NEBRASKA
Good Life. Great Water.
DEPT. OF NATURAL RESOURCES

North Platte River at North Platte, Nebraska
06693000

LOCATION

Latitude and Longitude

41.15391, -100.759

Road Log

Located on right bank 20 feet downstream from bridge on U. S. Highway 83, 0.5 mile north of City of North Platte and 4.5 miles upstream from confluence with South Platte River.

Nearby Features

Equipment Details

Recording Gage

The base recorder is SUTRON CBS and SATLINK DCP Flow Meter in a cube shelter connected to stream with a sand point or open end orifice depending on conditions located on right downstream bridge abutment. Communications from the gage every hour by satellite data dump with 15 minute information.

External Gage

Wire-Weight located on the downstream bridge rail.

Bench Mark and Reference Marks

PRESENT GAGE DATUM: 2792.199 ft. NGVD29/2793.338 NAVD88

R.M. No. 1 thru No. 14 all been destroyed.

R.M. No. 15: X on Concrete pad South West of R.M. No. 11, which was 65.5 feet west of old 48-inch CMP shelter between 7th and 8th ties. Elevation of 5.70 ft. from levels dated 10/17/2013. Not shot on 9/9/2015 and 9/22/2017 levels.

R.M. No. 16: X On U.S. bridge rail in from R.E.W abutment. This R.M. can also be an RP with an established elevation of 16.83 ft. from levels dated 10/17/2013. (Origin)

Not shot on 9/9/2015 and 9/22/2017 levels.

R.M. No. 17: X On D.S. bridge rail 17.5 ft. north of the right (south) end of the concrete bridge rail. Elevation of 16.50 ft. established from levels dated 9/22/2017.

R.M. No. 18: Dept. of Roads SBT (Elev. 2808.769 ft. NGVD29) On D.S. bridge rail 2.35 ft. north of the right (south) end of the concrete bridge rail. Elevation of 16.57 ft. established from levels dated 9/22/2017.

Wire-Weight Check-Bar: On the downstream side 50 ft. from south end of bridge on the bridge rail with a check-bar Elevation of 16.69 ft. from levels dated 9/22/2017.

Hydrology

Drainage Area

30,900 square miles, approximately, of which about 26,300 square miles contributes directly to surface runoff. (revised 1976).

Channel and Control

This channel is straight in vicinity of gage. Banks are low and subject to overflow at or near a stage of 6.00 foot. The streambed is composed of shifting sand with no defined control. At low stages several small channels may that meander creating varying angles of flow.

Discharge Measurements

Low to medium stages (2.00 to 4.00 ft) may be waded in vicinity of gage. High flows may be measured by crane or bridge board from upstream side of Highway Bridge. Turbulence and erratic depths can be expected near piers.

Floods

Maximum discharge observed was 29,500 cfs, June 11, 1909 (discharge measurement).

Extremes for Period of Record

Peak discharge 29,600 cubic feet per second June 11, 1909.

Minimum daily discharge 20 cubic feet per second September 20, 1904.

Minimum daily since 1943, 97 cubic feet per second June 16, 1959.

Point of Zero Flow

Variable.

Winter Flow

Partial to complete ice cover can be expected from November to April during extended periods of cold temperatures.

Regulation and Diversions

Flow regulated by releases from Lake McConaughy, approximately 45 miles upstream, for downstream irrigation demand. Six canal diversions are located between gaging station and reservoir that will cause considerable stage fluctuation during irrigation period May thru September. Lincoln County Drain No. 1 enters the stream one mile above the gage. A spill from the North Platte Canal enters the stream one-half mile above the gage.

Accuracy

Twice monthly measurements supplemented by additional measurements during periods of large changes in discharges should produce good record results.

Establishment and History

Established February 25, 1895 by the U. S. Geological Survey. A vertical staff gage was attached to the railroad bridge two miles east of North Platte.

On March 25, 1910 the station was relocated two miles upstream near present location. A chain gage was installed at a new datum.

Readings at this site began April 10, 1910.

Chain gage was stolen July 1, 1910 interrupting readings until October 15, 1910, when the staff gage, reading to a different datum was placed in use.

Gage was discontinued by the Geological Survey September 30, 1915. However the State of Nebraska continued operation and the staff gage was moved from time to time to accommodate channel changes.

For 1916 the datum was raised 0.35 foot above previous gage datum.

During January 1929 a 6-inch steel pipe, closed at the lower end and extending about 2 feet below low-water stage, was fastened to the first pier from the right bank. A wooden shelter was constructed over the pipe for housing a recorder.

