Water-Data Report 2012

# 04112500 RED CEDAR RIVER AT EAST LANSING, MI

Southeastern Lake Michigan Basin
Upper Grand Subbasin

LOCATION.--Lat 42°43′38″, long 84°28′41″ referenced to North American Datum of 1927, in SW ¼ sec.18, T.4 N., R.1 W., Ingham County, MI, Hydrologic Unit 04050004, in left downstream bridge abutment of Farm Lane Bridge on Michigan State University Campus in East Lansing, 4.0 mi upstream from Sycamore Creek, and 5.6 mi upstream from mouth.

DRAINAGE AREA.--355 $mi^2$.

## SURFACE-WATER RECORDS

PERIOD OF RECORD.--August 1902 to December 1903, March 1931 to current year. Monthly discharge only for some periods, published in WSP 1307. Published as Red Cedar River at Agricultural College, August 1902 to December 1903 and as Cedar River at East Lansing, March 1931 to September 1965. Gage-height records collected in this vicinity 1911-19, and 1920-28 (flood seasons only), are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 1307: 1936(M).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 823.96 ft above NAVD 88 (levels by Michigan Department of Transportation). August 1902 to December 1903 nonrecording gage at site 0.8 mi downstream at different datum. March 1931 to November 1940 water-stage recorder at site 250 ft upstream at present datum.

REMARKS.--Records good. Prior to April 1975, occasional regulation at low flow by mill at Williamston, 16 mi upstream from station. Gage-height telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 24, 1904, reached a stage of 13.4 ft, discharge, 8,000 $ft^3/s$.



Suggested citation: U.S. Geological Survey, 2013, Water-resources data for the United States, Water Year 2012: U.S. Geological Survey Water-Data Report WDR-US-2012, site 04112500, accessed at http://wdr.water.usgs.gov/wy2012/pdfs/04112500.2012.pdf

**04112500 RED CEDAR RIVER AT EAST LANSING, MI—Continued**

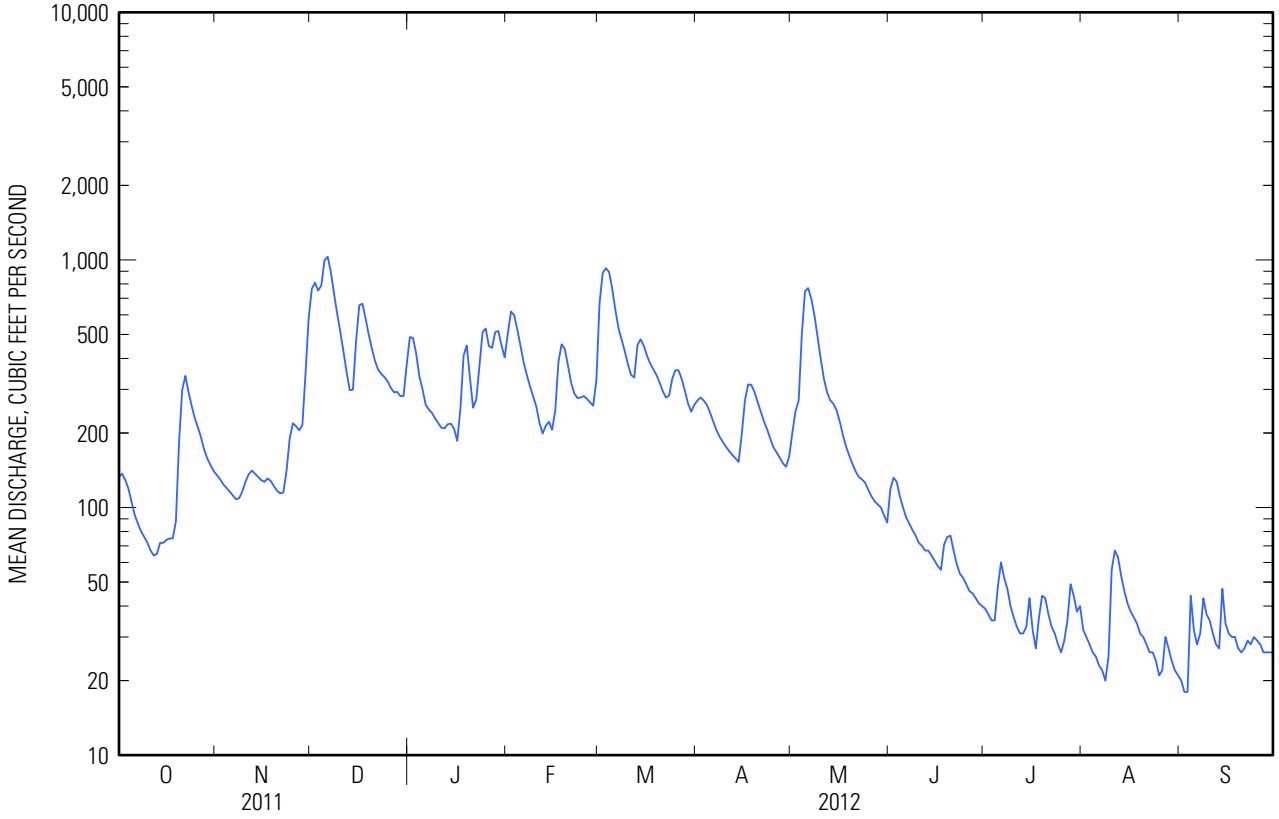
**DISCHARGE, CUBIC FEET PER SECOND**
**WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012**
**DAILY MEAN VALUES**
[e, estimated]

