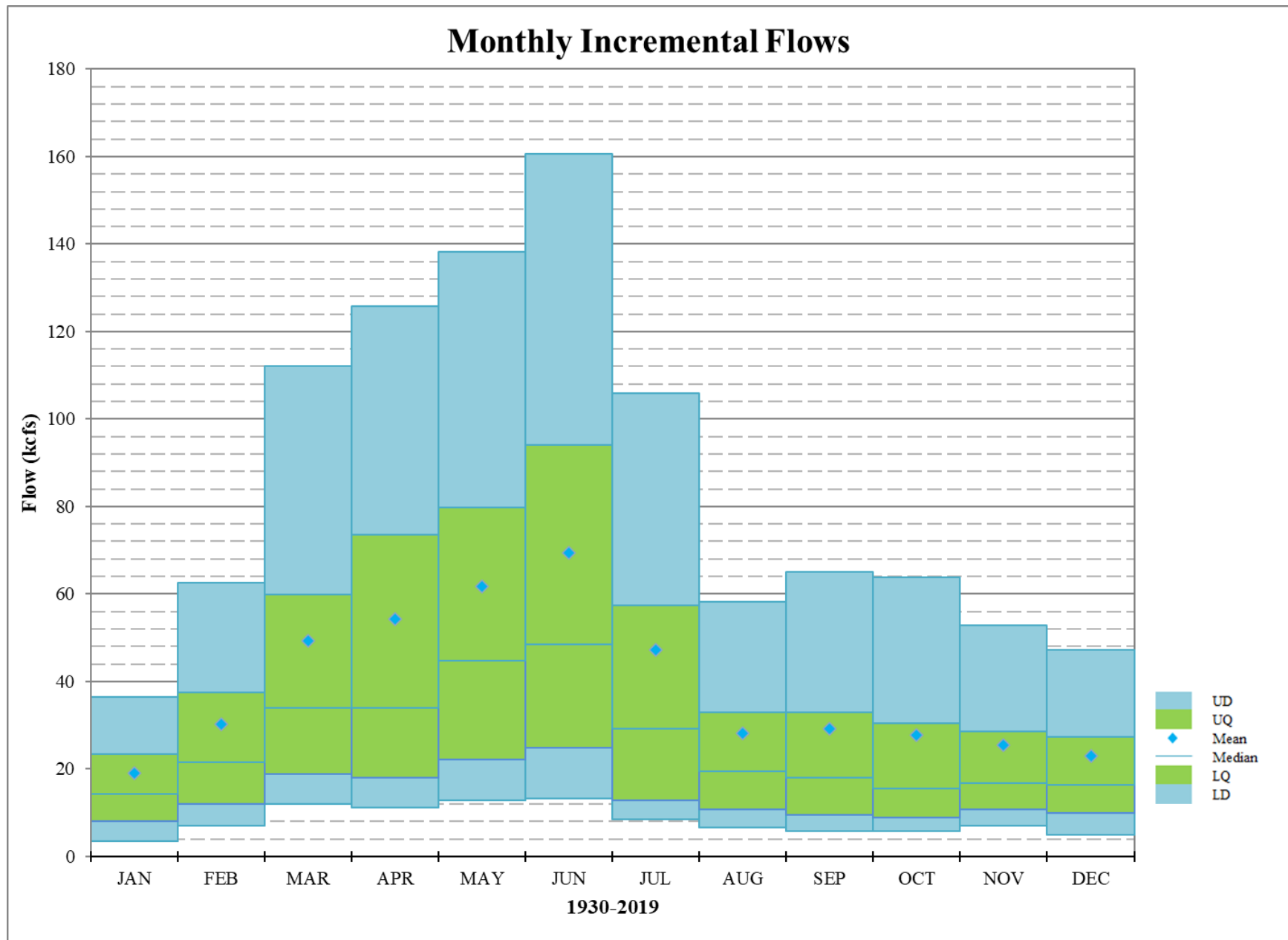
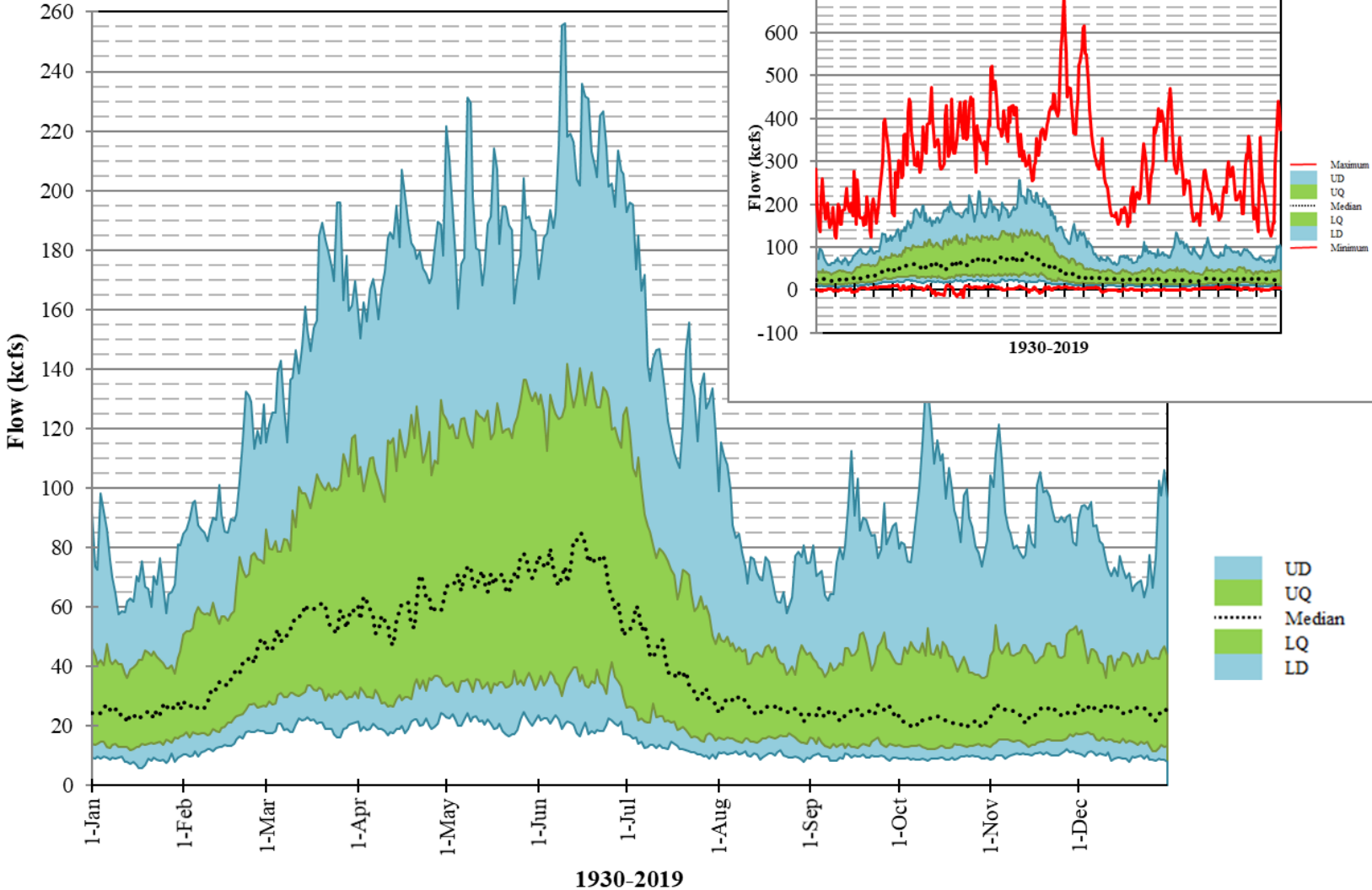


Plate 28. Gavins Point to Boonville Daily and Monthly Incremental Flows
MRBWM Technical Report – Incremental Flows Below Gavins Point, May 2021

Gavins Point to Hermann

Daily Incremental Flows



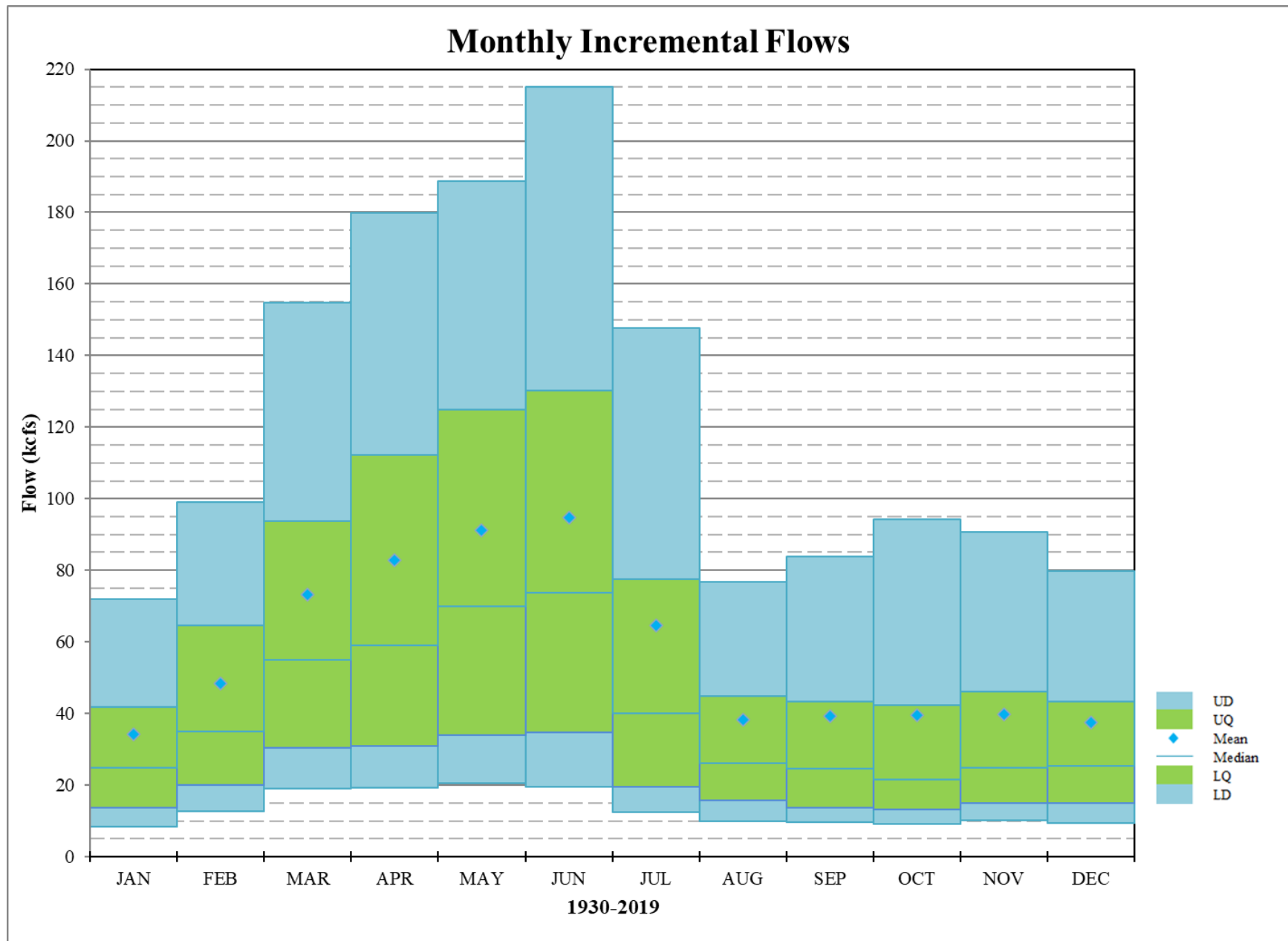


Plate 29. Gavins Point to Hermann Daily and Monthly Incremental Flows
MRBWM Technical Report – Incremental Flows Below Gavins Point, May 2021

Gavins Point to Sioux City
Ranking of Average Monthly Flows (kcfs)

Rank	Jan	Year	Feb	Year	Mar	Year	Apr	Year	May	Year	Jun	Year	Jul	Year	Aug	Year	Sep	Year	Oct	Year	Nov	Year	Dec	Year
1	-1.2	1952	-0.3	1956	-1.0	1943	-1.8	1943	-1.4	1955	-0.9	1956	-3.0	1947	-1.2	1955	-1.2	1955	-0.7	1943	-0.5	1943	-1.3	1950
2	-0.7	2004	-0.2	1930	0.0	1934	-0.6	1950	-0.2	1931	-0.8	1955	-1.5	1943	-0.2	1988	-0.8	1943	-0.5	1955	-0.4	2012	-1.1	1968
3	-0.6	1970	-0.1	1942	0.2	1991	-0.5	1955	-0.2	1940	-0.2	1933	-0.8	1988	-0.2	1989	-0.6	2012	-0.5	2012	-0.1	1930	-0.6	1989
4	-0.6	1971	-0.1	1936	0.3	1933	-0.4	1990	-0.2	1956	-0.2	1941	-0.7	1955	-0.1	2012	-0.4	1990	-0.4	1989	-0.1	1969	-0.5	1990
5	-0.4	1977	-0.1	1939	0.4	1990	0.1	1931	0.0	1934	-0.1	1989	-0.6	1953	0.0	1946	-0.3	1989	-0.2	1990	-0.1	1936	-0.5	1943
6	-0.4	1951	0.0	1955	0.4	1931	0.2	1991	0.1	1981	0.3	1935	-0.5	1942	0.1	1954	-0.2	1954	-0.2	1988	0.1	1939	-0.4	1940
7	-0.3	1988	0.0	1937	0.6	1981	0.2	1934	0.4	1968	0.4	1988	-0.3	1989	0.1	1931	-0.1	1931	0.0	1937	0.1	1933	-0.3	2000
8	-0.2	1982	0.0	1932	0.7	1964	0.3	1935	0.5	1935	0.5	1936	-0.2	1956	0.1	1991	0.1	1981	0.0	1934	0.1	1934	-0.3	1944
9	-0.2	1955	0.1	1940	0.9	1935	0.4	1981	0.5	1939	0.6	1939	0.0	1933	0.1	1936	0.1	1991	0.0	1935	0.2	1945	-0.2	1953
10	-0.1	1934	0.1	1933	1.0	1968	0.5	1939	0.7	1933	0.7	1977	0.0	1930	0.2	1990	0.1	1934	0.0	1931	0.2	1940	-0.2	1949
11	-0.1	1968	0.1	1934	1.0	1975	0.6	1968	0.7	1989	0.8	1968	0.1	1968	0.2	1968	0.1	1937	0.1	1936	0.2	1932	-0.2	1983
12	-0.1	1950	0.1	1961	1.0	1940	0.8	1933	0.7	1936	0.9	1938	0.1	1935	0.2	1941	0.2	1935	0.1	1945	0.2	1935	-0.1	1938
13	-0.1	1957	0.2	1990	1.1	2005	0.8	1938	0.8	1932	0.9	1931	0.2	1932	0.2	1934	0.2	1940	0.1	1953	0.3	1951	-0.1	1941
14	-0.1	1969	0.2	1935	1.1	1998	0.9	1963	0.9	1946	0.9	1932	0.2	1931	0.3	1933	0.3	1998	0.1	1991	0.3	1931	0.0	1947
15	0.0	1933	0.2	1938	1.1	1959	0.9	1936	0.9	1974	1.1	1981	0.2	1936	0.3	1981	0.3	1968	0.1	1932	0.3	1989	0.0	1961
16	0.0	1930	0.3	1960	1.2	1963	1.0	1974	1.1	1938	1.2	1992	0.3	1981	0.3	2003	0.3	1956	0.1	1939	0.3	1937	0.0	1935
17	0.0	1962	0.3	2004	1.2	2000	1.5	1992	1.2	1941	1.3	1937	0.3	1940	0.3	2000	0.3	1974	0.3	1954	0.4	1987	0.0	1937
18	0.0	1940	0.3	1998	1.3	1958	1.6	1932	1.2	1991	1.4	1934	0.3	1937	0.4	1945	0.4	2003	0.3	1933	0.4	1955	0.0	1960
19	0.0	1935	0.4	1950	1.3	1965	1.6	1961	1.3	1977	1.4	1946	0.3	1946	0.4	1935	0.5	1988	0.3	1949	0.5	1954	0.1	1930
20	0.0	1936	0.4	1972	1.4	1937	1.6	1959	1.4	1988	1.6	1940	0.5	1977	0.4	1937	0.5	1939	0.3	1959	0.5	1990	0.1	1964
21	0.0	1937	0.4	1959	1.7	2003	1.6	1977	1.4	1992	1.6	2002	0.5	1941	0.5	1938	0.6	1932	0.4	2003	0.6	1953	0.1	1958
22	0.0	1960	0.5	1989	1.7	1957	1.7	1942	1.4	1990	1.6	1987	0.5	1959	0.5	1932	0.6	1987	0.4	1987	0.7	1959	0.1	1939
23	0.0	1938	0.6	1962	1.8	1969	1.7	1957	1.5	1958	1.7	1958	0.5	1970	0.6	1940	0.6	1953	0.5	1998	0.7	1938	0.1	1932
24	0.0	1961	0.6	2014	1.9	1974	1.7	1954	1.5	1963	1.8	1963	0.6	1934	0.8	1973	0.6	1945	0.5	1940	0.7	1974	0.1	1945
25	0.1	1997	0.6	1965	2.0	2015	1.7	2000	1.6	1967	2.0	1959	0.6	2012	0.8	1987	0.7	1977	0.6	1942	0.8	1991	0.2	1931
26	0.1	1942	0.7	1964	2.2	1967	1.7	1988	1.7	1975	2.1	1964	0.9	2002	0.9	1942	0.8	1947	0.6	1969	0.8	1956	0.2	2013
27	0.1	1932	0.7	1931	2.2	2002	1.8	1956	1.8	1954	2.4	1973	0.9	1939	1.0	1939	0.8	1970	0.7	1958	0.9	1961	0.2	1946
28	0.2	2014	0.7	1963	2.2	1947	1.8	1967	1.9	1971	2.4	1990	1.0	1990	1.0	1982	0.9	1959	0.7	1974	1.0	1968	0.3	1934
29	0.2	1972	0.7	1975	2.4	2013	1.8	1975	1.9	1937	2.5	1974	1.2	1963	1.0	1958	0.9	1963	0.8	1960	1.0	1994	0.3	1996
30	0.2	1944	0.8	1953	2.4	1942	1.8	2004	2.3	1964	2.6	1930	1.3	2006	1.1	1997	0.9	1941	0.9	1930	1.0	1952	0.3	1942
31	0.2	1931	0.8	1941	2.5	1956	1.9	1958	2.3	1957	2.6	2000	1.3	1985	1.1	1959	1.1	1973	0.9	1981	1.0	1958	0.3	1952
32	0.2	1946	0.9	1978	2.5	2014	2.0	2003	2.5	2014	2.6	1960	1.5	1974	1.1	1947	1.1	2000	1.0	1952	1.0	1963	0.3	1936
33	0.3	1953	0.9	1949	2.6	1960	2.1	1941	2.5	1980	2.7	1975	1.5	1991	1.2	1956	1.1	1997	1.0	1956	1.1	2003	0.4	1962
34	0.3	1967	0.9	1979	2.7	1989	2.1	1930	2.6	1959	2.8	1970	1.6	2000	1.3	1948	1.1	1936	1.1	1997	1.1	1988	0.4	1988
35	0.3	1945	0.9	1969	2.8	1977	2.2	1989	2.7	1973	2.8	1980	1.6	1964	1.3	1970	1.1	1958	1.1	1963	1.2	2006	0.4	1963
36	0.3	1941	0.9	2013	3.1	1999	2.3	2015	2.8	2002	2.8	1953	1.6	1966	1.3	1977	1.2	1982	1.1	2000	1.2	1960	0.4	1967
37	0.3	1959	1.0	1968	3.1	2006	2.4	1964	2.9	1943	2.9	1982	1.8	1975	1.4	1985	1.2	1946	1.1	1947	1.2	1947	0.4	1933
38	0.3	1958	1.0	1951	3.2	1988	2.4	1937	2.9	1961	3.0	1961	1.9	1954	1.4	2002	1.4	1930	1.2	1996	1.2	1944	0.4	1957
39	0.4	1954	1.0	1958	3.3	1941	2.8	1940	3.1	2003	3.0	1976	1.9	1960	1.5	1969	1.4	2008	1.2	1977	1.2	1950	0.4	1948
40	0.4	1996	1.1	1997	3.4	1980	2.9	1982	3.1	2004	3.0	2003	1.9	1987	1.5	1974	1.4	2007	1.2	1970	1.3	1962	0.5	1954
41	0.4	1943	1.1	2003	3.6	1992	2.9	1971	3.2	2015	3.1	1966	1.9	1950	1.5	1998	1.5	1948	1.3	1962	1.3	1985	0.6	1976
42	0.4	1949	1.1	1991	3.7	1982	3.0	1946	3.2	1982	3.2	1949	2.0	1938	1.6	2006	1.5	1969	1.3	1950	1.4	1941	0.6	1991
43	0.4	1991	1.2	2005	3.7	1932	3.1	2014	3.2	1966	3.6	2006	2.1	1980	1.6	1965	1.5	1962	1.4	1994	1.4	1973	0.6	1956

