

2017 Stream Monitoring

There are three hydrologic watersheds within the administrative boundaries of the Elm Creek Watershed Management Commission – Elm Creek, Crow River and Mississippi River. The Elm Creek watershed contains several large depressions and drainageways. Stormwater within Elm Creek watershed is generally directed from the south and west to northeast via four main drainage ways – Rush Creek, North Fork Rush Creek, Diamond Creek, and Elm Creek. These drainage ways converge in the Elm Creek Park Reserve and enter Hayden Lake. Water is eventually discharged to the Mississippi River near the Mill Pond in Champlin.

Northwest areas of Rogers drain to Crow River. Within this area, Fox Creek is the main drainage way that collects stormwater along the I-94 corridor and the area between I-94, Territorial Road and Fletcher Lane. Areas north of I-94 and along the Highway 101 corridor drain north to the Crow River, mostly along the corridor. The northern quarter of Dayton flows north into the Mississippi River with a small area on the northwest side of Dayton draining to the Crow River. There are no major drainageways in these areas.

Elm Creek has been monitored since 1976 by a station located in Champlin. The monitoring station for Elm Creek is located at Elm Creek Road crossing in the Elm Creek Park Reserve and is operated in cooperation with the United States Geological Survey (USGS). The exact location is: latitude 45°09'48", longitude 93°26'11" referenced to North American Datum of 1927, in NE ¼ NW ¼ Sec.35, T.120 N., R.22 W., Hennepin County, MN, Hydrologic Unit 07010206, on left bank, 33 feet downstream from bridge on Elm Creek Road, 2.5 mi southwest of Champlin. Datum of the gage is 850.70 ft above sea level (NGVD of 1929). The Commission shares the costs of operating the station, which collects continuous flow data and periodic event and base water quality data. The watershed area above the gauging station is 86 square miles, or 81% of the hydrologic watershed.

Both grab samples and storm runoff samples are collected and analyzed for various parameters. Analyses of the streamflow and water quality monitoring data for Elm Creek and its tributaries are summarized below. Real time data from the monitoring station in Champlin may be viewed on the Internet at

http://waterdata.usgs.gov/mn/nwis/uv/?site_no=05287890&PARAMeter_cd=00065,00060.

Flow Monitoring

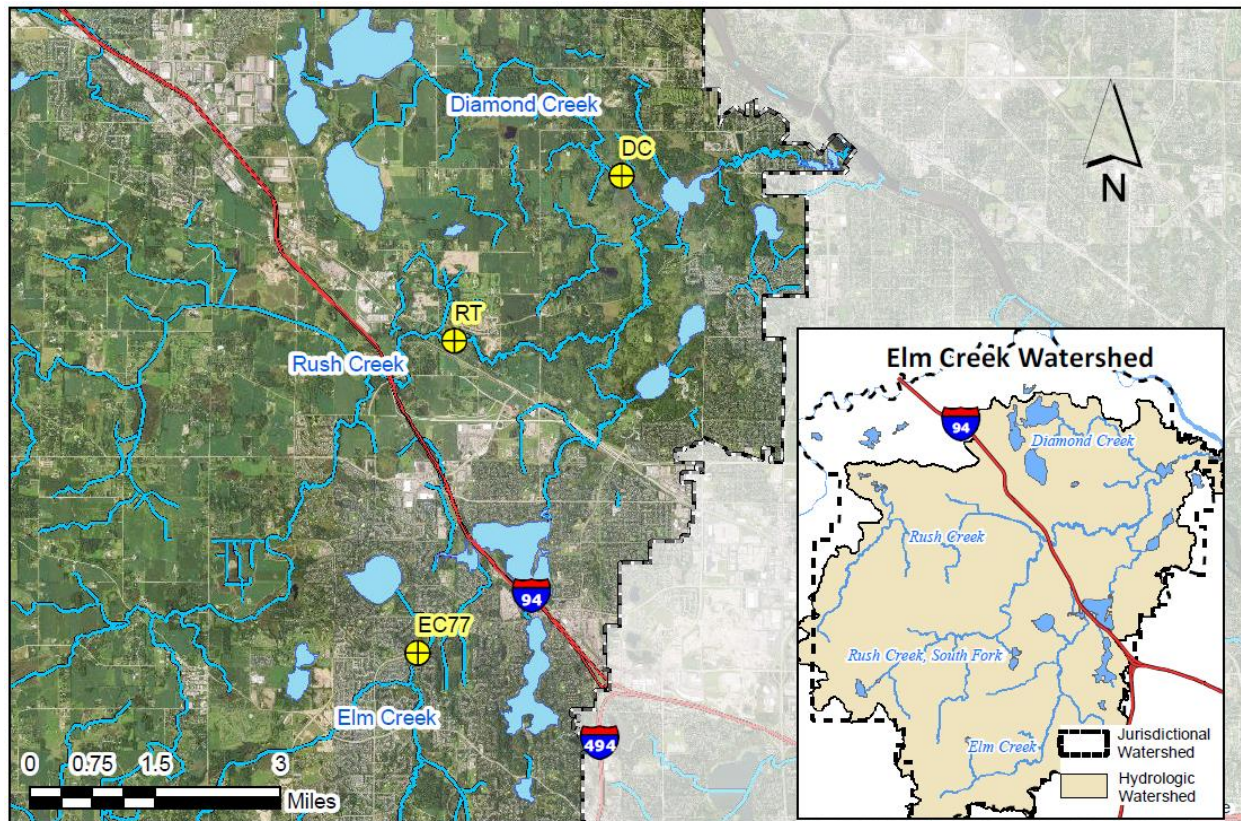
Storm event samples are collected using an automatic sampler. Routine manual sampling occurs approximately monthly. The average daily discharge for the 2017 WY (October 1, 2016 through September 30, 2017) was 78.8 cubic feet per second (cfs) or 12.55 inches. During the same period, the minimum and maximum observed average daily discharge values were 9.02 cfs and 496 cfs, respectively. The long-term average daily discharge at the station is 42.1 cfs or 6.65 inches (years 1979-2017). A spreadsheet of the data received in 2017 water year (WY), including daily discharge and summary information, long-term flow volumes (calendar and water years), the flow hydrograph and the annual instantaneous peak discharge values at the gauging station for the period of record are also found in this appendix.