On January 3, 1934, the wood shelter and pipe well were replaced with a corrugated pipe well and shelter at no change in datum.

WSP 2118 reports no change in datum from October 1, 1930 to June 2, 1968.

On June 3, 1968 gage was moved to 150 feet downstream on right bank by installing A-35 water-stage recorder in a 48-inch CMP well and shelter. Well connected to stream with two 2-inch intakes. Reference point is located on front edge of instrument shelf. Instrument referenced to water surface inside of well by means of a graduated weighted steel tape (length 11.0 ft). Elevation of reference point 11.00 ft to gage datum. Outside gage an enameled staff on a 2x6 timber attached to a grader blade and driven in the stream near the intake.

On March 30, 1971 a Fisher-Porter digital punch recorder was installed and operated independent of A-35. Digital recorder was base recording instrument.

On April 29, 1987 Leupold-Stevens data logger and encoder was installed and operated by direct chain drive from A-35 to free standing pulse generator. Fisher and Porter digital punch recorder remained base recording instrument.

On October 1, 1987 Leupold-Stevens data logger became base recording instrument. Fisher and Porter digital recorder removed.

On October 1, 1994 the cooperative program with the USGS for this gaging station was discontinued. Department of Natural Resources now maintains and provides reports for all data generated at this site.

On January 13, 1997 a Leupold-Stevens GS-93 data logger was installed to replace older model Leupold-Stevens logger. GS-93 logger driven from A-35 recorder and was base recording instrument.

On April 2, 1997 a chain gage was installed.

On August 31, 2004 the GS-93 data logger was replaced with an Isco Bubbler Flow Meter Model 4320. Instrument connected to stream with a sandpoint orifice. Instrument housed in a 48-inch CMP shelter and assessed by modem via direct phone telephone line. Phone # 308-535-8001.

On April 17, 2007 Installed wire weight on upstream side of bridge approximately 175 ft upstream of chain gage. There is a +0.17 elevation difference between Wire weight and chain gage. Chain gage remained base gage.

Levels ran on Oct. 11, 2007 made wire weight base gage. Base gage was chain gage up to this set of levels. Station is 48-inch CMP.

On October 11, 2007 levels were ran again and the Staff and Chain Gage were removed and the Wire Weight was established as the base gage with a check bar elevation of 15.59 ft. above gage datum.

On December 17, 2007 levels were ran to close out Wire Weight in preparation for Wire Weight move from the upstream side of bridge to the downstream side of bridge.

On December 18, 2007 levels were ran to establish the elevation of the Wire Weight check bar of 16.69 above gage datum after move to the downstream side of bridge. Location of Wire Weight is approximately 50' to the north on the downstream bridge rail.

On March 23, 2011 48-inch CMP shelter was removed due to flooding. Shelter was replaced with 24-inch look in type shelter. Shelter was located on right downstream bridge abutment approximately 130 ft. west of old 48-inch CMP shelter location. A cellular AirLink modem and ISCO 4230 Bubbler were installed for telemetry and recorder respectively. Isco connected to stream using open end or sand point orifice line. Stream conditions dictate which one is used.

On August 13th, 2012 Removed cellular AirLink modem system and hooked ISCO up to telephone line as the main source of telemetry.

On October 17, 2013 RM#8 and RM#11 were not found during levels and presumed buried by sand from the 2011 flooding. RM#17 and RM#18 were established with elevations of 16.49 ft. and 16.57 ft. respectively. RM#18 is a Dept. Roads BM with an elevation of 2808.769 ft. NGVD29. This would change the Gage Datum from 2792.14 ft. NGVD29 to 2792.199 ft. NGVD29/2793.338 NAVD88

On February 26, 2016 the ISCO 4230 Bubbler and phone system was removed & Sutron CBS and SATLINK DCP flow meter were installed.

Revision History

Station description revised:

08/07/1952	by C. F. Burns
01/09/1990	by J. W. Vassos
05/14/1996	by J. W. Vassos

01/13/1997	by J.W. Vassos
10/20/1998	by J.W. Vassos
01/11/2000	by J.W. Vassos
01/25/2002	by J.W. Vassos
11/04/2003	by J.W. Vassos
12/07/2004	by J.W. Vassos
10/20/2005	by J.W. Vassos
10/05/2010	by A.S. Leisy
10/26/2011	by A.S. Leisy
11/02/2012	by J.T. Nichols
05/14/2014	by S. Wright
01/13/2017	by J.A.Marburger
12/01/2017	by S. Figuric
02/27/2019	by K. Schwager