44	0.4	1993	1.2	1957	3.8	1976	3.3	1972	3.2	1970	3.8	1985	2.2	1961	1.6	1949	1.5	1952	1.4	1976	1.5	1957	0.7	1951
45	0.5	1978	1.2	1985	4.1	2009	3.3	1945	3.4	1976	4.1	1942	2.2	1958	1.6	1952	1.5	1950	1.5	1967	1.6	2013	0.7	1955
46	0.5	1992	1.2	2000	4.1	1938	3.4	2013	3.4	1948	4.4	1969	2.3	1949	1.7	1950	1.5	1961	1.5	1941	1.6	1976	0.8	2003
47	0.6	1990	1.2	1995	4.1	1954	3.4	1944	3.4	1987	4.5	2012	2.4	1948	1.8	1966	1.6	1966	1.6	1961	1.6	1997	0.9	2012
48	0.6	1939	1.3	2008	4.1	1944	3.5	2012	3.5	1930	4.5	1991	2.4	1976	1.8	1963	1.6	2002	1.6	1938	1.6	2002	0.9	1969
49	0.6	2007	1.3	1981	4.3	1996	3.5	1980	3.7	2000	4.6	1978	2.5	1982	2.0	1943	1.7	1967	1.7	1966	1.7	1966	1.0	1959
50	0.6	1948	1.4	1987	4.3	2004	3.7	1966	3.8	1945	4.8	2015	2.5	1973	2.0	2008	1.9	1994	1.7	2006	1.7	1996	1.1	2002
51	0.6	1965	1.4	1970	4.3	1955	3.7	1953	4.0	1949	4.9	1948	2.6	2003	2.1	2004	1.9	2006	1.8	2001	1.7	1967	1.1	1966
52	0.7	1964	1.4	1988	4.4	1939	3.8	2002	4.3	2005	4.9	1952	2.7	1965	2.2	1967	1.9	1957	1.8	1968	1.7	1999	1.2	1997
53	0.7	2005	1.5	1974	4.5	1966	3.9	1970	4.3	1950	5.5	2004	2.8	2017	2.2	1930	1.9	1949	1.8	1973	1.8	2000	1.2	1972
54	0.7	1975	1.5	2015	4.6	1936	4.0	2005	4.3	1942	5.5	1965	3.0	1967	2.2	1976	2.0	1971	1.9	2002	1.9	1965	1.2	2006
55	0.7	1976	1.5	1977	4.7	1962	4.1	1976	4.5	1998	5.8	1998	3.0	1945	2.4	1957	2.0	1965	2.0	1964	1.9	1975	1.2	1994
56	0.8	1979	1.6	1967	4.7	2012	4.9	1973	4.7	1965	5.8	1957	3.4	2004	2.4	1961	2.0	1933	2.2	2014	1.9	2004	1.3	2004
57	0.8	1999	1.6	1986	4.8	1970	5.4	1949	5.2	1985	5.8	1943	3.4	1998	2.4	1980	2.0	1964	2.2	2013	1.9	1970	1.3	2008
58	0.8	1966	1.7	1943	4.9	1951	5.5	2017	5.4	1960	6.1	1967	3.7	1971	2.5	1964	2.1	1980	2.2	1948	2.0	1942	1.5	1981
59	0.8	1963	1.7	1947	4.9	1995	6.2	1996	5.5	1962	6.1	2017	4.0	2005	2.6	2016	2.1	1938	2.2	1957	2.0	1981	1.5	1973
60	0.8	2013	1.7	1993	5.1	1953	6.4	2008	5.6	1978	6.4	1997	4.1	1986	2.6	1994	2.2	1996	2.2	2015	2.0	2014	1.5	1992
61	0.8	1989	1.7	1946	5.3	1961	6.8	1947	5.7	2013	6.4	1979	4.1	1997	2.7	1971	2.4	2013	2.3	2004	2.2	1949	1.5	2014
62	0.9	1974	1.8	2001	5.5	1952	7.3	2016	5.8	1953	6.5	1944	4.1	2008	2.9	1996	2.4	1960	2.3	1972	2.2	1977	1.7	1965
63	1.0	1985	1.8	1948	5.6	2008	7.6	1998	6.0	1947	6.6	1947	4.2	2007	2.9	1986	2.5	2015	2.3	1975	2.2	1948	1.7	1974
64	1.0	2003	1.9	1945	5.7	2001	8.2	2009	6.2	1996	7.0	2009	4.2	2016	3.0	2017	2.5	1976	2.4	1971	2.3	2005	1.8	1987
65	1.0	1956	1.9	2018	5.7	2017	8.3	1965	6.4	2006	7.5	1971	4.5	1972	3.0	2013	2.6	2001	2.5	2008	2.4	1964	1.9	2007
66	1.0	1995	2.0	1999	5.9	1971	8.9	1994	6.9	1951	7.8	2013	4.6	2015	3.0	1975	2.6	2004	2.5	1951	2.7	2007	1.9	1977
67	1.3	2001	2.0	2007	6.4	2016	9.4	1999	7.1	1994	7.8	2016	4.9	1994	3.0	2005	2.6	1983	2.5	1944	2.8	1983	1.9	2009
68	1.4	1947	2.1	1954	6.5	1972	9.6	1948	7.3	1983	7.8	2007	5.0	1969	3.1	1960	2.8	1975	2.5	1980	2.9	2008	2.0	1970
69	1.4	2000	2.1	2010	6.5	1987	9.9	1987	7.6	2008	7.8	1950	5.1	1957	3.1	2007	2.8	2017	2.6	1985	3.0	1946	2.0	1985
70	1.5	2008	2.1	2002	6.8	1950	10.2	1985	7.9	1969	7.9	1972	5.1	2013	3.3	1944	2.9	1942	2.7	1983	3.1	2001	2.0	1995
71	1.7	1987	2.1	1992	6.9	1984	11.3	1979	8.1	1999	8.3	1994	5.4	1979	3.4	1953	2.9	2005	2.7	1965	3.2	2016	2.1	1984
72	1.7	1981	2.1	1944	7.4	1946	11.7	1978	8.4	2012	8.4	1954	5.7	1992	3.5	2001	3.0	2009	2.7	1999	3.3	2015	2.2	1980
73	1.7	2009	2.3	1996	8.2	1945	11.8	2007	8.5	1979	9.1	1999	5.9	1952	3.5	1972	3.0	1972	3.4	2009	3.4	1972	2.3	2005
74	1.7	1998	2.3	2012	8.4	1948	12.0	2006	8.6	1972	9.4	1986	6.1	1978	3.6	1962	3.3	1944	3.9	1979	3.4	1980	2.3	1999
75	1.8	2015	2.6	1982	8.6	1949	12.4	2018	9.7	2017	9.9	1951	6.3	1996	3.9	2014	3.3	1985	4.1	2016	3.4	1992	2.4	1971
76	1.8	1986	2.8	1980	8.6	2018	12.9	1951	10.0	2009	10.0	1945	6.3	2001	4.0	1999	3.4	2014	4.2	1946	3.6	1971	2.7	1975
77	1.9	1994	3.0	1973	8.7	1993	15.0	1983	10.5	1952	10.3	2001	7.1	2014	4.1	1983	3.6	1995	4.3	1992	3.9	2017	2.7	1998
78	2.0	2002	3.1	1984	9.2	1979	17.8	1952	10.6	1944	10.4	1983	8.2	1995	4.1	2015	3.6	1984	4.3	1978	4.0	1984	3.0	2017
79	2.1	2018	3.3	2019	9.2	1978	17.8	1993	11.4	2010	10.8	2005	8.7	1999	4.2	2009	4.1	1999	4.3	2005	4.2	1993	3.0	2001
80	2.1	1980	3.3	2006	9.9	1985	19.3	1995	11.9	2018	11.4	1996	8.9	2009	4.3	1992	4.2	1992	4.4	1982	4.4	1978	3.1	1993
81	2.2	2010	4.0	1976	11.0	1986	20.1	2010	12.1	2016	13.7	2008	9.5	1962	4.4	1951	4.3	1978	4.6	2007	4.5	1986	3.2	1986
82	2.2	1984	4.1	1952	11.7	1997	21.0	1986	14.0	2007	13.8	1962	9.8	1983	5.3	1978	4.4	2016	4.9	1993	4.6	1995	3.3	1978
83	2.8	1973	4.1	2009	12.4	1973	28.1	1969	15.1	1993	15.4	2011	10.3	1951	5.4	1984	4.7	1979	5.1	2011	4.8	2011	3.6	2016
84	2.8	2016	4.6	1966	13.8	1930	28.2	1962	15.2	1984	17.4	2018	12.6	1944	6.1	1979	5.5	1951	6.0	1984	5.1	2009	4.0	2015
85	2.9	2017	4.6	2016	13.8	2007	28.6	1984	17.8	1986	18.5	2014	13.3	1984	6.4	1995	5.7	2011	6.2	1995	5.2	1998	4.1	1979
86	2.9	2006	4.7	1994	14.0	1994	28.8	1960	19.1	2001	18.6	1993	17.3	2018	6.4	2018	7.6	1993	7.9	1986	5.3	2010	4.3	2011
87	3.0	1983	4.7	1983	15.4	1983	30.9	2001	19.2	1997	18.7	1995	18.2	2019	9.9	2011	9.8	1986	8.0	2017	5.7	1979	4.4	2010
88	3.4	2012	5.6	2017	18.1	2011	33.5	2011	25.4	2011	21.6	2019	20.7	2011	13.8	1993	12.8	2010	13.0	2010	6.3	1982	6.2	1982
89	3.9	2011	6.4	1971	26.6	2010	36.8	2019	27.5	1995	23.5	2010	22.9	2010	14.1	2019	14.0	2018	13.3	2018	7.1	2018	6.7	2018
90	4.1	2019	7.1	2011	36.3	2019	38.3	1997	32.3	2019	33.3	1984	40.5	1993	20.1	2010	31.2	2019	15.1	2019	10.7	2019	10.5	2019

Plate 30. Gavins Point to Sioux City Ranking of Average Monthly Flows

MRBWM Technical Report - Missouri River Incremental Flows Below Gavins Point, May 2021

Gavins Point to Omaha
Ranking of Average Monthly Flows (kcfs)

Rank	Jan	Year	Feb	Year	Mar	Year	Apr	Year	May	Year	Jun	Year	Jul	Year	Aug	Year	Sep	Year	Oct	Year	Nov	Year	Dec	Year
1	-1.6	1971	-0.3	1936	-2.6	1943	0.1	1934	-2.5	1934	-4.1	1933	-3.1	1933	-1.4	1955	0.0	2012	-0.3	1955	-0.8	1936	-1.4	1943
2	-0.9	1954	-0.2	1939	0.5	1934	0.3	1931	-0.7	1943	-1.2	1936	-1.9	1946	-1.2	1944	0.0	1955	-0.2	1947	-0.6	1933	-1.3	1989
3	-0.8	1969	0.1	1937	0.9	1968	0.6	1939	-0.5	1939	-0.8	1956	-0.4	1932	-0.3	1946	0.2	1956	-0.2	1953	-0.2	1945	-1.0	1944
4	-0.6	1972	0.2	1959	1.0	1931	0.7	1959	-0.5	1955	0.1	1955	-0.1	1935	0.1	1936	0.4	1943	-0.2	1943	0.1	1943	-0.9	1933
5	-0.5	1937	0.2	1940	1.2	1964	0.7	1968	-0.3	1940	0.2	1946	0.2	1936	0.3	1941	0.5	1935	-0.1	1940	0.1	1939	-0.6	1932
6	-0.4	1936	0.3	1956	1.9	1940	0.7	1933	-0.3	1931	0.7	1931	0.3	1968	0.4	1932	0.5	1934	0.1	1934	0.2	1937	-0.6	1947
7	-0.4	1960	0.5	1935	2.1	1935	0.7	1935	0.4	1956	1.1	1939	0.3	1941	0.4	2012	0.5	1947	0.1	1935	0.2	1934	-0.4	1968
8	-0.2	1957	0.7	1933	2.1	1981	1.1	1938	0.5	1933	1.1	1938	0.3	1956	0.5	1931	0.6	1946	0.1	1937	0.3	1947	-0.3	1949
9	-0.2	1938	0.7	1968	2.4	1959	1.4	1950	0.6	1968	1.1	1935	0.4	1931	0.5	1933	0.7	1954	0.1	1936	0.4	1969	-0.2	1938
10	0.0	1940	0.7	1942	2.5	2005	1.4	1957	0.9	1935	1.7	1977	0.5	1930	0.6	1968	0.8	1940	0.2	1932	0.5	1940	-0.2	1935
11	0.0	1959	0.9	1969	2.8	1957	1.4	1990	1.3	1958	1.8	1941	0.9	1970	0.6	1934	0.9	1953	0.2	2012	0.5	1935	-0.2	1950
12	0.0	1955	0.9	1931	2.8	1990	1.8	1963	1.4	1936	1.9	1958	1.6	1940	0.7	1970	0.9	1937	0.2	1945	0.6	1930	-0.1	1958
13	0.0	1967	1.1	1932	3.1	2003	2.3	1956	1.4	1941	2.0	1968	1.7	1977	0.9	1938	1.0	1939	0.3	1931	0.6	1951	0.0	1934
14	0.0	1970	1.1	1975	3.4	1958	2.3	1932	1.8	1977	2.0	1934	1.8	1959	1.0	1958	1.1	1968	0.4	1939	0.7	2012	0.0	1931
15	0.1	1968	1.1	1957	3.5	2014	2.3	1981	1.9	1950	2.0	1989	1.9	1974	1.1	1956	1.1	1958	0.4	1933	0.8	1938	0.0	1961
16	0.2	1953	1.1	1950	3.6	1947	2.3	1936	1.9	1967	2.5	1932	1.9	1963	1.4	1935	1.1	1991	0.5	1958	0.8	1932	0.0	1953
17	0.3	1935	1.2	1960	3.7	2002	2.6	1977	2.5	1946	2.7	1964	2.0	1966	1.4	1954	1.1	1974	0.6	1949	1.1	1949	0.0	1940
18	0.3	1962	1.2	1934	4.1	1974	2.6	1967	2.6	1971	2.9	1930	2.0	1938	1.8	2003	1.1	1931	0.7	1942	1.2	1968	0.1	1937
19	0.4	1948	1.2	1955	4.2	2015	2.7	1958	2.7	1957	2.9	1988	2.0	1955	1.8	1973	1.1	1970	0.8	1930	1.2	1942	0.2	1948
20	0.5	1978	1.3	1989	4.2	2013	2.7	1942	2.8	1948	3.0	1937	2.1	2012	1.9	1959	1.2	1959	0.9	1959	1.2	1931	0.2	1964
21	0.5	1944	1.7	1930	4.2	1956	2.8	1944	2.8	1963	3.3	1952	2.1	1953	2.0	1988	1.5	1945	1.2	1969	1.4	1955	0.3	1956
22	0.5	1982	1.8	1938	4.2	1960	2.8	1930	2.9	1981	3.3	1970	2.1	1989	2.1	1965	1.6	1990	1.3	1963	1.6	1950	0.3	1955
23	0.5	1930	1.8	1972	4.4	2000	3.0	1955	3.0	1989	3.4	1948	2.2	1961	2.1	1947	1.6	1932	1.4	1956	1.6	1944	0.3	1930
24	0.6	1950	1.8	2014	4.5	2006	3.1	1954	3.1	1954	3.8	1976	2.2	1988	2.1	1957	1.6	1930	1.4	1960	1.6	1974	0.4	1939
25	0.6	1945	1.9	1958	4.6	1991	3.1	1964	3.4	1961	4.0	1940	2.2	1939	2.1	1989	1.6	1933	1.5	1974	1.7	1967	0.5	1967
26	0.6	1934	1.9	2013	4.7	1998	3.2	1946	3.6	1937	4.0	1966	2.3	1964	2.1	1952	1.7	1967	1.6	1952	1.8	1958	0.6	1942
27	0.6	1932	1.9	1967	4.7	1933	3.6	1940	4.0	1932	4.4	1949	2.3	2002	2.2	1939	1.7	1963	1.7	1970	1.8	1956	0.6	1945
28	0.6	1952	1.9	1964	4.8	1937	3.6	1943	4.0	1938	4.7	1981	2.4	1958	2.3	1948	1.8	1952	1.7	1967	1.8	1953	0.7	1936
29	0.6	1931	2.0	1978	4.9	1975	3.6	1941	4.3	1966	5.0	1973	2.6	1934	2.3	1974	1.9	1948	1.8	1950	1.9	1966	0.8	1976
30	0.7	1977	2.1	1990	5.0	1963	3.7	1974	4.5	1930	5.5	1961	2.6	2006	2.3	1930	1.9	1949	1.8	2003	1.9	1963	1.0	1946
31	0.7	1961	2.1	1977	5.0	1967	3.8	2003	4.7	1970	5.6	2002	2.7	1937	2.4	1967	1.9	1977	1.9	1989	2.2	1962	1.1	1960
32	0.7	1941	2.1	1979	5.1	1966	4.2	2014	4.7	2014	5.7	2006	2.7	1949	2.5	1991	2.0	2003	1.9	1988	2.2	1976	1.2	1969
33	0.8	1958	2.3	1941	5.2	1977	4.2	1961	4.9	1980	5.9	1974	2.8	1980	2.6	1976	2.0	1966	2.0	1966	2.3	1952	1.2	1963
34	0.8	2004	2.4	1953	5.5	1976	4.4	2004	4.9	1976	6.5	1978	3.1	1960	2.7	1971	2.1	2002	2.1	1991	2.3	2006	1.3	1952
35	0.8	1949	2.5	1963	5.6	1941	4.5	1989	5.1	1949	6.9	1959	3.5	1976	2.8	1969	2.2	1941	2.2	1948	2.3	1961	1.3	1957
36	0.8	1939	2.5	2001	5.6	1942	4.6	2000	5.1	1988	7.0	1963	3.5	1965	2.8	1966	2.2	2000	2.3	1976	2.4	1959	1.4	1966
37	0.9	1942	2.6	1951	6.0	1989	4.7	1937	5.5	1964	7.0	1960	3.6	1981	2.8	1940	2.2	1936	2.3	1964	2.4	1965	1.4	1941
38	0.9	1933	2.6	2004	6.4	1954	5.0	1971	5.7	1974	7.1	1992	3.7	1950	2.8	1963	2.2	1971	2.4	1981	2.4	1954	1.4	1983
39	1.0	1975	2.6	1947	6.6	1980	5.2	1972	6.0	1959	7.1	2000	4.1	1967	2.8	1949	2.3	1973	2.4	2000	2.4	1941	1.5	1962
40	1.0	1943	2.7	1962	6.9	1970	5.3	1970	6.3	1990	7.6	1980	4.2	1975	2.9	1977	2.4	1961	2.4	1941	2.5	1948	1.5	1951
41	1.1	1966	2.8	2003	7.2	1999	5.4	1966	6.4	2002	7.9	2003	4.3	1943	3.0	1964	2.5	1981	2.5	1990	2.6	1964	1.5	1954
42	1.2	1956	2.9	1949	7.2	1955	5.7	1988	6.4	1973	8.0	1965	4.3	1948	3.1	1942	2.5	1988	2.6	1954	2.7	1960	1.6	1990
43	1.2	2014	3.0	1981	7.5	1988	5.8	2002	6.7	1947	8.1	1987	4.4	1942	3.1	1961	2.6	1950	2.6	1962	2.9	1970	1.7	1977

44	1.3	1976	3.0	1998	7.6	2009	5.9	1976	6.8	2000	8.5	1969	4.5	1954	3.1	1981	2.8	1957	2.7	1977	3.0	1989	2.0	1959
45	1.4	1979	3.1	1954	7.7	1996	6.0	2012	6.9	1953	8.8	1985	4.6	1973	3.2	2006	2.9	1976	2.7	1957	3.1	1973	2.1	1970
46	1.5	1951	3.1	1965	7.9	1969	6.1	2015	7.3	1978	8.9	1943	5.3	1971	3.3	1980	2.9	1960	2.8	1944	3.2	2013	2.2	2000
47	1.5	1946	3.2	1961	7.9	1939	6.1	1948	7.4	2004	9.1	2012	5.4	1991	3.4	1950	3.0	1969	2.9	1938	3.2	1946	2.2	2012
48	1.5	1963	3.4	2002	8.2	1932	6.4	1980	7.8	1965	9.3	1982	5.4	1985	3.5	1990	3.0	1998	3.1	1946	3.2	2002	2.3	1965
49	1.6	2013	3.5	2007	8.2	1946	6.5	1945	7.9	2003	9.5	1975	5.6	1947	3.6	2000	3.2	1942	3.1	1951	3.3	1990	2.5	2013
50	1.7	1965	3.7	1970	8.3	2012	7.0	2013	8.3	1952	9.8	1942	5.8	2000	3.8	2002	3.3	2013	3.2	1971	3.4	2000	2.5	2003
51	1.8	1964	3.7	1944	8.5	1953	7.0	1953	8.4	1975	9.8	1972	5.8	1952	3.8	1985	3.3	1980	3.4	1972	3.4	2005	2.5	2006
52	1.8	1974	3.8	1974	8.6	2004	7.1	1991	8.6	1992	10.3	1979	6.2	1957	4.0	1960	3.3	1989	3.4	2013	3.4	2003	2.6	1981
53	1.9	1947	4.0	2015	8.7	1952	7.2	1982	9.2	1942	10.6	1957	6.6	1990	4.1	2005	3.4	1964	3.4	1975	3.5	1957	2.6	1974
54	1.9	1991	4.2	2008	9.0	1944	7.3	2005	9.2	2015	11.0	1953	6.8	1972	4.4	1972	3.6	2006	3.5	1961	3.7	1980	3.0	2002
55	2.3	2007	4.6	1945	9.0	1992	8.2	1973	10.2	1982	11.4	2015	6.9	1945	4.4	2013	3.6	2008	3.6	2006	3.8	1988	3.1	1988
56	2.4	1981	4.6	1973	9.2	1982	8.3	1992	10.2	1962	11.4	2009	7.1	1979	4.5	2004	3.8	2001	3.6	2002	3.9	1991	3.2	1980
57	2.4	1988	4.7	1988	9.2	1965	10.1	1975	10.4	1998	11.5	2004	7.3	2007	4.5	1943	3.9	2005	3.6	2001	4.1	1981	3.2	1971
58	2.5	2003	4.8	1976	9.9	1972	10.6	1947	10.5	1987	12.3	1947	7.6	2005	4.7	1997	4.1	1965	3.7	1968	4.3	1977	3.3	2005
59	2.5	2005	4.8	1986	10.0	1938	11.4	1996	10.5	2005	12.6	1971	7.6	2017	4.8	1975	4.2	1972	3.8	1987	4.4	1985	3.4	2008
60	2.8	2001	4.8	2006	10.3	1936	11.4	2017	10.6	1945	12.7	2007	7.9	2013	4.8	2008	4.2	1944	3.9	1965	4.5	2001	3.4	1972
61	2.8	1989	4.9	2010	10.4	2001	11.5	2009	10.7	1991	12.7	2017	8.1	2004	4.9	1982	4.5	1975	4.1	1980	4.6	2014	3.5	2004
62	3.0	1990	4.9	2000	10.9	2017	13.0	2008	11.1	1960	12.8	1950	9.6	2001	5.0	2001	4.5	1997	4.6	1973	4.6	1971	3.5	1978
63	3.4	2002	4.9	2018	11.0	1950	13.8	1949	11.4	1969	13.0	1990	9.8	1978	5.0	1953	5.0	2009	4.7	1998	4.7	1987	3.6	1973
64	3.5	1998	5.0	2012	11.6	1995	13.9	1994	11.8	2012	15.4	2005	9.8	2015	5.1	1945	5.2	2007	5.4	1999	4.9	1978	4.2	1987
65	3.6	2009	5.0	1946	11.9	2008	14.7	1978	12.2	2013	15.9	1997	10.2	1997	5.4	1937	5.7	2017	5.5	1978	5.0	1975	4.3	1997
66	3.9	1993	5.2	1991	12.9	1951	16.8	1998	12.3	1972	16.8	1944	10.3	2003	6.2	1962	6.0	1962	5.9	1997	5.1	1997	4.3	2007
67	4.0	1995	5.2	1987	13.1	1987	18.0	2006	12.3	1994	17.2	2013	10.3	1987	6.6	2016	6.0	1987	6.1	1994	5.2	2004	4.4	1991
68	4.0	2008	5.2	1993	14.1	1961	19.2	2016	12.6	2006	17.5	1951	10.6	2016	6.8	2017	6.2	1982	6.1	1996	5.5	1994	4.5	1975
69	4.5	1986	5.3	2005	14.7	1971	19.3	2018	12.8	1944	17.7	1991	10.9	2008	6.9	1978	6.6	1996	6.4	1979	5.7	1999	5.1	1994
70	4.5	2015	5.4	1995	15.2	1949	19.5	1985	13.1	1996	17.7	2001	11.3	1982	7.1	1987	6.6	1995	6.4	2004	5.8	1996	5.3	2001
71	4.6	1996	5.8	1999	15.6	1984	19.7	1999	13.6	2009	17.8	1998	11.6	1969	7.3	1998	6.6	1983	6.5	2008	6.0	1972	5.5	2009
72	4.7	1992	6.0	1980	15.7	2018	19.7	1979	14.4	1985	18.0	1945	11.6	1998	7.5	1986	6.7	1994	6.7	2014	6.6	2011	5.5	2014
73	4.8	2006	6.2	1943	15.8	1985	20.5	1987	14.8	1979	18.1	1954	12.4	1986	7.7	2009	7.0	1999	6.9	1983	6.8	2008	5.5	1985
74	5.0	1999	6.4	2019	15.9	1945	22.2	2007	15.8	1951	18.8	1994	14.3	1992	7.8	2007	7.6	2004	7.0	2015	7.7	2017	5.9	1996
75	5.1	2018	6.5	1948	16.3	2016	24.5	1965	16.1	2008	18.9	1986	14.7	1994	8.1	2014	8.0	1985	7.0	2009	7.9	2007	6.0	1999
76	5.1	2010	6.6	1992	16.4	1948	25.7	1951	17.4	1999	19.0	1967	14.9	2009	8.2	1994	8.3	1978	7.4	2005	8.1	2016	6.2	1992
77	5.4	2000	7.0	1985	17.1	1962	27.3	1995	17.9	2010	19.1	2016	15.2	1995	8.3	1983	8.4	1984	7.4	1985	8.5	1983	6.3	2017
78	5.5	1994	7.3	1982	17.3	1978	29.5	2010	21.2	2017	20.4	1962	16.0	1962	9.9	1979	8.6	1979	8.4	2011	8.7	1995	7.1	1995
79	5.6	1997	7.9	1996	18.4	1930	31.8	1952	21.2	2018	21.7	1999	16.5	2014	10.2	1992	9.1	2014	10.5	2016	9.3	1993	7.6	1998
80	5.6	1980	8.6	1966	20.2	1997	33.0	1986	21.6	1983	22.0	2011	16.5	1951	10.3	1999	9.8	1938	10.6	1995	10.0	2009	7.7	1979
81	5.7	1985	9.4	1994	21.2	2007	35.6	1993	27.7	1997	24.5	1996	17.1	1999	10.9	1995	9.9	2015	10.8	1982	10.2	2010	8.3	1993
82	5.9	2012	9.4	1952	21.6	1994	36.0	1962	28.2	1993	29.2	2018	17.8	1996	11.3	1984	10.1	1951	10.9	1984	10.3	1992	8.4	2011
83	6.2	1973	9.7	2009	21.6	1993	36.6	1983	28.6	2007	29.9	1995	19.3	1944	11.7	2015	10.2	1992	11.3	1993	11.6	1984	8.7	1986
84	6.3	1984	10.7	1997	22.4	1986	38.5	2001	29.6	2001	30.0	1983	22.5	1983	12.6	2018	10.9	2016	12.6	2007	11.7	1998	9.2	2016
85	7.0	1987	10.8	1971	22.7	1973	39.2	2011	29.7	1984	30.7	2008	23.6	1984	13.7	1951	13.4	2011	13.8	1992	12.0	1986	9.3	1984
86	7.8	2017	11.1	2017	23.9	2011	39.9	1960	30.0	2016	32.2	2014	26.7	2019	15.3	1996	15.0	1986	15.0	2017	12.3	2015	9.3	2010
87	8.1	2011	11.8	1984	27.1	1979	43.8	1969	30.2	2011	36.8	2010	31.1	2018	17.7	2019	17.0	1993	16.1	1986	12.7	1979	10.9	1982
88	8.5	2019	13.9	2011	33.0	1983	44.8	1997	32.0	1986	37.4	2019	33.2	2011	25.2	1993	17.7	2010	19.3	2010	14.1	1982	13.2	2018
89	8.6	1983	14.0	1983	42.5	2010	45.4	1984	39.6	1995	38.9	1993	36.7	2010	25.5	2011	25.4	2018	25.2	2019	14.8	2018	16.5	2019
90	10.7	2016	15.0	2016	58.6	2019	47.6	2019	43.6	2019	59.7	1984	69.7	1993	34.1	2010	33.0	2019	25.7	2018	15.4	2019	19.8	2015