| Elm Creek Annual Instantaneous Peak Discharge Rates | | | | | | | |
|---|-----------------|---------|-----------------|----------|-----------------|---------|-----------------|
| Date | Peak Flow (cfs) | Date | Peak Flow (cfs) | Date | Peak Flow (cfs) | Date | Peak Flow (cfs) |
| 4/4/79 | 307 | 3/31/89 | 159 | 5/15/99 | 538* | 3/27/09 | 119 |
| 3/25/80 | 199 | 8/1/90 | 225 | 7/13/00 | 112 | 3/17/10 | 369 |
| 6/15/81 | 44 | 6/1/91 | 371 | 4/25/01 | 875 | 3/24/11 | 803 |
| 4/3/82 | 471* | 3/8/92 | 380 | 5/11/02 | 554 | 5/29/12 | 568 |
| 3/9/83 | 408 | 6/22/93 | 315 | 6/28/03 | 695 | 6/26/13 | 389 |
| 2/25/84 | 341 | 4/30/94 | 669* | 6/03/04 | 350 | 5/1/14 | 803 |
| 3/18/85 | 579* | 3/17/95 | 237 | 10/30/04 | 118 | 7/19/15 | 127 |
| 3/27/86 | 812* | 3/19/96 | 407 | 10/09/05 | 295 | 9/24/16 | 1,220** |
| 8/1/87 | 185 | 4/1/97 | 511* | 3/17/07 | 223 | 5/23/17 | 482 |
| 3/27/88 | 39 | 4/5/98 | 306 | 5/4/08 | 205 | | |

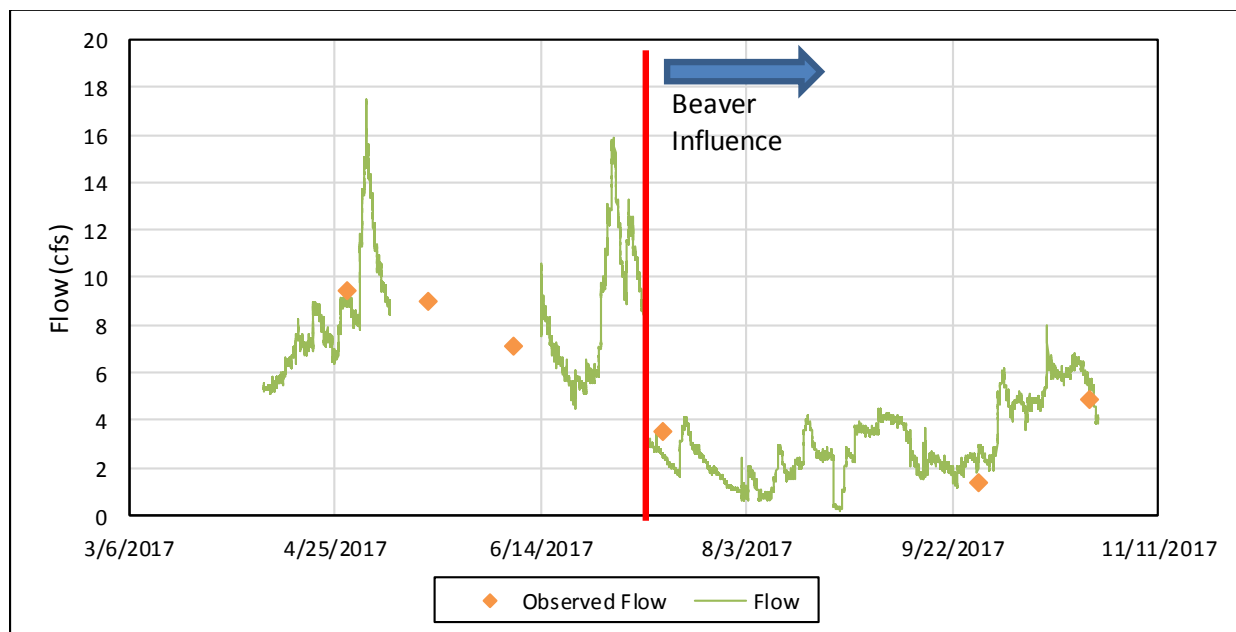
*These values have been revised based on the 2001 rating curve.

