

KANSAS-LOWER REPUBLICAN BASIN TOTAL MAXIMUM DAILY LOAD

Waterbody: Washington WA
Water Quality Impairment: Siltation

1. INTRODUCTION AND PROBLEM IDENTIFICATION

Subbasin: Lower Little Blue

County: Washington

HUC 8: 10270207

HUC 11: 083

Drainage Area: Approximately 5.4 square miles.

Conservation Pool: Area 16 acres, Maximum Depth 2.0 meters

Designated Uses: Secondary Contact Recreation; Aquatic Life Support

1998 303d Listing: Table 4 - Water Quality Limited Lakes

Impaired Use: Aquatic Life Support

Water Quality Standard: Siltation--Narrative: Suspended solids added to surface waters by artificial sources shall not interfere with the behavior, reproduction, physical habitat or other factor related to the survival and propagation of aquatic or semi-aquatic or terrestrial wildlife. (KAR 28-16-28e(c)(2)(D)).

2. CURRENT WATER QUALITY CONDITION AND DESIRED ENDPOINT

Monitoring Sites: Station 010941 in Washington WA.

Period of Record Used: Two previous surveys in 1997-1998.

Current Condition: The average concentration of TSS was 57.5 mg/L, ranging from 44 to 70 mg/L. The inorganic turbidity is moderately high, but light availability within the water column is good.

Interim Endpoints of Water Quality (Implied Load Capacity) at Washington WA over 2004 - 2008:

The amount of total suspended solids within the conservation pool is below 7.65 tons (a concentration of 60 mg/L), over 2004-2008.

This TMDL endpoint meets water quality standards as measured and determined by Kansas Water Quality Assessment protocols. These assessment protocols are similar to those used to cite the stream segments in this watershed as impaired on the Kansas 1998 Section 303d list.

Seasonal variation in the endpoint is not established by this TMDL. This endpoint can be reached as a result of expected reductions in loading from the various sources in the watershed resulting from implementation of corrective actions and Best Management Practices, as directed by this TMDL. Achievement of the endpoints indicate loads are within the loading capacity of the stream, water quality standards are attained and full support of the designated uses of the stream has been restored, therefore the narrative water quality standard pertaining to suspended solids would be attained.

3. SOURCE INVENTORY AND ASSESSMENT

Land Use: Land use coverage analysis indicates that 29% of the watershed is cropland. Erosion from cropland is the most likely source of siltation. Because this waterbody was first built as a sediment trap for the state fishing lake just downstream, the presence of abundant silt is not a surprise. If there is a siltation problem now, it is in return for water quality benefits accrued to the lake downstream.

4. ALLOCATION OF POLLUTION REDUCTION RESPONSIBILITY

More detailed assessment of sources and confirmation of the siltation of the lake must be completed before detailed allocations can be made. The general inventory of sources within the drainage does provide some guidance as to areas of load reduction.

Point Sources: Since this impairment is primarily associated with agricultural non-point source pollution, there will be no Wasteload Allocation assigned to point sources for sediment under this TMDL.

Non-Point Sources: Siltation loading comes predominantly from non-point source pollution. Given the runoff characteristics of the watershed, overland runoff can easily carry sediment into the streams. The Load Allocation would be a maintenance of sediment loads such that the amount of total suspended solids within the conservation pool is below 6.88 tons.

Defined Margin of Safety: The margin of safety will be taken as 0.77 tons of total suspended solids within the conservation pool, allowing greater certainty that the desired endpoint of the lake will be achieved.

State Water Plan Implementation Priority: Because Washington WA is a small wetland under state jurisdiction, this TMDL will be a Low Priority for implementation

Unified Watershed Assessment Priority Ranking: This watershed lies within the Lower Little Blue Subbasin (HUC 8: 10270207) with a priority ranking of 10 (Highest Priority for restoration work).

Priority HUC 11s: The entire watershed is with HUC 11 (083).

5. IMPLEMENTATION

Desired Implementation Activities

The wetland will need to periodically be dredged to remove some of the silt.

Implementation Programs Guidance

Until additional assessment of probable sources is made, no direction can be made to implementation programs.

Timeframe for Implementation: Wetland protection practices should be installed within the vicinity of the wetlands after the year 2004 re-evaluation.

Targeted Participants: Primary participants for implementation will be state officials responsible for managing the wetlands.