Plate 31. Gavins Point to Omaha Ranking of Average Monthly Flows

MRBWM Technical Report - Missouri River Incremental Flows Below Gavins Point, May 2021

Gavins Point to Nebraska City
Ranking of Average Monthly Flows (kcfs)

Rank	Jan	Year	Feb	Year	Mar	Year	Apr	Year	May	Year	Jun	Year	Jul	Year	Aug	Year	Sep	Year	Oct	Year	Nov	Year	Dec	Year
1	-0.3	1937	1.2	1936	2.4	1943	3.7	1990	-0.3	1934	0.2	1933	0.9	1946	0.0	1955	1.1	2012	1.2	1940	1.8	1936	-0.1	1943
2	0.4	1936	2.7	1940	6.0	1981	5.0	1934	1.9	1955	1.8	1936	1.2	1936	0.8	1941	1.2	1955	1.9	1936	2.1	1939	0.3	1989
3	0.5	1968	2.9	1939	6.5	1968	5.2	1981	3.1	1943	2.4	1956	2.0	1933	0.9	1936	1.5	1956	2.0	1939	2.8	1937	0.9	1944
4	0.9	1971	3.7	1978	6.5	1934	5.6	1935	3.3	1940	4.1	1989	2.3	1941	1.4	2012	1.8	1991	2.1	1943	3.0	1945	1.2	1932
5	1.2	1940	4.3	1937	7.6	1964	5.7	1942	3.3	1939	4.8	1931	2.4	1974	1.5	1934	1.9	1940	2.3	1937	3.1	1943	1.8	1940
6	1.3	1977	4.6	1956	7.6	1990	5.8	1968	4.2	1956	5.1	1939	2.8	1956	2.1	1946	2.0	1953	2.3	1947	3.2	1940	1.9	1955
7	1.4	1957	4.9	1979	7.7	2005	6.0	1938	4.6	1941	5.2	1934	2.9	1968	2.2	1970	2.1	1947	2.3	1953	3.7	1934	1.9	1934
8	1.8	1969	5.0	1975	7.9	1935	6.0	1956	4.7	1989	5.3	1988	2.9	1940	2.4	1931	2.1	1939	2.5	2012	3.8	1933	2.0	1945
9	2.0	1954	5.0	1957	7.9	1957	6.4	1955	4.7	1968	5.7	1955	3.0	1931	2.8	1976	2.2	1990	2.8	1935	4.0	1938	2.0	1956
10	2.2	1935	5.2	1933	8.3	1991	6.4	1939	5.0	1967	5.9	1948	3.3	2002	2.8	1968	2.3	1974	2.8	1934	4.2	1950	2.2	1990
11	2.5	1970	5.2	1989	8.7	2003	6.6	1967	6.0	1981	6.1	1938	3.4	1970	2.9	1988	2.7	1954	3.0	1991	4.4	1955	2.5	1939
12	2.5	1960	5.3	1942	8.9	1931	6.9	1936	6.2	1946	6.5	1968	3.6	2012	3.0	2003	2.9	1943	3.0	1955	4.4	2012	2.5	1950
13	2.6	1972	5.4	1938	8.9	1940	6.9	1957	6.6	1931	6.7	1976	3.7	1988	3.0	1989	3.0	1971	3.3	1942	4.5	1956	2.7	1958
14	2.6	1967	5.6	1990	9.1	1956	7.0	1989	6.7	1948	6.7	1941	3.9	1976	3.1	1971	3.3	1934	3.3	1974	4.6	1944	2.8	1937
15	2.8	1948	5.6	1955	9.1	2014	7.3	1940	6.9	1936	6.9	1977	3.9	1932	3.1	1933	3.4	1937	3.3	1931	4.9	1941	2.9	1935
16	3.1	1979	6.1	1969	9.8	2002	7.5	1946	7.8	1958	6.9	1981	4.0	1934	3.6	1991	3.5	1976	3.4	1958	4.9	1935	2.9	1963
17	3.1	1982	6.4	1981	9.9	1967	7.9	1943	7.8	1963	7.3	1958	4.1	2006	3.8	1956	3.6	1945	3.5	2003	5.0	1976	2.9	1936
18	3.1	1955	6.8	1935	10.0	2013	8.1	1941	8.0	1937	8.1	1970	4.2	1955	3.9	1947	3.6	1968	3.5	1945	5.1	1947	3.1	1949
19	3.1	1941	6.9	2013	10.2	1977	8.5	1963	9.2	1966	8.2	2006	4.4	1981	4.0	1938	3.7	2000	3.5	1956	5.2	1931	3.6	1968
20	3.2	1978	6.9	1959	10.2	2006	8.5	1931	9.4	1932	8.2	1946	4.5	1939	4.0	1974	3.7	1970	3.6	1989	5.2	1942	3.7	1942
21	3.4	1991	6.9	1967	10.4	2000	8.6	1933	9.5	1977	8.8	1937	4.5	1963	4.1	1935	3.8	1946	3.6	1990	5.3	1966	3.8	1938
22	3.4	1950	7.1	1934	10.8	1941	8.9	2004	9.5	1990	9.6	2002	4.5	1980	4.2	1939	3.8	1988	3.8	1933	5.3	1974	3.9	1976
23	3.5	1959	7.2	2004	11.0	2015	9.0	2003	10.1	1957	9.9	1966	4.6	1977	4.7	1944	3.9	2002	4.4	1988	5.3	1969	4.1	1961
24	3.5	2004	7.3	1941	11.5	1976	9.1	2000	10.2	1988	10.6	1974	4.7	1966	4.8	1980	3.9	1967	4.6	1976	5.5	1948	4.3	1964
25	3.6	1975	7.3	1964	11.7	1996	9.2	1977	10.3	1970	10.6	1992	5.1	1935	4.8	1965	3.9	1935	4.7	1949	5.5	1952	4.3	1967
26	3.6	1942	7.3	1977	11.7	1947	9.2	1937	10.3	2000	10.7	2000	5.3	1989	4.9	1967	3.9	2003	4.8	1932	5.6	1949	4.4	1933
27	3.7	1938	7.4	2014	12.5	1942	9.2	1959	10.7	1954	12.1	1940	5.7	1975	5.0	2006	4.0	1959	4.8	1963	5.6	1932	4.5	1947
28	3.8	1951	7.4	1951	12.6	1975	9.5	1932	10.8	1976	12.6	1978	5.8	1961	5.1	1963	4.1	1931	5.0	1948	5.8	1953	4.5	1948
29	3.8	1930	7.5	1960	12.8	1959	9.6	1950	10.9	1961	13.3	2003	6.1	1954	5.2	1953	4.3	1980	5.1	1966	6.0	1967	4.8	1953
30	3.9	1958	7.6	1958	13.2	1970	9.7	1954	10.9	1933	13.9	1972	6.1	1953	5.3	1957	4.6	1936	5.2	1975	6.1	1989	4.8	1960
31	4.1	1956	7.7	1950	13.4	1954	9.8	2014	11.7	1938	14.2	2012	6.7	1959	5.4	2000	4.7	1981	5.2	1941	6.2	2003	4.8	1966
32	4.1	1961	7.8	1972	13.6	1958	9.8	1948	11.9	2014	14.4	1959	6.9	1930	5.5	2002	4.9	1969	5.3	1944	6.2	1964	5.1	2000
33	4.2	1962	8.2	1968	13.7	1989	10.5	1964	12.0	1947	14.5	1961	6.9	1937	5.5	1949	5.0	1950	5.4	1967	6.2	2006	5.1	1941
34	4.3	1944	8.2	2003	14.1	1998	10.6	1972	12.6	1992	14.7	1963	7.5	1964	5.5	1943	5.1	1941	5.5	1959	6.3	1963	5.2	1954
35	4.3	1963	8.2	1965	14.1	1999	10.6	1982	12.6	2002	15.0	1979	7.7	1938	5.6	1942	5.2	2013	5.5	1938	6.4	1988	5.2	1962
36	4.3	1932	8.3	1963	14.2	1933	10.7	2002	12.8	1935	15.1	1930	7.8	1991	5.6	1964	5.2	1932	5.7	1964	6.6	1980	5.5	2003
37	4.3	1943	8.5	1944	14.6	1966	10.9	1988	12.8	1975	15.7	1985	8.8	1985	5.7	1969	5.3	1966	5.7	1952	6.6	1954	5.7	2012
38	4.5	1949	8.5	2001	14.7	1992	11.0	1991	13.9	1964	15.7	1969	9.3	2000	5.7	1940	5.3	1958	5.9	1981	6.7	1990	5.8	1974
39	4.7	1939	8.6	1947	14.7	1946	11.0	1976	14.3	1950	16.3	1975	9.3	1948	6.0	1961	5.4	1952	6.0	1980	6.7	1958	5.9	1931
40	4.7	1945	8.9	1961	14.9	1974	11.4	1961	14.9	1980	16.4	1952	10.0	1960	6.2	2005	5.5	1963	6.0	2000	7.0	2005	6.0	2013
41	5.0	2003	8.9	1949	15.2	2009	11.6	1930	15.4	1974	16.6	1932	10.9	1942	6.2	1975	5.5	2005	6.1	1950	7.1	2002	6.1	1980
42	5.1	1966	9.3	2006	15.4	1988	12.4	1992	15.4	1991	18.0	1987	10.9	1990	6.3	1930	5.6	1961	6.1	1971	7.1	1991	6.2	1957
43	5.1	1934	9.4	1962	15.9	1960	12.4	1971	15.4	2004	18.4	2004	10.9	1972	6.3	1972	6.0	1975	6.1	1960	7.1	1968	6.3	1970

44	5.2	1947	9.6	2002	15.9	1955	12.5	1966	15.7	1949	19.0	1964	11.0	2013	6.9	1954	6.1	1998	6.2	1954	7.4	1975	6.3	1952
45	5.3	2014	9.9	1931	16.2	1980	13.3	1958	15.9	1994	19.5	1949	11.4	2007	7.0	2013	6.2	1949	6.6	1969	7.4	1959	6.4	1959
46	5.5	1964	10.1	1953	16.2	1937	13.5	1970	16.3	1978	19.7	1950	11.4	2005	7.2	1981	6.3	1948	6.7	2002	7.5	1962	6.4	1969
47	5.5	1965	10.1	1932	16.6	1939	14.1	2012	16.5	2006	20.5	1980	11.5	1949	7.7	2001	6.7	1957	6.9	1970	7.6	1978	6.7	1988
48	5.5	2013	10.5	2008	16.7	2012	14.1	2015	16.9	2003	20.6	1953	11.6	1971	7.7	1973	6.7	1933	7.1	1957	7.8	1957	6.8	1946
49	5.5	1946	10.5	1991	17.0	2004	14.3	2013	17.9	1971	21.4	1997	11.6	1973	7.7	2004	7.2	1944	7.3	1972	8.0	1951	6.8	2002
50	5.6	1988	10.6	1992	17.7	1963	14.3	2005	18.1	1969	21.4	1965	11.8	1943	7.8	1937	7.4	1960	7.4	1977	8.0	1960	6.9	1951
51	5.8	1976	10.8	1945	17.8	1944	14.5	1953	18.3	1953	22.1	1973	12.3	1952	7.9	1985	7.6	2008	7.4	1987	8.3	1970	7.2	2005
52	6.0	1981	11.0	1954	18.4	1972	14.6	1974	18.7	2005	22.5	1960	12.3	2017	8.1	1977	7.8	1964	7.4	2006	8.4	1961	7.2	1978
53	6.1	2005	11.1	1993	18.4	1982	15.6	1996	18.8	1942	22.7	2009	12.6	1967	8.5	1966	8.0	2001	7.7	1978	8.4	1987	7.3	2006
54	6.2	1990	11.5	1946	18.6	1938	16.2	1945	19.4	1962	23.0	1990	12.7	1979	8.7	1978	8.0	2006	7.8	2001	8.4	2013	7.3	1930
55	6.4	1953	11.6	2000	18.9	1995	16.5	1980	19.5	2009	23.4	1943	12.9	1987	8.7	1997	8.2	1997	7.9	1962	8.6	1981	7.4	2004
56	6.5	1931	11.7	1980	19.0	1953	16.7	1944	19.7	2012	23.5	1942	13.0	1997	8.8	1945	8.8	1994	8.3	1994	8.9	2000	7.6	1991
57	6.6	2007	11.8	1995	20.1	2017	16.8	1975	20.1	1952	23.7	1994	13.1	1957	8.8	1990	8.8	1930	8.5	1999	9.0	1985	7.6	1977
58	7.0	1933	12.0	1976	22.0	2008	17.6	1947	20.3	2013	23.8	2017	13.4	2003	8.8	1959	9.1	2004	8.7	1997	9.1	1999	7.7	1981
59	7.1	1989	12.0	1970	22.7	1965	19.5	2009	20.4	1998	24.3	1935	13.7	1965	8.9	1932	9.2	1972	8.7	1961	9.2	1994	7.8	2008
60	7.3	1993	12.1	2007	22.8	1961	19.6	1994	20.5	1945	24.9	1957	14.5	2004	9.6	2008	9.3	1977	8.8	1996	9.5	2004	7.8	1985
61	7.4	1952	12.1	1988	22.8	1952	21.2	2017	21.4	1965	26.1	1982	14.8	2001	9.6	1960	9.3	1995	9.3	1979	9.5	1971	7.9	1971
62	7.7	1992	12.2	1986	23.3	1932	22.8	2008	21.5	1959	26.1	2001	14.9	1978	10.1	1948	9.4	1973	9.3	1930	9.5	1997	8.1	1975
63	8.0	2001	12.4	1998	24.5	2001	22.9	1973	22.8	1973	26.3	2005	15.6	1950	10.7	1979	9.7	1989	9.3	1968	9.5	2014	8.8	1983
64	8.1	1996	12.5	1985	24.5	1950	25.0	1949	22.9	1979	26.3	2013	16.1	1958	10.8	1962	9.7	2009	9.4	2004	9.5	2001	9.1	1965
65	8.2	1995	12.9	2010	25.6	1969	25.9	2006	23.9	2015	26.5	1986	17.1	1945	11.0	1994	9.9	1999	9.7	1998	9.9	1965	9.3	1972
66	8.5	1998	13.3	2018	25.7	1930	27.7	1979	24.5	1996	26.6	2007	17.9	1992	11.8	1958	10.1	1942	10.3	2005	9.9	1930	9.3	1994
67	8.8	1997	13.4	2015	26.1	2016	28.1	1985	24.6	1987	27.9	1971	18.2	1982	11.8	1952	10.4	1978	11.3	2013	10.1	1946	9.4	1996
68	8.8	1980	13.5	1948	26.3	1945	28.8	2018	24.9	1972	28.7	1991	18.2	1947	11.9	1984	10.5	1962	11.3	1951	11.0	1996	9.9	1973
69	9.0	2002	13.7	1987	26.4	1985	30.8	1978	25.0	1982	28.7	1954	19.2	1969	12.4	2009	10.6	1979	12.8	1946	11.1	1977	10.0	1992
70	9.0	1994	13.7	2012	27.2	1936	31.7	1998	26.3	1985	34.5	1998	20.1	2015	12.8	1950	10.7	1982	12.9	1985	12.3	1995	10.2	2009
71	9.4	1974	13.8	2005	28.0	1997	33.0	1999	26.3	1930	36.4	2015	20.6	2009	12.9	1986	10.8	1996	13.4	1995	12.6	1973	10.3	1997
72	9.5	2008	14.1	1996	28.8	1951	33.8	2016	27.8	2010	36.8	2011	21.1	2008	13.4	2017	11.0	1987	13.9	1983	12.8	1983	10.5	1987
73	9.5	2009	14.4	1930	29.1	2018	35.3	1951	27.9	1960	36.8	1999	21.2	2016	13.5	1982	11.3	2017	13.9	2009	13.7	1972	10.8	1999
74	9.6	2000	14.9	1999	29.7	1971	35.5	2007	30.2	1944	37.2	2016	21.8	1995	13.5	1983	11.7	2007	14.0	2015	14.5	2011	11.0	1995
75	9.8	2006	15.5	1943	32.8	1984	36.4	1965	30.2	1997	37.2	1962	22.1	1994	14.0	1995	12.2	1985	14.3	2014	14.7	2017	11.0	2001
76	9.8	1985	15.7	1982	32.8	1994	37.2	1995	30.3	2008	37.7	1945	22.2	1996	14.3	1992	12.4	1984	15.2	2008	14.9	1992	11.1	2007
77	10.1	1986	15.9	1994	33.6	1986	39.5	2010	30.3	1951	39.0	1996	22.7	1998	14.4	2014	14.2	1992	15.7	1965	15.0	2007	12.4	2017
78	10.3	2018	16.2	2019	33.7	2007	41.6	1987	30.9	2018	40.3	1951	23.0	1986	14.9	1998	14.4	1983	16.6	1992	15.6	1993	12.8	2014
79	10.5	2015	16.8	1973	34.1	1948	44.0	1986	31.1	1999	40.9	1944	24.4	1962	15.3	1987	15.9	1938	17.6	2011	15.7	2016	12.9	1979
80	10.9	1999	17.3	1966	34.5	1962	44.8	1952	37.6	1993	42.5	2018	25.0	2014	15.4	2016	17.3	2014	17.9	1984	16.0	2008	13.7	1998
81	12.0	2010	17.3	1974	34.5	2011	45.1	1993	39.3	1983	45.3	1947	26.2	1999	16.4	2007	17.4	1965	18.0	1982	17.9	1979	15.1	1982
82	12.7	2012	18.3	1997	34.6	1987	48.1	1962	39.5	2017	48.4	1993	26.3	1944	17.6	2018	18.8	2015	18.4	1993	18.3	2010	15.2	1993
83	13.1	1984	20.3	2009	38.8	1978	50.2	1997	40.4	1986	48.8	1995	28.7	1951	19.7	1999	18.9	1951	18.6	2016	18.5	2009	15.3	2011
84	13.6	1987	22.1	2017	40.5	1973	51.3	2001	44.3	2001	49.1	2014	33.9	1984	19.7	2015	20.1	2011	20.2	1973	18.6	1984	16.0	2016
85	13.9	2011	22.3	1952	43.6	1993	52.8	2011	45.2	2011	55.7	2019	41.7	2019	20.0	1996	20.6	2016	23.6	2007	18.9	1982	16.2	2010
86	15.1	1983	25.1	1971	45.2	1949	54.4	1983	45.7	2007	56.8	1983	41.9	1983	22.9	1951	23.7	1986	25.9	2010	19.0	1998	18.1	1986
87	15.8	1973	26.2	2011	45.6	1983	55.5	1969	55.8	1995	57.9	1967	43.4	2018	33.7	2019	26.1	2010	28.0	2017	20.4	1986	19.6	1984
88	16.9	2017	26.4	1983	48.1	1979	58.5	2019	58.8	2016	64.1	2008	47.6	2011	34.6	2011	26.8	1993	29.9	1986	20.6	2015	27.3	2018
89	19.2	2016	28.2	1984	61.8	2010	66.0	1960	61.7	2019	82.8	2010	58.5	2010	38.4	2010	35.9	2018	34.3	2018	23.0	2018	31.0	2019
90	21.9	2019	29.1	2016	104.0	2019	80.4	1984	65.0	1984	102.1	1984	107.6	1993	42.3	1993	46.3	2019	39.2	2019	26.8	2019	33.8	2015