| Day | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 133 | 135 | 765 | 488 | 505 | 667 | 271 | 201 | 119 | 39 | 32 | 20 |
| 2 | 137 | 130 | 809 | 484 | 618 | 885 | 278 | 245 | 132 | 37 | 30 | 18 |
| 3 | 129 | 124 | 752 | 419 | 598 | 926 | 270 | 271 | 127 | 35 | 28 | 18 |
| 4 | 119 | 120 | 789 | 339 | 523 | 895 | 259 | 504 | 111 | 35 | 26 | 44 |
| 5 | 105 | 116 | 995 | 301 | 450 | 768 | 241 | 748 | 100 | 48 | 25 | 32 |
| 6 | 93 | 112 | 1,030 | 260 | 386 | 629 | 222 | 770 | 91 | 60 | 23 | 28 |
| 7 | 86 | 108 | 897 | 249 | 343 | 530 | 205 | 695 | 86 | 52 | 22 | 31 |
| 8 | 80 | 109 | 733 | 241 | 309 | 476 | 193 | 595 | 81 | 47 | 20 | 43 |
| 9 | 76 | 116 | 608 | 229 | 281 | 427 | 184 | 486 | 77 | 40 | 25 | 37 |
| 10 | 72 | 127 | 513 | 219 | 256 | 378 | 176 | 396 | 72 | 36 | 56 | 35 |
| 11 | 67 | 136 | 427 | 210 | 220 | 343 | 169 | 330 | 70 | 33 | 67 | 31 |
| 12 | 64 | 141 | 352 | 209 | 199 | 335 | 163 | 291 | 67 | 31 | 63 | 28 |
| 13 | 65 | 137 | 298 | 217 | 214 | 453 | 158 | 271 | 67 | 31 | 53 | 27 |
| 14 | 72 | 133 | 299 | 218 | 222 | 478 | 153 | 262 | 64 | 33 | 46 | 47 |
| 15 | 72 | 129 | 471 | 208 | 206 | 450 | 198 | 247 | 61 | 43 | 41 | 34 |
| 16 | 74 | 127 | 655 | 186 | 247 | 411 | 271 | 222 | 58 | 32 | 38 | 31 |
| 17 | 75 | 131 | 666 | 251 | 387 | 382 | 314 | 196 | 56 | 27 | 36 | 30 |
| 18 | 75 | 128 | 579 | 411 | 456 | 362 | 313 | 176 | 71 | 36 | 34 | 30 |
| 19 | 88 | 122 | 499 | 451 | 438 | 343 | 293 | 162 | 76 | 44 | 31 | 27 |
| 20 | 184 | 117 | 438 | e335 | 376 | 320 | 267 | 150 | 77 | 43 | 30 | 26 |
| 21 | 299 | 114 | 390 | 253 | 320 | 295 | 244 | 140 | 67 | 37 | 28 | 27 |
| 22 | 340 | 115 | 360 | 273 | 289 | 278 | 223 | 133 | 59 | 33 | 26 | 29 |
| 23 | 292 | 141 | 346 | 371 | 277 | 283 | 207 | 130 | 54 | 31 | 26 | 28 |
| 24 | 257 | 190 | 336 | 511 | 278 | 331 | 190 | 126 | 52 | 28 | 24 | 30 |
| 25 | 229 | 219 | 323 | 528 | 282 | 359 | 175 | 118 | 49 | 26 | 21 | 29 |
| 26 | 210 | 213 | 304 | 449 | 275 | 358 | 167 | 111 | 46 | 29 | 22 | 28 |
| 27 | 191 | 205 | 292 | 441 | 266 | 330 | 159 | 106 | 45 | 35 | 30 | 26 |
| 28 | 170 | 215 | 293 | 511 | 258 | 296 | 151 | 103 | 43 | 49 | 27 | 26 |
| 29 | 157 | 347 | 282 | 516 | 326 | 263 | 146 | 100 | 41 | 44 | 24 | 26 |
| 30 | 148 | 583 | 282 | 451 | --- | 244 | 161 | 93 | 40 | 38 | 22 | 26 |
| 31 | 140 | --- | 377 | 404 | --- | 260 | --- | 87 | --- | 40 | 21 | --- |
| Total | 4,299 | 4,840 | 16,160 | 10,633 | 9,805 | 13,755 | 6,421 | 8,465 | 2,159 | 1,172 | 997 | 892 |
| Mean | 139 | 161 | 521 | 343 | 338 | 444 | 214 | 273 | 72.0 | 37.8 | 32.2 | 29.7 |
| Max | 340 | 583 | 1,030 | 528 | 618 | 926 | 314 | 770 | 132 | 60 | 67 | 47 |
| Min | 64 | 108 | 282 | 186 | 199 | 244 | 146 | 87 | 40 | 26 | 20 | 18 |
| Cfsm | 0.39 | 0.45 | 1.47 | 0.97 | 0.95 | 1.25 | 0.60 | 0.77 | 0.20 | 0.11 | 0.09 | 0.08 |
| In. | 0.45 | 0.51 | 1.69 | 1.11 | 1.03 | 1.44 | 0.67 | 0.89 | 0.23 | 0.12 | 0.10 | 0.09 |

