

Solomon Working Group Meetings

Meeting Summary Overview
September 18, 2001 to March 2006

September 18, 2001 (Hoxie and Beloit, Kansas)

Meeting overview:

- Informational meetings to create a working group for the Solomon Basin
- The Subbasin Water Resource Management Program was explained (goals, process, staff duties, and formation of working group)
- It was suggested to have one meeting (probably Stockton) rather than two meetings as originally proposed.

January 9, 2002 (Stockton Grade School, Stockton, Kansas)

Meeting overview:

- Introduction of Basin Team staff and changes in staff.
- Working group meetings will be coordinated with the Solomon Basin Advisory Committee Meetings.
- An irrigation survey has been distributed for responses and results will be presented at a future meeting
- Overview of the first meeting was given.
- High Plains Aquifer will not be addressed in these meetings since a new statewide effort is going on. Therefore, there will only be one working group.
- There has been a goal set to achieve 'safe yield' in the management plan for the alluvial valleys of the basin.
- Overview of program goals and objectives
- Review of water rights
- DWR listed what has been completed thus far in the basin and the role of the working group to devise management strategies by 2005.
- Reviewed project strategies for achieving safe yield in the alluvial aquifers and addressing water quality issues downstream of Waconda Reservoir.

March 14, 2002 (Stockton Field Office, Stockton, Kansas)

Meeting overview:

- At the next working group meeting need to identify who is interested in being an active representative.
- DWR provided a water budget overview, safe/sustainable yield criteria, historical information on MDS and Pick-Sloan Missouri River Basin Project.
- Results of the irrigations survey will be presented at the Solomon BAC meeting
- Open discussion on topics of the presentations
- Discussed issues to be addressed at next working group meeting

June 6, 2002 (Stockton Field Office, Stockton, Kansas)

Meeting overview:

- BMT provided an overview of Phreatophytes and water consumption in the alluvial corridor, reported water usage for 2000, MDS update
- Open discussion on the five-year timeline
- Discussed issues to be addressed at the next working group meeting. Working group suggested BMT put together a complete water budget for the next meeting.

August 27, 2002 (Stockton Field Office, Stockton, Kansas)

Meeting overview:

- Follow up question from the Phreatophyte presentation at the last meeting
- Presentation of draft water budgets & review of components and methodology
- Thoughts from working group regarding the components and methodology
- Appointed representatives and co-representatives of the working group
- Discussed issues to be addressed at the next working group meeting. The group suggested that the BMT look into a few components of the draft water budgets.
- The report on irrigation survey was provided to the working group
- Chief Engineer will be attending the November working group meeting

October 3, 2002 (4-H Building Rooks County Fairgrounds, Stockton, Kansas)

Meeting overview:

- Provided precipitation data, average potential ET map, and summary of ground and surface water data collection activities as requested from last meeting.
- Review changes of the draft water budgets. The group suggested that BMT due further analysis on change in groundwater storage for the next meeting
- BMT presented runoff data from HYSEP and presented reservoir change in storage data

November 20, 2002 (4-H Building Rooks County Fairgrounds, Stockton, Kansas)

Meeting overview:

- BMT presented accomplishment's to date and the program's timeline
- Chief engineer was present for a roundtable discussion with the working group
 - State Water Plan goals for the basin are guidelines by which conservation can be achieved and the management strategies are developed and implemented through the working group, DWR and GMD
 - Sustainable yield
 - Proactive approach of the working group
 - Level of water resource management by the irrigation districts, GMD#4, DWR and KWO
 - IGUCAs- option the working group can use in the decision making process

- Updates on water budgets-working suggested BMT do further analysis on the saturated thickness and change in groundwater storage data for the next meeting.
- Discussion on mandatory metering of all points of diversion within the basin which is outlined in the State Water Plan to occur by 2010.