Plate 32. Gavins Point to Nebraska City Ranking of Average Monthly Flows

MRBWM Technical Report - Missouri River Incremental Flows Below Gavins Point, May 2021

Gavins Point to Rulo
Ranking of Average Monthly Flows (kcfs)

Rank	Jan	Year	Feb	Year	Mar	Year	Apr	Year	May	Year	Jun	Year	Jul	Year	Aug	Year	Sep	Year	Oct	Year	Nov	Year	Dec	Year
1	-0.3	1937	1.7	1936	2.2	1943	5.1	1934	-0.3	1934	0.3	1933	1.7	1936	0.1	1955	1.0	1955	1.3	1940	1.9	1936	-0.1	1943
2	0.6	1936	2.8	1940	6.0	1981	5.6	1935	3.0	1939	2.3	1956	1.8	1946	0.9	1941	1.4	2012	2.0	1953	2.2	1939	0.9	1989
3	1.0	1968	3.4	1939	6.6	1934	5.6	1981	3.6	1955	3.2	1936	2.5	1933	1.6	1936	2.2	1956	2.1	1939	2.9	1937	1.2	1944
4	1.1	1971	4.1	1978	7.5	1968	6.4	1956	3.6	1940	5.5	1934	2.6	1941	1.7	2012	2.3	1940	2.2	1943	3.3	1943	1.4	1955
5	1.2	1940	4.7	1956	8.0	1964	6.4	1990	3.9	1956	5.8	1948	3.7	1970	2.1	1934	2.5	1939	2.3	1936	3.5	1945	1.7	1945
6	1.9	1977	5.2	1979	8.0	1957	6.5	1942	4.3	1943	6.1	1931	3.7	1940	2.5	1946	2.6	1947	2.3	1937	3.6	1940	1.7	1932
7	1.9	1969	5.4	1933	8.5	1935	6.7	1968	5.2	1941	6.5	1938	3.9	1974	2.7	1970	2.7	1991	2.7	1955	3.9	1933	2.0	1940
8	1.9	1957	5.5	1957	8.5	2005	6.7	1939	5.5	1989	6.7	1968	3.9	1968	2.7	1931	2.8	1953	2.7	1947	4.1	1934	2.1	1934
9	2.3	1954	5.6	1938	8.9	1931	6.8	1938	5.7	1968	6.8	1939	4.0	1931	3.7	1976	3.0	1943	3.0	1935	4.2	1938	2.6	1939
10	2.3	1935	5.7	1975	9.1	2003	7.1	1957	5.8	1967	6.8	1988	4.1	2002	4.0	1968	3.1	1974	3.1	2012	4.7	2012	2.7	1937
11	2.8	1970	5.8	1989	9.2	1956	7.2	1955	6.4	1981	6.8	1977	4.3	1956	4.0	1988	3.5	1990	3.3	1934	5.0	1944	2.8	1936
12	2.8	1959	5.9	1937	9.6	1940	7.3	1967	6.8	1931	7.2	1989	4.4	1934	4.2	2003	3.6	1971	3.7	1956	5.1	1942	2.9	1990
13	2.9	1948	6.2	1942	9.8	2014	7.4	1940	7.3	1946	7.3	1955	4.4	1977	4.2	1989	3.7	1934	3.7	1942	5.2	1950	3.0	1956
14	3.0	1967	6.5	1955	10.0	1967	7.5	1936	7.5	1948	8.1	1981	4.5	2012	4.4	1971	3.9	1937	4.0	1991	5.3	1955	3.0	1950
15	3.3	1979	6.9	1981	10.1	1990	8.2	1954	8.0	1936	8.5	1958	4.8	2006	4.4	1933	4.0	1954	4.0	1933	5.3	1976	3.0	1935
16	3.3	1941	7.1	1935	10.5	2006	8.5	1989	8.8	1958	8.5	1937	5.0	1980	4.5	1991	4.0	1945	4.1	2003	5.5	1935	3.2	1963
17	3.3	1955	7.2	1990	10.6	2002	8.7	1946	9.1	1937	9.0	1970	5.1	1955	4.5	1956	4.1	2003	4.2	1945	5.6	1956	3.4	1958
18	3.7	1972	7.2	1934	10.6	2013	8.7	1941	9.6	1963	9.4	2006	5.1	1953	4.7	1947	4.1	1976	4.2	1931	5.8	1953	3.8	1938
19	3.7	1938	7.3	1959	11.0	1941	8.7	1943	10.0	1954	9.5	1941	5.1	1981	4.9	1938	4.2	1970	4.7	1974	6.0	1966	4.1	1949
20	3.8	1982	7.5	1964	11.3	1991	8.9	1931	10.4	1966	9.5	1976	5.1	1963	4.9	1974	4.2	1968	5.0	1990	6.1	1947	4.3	1976
21	4.0	1930	7.6	1967	11.8	1977	9.4	1933	10.5	1932	10.4	1946	5.1	1976	5.1	1935	4.3	1935	5.0	1948	6.1	1932	4.3	1968
22	4.1	1978	7.7	1941	12.0	1947	9.6	1963	10.5	1977	10.6	2002	5.7	1932	5.1	1939	4.5	2002	5.0	1989	6.6	1948	4.4	1942
23	4.3	1958	7.8	2013	12.2	1954	9.8	1937	11.2	1933	12.1	1966	5.7	1988	5.8	1944	4.6	1967	5.1	1932	6.7	1974	4.7	1964
24	4.3	1944	7.9	2014	12.4	2000	9.9	2003	11.5	1957	12.4	1940	5.7	1966	6.0	1980	4.6	1980	5.3	1958	6.8	1980	4.7	1933
25	4.4	1950	8.0	1972	12.5	2015	10.0	1950	11.7	2000	13.4	1992	6.0	1939	6.0	1965	4.6	2000	5.3	1976	6.8	1964	4.8	1967
26	4.4	2004	8.0	1977	12.8	1976	10.2	1977	11.8	1970	13.8	2000	6.2	1935	6.0	1967	5.1	1931	5.4	1963	6.9	1967	4.9	1948
27	4.5	1991	8.0	2004	14.1	1933	10.4	2014	12.4	1990	14.3	1978	6.9	1954	6.1	2006	5.3	1988	5.8	1966	7.0	2006	5.0	1947
28	4.5	1961	8.2	1951	14.6	1942	10.5	1948	12.6	2014	15.6	1974	6.9	1930	6.2	1963	5.6	1950	5.9	1938	7.0	1949	5.2	1961
29	4.5	1951	8.5	1947	15.1	1959	10.8	1932	13.0	1961	16.3	1930	7.5	1989	6.4	1953	5.8	1981	5.9	1975	7.0	1963	5.3	1953
30	4.6	1939	8.5	1950	15.1	1975	10.9	2000	13.1	1938	16.4	2003	7.7	1961	6.5	1957	5.8	1936	6.0	1949	7.1	1969	5.4	1960
31	4.7	1963	8.6	1960	15.2	1958	11.3	2004	13.1	1988	16.6	1979	7.8	1937	6.5	2000	5.9	2013	6.1	1988	7.1	1941	5.5	1954
32	4.7	1956	9.0	2003	15.3	1966	11.4	1959	13.5	1976	17.0	2012	8.1	1975	6.6	2002	5.9	1966	6.2	1944	7.1	1954	5.6	1966
33	4.8	1942	9.1	1969	15.9	1989	11.4	2002	13.6	1947	17.0	1961	8.3	1938	6.8	1949	6.2	1959	6.3	1980	7.4	1931	6.0	1951
34	4.8	1962	9.2	1963	15.9	1970	11.5	1972	13.7	1935	17.0	1985	9.8	1985	6.9	1943	6.2	2005	6.4	1964	7.6	2005	6.0	1941
35	4.9	1943	9.3	1968	15.9	1996	11.9	1930	14.0	2002	17.1	1963	10.0	1991	7.0	1942	6.3	1969	6.4	1971	7.6	2003	6.1	1962
36	5.0	1975	9.5	1965	16.3	1960	12.7	1964	14.4	1992	17.4	1972	10.4	1948	7.2	1964	6.4	1932	6.5	2000	7.8	1988	6.3	2000
37	5.1	1949	9.6	2006	16.8	1955	12.8	1988	15.4	1980	18.6	1932	10.5	1959	7.2	1969	6.5	1948	6.8	1967	7.9	1989	6.3	1980
38	5.3	1934	10.0	1944	17.1	1946	13.1	1982	16.0	1975	18.7	1969	11.2	1964	7.3	1940	6.5	1946	7.1	1960	7.9	1968	6.6	2012
39	5.4	1960	10.1	1931	17.4	2009	13.3	1971	16.2	1949	18.8	1959	11.9	2000	7.4	1961	6.6	1963	7.2	1981	8.0	2002	6.6	1974
40	5.5	2003	10.1	1958	17.8	1937	13.3	1976	16.2	1964	19.9	1953	12.0	1960	7.8	2005	7.0	1941	7.5	2002	8.0	1958	6.7	2013
41	5.6	1947	10.6	1949	18.1	1988	13.7	1966	16.8	1953	20.2	1975	12.3	1942	7.8	1975	7.2	1933	7.6	1969	8.0	1990	6.7	2003
42	5.8	1945	10.8	2002	18.2	1980	14.1	1958	18.1	2006	22.4	1952	12.4	1971	7.8	1930	7.5	1949	7.7	1954	8.1	1978	7.1	1978
43	5.8	1966	11.3	1961	18.3	2012	14.8	1961	19.0	1994	22.8	2004	12.7	1943	8.7	1972	8.1	1957	7.8	1952	8.4	1975	7.2	1957

44	5.8	1964	11.5	1954	18.4	1999	14.9	1953	20.1	1971	22.9	1950	12.9	1972	9.0	1954	8.8	1944	7.8	1970	8.5	1991	7.3	1946
45	5.9	1946	11.7	2001	18.4	1938	15.0	1991	20.2	2003	22.9	1980	13.3	2007	9.0	2013	9.0	2006	8.0	1959	8.8	1962	7.5	1969
46	6.1	1965	12.1	1945	18.5	1953	15.3	1970	21.0	1942	25.6	1965	13.6	2005	9.1	1981	9.1	1964	8.1	1978	8.8	1959	7.6	1930
47	6.1	2013	12.1	1953	18.6	1944	16.0	1992	21.5	1991	25.7	1987	13.8	2013	9.1	2001	9.2	1975	8.4	1941	9.0	2013	7.6	2002
48	6.2	1953	12.5	2008	19.0	1992	16.5	2015	21.9	1978	25.9	1960	14.1	1949	9.2	1973	9.3	2008	8.6	2006	9.1	1960	7.6	2005
49	6.2	1976	12.5	1980	19.1	1939	16.7	2005	22.3	2012	26.3	1949	14.3	2003	9.4	2004	9.4	1930	8.7	2001	9.2	1970	7.8	1988
50	6.3	2014	12.8	1991	19.2	1972	17.4	2013	22.5	1965	26.5	1942	14.4	1957	9.4	1937	9.4	1952	8.8	1957	9.3	1952	7.8	1959
51	6.5	1981	12.9	1932	19.9	2004	18.9	1944	22.9	2009	26.5	1964	14.8	1979	9.4	1985	9.4	2001	9.2	1972	9.5	1981	7.8	1970
52	6.6	1931	13.0	1946	20.5	1974	19.0	2012	23.0	1974	26.6	1997	15.3	1967	9.4	1977	9.6	2004	9.2	1950	9.5	1957	7.9	1931
53	6.8	2005	13.2	1992	21.3	1998	19.2	1980	23.0	2004	27.1	1935	16.1	1990	9.8	1966	9.6	1960	9.3	1962	9.7	1985	7.9	2006
54	7.3	1932	13.3	1976	22.2	1995	19.4	1974	23.6	2005	27.8	1943	16.1	2017	10.2	1978	9.6	1961	9.5	1930	10.0	2001	8.0	1952
55	7.4	1990	13.3	1970	22.7	1982	20.0	1945	24.3	1969	28.0	1957	17.5	1997	10.2	1997	9.8	1998	9.7	1987	10.1	1930	8.0	2004
56	7.5	1989	13.4	1962	22.8	2017	20.2	1947	25.1	1962	28.1	2009	17.5	2004	10.4	1945	10.6	2009	9.8	1977	10.1	2000	8.4	1977
57	7.8	1933	13.5	2000	23.2	1963	20.5	1996	25.2	1950	28.7	2017	17.9	1952	10.6	1990	10.9	1994	10.3	1979	10.2	2004	8.8	1985
58	8.2	2007	13.6	2007	24.7	1932	21.9	2009	25.5	1979	29.1	1971	17.9	2001	11.0	1959	11.0	1942	10.3	2004	10.8	1971	9.1	1991
59	8.7	1988	14.1	1986	25.5	2008	22.2	1975	25.5	1952	29.3	2005	19.0	1945	11.1	1932	11.0	1958	11.0	1994	10.9	1965	9.2	1975
60	8.7	2001	14.4	1948	26.2	1950	23.0	1994	26.6	2013	29.3	1954	19.1	1950	11.8	2008	11.3	1997	11.2	1968	11.0	1961	9.3	1971
61	8.9	1952	14.4	1985	26.3	1930	25.0	1949	26.7	1945	29.5	1986	19.2	1978	12.1	1960	11.3	1995	11.4	2005	11.2	1994	9.4	1983
62	9.3	1993	14.4	2015	26.9	1961	26.1	2017	27.3	1930	30.0	1973	20.0	1965	12.3	1948	11.9	1982	11.6	1961	11.2	1946	9.5	1981
63	10.1	1980	14.8	2018	27.1	1952	26.4	2006	27.9	1959	30.1	1994	20.3	1987	12.9	1979	12.1	1979	12.0	1997	11.8	1987	9.9	1965
64	10.3	1992	14.8	1995	27.8	1985	27.9	2008	28.4	1972	30.2	1990	20.5	1973	13.4	1962	12.2	2017	12.4	2013	12.0	1951	10.3	2008
65	10.4	2002	14.9	1987	28.8	1965	30.1	2018	28.5	1998	31.7	2007	21.0	1982	13.9	1994	12.8	1962	12.5	1998	13.2	2014	11.8	1972
66	10.4	1995	14.9	2010	29.0	1945	30.3	1985	29.3	1985	31.8	1982	21.8	1947	14.3	1958	13.4	1984	12.7	1999	13.5	1999	11.9	1994
67	10.5	2006	15.0	1988	30.0	1936	30.4	1979	31.6	1987	33.7	2013	24.3	2009	14.5	1952	13.5	1985	13.8	1946	14.0	1997	11.9	2001
68	10.7	1986	15.3	2005	30.2	2016	36.9	1951	32.3	2015	35.2	1991	24.4	1969	14.8	1984	13.5	1999	14.1	1985	14.5	1977	12.2	2009
69	10.8	1996	15.4	1930	31.3	2001	37.1	1973	32.3	1960	35.3	2001	24.5	1958	15.2	2009	13.8	2007	14.7	1983	14.9	1983	12.6	1995
70	11.0	1985	15.5	2012	31.4	1951	37.3	1978	32.8	1973	41.5	1945	25.6	1992	15.2	1950	14.3	1978	15.0	1996	15.2	1995	13.4	2007
71	11.4	2009	16.3	1993	31.9	1997	39.1	2016	32.8	2018	41.8	2011	26.1	2016	15.8	1986	14.9	1972	15.4	2009	15.6	2011	13.7	2017
72	11.6	2018	16.5	1999	32.0	2018	39.6	1965	33.8	1982	42.2	1944	27.2	2008	16.4	2017	15.3	1973	16.5	1995	16.9	2017	13.9	1979
73	11.8	1994	16.6	1943	32.8	1969	41.1	2007	34.4	1944	42.6	2016	27.2	2015	16.4	1982	15.6	1977	16.9	1951	17.3	1973	14.1	1992
74	11.9	2008	18.2	1996	34.6	1986	41.3	1998	35.4	2010	43.1	1962	27.3	1995	16.6	1983	15.6	1983	16.9	1965	17.5	1972	14.2	1987
75	12.0	2000	18.3	1998	34.6	1971	43.2	1995	36.3	1996	46.3	2018	27.9	1944	16.7	1995	16.4	1996	17.4	2015	18.1	2008	14.4	1999
76	12.1	2015	18.6	2019	35.8	2011	44.1	1999	37.2	1997	48.3	2015	28.0	1994	17.9	1992	16.9	1938	18.1	2008	18.2	2007	15.5	1996
77	12.2	1998	19.1	1966	36.6	1984	45.3	2010	37.3	2008	49.5	1996	28.2	1962	18.3	2014	17.1	1987	18.7	1982	18.6	2016	15.5	1973
78	12.9	1999	21.1	1974	37.4	2007	46.2	1987	41.4	1951	50.7	1999	29.9	1996	18.4	1998	17.8	1989	19.0	1984	18.9	1992	15.9	2014
79	13.3	1997	21.5	1994	37.4	1948	46.6	1986	44.7	2011	51.9	1951	30.8	1986	18.7	1987	18.9	1992	19.9	1992	19.1	1979	16.2	1997
80	13.5	2012	21.8	1982	37.6	1994	51.9	1962	45.4	1999	54.3	1998	31.1	2014	19.4	2016	21.5	1965	21.0	2011	19.8	1996	16.8	1998
81	13.7	1984	22.4	2009	39.7	1987	52.6	1952	45.7	1983	55.7	1947	31.8	1951	20.9	2007	23.2	2015	21.7	2014	19.9	1984	17.4	2011
82	14.7	2010	22.5	1973	40.4	1962	53.0	2001	47.0	1986	55.9	2014	33.8	1998	22.4	2018	24.7	2014	24.9	2016	20.9	2010	17.5	2010
83	14.9	2011	23.8	1997	46.4	1978	53.9	1993	49.2	2001	56.7	1995	37.9	1999	23.1	1999	25.8	2016	25.7	1993	21.2	1993	18.5	1982
84	15.2	1987	24.0	2017	48.8	1949	54.2	2011	49.8	2017	59.2	1993	41.1	1984	25.2	2015	27.2	2011	28.7	2010	21.2	1982	18.5	2016
85	15.2	1974	25.7	1952	49.6	1983	57.6	1997	52.8	1993	63.5	1983	45.1	1983	27.2	1996	27.4	1986	30.3	1973	21.2	2009	19.6	1984
86	16.5	1983	28.1	1971	53.3	1993	61.5	1983	69.8	2007	66.7	1967	48.3	2019	29.9	1951	27.5	1951	31.1	2007	22.6	1998	20.1	1993
87	19.6	2017	28.2	2011	54.6	1973	61.6	2019	70.5	1995	74.1	2019	49.6	2018	37.5	2019	30.1	2010	32.1	2017	22.8	1986	20.7	1986
88	21.9	1973	30.7	1983	66.2	1979	62.3	1969	73.1	2019	91.5	2008	56.6	2011	42.3	2011	39.1	1993	38.1	1986	24.7	2015	34.4	2018
89	24.9	2016	31.1	1984	74.8	2010	74.7	1960	73.2	2016	94.8	2010	68.6	2010	47.0	2010	42.4	2018	44.6	2018	27.5	2018	35.3	2019
90	25.2	2019	33.7	2016	114.9	2019	88.1	1984	73.8	1984	116.1	1984	155.9	1993	54.7	1993	48.6	2019	51.0	2019	29.2	2019	46.3	2015

Plate 33. Gavins Point to Rulo Ranking of Average Monthly Flows

Gavins Point to St. Joseph
Ranking of Average Monthly Flows (kcfs)