Milestone for 2004: The year 2004 marks the mid-point of the ten year implementation window for the watershed. At that point in time, additional monitoring data from Station 010941 will be re-examined to confirm the impaired status of the wetland. Should the case of impairment remain, source assessment, allocation and implementation activities will ensue.

Delivery Agents: The primary delivery agents for program participation will be the conservation district and the state officials responsible for the wetland.

Reasonable Assurances:

Authorities: The following authorities may be used to direct activities in the wetland to provide protection.

1. K.S.A. 2-1915 empowers the State Conservation Commission to develop programs to assist the protection, conservation and management of soil and water resources in the state, including wetland areas.
2. K.S.A. 82a-901, et seq. empowers the Kansas Water Office to develop a state water plan directing the protection and maintenance of surface water quality for the waters of the state.
3. K.S.A. 82a-951 creates the State Water Plan Fund to finance the implementation of the *Kansas Water Plan*.
4. The *Kansas Water Plan* and the Kansas-Lower Republican Basin Plan provide the guidance to state agencies to coordinate programs intent on protecting water quality and

to target those programs to geographic areas of the state for high priority in implementation.

Funding: The State Water Plan Fund, annually generates \$16-18 million and is the primary funding mechanism for implementing water quality protection and pollution reduction activities in the state through the *Kansas Water Plan*. The state water planning process, overseen by the Kansas Water Office, coordinates and directs programs and funding toward watersheds and water resources of highest priority. Typically, the state allocates at least 1% of the fund to programs supporting wetland protection. This watershed and its TMDL is a Low Priority consideration and should not receive funding until after 2004.

Effectiveness: Sediment control has been proven effective through conservation tillage, contour farming and use of grass waterways and buffer strips. The key to success will be widespread utilization of conservation farming within the watersheds cited in this TMDL.

6. MONITORING

KDHE will continue to collect seasonal samples from Washington WA over 4 times during 1999-2008. This wetland is part of an EPA funded project that will continue sampling into the year 2000.

7. FEEDBACK

Public Meetings: Public meetings to discuss TMDLs in the KLR Basin were held March 10, 1999 in Topeka, April 27 in Lawrence and April 29 in Manhattan. An active Internet Web site was established at <http://www.kdhe.state.ks.us/tmdl/> to convey information to the public on the general establishment of TMDLs and specific TMDLs for the Kansas-Lower Republican Basin.

Public Hearing: A Public Hearing on the TMDLs of the Kansas-Lower Republican Basin was held in Topeka on June 3, 1999.

Basin Advisory Committee: The Kansas-Lower Republican Basin Advisory Committee met to discuss the TMDLs in the basin on December 3, 1998; January 14, 1999; February 18, 1999; March 10, 1999; May 20, 1999 and June 3, 1999.

Discussion with Interest Groups: Meetings to discuss TMDLs with interest groups include:
Agriculture: November 10, 1998; December 18, 1998; February 10, 1999; April 10, 1999, May 4, 1999, June 8, 1999 and June 18, 1999.
Municipal: November 12, 1998, January 25, 1999; March 1, 1999; May 10, 1999 and June 16, 1999.
Environmental: November 3, 1998; December 16, 1998; February 13, 1999; March 15, 1999, April 7, 1999 and May 3, 1999.
Conservation Districts: March 16-18, 24-25, 1999

Consideration for 303d Delisting: The wetland will be evaluated for delisting under Section 303d, based on the monitoring data over the period 1999-2003. Therefore, the decision for delisting will come about in the preparation of the 2004 303d list. Should the wetland continue to be listed as impaired in 2004, the next evaluation for delisting will occur with the preparation of the 2008 Section 303d list. Should modifications be made to the applicable water quality criteria during the ten year implementation period, consideration for delisting, development of desired endpoints of this TMDL and implementation activities will be adjusted accordingly.

Incorporation into Continuing Planning Process, Water Quality Management Plan and the Kansas Water Planning Process: Under the current version of the Continuing Planning Process, the next anticipated revision will come in 2002 which will emphasize revision of the Water Quality Management Plan. At that time, incorporation of this TMDL will be made into both documents. Recommendations of this TMDL will be considered in *Kansas Water Plan* implementation decisions under the State Water Planning Process after Fiscal Year 2004.

Approved January 26, 2000.