

# TOSTON DAM (Broadwater-Missouri)

## Fact Sheet

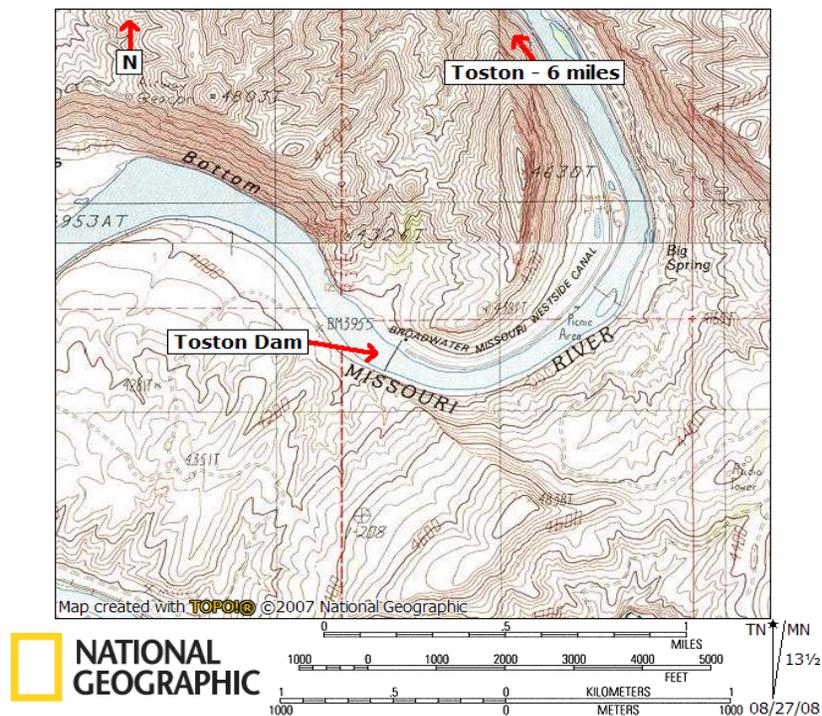
### PROJECT DESCRIPTION

- ◆ Located on the Missouri River in Broadwater County, 6 miles southeast of Toston
- ◆ Original construction completed in 1940; Hydropower facility completed in 1989
- ◆ Owned by DNRC & operated by SWPB
- ◆ Project consists of:
  - Concrete gravity dam, 51.5 feet high, 705 feet long
  - Run-of-the-river dam, 7 bays with rubber inflatable bladder flashboards
  - A 10 megawatt turbine
  - A three-mile long electric transmission line
- ◆ NorthWestern Energy purchases power from the plant. Hydropower revenue, after debt payments and operating expenses, is used for rehabilitation and repairs on other state-owned projects. Anticipated revenue for the calendar year 2014 is 1.3 million dollars.
- ◆ Impounds 4,100 acre-feet at normal full pool, covering 327 surface acres



### WATER USE

- ◆ Provides irrigation water through 200 contracts for 29,218 acre-feet. Delivered to users through the Broadwater-Missouri Canal.



## **REHABILITATION SUMMARY**

- ◆ A major rehabilitation of the dam occurred in 1989. The rehabilitation included construction of new rubber bladder flashboards to control pool levels, installation of a 10-megawatt hydropower plant, and improvements to access and maintenance roads. Project cost (1989): \$26,000,000
- ◆ A new automated track rake was installed in 2002. The trash rake cleans debris from the upstream face of the dam and greatly reduces shutdowns of the power plant for intake cleaning and maintenance. Project cost: \$450,000
- ◆ The spillway bridge was replaced in 2005 at a cost of \$675,000. The bridge serves as a primary maintenance access and provides public access to the east side of the river.
- ◆ The operation and maintenance staff completed replacement of two major components of the turbine shaft's mechanical seal in August 2009. Project cost: \$95,000
- ◆ One of the spillway rubber bladders failed in 2012, resulting in the loss of reservoir elevation (no resulting property damage or injuries). Subsequently, all seven bladders were replaced in 2014, as they had reached the end of their useable life span. Project cost: \$2,149,970

## **FUTURE NEEDS**

The dam, spillway and hydropower plant are in good condition and meet or exceed existing dam safety standards.



Rubber Bladder Replacement, July 2014



Track Rake at Toston Dam