Rank	Jan	Year	Feb	Year	Mar	Year	Apr	Year	May	Year	Jun	Year	Jul	Year	Aug	Year	Sep	Year	Oct	Year	Nov	Year	Dec	Year
1	-0.4	1937	3.1	1940	1.9	1943	5.1	1934	-0.2	1934	0.1	1933	2.5	1936	-0.9	1955	0.2	1955	1.2	1953	1.9	1936	-0.1	1943
2	0.9	1936	3.1	1936	6.9	1934	5.8	1935	1.4	1939	3.4	1956	3.2	1941	1.0	1941	1.5	1953	1.5	1940	2.3	1939	0.7	1989
3	1.3	1940	4.2	1939	7.8	1968	6.1	1956	3.6	1955	5.5	1936	3.3	1946	1.9	1936	1.9	2012	2.2	1939	3.1	1937	1.0	1945
4	1.4	1971	4.6	1956	8.1	1981	7.0	1968	3.9	1940	5.9	1934	3.7	1933	2.2	1934	2.9	1956	2.3	1955	3.9	1943	1.3	1955
5	1.7	1968	5.3	1979	8.2	1964	7.2	1955	4.3	1956	6.1	1948	5.0	1934	2.5	2012	2.9	1954	2.3	1937	4.0	1933	1.6	1944
6	1.9	1954	5.7	1978	8.3	1957	7.4	1990	5.8	1989	7.2	1938	5.0	1940	3.2	1931	3.0	1991	2.4	1943	4.3	1940	2.2	1940
7	2.0	1977	5.8	1957	8.5	2005	7.5	1938	6.0	1967	8.0	1968	5.1	1954	4.3	1988	3.1	1940	2.9	1936	4.3	1945	2.5	1934
8	2.1	1957	5.8	1938	8.9	1956	7.7	1940	6.2	1943	8.4	1988	5.4	1974	4.3	1946	3.3	1939	3.4	2012	4.5	1938	2.6	1932
9	2.4	1959	5.9	1933	9.1	1931	7.8	1942	6.3	1941	8.5	1931	5.4	1963	4.5	1957	3.4	1943	3.4	1935	4.9	1942	2.6	1937
10	2.6	1969	6.3	1989	9.6	1935	7.9	1939	6.5	1968	8.9	1937	5.5	1953	4.5	1976	3.6	1947	3.4	1947	4.9	1934	2.7	1936
11	2.6	1955	7.3	1934	9.8	2014	8.0	1957	7.1	1931	8.9	1989	5.6	2006	4.8	1989	3.8	1990	3.7	1956	5.3	1955	2.8	1939
12	2.7	1935	7.4	1975	9.9	2003	8.3	1989	8.9	1948	9.2	1981	5.8	1966	4.8	1970	4.0	1974	4.1	1934	5.7	1944	3.1	1956
13	3.2	1948	7.5	1972	10.3	1967	8.3	1950	9.0	1981	9.2	1958	5.8	1931	4.8	1971	4.0	1971	4.4	1933	5.8	1956	3.2	1935
14	3.6	1979	7.5	1935	10.3	2002	8.3	1981	9.4	1946	9.4	1955	5.8	2002	5.0	1956	4.3	1934	4.5	2003	5.9	2012	3.4	1963
15	3.7	1938	7.8	1942	10.6	2013	8.4	1954	10.0	1936	9.5	1977	5.8	2012	5.2	1991	4.5	2003	4.6	1942	6.2	1953	3.6	1950
16	3.7	1941	8.0	2013	10.7	1940	8.9	1936	10.2	1954	10.1	1939	5.9	1970	5.4	1933	4.6	1976	5.2	1948	6.5	1976	3.7	1990
17	3.9	1970	8.1	2014	10.9	2006	9.0	1967	10.8	1937	10.3	2006	6.0	1955	5.5	1935	4.6	1988	5.3	1963	6.6	1950	3.9	1938
18	4.1	1972	8.2	1967	11.6	1941	9.8	1941	11.2	1958	12.7	1970	6.2	1956	5.7	2003	4.7	1937	5.3	1945	6.7	1935	4.4	1958
19	4.2	1963	8.3	1947	11.9	1954	9.8	1931	11.3	2000	13.0	2002	6.3	1968	5.8	1947	4.9	1935	5.5	1991	6.7	1954	4.8	1953
20	4.3	2004	8.3	1977	12.2	1991	10.4	2014	11.4	1957	13.1	1940	6.6	1989	6.1	2006	5.0	1968	5.7	1990	7.0	1963	4.9	1954
21	4.3	1967	8.4	1941	12.3	1947	10.5	1933	11.8	1933	13.3	1976	6.9	1930	6.3	1938	5.0	2002	5.8	1932	7.0	1966	5.2	1933
22	4.4	1950	8.7	1990	12.6	1990	10.7	2003	12.4	1966	13.5	1966	7.0	1977	6.4	1963	5.1	1945	5.9	1931	7.1	1967	5.2	1949
23	4.4	1939	8.7	1964	13.0	1977	10.8	1943	12.4	1977	14.9	1946	7.0	1988	6.4	1968	5.2	2000	5.9	1966	7.1	1932	5.6	1948
24	4.5	1956	8.8	1955	13.6	2000	11.0	1937	12.7	1932	14.9	1941	7.2	1976	6.5	1967	5.4	1967	5.9	1958	7.3	1964	5.8	1942
25	4.5	1982	8.8	1937	14.2	1933	11.0	2002	13.6	1970	15.9	2000	7.5	1980	6.7	1980	6.3	2005	6.1	1971	7.6	1949	5.9	1964
26	4.5	1944	9.2	2004	14.2	1976	11.0	1946	14.0	1963	16.2	1992	7.9	1935	6.8	1953	6.5	1980	6.4	1954	7.7	1947	5.9	1968
27	4.6	1930	9.3	2003	14.5	2015	11.6	2000	14.5	2014	17.6	1963	8.6	1939	6.9	1939	6.6	1963	6.4	1989	7.9	2006	6.0	1947
28	4.9	1951	9.3	1944	16.4	1958	11.7	1977	14.9	1988	18.3	1978	8.9	1932	7.4	1965	6.7	2013	6.5	1938	8.3	2003	6.0	1967
29	5.0	1961	9.4	1959	16.7	1989	11.8	1948	15.2	1961	18.3	1972	9.2	1975	7.5	2000	6.9	1966	6.6	1988	8.3	1974	6.4	2003
30	5.0	1991	9.7	2006	17.2	1996	12.0	2004	15.7	1938	18.5	1930	9.4	1937	7.9	2002	6.9	1957	6.7	1964	8.4	1948	6.4	1976
31	5.4	1958	9.7	1981	17.2	1966	12.1	1930	15.7	1935	19.2	1974	9.4	1981	7.9	1975	6.9	1948	6.8	2000	8.7	2005	6.5	1966
32	5.8	1934	10.0	1958	17.5	1970	12.1	1963	16.0	2002	19.4	1961	9.6	1938	8.0	1974	7.0	1950	6.8	1949	8.7	1990	6.6	1960
33	5.9	1943	10.1	1951	17.6	1955	12.4	1972	16.3	1976	19.4	1985	10.5	1961	8.2	1943	7.0	1970	6.9	1976	8.8	2002	6.8	1961
34	5.9	2003	10.1	1968	18.4	1942	13.3	1932	16.5	1990	19.6	2003	10.7	1991	8.2	1964	7.1	1931	7.0	1975	8.8	1980	6.8	1962
35	6.2	2013	10.2	1931	18.8	1953	13.6	1964	16.5	1953	19.7	1953	11.3	1959	8.3	1930	7.3	1959	7.2	1974	8.9	1968	7.2	2012
36	6.2	1947	10.3	1950	18.8	1938	13.8	1959	16.6	1947	19.9	2012	12.4	1948	8.3	1961	8.1	1933	7.7	1960	8.9	1989	7.4	2000
37	6.3	2005	11.2	2002	19.1	1988	14.5	1966	16.7	1949	20.6	1959	13.1	1964	8.4	1949	8.2	1936	7.8	1980	8.9	1958	7.4	2013
38	6.3	2014	11.4	1960	19.3	1975	14.6	1953	17.8	1975	21.6	1952	13.9	1971	9.2	2005	8.6	1932	7.8	1944	9.1	1962	7.5	1957
39	6.3	1949	11.6	1965	19.4	1959	14.8	1971	18.2	1964	21.8	1950	13.9	1972	9.3	1942	8.7	1981	8.0	1952	9.4	2013	7.7	1974
40	6.6	1953	11.7	1954	19.4	1944	15.0	1958	18.4	1980	21.9	1979	14.0	1957	9.4	2004	8.8	2006	8.5	1967	9.5	1969	7.7	1951
41	6.7	1946	12.1	1961	19.4	2009	15.6	1988	18.6	1992	22.4	1932	14.0	2007	9.9	1969	9.0	1969	8.7	1957	9.6	1960	7.8	1941
42	6.8	1978	12.1	1963	19.9	1972	16.1	1970	19.4	2006	24.0	1969	14.2	1943	10.0	1944	9.7	1952	8.8	2002	9.7	1978	7.9	1930
43	6.9	1975	13.9	1969	20.3	1999	16.8	1982	21.2	1994	25.0	2004	14.2	1960	10.0	1972	9.9	1949	9.4	1981	9.7	2000	8.1	2004

44	6.9	1942	13.9	1949	20.9	1937	18.0	2005	21.7	1971	25.9	1975	14.2	2000	10.2	2013	10.0	1975	9.5	1978	9.7	1952	8.1	2002
45	7.0	1966	14.1	1991	21.4	1946	18.5	1976	23.5	2003	28.3	1960	14.5	1985	10.4	1937	10.1	1930	9.8	2006	9.8	1957	8.1	1969
46	7.0	1931	14.2	1953	21.7	1992	18.6	1991	23.7	1991	29.9	1957	14.6	2005	10.8	1940	10.3	1960	9.9	2001	10.0	1959	8.4	1959
47	7.0	1964	14.4	1945	22.1	2004	18.8	1961	24.4	2004	30.2	1980	14.7	1942	10.9	1966	10.5	1941	10.0	1930	10.0	1975	8.4	1946
48	7.5	1965	14.5	2001	22.1	1995	19.5	2015	24.4	2012	30.9	1964	16.0	2013	11.2	2001	10.6	2004	10.1	1970	10.1	1991	8.4	2005
49	7.6	1945	14.7	1992	22.1	2012	19.6	2013	24.8	1952	30.9	1971	16.6	2003	11.7	1990	10.7	1964	10.5	1962	10.1	1988	8.7	1970
50	8.0	1989	14.8	2000	23.0	1980	20.9	1996	25.1	1942	31.5	1965	16.6	2017	12.2	1959	11.2	1944	10.7	1969	10.1	1970	8.9	1978
51	8.1	1962	15.0	1976	24.3	1939	22.4	1992	25.1	2005	31.6	1954	17.7	1949	12.4	1978	11.2	1998	10.7	1972	10.5	1930	9.0	1988
52	8.4	1988	15.2	2018	24.8	1974	23.5	1944	25.2	1950	32.1	2005	18.3	1950	12.4	1954	11.5	2008	11.0	1959	10.6	2001	9.0	2006
53	8.7	1981	15.4	1995	25.0	1998	23.8	1975	25.9	1965	32.1	1997	18.4	1967	13.1	2008	11.7	2001	11.6	2004	10.7	2004	9.2	1980
54	8.9	1976	15.5	1980	25.4	2017	23.8	2012	27.4	1962	32.2	1942	18.4	2004	13.3	1945	11.8	1946	11.8	1999	11.1	1941	9.2	1952
55	9.1	1990	15.5	2015	25.5	1960	24.3	1980	27.9	1969	32.7	1935	19.9	1990	13.6	1997	11.9	1995	12.3	1950	11.1	1971	9.9	1971
56	9.3	1933	15.7	1946	26.0	1950	24.5	1974	29.2	1930	32.8	2017	20.5	1952	13.7	1977	12.2	1994	12.4	1968	11.4	1999	10.1	1985
57	9.4	1960	15.7	1988	26.0	1963	25.2	1994	29.5	2009	32.9	2007	21.5	2001	13.9	1962	12.3	2009	12.7	2005	11.9	1931	10.4	1981
58	9.4	1952	15.7	2005	26.8	1932	25.5	1947	31.0	1978	33.6	1987	21.8	1997	14.4	1994	12.6	1942	13.0	1987	12.3	1994	11.0	1991
59	9.5	2001	16.1	2007	27.5	1930	26.0	1949	31.2	1974	34.1	1973	22.3	1945	14.7	1948	13.0	2017	13.0	2013	12.4	1965	11.4	1983
60	10.2	2002	16.1	1970	27.9	1982	26.6	2009	31.5	2013	34.3	1994	23.9	1979	14.8	1960	13.1	1962	13.1	1979	12.6	1951	11.7	1931
61	10.2	2007	16.2	2008	30.7	1961	27.0	1945	31.6	1998	35.4	1986	26.3	1987	15.1	1981	13.9	1961	13.2	1994	13.3	1946	12.2	1975
62	11.3	2006	16.6	1948	32.3	2018	27.4	2006	33.4	1960	36.1	1943	26.6	1978	15.2	1985	14.0	1999	13.2	1977	13.9	1985	12.3	2001
63	11.8	1995	17.2	1930	32.3	1951	30.2	2018	33.5	1972	36.4	2009	27.5	1973	15.5	1932	14.0	1997	14.1	1997	13.9	1981	12.6	1965
64	11.9	1992	17.7	1966	32.4	2008	31.2	1985	33.8	1979	37.1	1990	27.8	1982	16.8	1995	15.1	1979	14.5	1941	15.2	1997	12.6	1977
65	12.1	1996	18.2	2012	32.4	1985	32.5	2017	33.9	1985	39.9	1949	28.2	2009	16.8	1973	16.3	2007	15.3	1998	15.3	2014	12.8	2008
66	12.4	1993	18.2	1986	32.5	1952	32.7	2008	35.9	2018	40.1	2013	28.2	1947	17.1	1958	16.6	1958	15.5	1946	15.5	1987	13.6	1994
67	12.8	2009	18.3	1987	32.6	2016	35.1	1979	35.9	1959	40.2	1991	29.2	1994	17.4	2017	16.8	1984	16.1	1961	16.0	1995	14.0	1995
68	12.8	2018	18.3	1932	34.0	1945	38.1	1951	38.3	1945	41.4	2001	29.4	1962	17.4	1952	17.0	1983	16.2	1996	16.4	1961	14.7	2017
69	12.9	2000	18.4	1985	34.6	1997	41.8	2007	40.6	2015	42.2	2011	30.8	1944	17.5	1950	18.0	1978	16.5	1983	18.0	2017	14.9	1999
70	13.1	2015	18.7	1943	34.6	1969	42.5	2016	41.5	2010	44.6	1962	31.1	2008	18.1	1979	18.3	1996	16.8	1951	18.1	2011	15.6	2009
71	13.4	1932	18.8	1993	35.0	1936	42.7	1965	42.0	1944	44.6	1944	31.1	1969	18.2	1984	18.6	1938	16.8	2009	18.9	1983	15.7	2007
72	13.5	1994	19.0	2010	36.5	1971	46.9	1973	42.1	1973	45.3	1982	31.2	1965	18.5	2009	19.5	1985	17.6	1995	19.5	2016	16.0	1972
73	13.7	1980	19.5	1998	36.7	1965	47.4	1978	43.2	2008	46.3	2016	31.4	2016	20.1	1983	19.7	1972	19.3	1965	20.2	2007	17.4	2014
74	13.7	1998	19.6	1996	37.1	2001	47.5	1995	44.7	1982	46.9	2018	33.5	1996	20.7	1998	19.9	1982	19.9	2015	20.5	2008	17.7	1987
75	14.1	2008	20.5	1999	37.6	2007	49.3	1998	46.3	1996	49.0	1945	33.8	1995	22.0	2014	23.7	1989	20.1	2008	21.4	1993	18.2	1997
76	14.5	1984	21.6	2009	37.7	2011	50.6	1962	46.4	1997	54.8	1999	34.4	1958	22.4	1986	24.3	1987	21.5	2011	22.3	1972	18.6	2016
77	15.1	1997	21.8	1994	40.7	1986	50.7	1999	46.5	1987	58.5	1996	34.8	2014	22.7	1992	24.5	1973	21.7	1984	22.4	1973	19.0	1979
78	15.5	1985	22.7	1962	41.0	1984	51.7	2010	49.0	1951	61.0	2014	36.3	2015	22.9	2007	24.7	1992	22.1	1982	22.6	1979	19.6	1998
79	15.8	2012	23.4	2019	43.0	1948	53.0	2001	51.6	1999	62.6	1993	36.7	1992	23.6	1982	27.5	2015	23.0	1985	23.8	1977	19.8	1992
80	15.9	1999	24.8	1974	43.1	1994	53.3	1987	53.5	2011	63.4	2015	37.6	1998	23.8	2016	28.7	1965	23.4	1992	24.0	1984	20.3	2011
81	17.8	1986	24.9	2017	44.0	1962	54.6	1986	55.4	2001	63.9	1998	39.7	1999	24.0	2018	28.8	1977	25.1	2014	24.3	1992	20.5	1996
82	18.5	1987	25.9	1952	47.9	1987	59.2	2011	56.6	2017	64.7	1995	41.2	1951	24.9	1999	29.5	2014	25.4	2016	24.6	1996	20.6	1993
83	19.5	2010	28.1	1997	53.9	1978	60.2	1952	60.1	1986	65.2	1951	41.5	1986	28.7	1987	30.6	1951	30.0	1993	24.7	2010	21.2	2010
84	19.6	2011	30.4	1971	55.3	1949	62.2	1993	61.4	1993	73.5	1983	50.2	2019	29.6	2015	31.3	2011	31.3	2010	24.7	2009	22.2	1973
85	19.7	1974	32.9	1973	57.5	1993	62.6	1997	61.5	1983	75.1	1947	50.8	2018	31.5	1996	31.7	2016	35.4	2007	25.4	1982	24.6	1982
86	21.4	2017	33.5	1982	63.3	1973	64.1	2019	77.0	2007	78.0	1967	52.2	1983	34.1	1951	33.3	1986	36.0	2017	25.9	2015	25.1	1984
87	21.9	1983	34.0	2011	64.6	1983	66.4	1969	77.3	2016	90.0	2019	52.6	1984	41.2	2019	33.7	2010	47.9	1986	26.7	1998	27.1	1986
88	25.6	1973	36.0	2016	78.8	2010	73.1	1983	83.8	1984	101.5	2008	63.8	2011	47.1	2011	46.2	2018	48.2	1973	28.1	1986	38.1	2019
89	28.1	2016	38.3	1984	83.8	1979	76.2	1960	85.1	1995	104.1	2010	74.6	2010	52.8	2010	48.6	1993	53.9	2018	29.9	2018	39.2	2018
90	29.1	2019	38.8	1983	129.1	2019	99.1	1984	95.9	2019	130.8	1984	186.8	1993	62.1	1993	50.5	2019	57.1	2019	32.4	2019	51.7	2015

Plate 34. Gavins Point to St. Joseph Ranking of Average Monthly Flows

MRBWM Technical Report - Missouri River Incremental Flows Below Gavins Point, May 2021

Gavins Point to Kansas City
Ranking of Average Monthly Flows (kcfs)

Rank	Jan	Year	Feb	Year	Mar	Year	Apr	Year	May	Year	Jun	Year	Jul	Year	Aug	Year	Sep	Year	Oct	Year	Nov	Year	Dec	Year
1	0.3	1937	4.1	1940	5.5	1943	6.6	1934	1.8	1934	1.8	1933	4.3	1936	-0.7	1955	1.6	1955	2.8	1939	2.7	1936	2.0	1943
2	1.2	1940	5.5	1939	8.8	1934	6.8	1935	3.5	1939	5.9	1956	5.2	1933	2.7	1936	3.0	1956	3.1	1940	2.8	1939	2.5	1955
3	1.4	1977	6.1	1956	8.8	1957	7.4	1956	5.6	1955	8.8	1934	6.5	1934	3.0	1934	3.2	1991	3.2	1937	4.4	1937	3.0	1937
4	2.1	1957	6.4	1957	9.0	1981	8.8	1989	5.9	1956	9.0	1989	7.3	1953	4.6	2012	3.3	1953	3.5	1953	5.4	1933	3.4	1940
5	2.1	1936	6.5	1989	9.3	1964	8.9	1940	6.1	1989	9.6	1988	7.4	1940	4.8	1988	3.7	1947	4.1	1956	5.4	1940	3.4	1945
6	3.4	1954	7.1	1938	10.2	1968	9.3	1950	8.7	1940	10.2	1936	7.9	1970	5.3	1970	3.9	2012	4.3	1947	5.8	1943	3.5	1989
7	3.8	1935	7.4	1933	10.7	1956	9.3	1981	8.9	1967	12.1	1968	8.0	1954	5.5	1991	3.9	1971	4.9	2012	6.0	1938	3.5	1936
8	3.8	1955	7.7	1978	10.7	2003	10.5	1938	10.3	1968	13.0	1937	8.0	2002	6.3	1976	4.4	1939	4.9	1943	6.5	2012	3.7	1939
9	3.9	1979	8.5	2013	10.9	1967	11.0	1990	10.6	1941	13.0	1931	8.0	2012	6.6	1989	4.4	1976	5.3	1991	6.6	1976	3.7	1956
10	4.4	1971	8.6	1934	11.3	1935	11.1	1954	12.5	2000	13.1	2006	8.2	1966	7.1	1956	5.1	1954	5.3	1955	6.8	1945	4.3	1990
11	4.4	1938	8.8	1936	12.0	1931	11.6	1955	13.3	1931	15.6	1955	8.3	1980	7.5	1971	5.4	1990	5.5	1936	6.8	1956	4.4	1934
12	4.6	1970	9.3	1935	12.0	2002	11.8	1957	14.0	1937	17.2	1940	8.6	1989	7.7	2003	5.8	1943	5.9	1934	6.8	1955	4.6	1963
13	4.9	1967	9.4	1967	12.6	2013	12.5	1936	14.6	1946	18.3	1981	8.7	2006	7.7	1941	5.9	2002	6.1	2003	7.9	1934	4.6	1932
14	5.2	1948	9.5	1964	12.8	2014	13.1	2003	15.1	1981	18.5	1976	8.7	1974	7.8	1946	5.9	1988	6.2	1948	8.1	1980	4.9	1938
15	5.3	1939	9.9	1990	13.2	2005	13.2	1977	15.4	1966	18.9	1948	8.8	1988	8.0	1947	6.6	1934	6.8	1971	8.2	1954	6.0	1935
16	5.5	2004	10.0	1947	13.3	1940	13.2	1967	15.9	1948	19.3	2002	10.0	1931	8.1	2002	6.7	1974	7.2	1933	8.3	1953	6.4	1976
17	5.6	1963	10.5	2003	13.8	1954	13.5	1937	16.6	1954	19.5	1946	10.1	1955	8.6	1953	6.8	1940	7.5	2000	8.9	1947	6.6	1950
18	5.6	1956	10.5	1977	14.2	2006	13.6	2000	16.6	1943	19.9	1992	10.8	1963	8.7	1980	6.9	1937	7.5	1976	8.9	1932	6.7	1954
19	6.2	1930	10.6	1981	14.3	1941	13.9	1939	17.2	1977	20.2	2000	10.8	1946	8.7	1975	7.0	2000	7.6	1988	9.2	1949	6.8	1953
20	6.3	1959	10.6	1972	14.4	1977	14.2	1931	17.4	1988	20.4	1958	11.0	1976	8.9	2000	7.4	2003	7.6	1990	9.3	1966	7.2	1933
21	6.3	1944	11.2	2004	14.4	1991	14.6	1941	18.3	2014	21.0	1963	11.1	1941	8.9	1935	8.4	1980	7.8	1966	9.4	2006	7.3	1966
22	6.3	1961	11.7	1944	16.9	2000	14.6	2004	18.4	1932	21.4	1972	11.1	1930	9.0	1974	8.6	1945	7.9	1932	9.4	1948	7.3	1958
23	6.3	1968	12.3	1979	16.9	1989	15.0	1933	20.2	1933	21.5	2012	11.7	1956	9.1	1931	9.3	2013	8.0	1938	9.8	1942	7.3	1964
24	6.4	1991	12.3	1941	17.1	1933	15.2	1972	20.7	1992	22.1	1953	12.7	1977	9.2	1933	9.7	1966	8.0	1975	10.1	1963	7.9	1948
25	6.8	1982	12.4	2014	17.4	2015	15.4	2002	21.4	1936	22.7	2003	13.3	1991	9.3	1963	9.7	1968	8.0	1935	10.1	1950	8.1	2000
26	6.9	1950	12.4	2002	18.4	1976	15.5	2014	22.1	1957	22.8	1966	13.4	1968	9.4	1964	10.0	1963	8.2	1980	10.2	2002	8.5	1949
27	6.9	1934	12.6	2006	19.1	1996	15.5	1943	22.1	1980	24.4	1939	15.0	1939	10.4	2006	10.2	1948	8.7	1963	10.4	1990	8.6	2003
28	7.0	2013	12.7	1931	19.6	1970	15.5	1968	22.3	1963	24.5	1938	15.7	1938	10.5	1957	10.6	1936	8.7	1974	10.6	2003	9.1	2012
29	7.0	2003	12.8	1975	19.7	1938	15.6	1946	22.9	1964	26.8	1952	16.4	1937	12.7	1938	11.0	1981	8.8	1952	10.6	2005	9.2	1988
30	7.4	1951	13.3	1968	21.0	1966	15.7	1963	23.0	1975	27.9	1978	17.1	1932	12.8	1966	11.6	1975	9.0	1964	10.7	1988	9.5	2002
31	7.6	1958	13.7	1965	21.2	1947	16.4	1930	23.6	1958	27.9	1979	17.5	1972	12.8	1965	12.7	2006	9.2	1945	10.8	1991	9.7	1947
32	7.6	1941	14.1	1954	21.4	1990	17.8	1964	24.3	1953	31.1	1977	17.7	2000	12.9	1967	12.8	1957	9.6	1989	11.1	2001	9.8	1967
33	8.3	2014	14.1	1950	22.0	1988	18.0	1942	25.1	1970	31.9	1959	17.7	1985	13.1	1939	13.2	2005	10.0	2002	11.1	2000	9.9	2013
34	8.3	1972	14.3	1958	22.0	1972	18.0	1966	26.2	2006	32.7	1985	17.8	1975	13.2	1930	13.2	1994	10.2	1981	11.3	1964	9.9	1960
35	8.6	1953	14.9	1942	22.6	1953	18.8	1971	26.5	2003	34.7	1930	19.2	1964	13.4	1949	13.6	1952	10.7	1931	11.6	1989	10.1	1957
36	8.7	1947	15.0	1963	22.9	1955	19.1	1953	27.0	2002	35.9	1950	19.3	2003	13.6	1943	13.7	1967	11.5	1960	11.6	1944	10.3	1962
37	8.7	1964	15.1	1955	26.4	1975	19.3	1948	28.4	1965	37.5	1997	19.3	2013	14.2	1969	13.8	1997	11.5	1954	11.9	1975	10.7	2006
38	9.0	1989	15.5	1970	26.8	1995	21.4	1988	28.4	1947	37.5	1974	21.0	2007	14.5	1961	14.0	1932	12.1	1972	12.3	1952	11.0	2005
39	9.1	1969	15.7	1951	27.5	1999	21.6	1996	30.5	2004	38.9	1980	21.7	2005	14.8	1937	14.1	1969	12.3	1978	12.3	1935	11.1	1974
40	9.2	1966	16.5	1961	27.6	1937	21.8	1932	31.0	2012	39.4	1932	22.4	1935	15.2	1997	14.3	1935	12.4	1999	12.6	1999	11.3	2004
41	9.7	1975	16.6	2000	27.9	1959	21.9	1982	31.0	1976	39.9	1970	22.7	1961	15.3	1940	15.2	1931	12.7	1942	12.7	1960	11.4	1951
42	9.9	1978	16.6	1992	28.1	1946	22.1	2015	31.3	1990	40.0	2004	22.9	1971	15.8	1978	15.2	1995	13.3	2006	13.1	1967	11.5	1952
43	10.1	1931	16.8	1991	28.3	1992	22.7	1970	32.5	1938	41.5	1973	23.2	1981	16.0	2001	15.6	1933	13.6	1979	13.4	2013	11.5	1930