January 7, 2003 (Stockton City Hall, Stockton, Kansas)

Meeting overview:

- Organization of the working group, one representative from each stakeholder group was asked to sit at the head table and take part in the decision-making process. Identification of the representatives and co-representatives took place.
- Discussed the option of forming subcommittees to analyze data in the water budgets. The working group preferred to have BMT staff continue to do the analysis at this point.
- BMT presented change in groundwater data for all subbasins of the Solomon basin. Discussion followed:
 - Use only winter data for the Upper South Fork
 - Combine winter and spring data for the Upper North Fork
 - Spring data for the Lower North and South Fork and Mainstem
- BMT presented the change in groundwater storage data and streamflow conditions for the basin
- Updates on the alluvial saturated thickness

February 4, 2003 (Stockton City Hall, Stockton, Kansas)

Meeting overview:

- Due to budget obligations, the BMT will be slightly reorganized
- BMT presented a list of basin issues and goal. The list will assist the working group in prioritizing the issues in the alluvial valley first
- A change in a representative/co-representative was made
- Water budget-consensus by the working group to use the change groundwater storage numbers for the Lower North and South Fork and Mainstem. Water budgets for the Upper North and South Forks will not be worked at this time until further field verification activities are completed.
- Stream-aquifer trigger level study-BMT presented a proposed management concept using trigger levels. A KGS open file report 96-17 was referenced as it offers simplified scenarios for managing a predetermined quantity of baseflow to meet demands and a respective groundwater level to manage the entire system. The water budget will need to be completed prior to management concepts being discussed in detail.

March 3, 2003 (Stockton Field Office, Stockton, Kansas)

Meeting overview:

- BMT presented information on water right development, runoff data, permeability ranges for soil associations in the alluvial valleys and irrigation efficiency data.

- Issues and Goals for the basin- a new list with the incorporated changes from the February meeting was provided to the working group for comment
- Hydrograph Separation and Analysis (HYSEP) – graphed results show a decreasing trend in runoff for all subbasins
- Irrigation return flows- the working group discussed reducing irrigation return flows for sprinklers to 0%. Further discussion on the percent of irrigation return flow for flood systems will occur at the next working group meeting.
- The KWO report on the Solomon irrigation survey was provided to the group.

April 15, 2003 (Stockton City Hall, Stockton, Kansas)

Meeting overview:

- USFWS decided to not participate any longer in the working group process
- Occurrence of Munjor Soils in Graham County- presentation of a GIS analysis to calculate the acreage in the alluvial valley cropland. Discussions on how this soil affects irrigation return flows pursued.
- Updates to Water right Development Data-BMT presented a correct graph as an error was found in the previous presentation. In addition, graphs of water appropriations vs. average streamflow were presented for select USGS gaging stations. A discussion of these graphs was held and the working group requested additional data on precipitation and runoff for the next working group meeting.
- Discussion on Irrigation Return flow rates-adopting percentages to assign irrigation return flow components in the water budgets. The working group agreed to adopt 0% for sprinklers in the upper and lower subbasins and 5% for mainstem. Flood irrigation would have 31% return flow rate.
- MDS Issues in the Solomon Basin-Water Commissioner, Scott Ross, presented to the group on the status of MDS administration on the Solomon River at Niles, KS.

June 2, 2003 (American Legion Hall, Stockton, Kansas)

Meeting overview:

- Precipitation vs. streamflow-graphs of precipitation data vs. streamflow values was presented as a follow up to questions at the previous meeting.
- Updates to the Irrigation return flow component- presented new calculations for the flow rates in each water budget and was reviewed by the working group
- Updates to the recharge component- an adjustment was made to the recharge component. The adjustment accounted for the differences in precipitation during the study periods.
- Comparison of irrigation survey results- a presentation was given on the center pivot system results from the survey and compared to the results from surveys conducted in the Middle and Upper Arkansas subbasins.

September 9, 2003 (Stockton City Hall, Stockton, Kansas)

Meeting overview:

- Updates on water budgets, initial results of the trigger level study, phreatophyte study and current administrative activities was given
- Water budget-the working group discussed changing the water budgets to one per subbasin for 1988-2002. The new timeframe will eliminate any errors for water use data not mandatory to report before 1988.
- Trigger level study-Presentation on the site locations, graphs comparing depth to water to flow. The graphs show a similar linear curve that demonstrates the interrelationship between the streamflow and groundwater levels which could be used as a management tool.
- Phreatophyte study- a presentation on the diurnal fluctuations of the water table due to daily cycles in the transpiration of phreatophytes, impacts on surface water flows and temperature induced dormancy.

November 18, 2003 (City Hall, Beloit, Kansas)

Meeting overview:

- BMT presented information on the water right history, conditions before and after construction of Waconda Reservoir, hydrology of the surface water and events leading to the study at Beloit.
- Don Whittemore, KGS presented “Determination of Lake Waconda Releases needed for Diluting Saline Water in the Solomon River at Beloit for Municipal Water Supply”-The presentation included the study objectives, surface water chemistry data, analytical procedures, relationship between the river flow and water quality, and Waconda flow releases needed to attain the desired chloride concentration in the river at Beloit intake. The report was provided to the working group.

