

## Turkey Creek at Naponee, Nebraska 06850000

### LOCATION

#### *Latitude and Longitude*

40.0763, -99.13838

#### *Road Log*

On right bank at downstream side of bridge on county road east side of Naponee.

### Equipment Details

#### *Recording Gage*

Sutron Constant Flow Bubbler is connected to a Sutron SatLink satellite transmitter. The gage is also equipped with a tipping bucket rain gage.

Equipment is housed in a stainless steel cabinet style gage house on the right wing wall of the downstream side of the county road bridge. The orifice is located in a muffler near the right bank. The bubble line is attached to the wing wall and encased in 1¼ galvanized pipe.

The equipment is powered by a 12-volt battery with a solar panel charging system

The Crest Stage gage is (1¼ pipe) located on the right wing wall of the county road bridge which contains an aluminum indicator 10.87 feet long.

#### *External Gage*

The base gage consists of a wire weight attached to the downstream guardrail of the county road bridge.

#### *Bench Mark and Reference Marks*

**RM #2** is a bronze tablet set in top of the left upstream bridge abutment of former site. Elevation 17.18 ft. (Levels 06/03/14).

**RM #7** is an "X" in top of steel I beam on right downstream wing wall. Elevation 11.58 (Levels 06/29/21. Origin. )

**RM #8** is a 1" rebar pin 20' south of gage house. Elevation 12.30 ft. (Levels 06/29/21).

**RM #9** is a chiseled "X" in the horizontal angle iron at the left, upstream wing wall at the beginning of the bridge. Elevation 14.675 ft. (Levels 06/29/21)

**RM #10** is a chiseled "X" on the northwest (right upstream) corner of a concrete county road bridge over Turkey Creek. RM #10 is on Washington Street at the east edge of Naponee, NE. 2' southeast and 1.7' southwest from the northwest corner of the bridge deck. Elevation 15.095 ft. (Levels 06/29/21).

**RM #11** is a countersunk 5.0 ft. rebar with NDNR aluminum cap. Located 9' west from the first street pole west of the bridge over Turkey Creek along Washington Street on the east edge of Naponee, NE. Elevation 17.67 ft. (Levels 08/07/17).

89.6 ft. northwest from southwest corner of Turkey Creek Bridge

23 ft. south from centerline of Washington Street

4.3 ft. south from south edge of sidewalk

0.5 ft. below ground level.

On 6/29/21 we were unable to locate RM #11. We talked to the local neighbor near the gage house, he said the city/county did extensive dirt & ditch work to remove a culvert that was under Washington St. and right next to RM #11.

**CSG** on right wing wall. Elevation 14.485 ft. (Levels 06/29/21).

Check Bar on downstream side of county road bridge guardrail. Elevation 16.01 ft. (Levels 06/29/21).

## Hydrology

### *Drainage Area*

129 sq. miles.

### *Channel and Control*

Banks are high and overgrown with vegetation. Streambed is composed of fine shifting sand and silt. The channel bends sharply right above the gage and is fairly straight below the gage.

There is a rock riffle 15' below gage that generally acts as the low water control. The riffle will become submerged during moderate to high flows at which time the channel will become the control.

### *Discharge Measurements*

Low stages by wading in the vicinity of the gage. High stages from bridge.

### *Floods*

Forecast Action Stage: 11 ft.

Flood Stage: 12 ft.

Moderate Flood Stage: 15 ft.

Major Flood Stage: 19 ft.

12 ft.: Water reaches the bottom of the Washington Street Bridge and begins to flood fields along the creek.

13 ft.: Lowland flooding occurs in area fields and in the park near the creek. The walk path bridge south of Washington Street bridge.

15 ft.: Flood water will cover Washington Street on the east side of Naponee. Extensive low land flooding will occur.

19 ft.: Water reaches the bottom of the Washington Street bridge and begins to flood fields along the creek.

### *Point of Zero Flow*

Variable.

### *Winter Flow*

### *Regulation and Diversions*

No regulations. A few small pump diversions upstream from gage.

### *Accuracy*

## **Establishment and History**

Established Aug. 5, 1945 by U.S. Bureau of Reclamation. Original gage was an enameled staff gage section (reading from 0.0 to 3.3 ft.) attached to a steel post driven in the streambed near right bank under bridge on former State Highway No. 3, and set to a datum one foot higher than present gage.

Station operated by Geological Survey since April 1, 1948.

On June 18, 1948, a wire weight gage was installed on the upstream guardrail of bridge at same site as staff gage at present datum.

Station was discontinued Dec. 31, 1953.

On Sept. 7, 1961, this station was reestablished as a partial record site. A College Park type crest-stage gage was installed on the left downstream pier of county bridge 345 ft. above former site at same datum.

CSG was moved to right wing wall April 19, 1984.

On Aug. 23, 2002, State of Nebraska Department of Natural Resources installed a Sutron 8200 with pressure manometer and satellite telemetry in a USGS type gun cabinet shelter. This gage is located on the right wing wall of the downstream side of the county bridge. A wire weight was also installed at this time with a check bar elevation of 15.99.

The Sutron 8200 and pressure manometer were replaced with a Sutron Constant Flow Bubbler (CFB) on June 11, 2013.

On June 3, 2014 Levels were run by the Survey Team to establish the NAVD88 of the gage which is 1,870.99 feet gage datum. Previous gage datum used was NGVD29 at 1,870.173 feet.

A stainless steel cabinet style gage house was installed on October 28, 2014 to replace the older gun cabinet style gage house.

## Revision History

Original description prepared by David Gunderson

Revised by J.A. Marburger	06-07-2005
Revised by J.A. Marburger	12/10/2010
Revised by J.A. Marburger	03/22/2011
Revised by D. Gunderson	03/26/2015
Revised by D. Gunderson	01/26/2016
Revised by D. Gunderson	11/27/2017
Revised by D. Gunderson	10/19/2021