44	10.2	1981	17.3	1976	28.5	1942	23.4	1958	32.9	1991	43.3	1994	24.1	1943	16.4	1972	15.8	1959	13.7	1949	13.6	1971	11.8	1980
45	10.5	2001	17.5	1953	29.1	2017	23.6	2005	33.0	1949	43.4	1961	24.7	1959	17.0	1959	15.8	2004	13.8	1994	13.7	1969	11.9	1991
46	10.6	1965	17.6	1959	29.3	1950	24.4	1991	33.8	2005	44.4	1971	25.7	1952	17.5	2005	15.9	1999	13.8	2001	13.7	1994	12.1	1946
47	10.7	1976	17.9	1995	30.0	2012	24.9	2013	33.8	1952	44.6	1960	26.2	1997	18.5	1994	16.3	2017	13.9	1958	14.0	1957	12.1	1968
48	11.4	1933	18.1	2015	30.3	2009	25.4	1959	34.9	1994	46.2	1991	26.9	1960	18.9	1942	16.5	1970	14.5	1944	14.2	2004	12.4	1959
49	11.4	1990	18.6	1937	30.4	1939	31.3	1992	35.9	1962	46.6	1969	27.9	1942	19.6	1952	16.8	1964	14.6	1957	14.2	1978	12.9	1942
50	11.5	1943	18.6	1946	30.4	1930	31.9	2006	37.1	1971	48.0	1954	28.0	1990	19.9	1984	16.9	1960	14.6	1997	14.2	1962	12.9	1970
51	11.7	2002	18.8	2018	30.9	1958	32.1	1976	38.9	2013	48.1	1941	28.8	1978	19.9	2004	17.0	1930	14.8	1930	14.6	1974	13.9	1971
52	11.9	2005	19.5	1980	30.9	1944	32.5	1974	39.7	1950	48.2	1986	29.1	2017	20.6	2008	17.2	2009	15.0	2004	14.6	1959	14.0	1969
53	12.3	1945	19.8	2007	33.1	1932	32.6	1961	39.8	2018	48.4	1964	30.5	1957	20.6	2013	17.5	1979	15.2	2013	15.1	1930	14.2	1961
54	12.5	2007	20.2	1948	33.5	1980	32.8	1949	40.0	1998	49.3	1975	31.7	1967	20.9	1932	18.1	1998	15.4	1969	15.5	1970	14.9	2001
55	13.0	1946	20.8	1960	33.6	2004	33.3	2018	40.1	1935	50.3	2018	35.6	2001	21.1	1954	18.9	1983	15.8	1970	16.1	1968	15.0	1978
56	13.4	1992	21.1	1945	34.6	1963	33.9	1975	40.5	1972	50.8	1957	36.4	1994	21.6	1983	19.0	1984	18.2	1962	16.2	1958	16.3	1977
57	13.6	1988	21.1	2001	35.2	1974	34.0	1994	41.8	1979	51.7	1990	36.9	2004	22.5	1945	21.6	1950	18.4	1987	17.7	2014	16.3	1975
58	13.7	1996	21.5	1988	35.6	2018	34.8	1985	44.4	1961	52.3	2017	37.4	1948	22.5	1977	21.8	1996	19.0	1995	18.2	1997	16.5	1994
59	14.0	1995	22.3	1930	37.3	2016	34.9	2012	45.3	1985	55.0	2013	37.4	1973	22.6	1960	21.9	1938	20.3	1983	18.2	1981	16.6	1999
60	14.4	1952	22.6	2012	39.8	1951	44.4	2008	46.4	1942	55.7	1987	38.2	1949	23.0	1962	22.2	2007	21.4	2009	18.5	1995	16.6	1981
61	14.9	1942	23.0	1996	40.4	1998	44.7	2009	47.5	1978	55.9	1965	38.3	1979	23.3	1990	22.5	1949	21.4	1967	19.1	1965	16.7	1941
62	14.9	2015	23.9	1966	40.9	1982	45.6	1951	50.5	1960	59.2	2009	39.4	2009	24.8	1948	22.6	1946	21.8	2015	19.4	1987	17.3	1983
63	15.0	2018	24.3	1969	41.7	1997	49.2	1965	51.9	1974	59.8	2005	40.3	2016	25.1	1979	23.1	1962	22.2	1968	20.2	1946	17.4	1965
64	15.1	2006	24.5	1932	43.1	1985	51.6	1995	52.5	1969	60.0	2011	43.4	2014	26.0	2018	23.2	2001	22.6	1996	20.5	2017	17.7	2017
65	15.2	1962	25.1	2008	43.1	1936	53.1	2007	52.8	1930	60.6	2007	43.8	1962	26.7	1995	23.7	1978	24.0	1984	21.1	2011	17.9	1995
66	15.4	1949	26.0	2005	43.3	2007	55.4	2016	53.5	2009	63.9	1962	43.9	1996	26.9	1981	24.0	1941	24.7	1946	22.3	2016	18.8	1985
67	15.9	1980	26.6	1987	45.5	2011	55.6	1980	54.3	1997	65.1	1944	44.7	1987	26.9	1968	25.1	2008	24.9	2005	23.2	1951	19.1	1931
68	16.3	2000	26.7	1986	45.7	1960	55.9	1947	55.6	2008	67.2	1942	45.5	1947	26.9	1973	26.0	1944	26.7	1982	23.2	1983	19.4	1944
69	16.8	1960	27.4	2017	46.2	1971	58.8	2017	57.2	1959	72.7	1998	45.7	1944	28.0	2014	28.2	1982	27.7	1959	25.7	2007	21.0	2014
70	18.3	2009	27.5	1943	47.2	1961	61.9	1962	58.7	1996	75.2	2016	49.3	1969	28.1	2009	31.0	1972	27.8	1992	26.8	1985	21.2	2008
71	18.7	2012	27.7	2010	47.6	1994	63.1	2011	62.1	2011	75.9	1949	51.0	1998	28.6	2017	31.2	1992	28.1	2011	27.1	1984	21.5	1979
72	19.3	1993	28.0	2009	47.9	2008	64.7	1986	64.9	2001	77.6	2014	51.5	1995	30.6	1999	33.3	2015	28.4	1950	27.7	1941	23.1	2016
73	19.5	1997	28.8	1999	48.5	1986	65.3	2001	66.5	1982	80.6	2001	51.8	2008	30.9	2016	34.2	1958	29.5	1951	28.8	2010	23.4	2009
74	20.3	1999	29.9	1994	49.4	1952	66.3	1945	66.5	2010	81.0	1999	53.9	1945	33.0	2007	34.4	1942	31.4	1965	29.6	1982	23.5	1972
75	20.5	1985	30.8	1998	49.6	1965	69.7	1978	70.7	1973	83.7	1935	54.3	1999	33.2	1944	34.9	1987	31.5	1977	31.0	2015	25.3	2010
76	20.5	1984	32.0	1952	55.0	1945	70.7	1979	72.6	2015	84.5	1996	55.5	2018	34.4	1986	35.6	1985	33.5	2008	31.1	1979	25.8	1987
77	20.6	1998	33.3	1985	55.1	2001	70.9	1944	75.5	1983	85.0	1993	58.6	1950	34.9	1985	36.6	2014	33.7	2010	31.7	2008	26.2	2007
78	21.3	2011	34.7	1997	55.5	1969	72.1	1998	77.5	1944	85.6	1983	61.1	1982	35.7	1998	38.2	2011	33.8	2016	32.0	1972	26.3	2011
79	21.4	1994	34.8	2019	63.3	1984	72.7	2010	80.6	1951	85.9	1945	61.3	1992	36.0	1958	38.4	1961	35.0	2014	34.6	2009	28.2	1997
80	22.4	2008	37.3	1949	65.6	1962	75.3	1952	81.3	2017	91.3	1982	61.8	2011	36.6	1982	42.4	1989	38.0	1961	35.1	1993	30.2	1996
81	22.6	1932	38.7	1982	67.1	1948	78.0	1997	86.9	1999	96.1	1943	62.2	1983	37.9	2015	45.2	2010	38.2	1998	35.7	1996	31.1	1998
82	23.6	1986	38.9	2011	69.3	1987	79.2	2019	87.0	1945	111.9	2015	66.3	2015	38.1	1996	47.9	1973	40.7	2017	36.3	1992	31.5	1984
83	25.2	1987	39.1	1993	73.5	1983	80.0	1999	87.7	1986	116.9	1995	69.0	1965	38.9	1987	51.6	2016	49.7	2007	37.1	1931	31.8	1982
84	26.3	2017	40.1	1971	78.5	1978	89.6	1969	87.9	1987	127.7	2010	71.2	1986	42.0	1950	52.1	1965	50.2	1993	41.2	1977	32.9	1993
85	26.5	1983	42.3	1974	78.8	1949	93.6	1987	109.9	1993	131.2	1967	72.1	1958	45.4	2011	54.4	2018	57.2	1941	43.6	1986	40.4	1986
86	33.8	2010	42.9	2016	85.7	1993	97.8	1973	116.2	1984	132.1	1947	81.7	1984	46.5	1992	54.7	1986	66.1	1985	44.3	2018	42.7	1992
87	37.3	1974	46.3	1983	95.4	2010	103.8	1983	116.6	2016	132.5	2008	96.9	2019	59.8	1951	67.7	1977	70.4	2018	45.3	1961	47.6	1973
88	37.9	2016	50.1	1984	108.0	1973	106.4	1993	120.0	2007	141.7	1951	102.5	2010	72.3	2010	76.1	1951	76.3	2019	59.8	2019	53.9	2019
89	39.9	1973	52.0	1962	121.9	1979	112.4	1960	130.0	1995	144.1	2019	178.6	1951	74.3	2019	77.2	2019	88.8	1986	64.5	1998	61.8	2018
90	42.6	2019	57.3	1973	152.1	2019	136.0	1984	137.3	2019	161.5	1984	281.5	1993	131.0	1993	95.4	1993	107.7	1973	64.7	1973	70.7	2015

Plate 35. Gavins Point to Kansas City Ranking of Average Monthly Flows

MRBWM Technical Report - Missouri River Incremental Flows Below Gavins Point, May 2021

Gavins Point to Waverly
Ranking of Average Monthly Flows (kcfs)

Rank	Jan	Year	Feb	Year	Mar	Year	Apr	Year	May	Year	Jun	Year	Jul	Year	Aug	Year	Sep	Year	Oct	Year	Nov	Year	Dec	Year
1	1.0	1937	4.1	1940	6.6	1943	6.3	1956	1.7	1934	1.8	1933	4.7	1936	0.3	1955	1.2	1955	2.4	1953	2.7	1936	2.6	1943
2	1.2	1940	5.6	1939	7.0	1981	6.7	1934	3.1	1939	4.6	1956	5.5	1933	2.9	1936	2.7	1956	2.5	1940	2.9	1939	2.9	1945
3	1.3	1977	5.7	1956	8.7	1934	7.3	1981	4.5	1956	8.6	1934	6.0	1954	3.2	1934	2.8	1953	2.9	1939	4.6	1937	3.0	1955
4	2.4	1957	7.0	1957	8.7	1964	7.3	1950	7.0	1955	9.3	1988	6.7	1934	4.9	1970	4.0	1991	3.5	1937	4.9	1945	3.1	1937
5	2.6	1936	7.2	1938	9.2	1956	7.5	1935	8.1	1989	10.6	1936	7.5	1953	5.3	1988	4.2	1947	4.1	1947	5.3	1933	3.4	1940
6	3.6	1954	7.4	1989	9.6	1957	9.1	1940	9.2	1967	11.0	1989	7.6	1970	5.4	2012	4.3	1971	4.4	1956	5.5	1940	3.5	1936
7	3.9	1935	7.6	1933	10.3	1968	9.8	1989	9.3	1940	11.9	1937	7.7	1940	6.0	1956	4.4	1976	4.7	1943	5.7	1943	3.8	1939
8	4.0	1979	8.5	1934	10.8	1967	11.0	1954	10.6	1941	12.8	1968	8.1	1966	6.1	1991	4.5	1954	5.1	1955	6.2	1938	4.3	1956
9	4.2	1938	8.9	1978	11.1	2003	11.2	1955	11.8	1968	13.6	2006	8.3	1980	6.3	1976	4.8	1939	5.4	1948	7.0	2012	4.4	1989
10	4.8	1955	9.7	1964	11.7	1935	11.6	1938	14.0	1931	13.8	1931	8.8	1988	7.3	1971	5.3	2012	5.5	2012	7.2	1955	4.4	1963
11	5.2	1970	9.8	1967	12.4	1931	12.0	1957	14.7	1937	15.5	1955	8.9	2012	7.3	1946	5.4	1990	5.8	1936	7.3	1976	4.8	1990
12	5.3	1939	9.9	1981	13.4	1940	13.3	1936	14.9	2000	17.4	1940	9.0	2002	7.6	1941	5.8	1943	6.0	1991	7.3	1956	5.2	1938
13	5.5	1956	10.0	1936	13.8	2005	13.4	1990	15.1	1946	18.0	1976	9.3	1974	7.8	1947	6.1	2002	6.3	1934	8.0	1980	5.2	1934
14	5.5	1948	10.0	2013	14.0	1991	13.4	2003	15.4	1954	18.2	1981	9.4	2006	7.9	2003	6.6	1945	6.5	2003	8.2	1966	5.4	1932
15	5.8	1967	10.1	1947	14.0	1977	13.9	1937	15.5	1948	18.8	1946	9.7	1946	8.3	1980	7.0	1934	6.7	1952	8.3	1953	5.8	1976
16	6.0	1971	10.1	1972	14.1	2014	14.4	1963	15.6	1981	19.7	1948	10.0	1955	8.5	1989	7.1	1937	7.2	1945	8.9	1954	6.6	1954
17	6.4	1930	10.1	1935	14.3	1941	14.5	1931	15.8	1966	20.9	1958	10.3	1931	8.6	1953	7.3	1940	7.2	1966	9.0	1934	6.9	1935
18	6.4	1991	10.2	1977	14.3	2002	14.7	1939	17.0	1988	21.8	1963	10.8	1989	9.1	1935	7.4	1988	7.6	1971	9.0	1948	6.9	1953
19	6.5	1944	10.9	2003	14.6	2013	15.0	1968	18.2	2014	21.9	1972	10.8	1930	9.2	2002	7.8	2000	7.7	1933	9.1	1932	7.1	1950
20	6.5	1963	11.0	1944	14.6	2006	15.3	1977	19.6	1977	21.9	1992	11.0	1976	9.3	1933	7.9	1974	7.7	1976	9.4	1947	7.3	1958
21	6.6	1959	11.4	2004	14.9	1954	15.4	1941	20.0	1943	22.0	2012	11.3	1941	9.3	1931	8.3	1980	7.8	1990	9.9	1963	7.6	1966
22	6.8	2004	11.6	1990	17.0	1933	15.7	2000	20.4	1932	22.3	2002	11.3	1956	9.5	1957	9.0	2003	8.0	1964	9.9	1949	7.6	1933
23	6.8	1934	12.6	2006	17.3	1989	15.8	1972	21.5	1933	23.0	2003	11.9	1963	9.6	1974	9.1	1981	8.1	1932	10.3	2006	8.0	1964
24	7.1	1961	12.7	1931	17.7	1970	15.8	1933	22.1	1936	24.3	1966	13.0	1991	9.8	1963	9.2	1966	8.2	1975	10.7	1950	8.4	1949
25	7.2	1972	12.9	1979	19.0	1976	16.3	1967	22.6	1963	24.6	1938	13.0	1968	9.8	1975	9.8	1948	8.2	1938	10.8	2002	8.7	1948
26	7.3	1968	13.7	1941	19.1	2015	16.4	2014	22.9	1992	24.9	2000	14.5	1977	10.0	1964	9.9	1968	8.3	1980	10.9	1952	9.1	2000
27	7.3	1958	13.8	2014	19.1	1938	16.4	2004	23.0	1957	25.3	1939	15.4	1939	11.5	2000	10.1	1963	8.6	1988	11.0	1991	9.6	1988
28	7.3	1950	14.1	1950	19.6	2000	16.6	1930	23.1	1980	26.0	1953	16.0	1938	11.6	2006	10.2	2013	8.6	1935	11.2	2005	10.0	2012
29	7.6	1953	14.1	1954	19.6	1996	16.6	1943	23.3	1958	27.7	1952	17.6	1972	12.2	1949	10.9	1936	8.8	1963	11.3	1988	10.3	1960
30	7.6	2003	14.5	1970	20.3	1966	16.7	1946	23.9	1975	28.6	1978	17.7	1937	12.3	1967	11.9	1952	9.3	2000	11.4	1975	10.4	2003
31	7.9	1951	14.5	1975	21.7	1972	17.7	1966	25.0	1964	29.6	1979	18.0	1932	13.1	1966	12.2	1957	9.6	1974	11.4	1990	10.4	1957
32	8.0	1947	14.9	1968	22.6	1953	18.3	1971	25.9	1970	31.3	1959	18.6	1975	13.5	1938	13.0	1975	9.7	1981	11.4	2003	10.5	2002
33	8.0	2013	15.2	1958	22.8	1988	19.2	1964	26.7	2003	31.8	1977	19.3	2003	13.5	1930	13.6	2006	10.0	2002	12.1	1944	10.6	1967
34	8.5	1941	15.3	1965	23.2	1955	19.6	1942	26.8	1953	32.6	1985	20.1	1985	13.6	1939	13.7	2005	10.9	1954	12.3	1969	10.8	1952
35	9.0	1969	15.5	1942	23.6	1947	19.9	2002	27.7	2006	35.0	1930	20.6	2013	14.0	1965	13.8	1967	11.0	1931	12.4	1942	11.0	1962
36	9.2	1964	15.5	1963	24.4	1990	19.9	1948	28.3	1947	35.3	1950	21.2	1964	14.3	1943	14.5	1932	11.3	1960	12.4	1964	11.1	1947
37	9.4	1989	15.9	1951	25.8	1975	20.7	1988	29.5	1965	38.7	1974	21.5	2005	14.9	1969	14.7	1935	11.7	1989	13.3	1962	11.3	2006
38	9.8	1981	16.4	2002	27.4	1959	22.9	1932	31.8	1976	40.4	1980	21.7	2000	15.5	1961	15.3	1994	12.7	1978	13.3	1960	11.6	1968
39	10.0	1931	16.6	1955	28.6	1942	23.0	1996	32.7	1949	40.7	1932	22.9	2007	15.7	1959	15.4	1959	13.0	1972	13.4	1935	11.6	1930
40	10.5	1975	16.7	1961	28.9	1937	23.1	1982	33.1	2012	41.7	2004	22.9	1971	15.8	1940	15.5	1933	13.2	1958	13.4	1957	11.7	2005
41	10.6	2014	16.9	1991	28.9	1946	23.1	1953	33.6	1938	42.5	1970	23.4	1981	15.8	1937	15.6	1931	13.5	1999	13.5	1989	11.7	1974
42	10.7	1966	17.0	1953	29.8	1944	23.6	1970	34.5	2004	42.6	1973	23.9	1943	16.3	1978	15.9	1984	13.5	1957	13.7	1971	12.4	1959
43	11.2	1978	17.1	1959	29.9	1939	24.2	1991	34.8	1991	43.1	1986	24.7	1959	16.4	1972	16.7	1983	13.7	1979	14.0	1999	12.5	1991