February 19, 2004 (City Hall, Stockton, Kansas)

Meeting overview:

- Baseflow changes by month for the Upper North Fork and Upper South Fork
- Ogallala and alluvial water level change maps for 1988-2002 and 2002-2004- maps show the effects of drought conditions on water levels
- Updates on the Ogallala project- maps showing the addition of monitoring wells that were measured in January. The additional well along with existing KGS wells will provide more complete saturated thickness data for the fringe portion of the Ogallala.
- Updates to water budgets for Lower North and South Fork and the Mainstem-all components, except groundwater storage were updated to reflect the new period. Updates to the change in groundwater storage will be presented at the next meeting.
- Scott Ross, Water Commissioner presented to the working group the Republican River Compact Model.
- Brainstorming on management options for the basin will start at the next meeting. The working group was encouraged to start thinking about strategies they would

like implemented in the basin. Examples were provided from the Pawnee-Buckner and the Middle Arkansas subbasin project areas.

May 27, 2004 (City Hall, Stockton, Kansas)

Meeting overview:

- Updated 2003 Field Summary reports for the Solomon and Ogallala-High Plains were provided to the working group
- Historical water administration information-Scott Ross, Water Commissioner gave an overview of the water administration activities on the Lower North and South Fork Solomon. He provided updates on the current and past MDS regulations at Niles, KS.
- Water budget updates-general updates were made and the budgets will be used to determine management strategies for the lower subbasins due to years when administration occurs and there is a shortage of water within these areas.
- Management strategy brainstorming- presentation highlighting main recommendations for the Middle Arkansas and Pawnee-Buckner subbasin. For the next meeting the representatives are encouraged to start brainstorming about management strategies they would like implemented.

July 27, 2004 (City Hall, Stockton, Kansas)

Meeting overview:

- Presentation on trigger level data for the Upper North Fork and Upper South Fork subbasins
- Meter discussion-detains were provided on the upcoming meter order requirements for the non-metered, non-domestic wells in NW KS, including the Solomon River basin. The metering implementation strategies are currently under development through a joint effort between DWR and GMD #4.
- Follow up question on the lower subbasin water budgets and management strategy brainstorming-discussion on the use of the water budgets and trigger level for management strategies. The working group requested that BMT provide a recap of the project scope and objectives and how they relate to the water budget analysis and trigger level study, along with review of the project status.

October 26, 2004 (County Health Dept. Meeting Room, Stockton, Kansas)

Meeting overview:

- Review of project scope and objectives-issues identified by the State Water Plan and goals identified by the working group were reviewed. The working group suggested an additional goal for the Upper North and South Forks to further research the effects of conservation practices on surface water rights. The group also voiced their concerns on the lack of participation of the Kirwin and Webster Irrigation Districts representatives as they feel they are essential in the process.
- Review of the trigger level data-data correlations between two sites was presented.

- Review of water balance spreadsheets- working group suggested BMT define further define components
- Discussion on draft management strategies report-working group offered revisions and the group was encouraged to offer additional comments before the next meeting.

February 10, 2005 (City Hall, Stockton, Kansas)

Meeting overview:

- Brainstorming session on management strategies-BMT staff collected the working group's suggestions for management. Members of the public were included in the process and 46 suggestions were provided.
- Working group requested quantity calculations from the following stakeholders:
 - Irrigators upstream of the reservoirs
 - Irrigation Districts
 - KDWP
 - Municipalities (representatives not present)
- Requested quantity calculations
 - What quantity of water is needed to irrigate at 100% capacity?
 - What reduced quantity is acceptable?
 - What quantity would hurt me economically?
- Next working group meeting the agenda includes setting a goal that includes a quantity or level water. Management strategies will be evaluated to determine feasibility, benefits and acceptance. The group was asked to rate them for the next meeting.

March 2, 2005 (County Health Department, Stockton, Kansas)

Meeting overview:

- Working group members presented on 3 levels of water use needs (100%, acceptable reduced quantity and water use quantity that could hurt them economically)
 - Glen Elder Irrigation District-12 inches/acre (100% level) and 9 inches/acre (Economic hurt)
 - Webster/Kirwin Irrigation District-full delivery is 12 inches/acre, historically 15 inches/acre and anything less hurts them economically
 - Irrigators upstream of Webster and Kirwin-offered no quantity but to let the current system of law handle the water shortages (prior appropriation)
 - