Kansas Case Study Kanopolis Reservoir and Salina, KS

Western State Water Council – Water Quantity/Quality Workshop

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Kanopolis Reservoir and Salina, KS

- 2006 drought led to a look a modified reservoir mgmt.
- Kansas believed lake's beneficial purposes better served by reducing monthly releases from Kanopolis
 - KWO proposed reduced summer WQ release rates from 50 cfs to 20 cfs measured in the Smoky Hill River at Mentor, KS
- One stumbling block
 - 1949 U.S. Public Health Service study
 - Provide minimum releases to support the downstream water quality requirements for sanitary purposes at Salina, Kansas
- KDHE asked to evaluate impact on Salina
 - Concern reduced upstream flow could reduce permit limits
 - Increase cost of treatment for Salina



Location - Kanopolis/Salina





Location - Close Up





Our Mission: To Protect and Improve the Health and Environment of all Kansans

Kanopolis Reservoir and Salina, KS

- Kanopolis Reservoir
 - First federal reservoir built in Kansas 1948
 - Reservoir flood pool = 13,958 acres
 - Multi-purpose pool = 3,406
 - Supplies 400 MGY for municipal/industrial water use
 - The watershed drainage = 2,439 square miles
- Salina, KS
 - Population 48K
 - Wastewater Treatment Advanced Secondary
 - Design Flow 7.25 MGD



Salina, KS WWTF





Salina WWTF Analysis

- Used BOW's typical modeling methods to assess
 - BOD
 - TSS
 - NH₃-N (ammonia)
- Only potential issue was ammonia
 - Compounding factor was EPA's proposed ammonia vs current
 - Looked at both, but focus was on proposed criteria



Salina WWTF Analysis





Salina WWTF Analysis - Current





Salina WWTF Analysis - Future





Salina WWTF Analysis - Recommendation

- Reducing summertime flows to 20 cfs would not affect Salina WWTF compliance
- Reducing flows in SHR below 20 cfs would impact Salina
 - More stringent permit limits
 - Added cost now
- Based on current ammonia criteria
 - Lowering of SHR below 20cfs could be possible
 - Assuming only looking at "sanitary" impacts
 - Aquatic life/habitat could suffer



Other Potential WQ2 Issues

- Governor's 50-year Vision for Water
 - Reduce minimum releases at Clinton, Pomona, Melvern and Hillsdale Reservoirs to increase water supply yield
- Reduced releases may impact
 - Permit limits for downstream dischargers
 - Ultimately a quantity call, but how will quality be addressed?
 - Who bears the cost?
 - Aquatic life support



Other Potential WQ2 Issues





Summary

- Quantity vs Quality will continue to cause tension
 - Undoubtedly tensions will increase
- All parties need to keep talking
 - Look at achieving the best overall outcomes





WHO WILL BE VOTED OFF THE ISLAND NEXT?