44	11.3	1982	17.4	1992	30.1	1995	24.5	2015	36.1	1971	43.5	1997	25.0	1935	17.0	1997	16.9	1969	13.7	1949	14.0	1967	13.0	2004
45	11.5	1933	17.5	1976	30.3	1992	24.5	1959	36.8	2005	44.0	1960	26.1	1961	17.9	2001	16.9	1997	14.6	1942	14.2	2000	13.3	1980
46	11.7	1976	17.5	2000	30.5	2017	24.8	1958	37.7	1994	44.6	1971	27.1	1942	19.2	1984	17.0	1930	14.8	2006	14.3	2013	13.3	1969
47	11.7	1945	18.7	1946	31.0	1930	25.1	2005	38.4	1952	45.2	1961	27.3	1952	19.6	1983	17.0	1964	14.8	1994	14.5	2001	13.3	1970
48	11.9	1990	19.9	2018	31.4	1950	29.9	2013	38.7	2002	45.7	1994	27.7	1990	19.7	1942	17.2	1995	15.0	1930	14.5	1970	13.4	1946
49	11.9	1943	20.0	2007	31.8	1999	30.7	1976	38.7	1962	47.1	1954	28.3	1960	19.7	2005	17.2	2017	15.2	1944	14.8	1978	13.5	2013
50	12.0	2001	20.1	2015	32.1	1958	31.1	1949	39.3	1950	48.5	1941	29.8	1997	19.9	1952	17.3	1960	15.6	2013	15.0	1959	14.0	1942
51	12.1	1965	20.5	1995	33.4	1932	31.6	1974	41.9	1972	49.2	1991	31.0	1978	20.0	1994	17.6	1999	17.1	2004	15.1	1930	14.0	1951
52	13.0	2007	20.6	1980	34.2	2012	33.2	2006	42.4	1979	49.5	1975	31.2	1957	20.5	1945	17.6	1979	17.5	1983	15.6	1958	15.7	1961
53	13.4	1992	21.0	1960	34.7	1963	34.5	2018	43.0	2018	51.2	1957	32.6	1967	21.0	1954	18.7	2009	18.1	1997	15.9	1974	15.8	1971
54	13.8	2002	21.1	1945	35.4	2009	34.6	1985	43.1	1998	52.1	1964	34.8	2017	21.7	2013	18.7	2004	18.4	2001	16.4	1968	15.9	1975
55	13.8	1996	21.5	1948	35.9	2004	35.3	2012	43.1	1990	52.2	1969	36.3	1949	21.8	1932	19.2	1970	18.5	1969	16.6	1994	16.2	1977
56	13.9	1946	22.1	1988	36.7	1980	36.4	1992	43.2	2013	52.3	2018	36.6	1948	22.4	1962	21.4	1950	18.6	1970	16.9	2004	16.5	1978
57	14.7	1988	23.0	1937	37.0	2018	37.1	1975	44.3	1935	54.0	1987	37.8	2001	22.6	1960	21.6	1946	18.8	1962	18.1	1981	16.6	2001
58	14.9	1942	23.3	1930	38.6	1974	37.7	1961	45.7	1985	54.5	2017	39.0	2004	22.7	1948	22.5	1938	19.2	1987	18.3	2014	17.3	1983
59	14.9	1980	23.4	1996	39.1	2016	41.0	1994	46.9	1942	58.1	1965	39.3	1994	22.8	2004	22.5	1949	19.7	1995	18.4	1987	17.4	1985
60	15.1	2005	24.0	2012	40.6	1951	48.6	1951	48.5	1961	58.4	2013	39.9	1979	23.2	1977	23.0	1962	22.7	1984	19.4	1965	17.4	1999
61	15.8	2006	24.6	1932	40.9	1982	50.0	2008	51.3	1960	60.0	1990	40.1	1973	24.0	2008	23.3	2007	22.7	1968	19.5	1946	17.8	1941
62	15.9	1995	24.6	1966	41.9	1985	50.6	1965	51.5	1978	62.1	1944	41.8	1944	24.6	1990	23.4	1941	23.2	1967	20.7	1995	18.0	1965
63	16.0	1949	24.9	1987	44.4	1936	51.7	2009	53.2	1930	62.6	2011	42.3	2009	24.9	1979	23.8	1978	23.3	2009	21.1	1997	18.2	1981
64	16.2	2015	25.3	1969	44.7	1998	55.8	1995	53.9	1969	63.4	2007	43.0	1987	25.1	1981	24.5	1996	23.8	1946	21.3	2017	19.5	1994
65	17.1	2018	25.8	2001	45.3	1986	56.8	2007	56.2	1959	64.1	2009	44.4	1962	26.9	1973	25.9	1998	24.2	2015	22.8	1983	20.3	2017
66	17.1	2000	27.6	1943	46.7	1971	57.4	1980	58.4	2009	65.5	2005	45.1	2014	27.1	1968	26.0	1944	24.3	1982	22.9	2011	20.7	1931
67	17.1	1952	27.9	1986	46.8	2007	58.4	2016	60.1	2008	65.7	1962	47.5	2016	28.1	2018	27.0	2001	25.7	2005	24.0	2016	20.9	1995
68	18.2	1962	28.8	2017	47.5	1997	59.3	1947	62.3	1974	66.4	1942	47.9	1947	29.5	1986	28.5	1982	26.4	1996	25.1	1982	21.5	1944
69	18.3	1960	29.5	2009	47.7	1960	61.0	2017	63.6	1997	75.0	1949	51.7	1996	30.4	1995	29.7	1972	28.3	1959	25.2	1951	21.6	1979
70	18.8	2009	29.6	2010	48.8	2011	62.7	1962	66.2	2011	77.2	1998	51.9	1945	30.6	2014	30.7	2008	29.3	2011	26.1	2007	22.2	2008
71	19.9	1997	30.3	2005	49.4	1994	64.2	1986	68.3	1982	78.9	2014	54.5	1969	30.7	2009	32.1	1985	29.6	1950	27.0	1984	22.9	2014
72	20.8	1984	32.3	1999	51.2	1961	66.9	2011	69.1	2001	81.1	2016	55.6	2008	31.1	1985	32.4	1987	30.0	1951	28.9	1941	25.0	2009
73	21.0	2012	32.6	1985	51.3	2008	71.1	2001	69.1	1996	84.0	1945	56.6	1998	32.6	1999	33.4	1992	30.2	1992	29.4	1985	25.0	2016
74	22.3	1999	32.8	1994	53.5	1965	72.5	1979	74.8	1944	86.9	1983	57.1	2018	33.2	2007	33.9	1958	32.7	1965	29.9	1979	25.3	1987
75	22.3	2011	32.9	2008	55.3	1952	73.5	1978	74.8	2010	87.6	2001	58.2	1950	34.3	2017	35.4	1942	33.0	1977	30.0	2010	26.2	1972
76	22.4	1986	33.0	1998	56.5	1969	74.3	1945	75.1	1973	89.2	1935	59.4	1999	34.5	1958	36.7	2015	35.1	2008	32.7	1972	26.5	2010
77	22.8	1998	34.7	1952	59.4	2001	77.5	2010	79.2	2015	90.5	1999	59.7	1995	34.6	1944	39.8	2011	36.3	2010	33.0	2008	28.4	2007
78	23.6	1994	38.8	1949	60.7	1945	77.6	1944	79.3	1983	93.3	1993	63.8	2011	36.1	2016	39.8	2014	36.5	2016	33.1	2015	29.7	1997
79	23.9	1932	39.8	1971	62.5	1984	79.2	1998	81.2	1951	96.3	1996	64.0	1983	36.9	1987	45.1	1961	39.6	1961	36.4	2009	30.4	2011
80	24.0	1985	40.8	2019	68.8	1962	83.4	2019	82.5	2017	97.9	1982	64.3	1982	39.1	1998	46.3	1989	40.9	2014	39.4	1931	30.6	1984
81	24.3	1987	41.7	2011	71.5	1948	84.3	1952	82.9	1986	100.7	1943	68.1	1992	41.0	1996	50.0	1973	42.4	2017	40.0	1996	34.0	1982
82	24.8	1993	42.3	1997	73.1	1983	85.8	1997	85.5	1987	129.7	2015	69.6	1986	41.2	1982	52.3	2010	49.6	2007	40.1	1986	34.7	1996
83	25.0	2008	43.0	1993	75.4	1987	90.8	1969	87.6	1945	134.8	1947	70.7	1958	42.9	2015	52.9	1986	50.3	1998	40.2	1993	36.5	1993
84	26.2	1983	44.6	1983	77.7	1949	92.3	1999	102.4	1999	137.0	1995	74.2	2015	44.0	1950	56.4	2016	55.0	1993	42.5	1977	36.6	1998
85	27.8	2017	44.9	2016	83.2	1978	101.4	1987	112.2	1984	137.1	1967	77.5	1965	48.0	1992	57.5	2018	56.6	1941	43.1	1992	39.2	1986
86	36.4	2010	46.5	1974	88.4	1993	104.0	1973	117.8	1993	138.5	2010	80.9	1984	48.9	2011	57.6	1965	66.0	1985	47.6	2018	48.4	1973
87	38.8	1974	48.4	1984	99.5	2010	113.4	1960	126.5	2007	140.9	2008	104.3	2019	61.3	1951	80.1	1977	78.9	2018	52.1	1961	55.6	1992
88	41.0	2016	50.8	1982	114.4	1973	114.2	1993	127.2	2016	146.9	1951	106.7	2010	75.7	2010	80.8	1951	80.5	2019	62.1	2019	60.2	2019
89	43.9	1973	56.2	1962	123.3	1979	115.1	1983	153.5	2019	159.2	2019	198.9	1951	77.5	2019	81.6	2019	87.9	1986	66.9	1973	67.3	2018
90	47.6	2019	59.6	1973	154.3	2019	134.2	1984	153.9	1995	165.6	1984	303.7	1993	138.4	1993	101.7	1993	113.1	1973	77.9	1998	73.0	2015

Plate 36. Gavins Point to Waverly Ranking of Average Monthly Flows

MRBWM Technical Report - Missouri River Incremental Flows Below Gavins Point, May 2021

Gavins Point to Boonville
Ranking of Average Monthly Flows (kcfs)

Rank	Jan	Year	Feb	Year	Mar	Year	Apr	Year	May	Year	Jun	Year	Jul	Year	Aug	Year	Sep	Year	Oct	Year	Nov	Year	Dec	Year
1	1.1	1940	4.7	1940	8.3	1956	6.4	1956	2.5	1934	2.6	1933	5.5	1936	3.0	1955	1.5	1956	3.0	1953	3.2	1939	3.0	1955
2	2.4	1977	6.0	1956	9.3	1964	9.3	1934	4.9	1956	5.4	1956	7.3	1934	3.5	1936	2.3	1955	3.4	1939	4.2	1936	3.2	1937
3	3.1	1957	6.5	1939	9.4	1957	11.3	1989	5.5	1939	8.7	1934	7.6	1933	4.6	1934	3.6	1953	3.4	1940	5.1	1937	3.6	1943
4	3.3	1936	7.5	1957	9.7	1981	11.3	1935	9.6	1989	9.6	1988	7.7	1954	6.0	2012	5.0	1954	3.8	1937	5.6	1933	4.2	1939
5	3.6	1954	7.8	1938	9.8	1934	12.4	1940	12.1	1941	11.5	1936	9.2	1940	6.5	1988	5.1	1976	4.0	1956	5.9	1943	4.6	1956
6	4.8	1979	8.7	1934	10.7	1943	12.9	1950	13.0	1955	13.5	1989	9.2	1980	7.3	1976	5.4	1991	4.9	1947	6.6	1945	4.7	1945
7	4.9	1938	9.1	1989	12.4	1968	12.9	1954	14.1	1940	15.6	1937	9.4	1970	8.3	1991	5.5	1971	5.2	1948	6.6	1940	4.9	1936
8	5.8	1956	9.4	1978	12.5	2003	13.7	1981	15.5	1967	16.5	1968	9.7	1988	8.5	2003	5.6	1947	6.1	1943	7.2	1956	4.9	1963
9	6.0	1939	9.7	1933	13.9	1967	14.1	1955	17.6	1988	17.8	2006	10.5	2012	8.6	1941	5.8	1939	6.9	2012	7.4	1976	5.0	1940
10	6.2	1937	10.5	1964	15.8	1931	14.8	1936	17.7	2000	20.1	1940	10.6	2006	9.0	1971	6.6	2012	7.8	1991	7.4	1938	6.6	1938
11	6.7	1963	11.7	1967	16.3	1954	15.2	1977	19.4	1931	20.2	1955	11.3	1931	9.1	1947	7.3	1990	7.9	2003	7.8	1955	7.0	1954
12	6.9	1944	11.8	1947	16.3	1977	15.4	2003	20.0	1968	22.7	1963	11.4	1953	9.2	1964	7.5	2002	7.9	1952	8.3	2012	7.7	1976
13	7.2	1934	12.2	2003	16.3	2002	16.4	1957	20.5	1977	22.9	1931	11.6	1989	9.6	1953	7.9	1988	8.1	1976	9.2	1953	7.8	1953
14	7.3	1959	12.3	1981	16.3	1941	16.5	2000	20.6	1954	23.7	1976	11.6	2002	10.0	1956	8.0	1943	8.3	1964	9.9	1966	7.9	1950
15	7.4	1967	12.6	1977	16.7	2014	16.7	1963	22.0	1948	23.7	2012	11.7	1966	10.3	1963	8.5	1940	8.7	1963	10.0	1948	8.0	1989
16	7.7	1930	13.5	2006	16.8	2006	18.4	1943	23.1	2014	24.2	1946	12.4	1976	10.8	1975	8.6	1937	8.8	1975	10.1	1954	8.3	1990
17	8.2	1961	13.7	1931	18.5	2005	19.1	1937	23.2	1966	24.3	1992	13.0	1955	10.9	1989	9.0	2000	9.0	1966	10.3	1963	8.4	1933
18	8.3	1948	13.8	2013	19.3	1940	19.1	1930	23.9	1932	25.2	1972	13.0	1930	11.1	1935	9.6	1966	9.1	1971	10.7	1980	8.9	1935
19	8.6	1953	13.8	1954	19.6	1989	19.4	1941	24.9	1980	28.6	1953	13.2	1963	11.2	2002	9.7	1963	9.3	1988	10.8	1932	8.9	1948
20	8.9	2003	13.9	1972	20.2	1935	19.8	1938	25.5	1936	28.7	2003	14.3	1941	11.2	1931	10.5	1974	9.3	1932	10.9	1949	8.9	1958
21	8.9	1951	14.3	1944	20.5	2000	20.7	1990	26.0	1992	31.4	1977	14.4	1977	11.6	1946	10.8	1948	9.6	1990	11.5	2006	9.7	1966
22	9.7	1964	15.3	2004	20.5	1933	20.8	1971	26.2	1964	31.6	1958	15.1	1974	11.7	1974	11.0	2013	9.7	1935	11.6	1947	10.7	1964
23	9.7	1958	17.1	1990	20.7	1970	21.1	1933	28.5	1957	31.9	1938	15.5	1946	12.0	1970	11.4	1968	9.8	1980	11.9	2002	10.9	1960
24	10.0	1955	17.7	1963	21.3	1938	21.2	1972	28.7	1937	33.3	2002	16.4	1956	12.2	1957	11.8	1934	10.1	1938	12.6	1975	11.4	1988
25	10.0	1931	18.0	1935	22.0	2015	22.1	2004	29.5	1963	34.2	1948	16.6	1938	12.4	1933	12.6	1945	10.2	1955	12.8	1952	11.9	2002
26	10.2	1989	18.2	1970	22.6	1996	23.5	1948	30.0	1946	34.3	2000	17.8	1968	12.6	2006	14.3	1952	10.2	1934	12.9	1988	12.2	2012
27	10.3	1970	18.5	1936	24.4	1991	23.6	1966	32.6	1958	35.9	1952	19.4	1939	13.8	1980	14.3	1980	10.4	1933	12.9	1950	12.5	2000
28	10.3	1981	19.0	2000	24.5	1966	24.3	1931	33.5	2006	38.1	1966	19.8	1991	14.1	1930	14.5	2006	10.7	1974	13.4	1964	12.6	1962
29	10.6	1947	19.2	1976	26.5	1972	24.4	1946	33.8	1933	38.4	1978	19.9	1972	14.1	1949	14.6	2003	10.8	2000	13.6	2005	12.7	2005
30	10.6	1935	19.3	2014	27.2	1988	24.6	2014	33.9	1965	39.6	1939	20.2	1985	14.8	2000	15.0	1981	11.5	1989	13.6	2003	13.0	1949
31	11.1	2013	19.3	1941	28.2	1976	24.8	1996	34.4	1975	40.3	1981	21.8	1975	15.4	1967	15.2	1975	11.8	1945	13.9	1990	13.1	1952
32	11.3	1968	19.9	1968	30.4	1955	26.8	1988	36.3	2003	40.5	1930	22.0	1932	15.5	1938	15.4	1936	12.0	2002	14.2	1944	13.2	1930
33	11.4	2004	20.2	1953	30.8	1953	28.6	1958	36.5	1981	40.6	1959	22.1	2003	15.8	1966	15.4	2005	12.3	1936	14.6	1991	14.0	1932
34	11.4	1976	20.3	2002	32.6	2013	28.8	2002	36.6	1949	42.1	1979	23.4	2005	17.5	1943	15.6	1957	12.6	1960	15.2	1989	14.4	2013
35	11.5	2014	21.1	1958	33.1	2017	29.8	1932	36.9	1947	42.3	1985	23.5	1937	17.6	1969	16.1	1967	13.1	1978	15.4	1962	14.7	2006
36	11.6	1972	22.2	1961	33.8	1995	29.9	1939	39.5	1953	43.6	1980	23.7	1964	18.2	1937	16.3	1932	13.2	1981	15.5	1930	15.6	1968
37	12.1	1991	22.2	2018	34.6	1930	29.9	1968	42.3	1971	46.5	1971	24.5	2013	18.3	1965	16.5	1935	13.8	1979	15.9	2013	15.8	1969
38	12.9	1978	22.9	1980	36.4	1947	30.6	2015	43.4	1962	47.7	1986	24.7	1971	18.6	1972	17.1	1994	14.1	1972	15.9	1959	15.9	1934
39	13.1	1971	23.2	1946	37.2	1950	31.5	1942	44.1	2012	48.2	1961	25.8	2000	18.9	1939	17.6	1930	15.5	2006	16.0	2000	16.4	1967
40	13.4	1945	23.5	1979	38.6	1932	32.9	1964	44.3	1976	49.3	1932	26.6	1959	19.2	1997	17.9	1997	15.6	1994	16.0	2001	16.5	1959
41	13.5	1966	23.5	2015	39.4	1990	34.2	2006	46.3	2018	50.5	1997	28.1	1943	20.2	1961	18.1	1933	16.0	1930	16.1	1999	16.7	1947
42	14.5	1990	23.9	1965	39.6	1992	34.3	2005	46.4	1950	51.1	1994	30.4	1952	21.0	1942	18.3	2017	16.1	2013	16.9	1942	16.9	1974
43	15.3	1941	24.8	1991	40.8	1975	35.6	1982	46.7	2004	52.6	1950	31.8	1997	21.5	1945	19.9	1960	16.3	1999	16.9	1960	17.4	1946

44	15.3	2002	25.1	1992	40.9	1980	36.6	1974	46.9	2005	54.1	2018	32.4	2007	21.6	1978	20.0	1983	16.6	1954	17.1	1971	17.9	1957
45	15.5	1996	25.3	1950	42.5	2018	37.1	1949	47.1	1938	54.5	1957	34.6	1957	22.0	1983	20.3	1979	17.6	1942	17.1	1957	18.3	1991
46	15.7	2007	25.9	1995	42.6	1939	37.7	2018	48.3	1985	55.2	1954	38.0	1935	22.1	1994	20.4	1995	18.2	1958	18.0	1969	18.5	2001
47	16.1	1980	27.1	1955	43.6	1937	38.7	1953	49.0	1952	55.2	1960	38.7	1990	22.8	1954	20.5	1984	18.4	1944	18.2	1935	18.6	1978
48	16.3	2006	27.2	1960	44.4	1999	38.8	1959	52.5	1970	55.5	1991	39.0	1961	22.9	2013	20.7	1959	18.9	1987	20.2	1934	19.3	1951
49	16.3	1933	27.4	1951	44.7	1959	40.4	1967	55.0	1972	56.1	1987	40.8	1994	23.0	1948	22.9	1946	19.0	1949	20.9	1968	19.4	2003
50	16.8	1950	27.4	1966	45.4	2016	41.3	1985	55.5	1979	56.4	1973	42.0	1948	23.7	1959	22.9	1938	19.1	1957	22.0	1995	20.0	1999
51	17.0	1969	27.5	1996	45.6	1946	44.8	1970	57.4	1998	57.5	1941	43.3	1949	24.2	1940	23.3	1931	20.5	1931	22.0	1987	20.0	1980
52	17.1	1988	28.5	1987	46.0	1958	46.2	1991	58.1	1943	57.8	1970	43.4	1978	24.3	2001	23.4	1950	20.6	1995	22.1	1994	20.5	2004
53	17.2	1943	28.8	1975	46.3	1944	48.7	1976	58.4	1994	60.2	1975	44.1	1944	24.3	1952	24.1	1964	21.5	1983	22.6	1965	20.7	1979
54	17.3	2001	28.9	1948	47.6	1942	49.1	2012	60.5	1930	60.3	2017	44.4	1942	24.7	1984	24.6	2009	21.6	2001	22.6	1970	21.1	1975
55	17.6	2018	29.2	1959	48.2	1963	56.4	1992	62.6	1942	64.1	2004	45.0	1960	25.2	1977	25.0	1999	22.0	2004	22.9	2014	21.2	1970
56	17.7	2000	29.3	1945	49.0	2012	59.8	1961	64.0	1991	65.4	1974	47.2	1962	25.4	2005	25.3	1962	22.1	1997	23.1	2017	21.2	2017
57	17.7	1992	29.5	1932	50.9	1974	60.4	1975	66.7	1969	67.2	1944	47.2	1967	25.6	1960	26.0	2007	24.0	1968	23.3	1978	21.4	1981
58	17.8	1982	29.7	2007	51.4	1951	61.8	2016	67.1	1961	67.4	1964	47.9	1979	26.1	1962	26.1	1969	24.4	1962	23.7	1997	22.1	1965
59	17.8	1975	29.9	2012	53.2	2004	65.1	1980	67.7	1959	67.4	1965	49.1	2004	30.0	2018	26.3	1941	24.7	2015	24.1	1958	22.3	1995
60	18.3	2015	30.6	2017	54.9	1936	65.7	1962	68.3	2013	74.1	1969	51.0	1973	30.3	1979	27.4	1949	26.9	1946	24.8	1946	22.5	1961
61	20.8	1995	31.5	1988	55.4	1986	66.6	1994	76.8	1997	75.5	1962	51.7	2009	32.4	1981	28.2	1996	28.0	1984	24.8	1967	23.4	1977
62	21.2	1942	33.8	1942	55.5	1960	66.8	1995	78.5	2008	77.7	2011	51.8	2001	32.5	1990	29.2	1944	28.2	2005	24.8	1981	23.6	1994
63	21.4	1997	35.3	1943	56.9	2007	68.2	1951	80.8	1960	79.0	2007	52.1	2014	33.0	1973	29.8	2004	29.2	1996	25.1	1974	26.2	2016
64	22.2	1949	35.4	2009	60.3	1971	68.3	2013	82.1	1978	81.3	2005	57.5	2017	33.3	1968	30.6	2001	29.6	1950	25.8	2016	26.2	1942
65	22.8	2012	36.6	1930	60.6	1994	70.9	2007	82.6	1990	86.0	2016	57.8	1987	35.5	1985	32.0	1972	32.4	1992	27.0	2011	26.8	1941
66	23.2	1952	38.0	1986	62.3	1997	73.7	1986	87.3	2011	88.4	1990	58.4	2018	36.2	1986	33.3	1978	32.5	1967	28.4	2007	27.2	2014
67	24.7	2011	38.7	2010	66.2	1982	76.2	1965	87.6	1935	89.9	1983	59.0	1945	36.7	1932	34.9	1985	32.8	2011	31.4	2004	27.3	1983
68	25.4	1994	40.1	1969	66.4	1969	77.5	2009	87.7	2002	93.7	1942	59.6	2016	37.7	2007	35.3	1987	33.3	1982	33.2	1979	27.8	1985
69	26.6	1984	40.4	1952	67.8	2009	85.5	2017	89.3	1974	94.4	1949	62.7	1950	37.9	2004	35.6	1958	34.4	1970	34.3	1951	27.9	1944
70	27.4	1962	42.6	1994	69.7	2011	88.9	2011	91.9	2001	97.7	2009	62.8	1996	39.9	1944	39.7	1942	35.1	1951	34.7	1982	28.0	1971
71	27.9	1965	46.1	1998	70.5	1985	89.0	2008	92.6	1987	99.4	2013	62.9	1981	40.8	2014	40.5	2015	37.6	1965	34.8	2010	29.6	2010
72	28.1	2009	46.7	2005	74.8	1965	90.0	1979	94.0	1951	101.3	2014	65.7	1983	41.1	2017	41.1	1998	37.9	1969	39.4	1983	29.9	1972
73	28.8	1987	48.7	1999	74.8	1998	90.6	2001	98.7	1982	103.1	1998	68.3	2011	42.8	1999	45.2	2011	40.2	2016	42.5	1984	31.5	2007
74	29.3	1986	48.9	2008	75.5	2008	92.4	1952	100.4	1944	106.0	1999	71.3	1947	44.0	2008	47.6	1982	40.9	1959	42.6	1972	35.2	2008
75	30.5	2017	53.4	2001	78.0	1945	97.5	2019	102.3	2015	120.5	1993	74.1	1982	44.2	1995	47.6	1992	46.2	2017	42.8	1996	36.3	2009
76	30.8	1999	54.4	2016	80.4	1961	98.9	1947	103.3	2017	121.6	1945	75.8	1998	46.1	1987	48.3	1970	46.5	2008	44.3	2015	36.5	2011
77	31.3	2008	55.1	1993	80.8	1952	101.8	1945	105.3	1983	131.0	1996	77.4	1999	46.1	1996	54.1	1989	46.5	2009	44.7	2008	36.7	1931
78	31.7	1960	55.2	1984	88.3	1984	103.5	2010	106.7	2009	138.1	1943	78.9	1992	49.0	1998	58.6	1973	46.9	2010	46.3	1941	38.2	1996
79	31.8	2005	55.6	1971	90.0	2001	108.5	1987	109.2	1986	141.9	1982	82.1	1995	50.1	2016	63.8	2018	50.6	1977	48.1	1986	39.9	1997
80	31.8	1985	55.7	1937	91.0	1983	110.3	1978	113.2	1973	146.9	2001	82.8	1986	50.8	2009	65.1	2014	53.6	2007	49.1	1993	40.1	1984
81	34.8	1983	56.5	1949	91.0	1949	114.2	1969	114.5	1996	147.9	1935	93.9	1965	53.8	1950	68.3	2016	55.0	1961	51.4	2018	41.1	1987
82	35.0	1998	57.3	2011	92.2	1987	114.9	1998	115.3	1945	154.8	1995	94.5	1984	54.8	1982	73.1	1986	64.3	2014	58.8	2009	42.2	1993
83	39.6	1993	58.9	1983	93.0	1948	116.7	1997	135.8	2010	164.4	2015	101.2	2008	55.2	2011	79.9	2008	76.0	1993	61.5	1985	48.4	1998
84	40.0	1946	59.0	2019	95.8	1962	126.0	1999	136.3	2016	167.2	1951	106.8	1969	55.2	1958	82.8	1961	77.8	1941	64.0	2019	57.8	1986
85	46.7	1932	61.5	1974	110.1	1978	127.4	1944	139.4	1984	179.5	1967	110.7	1958	57.8	1992	85.2	1977	87.9	1998	65.5	1977	65.6	2019
86	53.9	2010	68.4	1985	118.6	1993	147.3	1993	140.3	1999	184.4	2010	113.5	2015	61.4	2015	87.7	1965	100.4	1985	70.8	1992	66.7	1973
87	58.1	2019	69.4	1997	133.1	2010	154.8	1960	144.6	1993	191.4	1984	118.9	2019	75.8	1951	89.0	2010	100.6	2018	74.4	1973	75.5	1982
88	59.9	2016	81.0	1973	164.9	1979	163.7	1983	174.0	2007	198.2	2008	132.7	2010	84.4	2019	91.3	2019	107.9	2019	76.8	1931	79.2	1992
89	63.9	1974	86.9	1962	169.2	1973	164.5	1984	204.3	2019	216.7	2019	248.1	1951	86.9	2010	95.0	1951	139.2	1986	101.1	1961	80.7	2018
90	67.1	1973	92.6	1982	174.6	2019	185.6	1973	222.6	1995	229.9	1947	380.3	1993	187.9	1993	146.2	1993	156.2	1973	101.2	1998	110.9	2015