**All-time instantaneous peak discharge. The estimated 100-year flood discharge at this site is 2,290 cfs.

Stream Monitoring

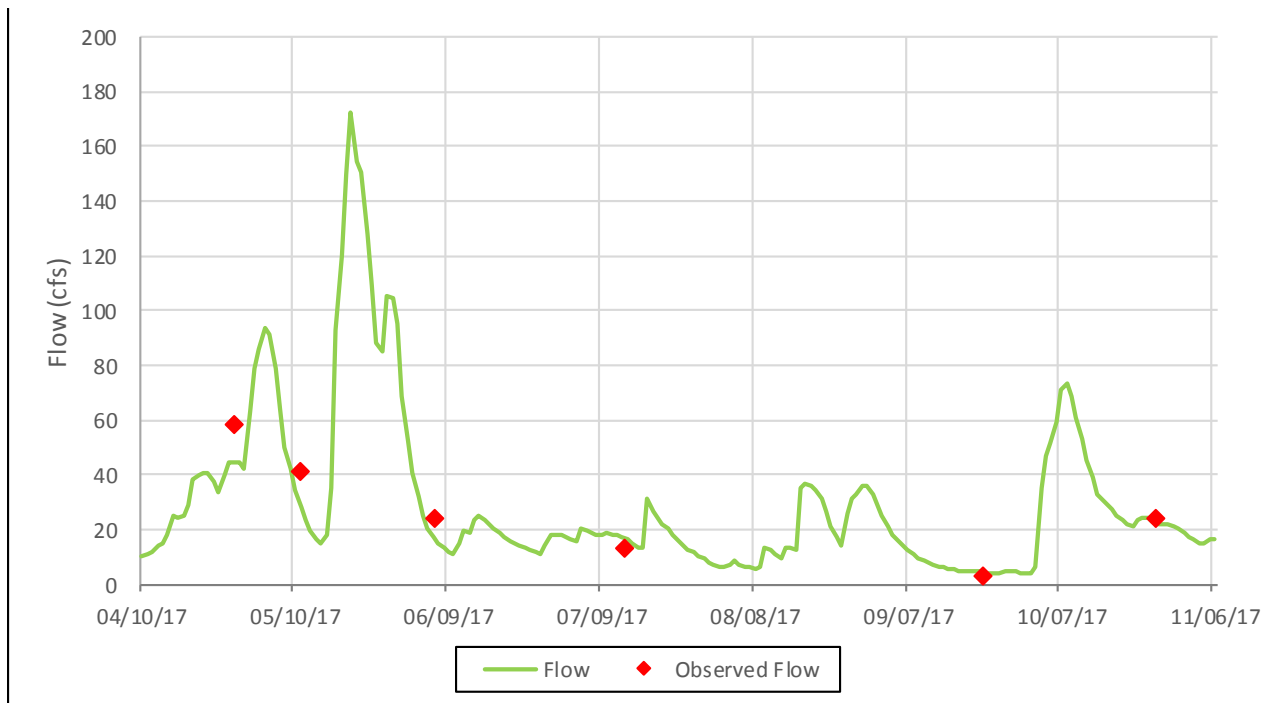


DC - Diamond Creek



- Missing data because of malfunction with the HOBO. The data was repaired, but not all of it was recoverable.

RT - Rush Creek at Territorial



EC77 - Elm Creek at 77th Place