**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1902 - 2012, BY WATER YEAR (WY)**

| | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mean | 104 | 143 | 190 | 227 | 299 | 501 | 457 | 305 | 190 | 90.8 | 62.7 | 78.7 |
| Max | 571 | 735 | 521 | 739 | 1,036 | 1,162 | 1,494 | 1,310 | 627 | 578 | 366 | 557 |
| (WY) | (1982) | (1993) | (2012) | (1993) | (2001) | (1948) | (1947) | (1956) | (1968) | (1994) | (1992) | (2008) |
| Min | 14.8 | 21.2 | 20.5 | 29.0 | 28.6 | 58.6 | 62.3 | 52.9 | 20.4 | 5.70 | 9.24 | 14.6 |
| (WY) | (1935) | (1964) | (1964) | (1940) | (1940) | (1934) | (1931) | (1931) | (1934) | (1934) | (1934) | (1939) |

**04112500 RED CEDAR RIVER AT EAST LANSING, MI—Continued**

**SUMMARY STATISTICS**

| | Calendar Year 2011 | | Water Year 2012 | | Water Years 1902 - 2012 | |
|---|---|---|---|---|---|---|
| **Annual total** | 121,721 | | 79,598 | | | |
| **Annual mean** | 333 | | 217 | | 221 | |
| **Highest annual mean** | | | | | 431 | 1993 |
| **Lowest annual mean** | | | | | 43.3 | 1964 |
| **Highest daily mean** | 1,800 | Apr 29 | 1,030 | Dec 6 | 5,720 | Apr 20, 1975 |
| **Lowest daily mean** | 51 | Jul 26 | 18 | Sep 2 | 3.0 | Jul 31, 1931 |
| **Annual seven-day minimum** | 57 | Feb 1 | 21 | Aug 28 | 3.9 | Jul 15, 1934 |
| **Maximum peak flow** | | | 1,050 | Dec 5 | 5,940 | Apr 20, 1975 |
| **Maximum peak stage** | | | 5.62 | Dec 5 | 11.95 | Apr 20, 1975 |
| **Instantaneous low flow** | | | 17 | Sep 2 | 3.0 | Jul 31, 1931 |
| **Annual runoff (cfsm)** | 0.939 | | 0.613 | | 0.624 | |
| **Annual runoff (inches)** | 12.75 | | 8.34 | | 8.47 | |
| **10 percent exceeds** | 890 | | 487 | | 526 | |
| **50 percent exceeds** | 191 | | 158 | | 112 | |
| **90 percent exceeds** | 67 | | 29 | | 31 | |