Plate 37. Gavins Point to Boonville Ranking of Average Monthly Flows

MRBWM Technical Report - Missouri River Incremental Flows Below Gavins Point, May 2021

Gavins Point to Hermann
Ranking of Average Monthly Flows (kcfs)

Rank	Jan	Year	Feb	Year	Mar	Year	Apr	Year	May	Year	Jun	Year	Jul	Year	Aug	Year	Sep	Year	Oct	Year	Nov	Year	Dec	Year
1	2.9	1940	7.4	1940	10.1	1956	8.7	1956	7.4	1934	11.0	1934	7.8	1936	5.4	1955	2.7	1956	4.6	1956	5.6	1939	5.9	1939
2	3.0	1977	9.8	1956	12.7	1981	15.9	1954	12.5	1956	11.7	1956	9.8	1934	5.5	1936	5.3	1955	5.6	1939	7.6	1937	7.4	1937
3	6.4	1954	11.9	1978	13.1	1964	16.9	1934	16.8	1989	12.2	1933	9.8	1954	7.8	2012	7.0	1954	5.7	1940	8.5	1956	7.4	1955
4	6.8	1957	12.0	1964	16.6	1967	18.6	1981	20.7	1955	13.5	1988	12.1	1940	9.4	1934	7.0	1976	5.7	1937	9.4	1940	7.7	1963
5	8.5	1936	14.7	1957	17.2	1954	20.2	1977	21.2	1941	14.9	1936	12.3	1988	9.6	1976	7.1	1953	6.0	1953	9.7	1933	8.1	1989
6	9.2	1963	14.8	1934	19.3	1941	21.5	2000	23.6	2000	23.6	2006	12.9	1933	10.4	1988	8.5	2012	8.5	1963	10.5	1976	8.5	1956
7	9.8	1956	15.5	1954	19.9	2014	21.6	1936	24.7	1977	26.2	1989	13.6	2012	11.2	1991	9.4	1991	8.7	2012	10.5	2012	9.0	1940
8	9.8	1939	16.3	2003	21.1	1934	22.0	1963	24.7	1940	27.2	1931	14.4	2006	11.3	1941	10.0	1963	9.8	1952	10.6	1955	9.4	1943
9	11.0	1967	16.4	1981	21.6	1957	22.2	1930	25.2	1932	28.1	2012	14.5	1970	11.8	1964	10.6	1939	10.0	1964	11.2	1966	9.4	1945
10	11.0	1934	17.3	2006	22.1	2006	23.7	2003	27.2	1954	28.7	1963	14.6	1980	12.0	1956	11.2	1988	10.3	1948	11.8	1980	10.1	1953
11	11.2	1979	18.2	1977	22.2	2003	23.9	1940	28.9	1939	29.2	1972	14.9	1931	12.6	1963	11.3	1971	10.5	1966	12.0	1943	10.5	1976
12	11.3	1938	18.4	1947	22.4	1931	28.6	1971	28.9	1936	31.0	1955	15.6	1963	12.7	2003	11.6	2002	10.7	2003	12.0	1953	12.1	1938
13	11.5	1951	18.4	1967	23.7	1943	29.1	1955	29.8	1980	31.5	1940	15.6	1930	13.7	1971	11.7	1943	10.8	1980	12.1	1963	12.7	1936
14	11.8	1964	18.7	1931	24.7	1977	29.5	1931	30.7	2014	32.4	1946	15.9	1953	14.0	1953	11.8	1947	11.3	1947	13.7	2006	13.5	1933
15	11.8	2003	20.3	1963	28.9	2002	29.9	1935	32.3	1931	32.6	1953	17.0	1989	14.0	1957	12.6	1937	11.5	1991	13.9	1945	13.6	1966
16	11.9	1961	20.8	1972	29.2	1996	30.0	1989	33.5	1948	32.7	1976	19.4	1966	14.2	2006	12.7	2000	12.6	1976	14.0	2002	13.6	1950
17	12.2	1931	21.9	2013	29.3	1940	31.0	1950	34.2	1988	33.6	1992	21.0	1976	15.2	1931	13.3	1966	12.8	1943	14.2	1952	13.8	2000
18	12.5	1981	22.7	1933	30.4	1968	32.0	1943	35.6	1992	37.1	1968	21.2	1955	15.4	1980	14.1	1940	12.9	1932	14.5	1954	14.0	1964
19	13.2	1944	22.9	2014	31.4	2015	36.1	1932	36.4	1967	40.6	2003	21.2	1946	15.5	1930	14.3	1990	12.9	1988	14.6	1938	14.4	1954
20	13.3	1953	23.4	1944	32.1	1970	37.6	2006	38.4	1964	43.0	1952	21.6	1974	16.2	1970	15.7	2013	13.4	2000	14.7	1932	14.4	2005
21	14.0	2013	23.4	1989	32.4	1991	38.3	1937	40.0	1965	43.7	2000	21.7	1941	16.6	1947	16.1	1957	13.5	2002	16.0	2005	14.8	2002
22	15.3	1958	23.9	1939	34.0	2005	39.2	1933	44.1	1966	45.2	1958	21.7	2002	16.9	1935	16.4	2006	13.5	1971	16.6	1964	15.0	1962
23	15.4	1959	24.0	1970	34.5	2000	40.0	1946	46.8	1968	46.1	1966	21.9	1956	17.3	1933	16.5	1980	14.2	1938	17.3	2000	15.1	2012
24	16.5	1978	24.8	1961	34.7	1933	40.0	1948	48.5	1963	47.1	1959	22.3	1972	17.9	2002	17.4	1952	14.3	1935	18.1	2001	15.3	1958
25	17.2	1970	25.9	2004	37.1	1972	42.9	1972	48.7	1958	48.6	1930	22.7	1938	19.1	1966	17.7	1948	14.7	1960	18.4	1990	16.5	1948
26	18.4	2006	26.2	1938	37.5	2017	43.0	2014	50.5	1971	49.9	1939	25.2	1968	19.4	1974	18.0	1968	15.7	1979	18.7	1930	16.8	1952
27	18.8	1976	27.3	1976	39.7	1966	44.2	1996	50.8	1962	50.2	1932	25.6	2003	20.2	1938	19.1	1967	15.9	1978	18.8	1962	18.2	2013
28	18.9	1990	27.3	1953	41.3	1989	44.3	2002	53.0	2006	50.8	1978	25.8	1939	21.4	1975	20.7	1932	16.5	1989	19.0	1949	18.9	1990
29	19.2	1947	28.8	1936	42.5	1938	46.8	2004	53.1	2005	51.8	1977	26.0	1991	22.6	1967	21.0	1981	17.2	1990	19.1	1947	19.7	1960
30	19.2	1948	30.4	1958	42.7	1930	47.1	1982	55.5	1949	53.2	1980	29.9	1975	22.9	1972	21.8	1959	17.6	1974	19.3	1944	20.9	1930
31	19.8	1968	30.4	2000	44.3	1953	47.2	2005	55.6	1975	56.3	1961	30.0	1971	23.5	1949	21.8	1983	17.8	2006	19.8	1999	21.0	2006
32	20.0	2001	31.0	1965	47.0	1995	47.2	2015	55.9	2003	56.5	1979	30.0	1937	23.6	1937	21.9	1936	17.8	1933	19.8	2003	22.0	1978
33	20.2	2018	31.6	1996	48.9	1932	48.1	1959	56.8	2018	57.3	1971	31.2	1964	23.8	1954	22.2	1935	18.4	1981	19.9	1948	22.1	1947
34	20.4	1945	32.8	1935	51.4	1976	48.1	1957	58.8	1946	59.7	1960	32.0	1959	24.4	2000	22.4	1960	18.6	1975	20.3	1957	23.0	1980
35	20.5	2014	33.1	2015	52.1	1992	50.3	1968	59.0	1953	61.5	1954	33.0	2005	24.4	1939	22.5	2003	18.7	2013	20.7	1989	24.4	1969
36	21.2	1980	33.5	1941	53.7	2016	52.0	1958	62.0	1937	62.5	1986	34.3	2013	24.9	1965	23.3	1930	18.7	1934	21.0	2013	24.4	1935
37	21.8	2002	34.5	1980	54.7	1935	52.4	1966	62.5	1952	63.0	2018	35.1	1952	25.8	1943	23.4	1933	18.7	1930	21.2	1975	24.4	1988
38	22.0	1930	35.5	1948	56.2	1947	52.7	2018	64.8	1981	65.3	1937	35.3	2000	26.0	1997	23.6	1934	18.7	1994	21.5	1950	24.5	2017
39	22.6	1996	36.4	1990	56.3	1950	53.5	1967	66.2	1976	66.3	1987	37.5	1932	27.1	1969	24.6	1984	19.5	1957	22.4	1960	25.1	1959
40	23.8	1955	36.5	2017	60.3	1955	56.0	1938	66.9	2012	67.5	1941	39.6	1985	27.2	1989	25.4	1964	19.8	1972	23.4	1988	25.3	1932
41	24.6	1989	38.8	1991	61.1	1936	58.6	1953	67.1	1947	67.7	1991	41.5	1977	27.2	1959	26.0	1999	21.0	1987	23.5	1971	25.4	1995
42	24.7	2015	38.8	2018	61.5	1980	58.7	1974	69.0	1930	73.9	2004	42.3	1943	27.5	1983	26.1	1994	21.2	1999	23.6	1936	26.3	1957
43	25.8	1966	40.1	1992	61.8	1963	59.8	1964	74.0	2004	74.1	1938	43.0	1997	27.5	1961	26.5	1946	22.9	1936	23.8	1991	26.8	1970

44	25.8	2007	40.4	1960	62.4	2013	60.4	1949	74.2	1957	74.6	2002	48.1	1978	27.9	1984	26.6	1997	23.4	1958	24.2	1959	27.6	1965
45	26.4	1992	40.8	2002	62.5	1959	60.6	1942	78.5	1985	76.2	1944	48.3	1960	27.9	1977	26.7	1938	24.7	1955	25.7	2014	27.7	1979
46	26.8	2000	42.4	2012	62.6	1939	61.0	1991	79.1	1933	76.5	1975	50.0	1944	28.2	1962	27.8	1979	25.2	1954	26.1	1965	28.1	2001
47	26.8	1972	43.2	1945	62.6	1988	65.5	1939	79.1	1959	78.2	1948	50.7	1962	28.3	1994	29.1	1995	25.6	2004	26.3	1978	28.5	1999
48	29.1	1982	43.5	2007	63.4	1946	65.9	1990	79.7	1979	79.2	1973	51.7	1957	28.3	1945	29.2	2017	25.7	1995	26.6	1997	30.3	2016
49	29.9	2012	44.5	1932	64.0	1937	68.4	1941	80.8	1972	81.8	1957	53.3	1961	28.9	1978	29.2	2005	26.6	1983	27.4	2017	30.6	1949
50	32.3	1935	45.6	1968	65.0	2018	70.4	1976	81.6	1998	83.1	1962	53.4	1994	29.2	1960	29.7	1931	26.6	2015	30.0	1934	31.9	1977
51	32.5	1942	47.3	1950	67.0	1942	71.3	2016	84.0	1950	87.8	1981	55.0	2014	29.4	1940	29.8	1974	26.9	1997	30.4	1995	32.7	1991
52	33.8	1941	47.5	1943	69.1	2007	75.6	1988	88.3	1969	89.7	2017	60.6	2004	30.4	1942	30.7	1962	27.0	1931	30.5	2011	33.6	1946
53	33.8	2011	47.8	1979	72.1	1986	77.6	1992	90.8	1991	91.8	1950	61.7	2018	32.2	1952	31.6	1975	27.5	1942	30.5	1958	34.4	2007
54	34.6	1984	48.1	1946	74.2	2012	80.9	1962	94.2	1997	94.7	1997	62.4	1935	32.9	2018	33.2	2007	29.4	1946	30.6	2016	34.7	1975
55	34.7	2004	49.3	1995	76.3	1999	82.7	2012	96.5	1942	95.9	1964	62.5	1973	33.9	2001	33.4	2001	30.0	2001	31.1	2007	34.7	1981
56	34.8	1991	50.3	1951	79.2	1960	88.7	1980	97.5	2001	96.3	2016	63.1	1990	34.2	1979	34.8	2009	32.4	1944	31.2	1942	34.9	2014
57	34.9	1971	50.6	1955	81.0	1971	90.6	1970	98.1	1938	96.9	1965	64.7	1979	34.8	2005	35.0	2004	32.9	1968	31.9	1987	35.0	2003
58	35.7	1965	50.7	1959	82.6	2009	94.9	1986	103.6	1987	99.5	1974	66.6	2009	40.1	1986	35.8	1945	34.1	1945	33.8	1969	35.9	2010
59	35.8	2017	51.7	1966	85.1	1990	95.8	1995	107.7	2013	99.5	1994	68.0	1949	40.1	1973	38.1	1987	34.3	2005	37.5	1979	36.1	1961
60	36.2	1933	52.3	2009	87.6	1944	96.3	1951	108.6	1982	101.1	1970	68.2	1987	40.5	1932	39.7	1978	34.8	1962	37.8	1981	36.8	1974
61	37.3	1997	56.8	1987	88.5	1994	98.6	1975	109.5	1970	105.9	2011	68.8	2017	41.5	1946	39.8	1972	36.0	2011	38.0	1970	37.6	1934
62	39.7	1937	59.0	1988	89.7	1951	99.1	2007	113.1	2015	106.5	2014	69.8	2011	41.6	2014	40.3	1996	36.8	1950	38.8	2010	38.4	1944
63	41.1	2008	59.3	1942	90.5	1958	99.4	1961	114.9	1951	107.7	2005	71.2	1942	43.8	1999	43.3	1941	37.7	1984	40.3	1935	40.0	1951
64	41.3	1962	64.4	1998	91.6	1982	103.3	1985	115.2	1974	109.0	2007	74.4	2001	44.7	1990	43.4	1985	39.8	1982	44.2	1982	44.4	2008
65	42.0	1952	64.8	1930	92.0	1969	111.3	2001	117.7	1978	112.3	1969	75.8	1983	46.0	1948	43.5	2015	41.4	1992	45.4	1968	44.8	1941
66	42.3	1975	69.5	2008	92.6	1975	113.0	2017	118.8	1935	120.7	1985	78.2	2016	48.4	1968	43.8	1969	42.2	1967	50.9	1967	45.2	1968
67	42.9	1960	70.4	1952	92.8	1965	115.3	2013	119.9	1960	132.2	1998	80.9	1996	49.8	2004	44.5	1944	44.4	1996	53.3	1994	45.6	1994
68	44.0	2009	70.9	1994	94.0	2004	116.7	2009	126.9	1986	135.8	2009	81.1	1967	50.7	1985	46.3	2011	49.6	2010	57.0	2008	46.3	2011
69	44.0	1987	72.5	1983	100.0	1983	118.5	2011	129.2	2011	137.7	1949	83.3	2007	50.9	1987	46.4	1950	51.4	1949	58.7	2018	47.2	1967
70	44.4	1994	72.6	2016	102.2	1961	119.2	1965	129.9	2008	140.9	1983	85.3	1945	55.3	2009	46.6	1949	51.8	2016	61.5	2015	48.0	1972
71	45.3	1986	75.4	1984	107.5	1974	124.7	1979	138.5	1994	143.9	2013	87.7	1950	55.7	1981	49.6	1958	52.4	2017	61.6	2004	52.3	2004
72	49.1	1988	76.3	2001	107.5	2001	127.1	1952	153.7	1944	144.3	1942	88.2	1948	56.5	2011	55.2	1942	52.7	1965	68.1	1984	54.3	1983
73	50.8	1995	76.4	1971	110.9	1997	128.1	2019	155.8	2016	145.0	1999	95.6	1986	57.6	1944	57.9	1998	57.1	2007	70.1	1983	54.5	1931
74	51.4	1943	76.5	2011	116.1	1952	141.0	2010	158.8	1990	155.0	1996	98.4	1999	58.2	1996	58.7	1992	58.4	1970	71.5	1974	55.6	1971
75	53.6	1999	76.9	1986	121.1	1948	144.7	1987	159.6	2009	159.2	1990	100.5	1998	58.7	2008	64.7	2014	60.3	1951	73.3	1946	57.9	1997
76	53.6	1983	78.4	2010	122.0	2011	149.6	1997	161.6	2002	162.7	1993	102.7	1982	60.6	2007	65.7	1989	61.7	2008	74.5	2019	58.9	2009
77	53.7	1969	82.3	1969	126.9	1998	149.7	1978	164.7	1996	184.1	1945	102.9	1947	62.2	2017	66.1	1982	63.5	1977	76.2	1951	60.8	1984
78	59.9	1949	83.4	1993	128.0	1949	154.7	1994	167.3	1945	186.8	2001	104.5	1992	62.3	2016	66.7	1973	67.2	1961	83.0	1996	61.5	1942
79	63.2	1950	86.1	1975	133.6	1987	156.4	1999	168.0	1973	187.1	1982	110.4	1965	64.8	2013	68.7	2018	67.2	1959	86.9	1931	66.1	1996
80	64.2	1998	87.2	1937	134.2	2008	157.2	1969	175.5	1961	198.0	1943	118.7	1984	66.0	1998	70.0	1970	73.0	2014	88.2	1972	72.5	1998
81	66.3	1932	93.1	2005	135.4	1945	159.2	2008	176.9	2010	198.6	1951	123.1	1981	71.4	1995	79.7	2016	94.5	1969	93.3	1977	74.5	1993
82	67.4	1946	95.1	1974	137.5	1962	162.9	1998	178.1	1993	198.6	1984	137.0	1995	73.3	2015	80.4	1986	96.9	2009	97.8	1973	75.6	2019
83	72.5	1985	96.0	2019	145.8	1993	179.6	1944	178.9	1983	213.7	1967	149.6	2008	74.4	1982	96.4	1977	108.8	2018	104.7	1986	79.4	1987
84	87.3	2010	96.1	1999	148.7	1985	182.0	1960	180.0	1984	214.2	2015	154.9	2010	77.6	1992	108.8	2010	124.7	1985	105.7	1993	91.8	2018
85	94.2	1993	103.5	1997	152.6	1984	182.1	1947	186.1	1999	214.7	2010	155.5	1969	84.1	1950	112.2	1961	125.6	2019	107.0	1941	94.7	1985
86	96.5	2019	108.7	1949	159.5	1978	183.2	1993	192.4	2007	221.2	2008	163.3	1958	91.4	2010	119.2	2019	140.1	1998	110.2	2009	97.1	1986
87	100.3	1974	110.3	1985	166.3	2010	200.4	1945	195.4	1943	244.5	1995	176.3	2015	92.6	1958	120.1	2008	140.6	1993	112.2	1992	108.2	1973
88	105.2	1973	111.0	1962	186.6	1979	214.9	1983	206.2	2017	258.9	1947	176.4	2019	93.2	1951	134.7	1965	158.6	1941	120.5	1985	133.0	1992
89	106.0	2005	115.2	1973	206.4	2019	238.4	1984	255.4	2019	261.7	2019	386.6	1951	129.2	2019	160.0	1951	186.9	1973	135.4	1961	149.2	1982
90	115.2	2016	122.7	1982	256.7	1973	302.8	1973	305.1	1995	268.3	1935	402.4	1993	259.6	1993	227.7	1993	243.5	1986	137.5	1998	185.3	2015

Plate 38. Gavins Point to Hermann Ranking of Average Monthly Flows

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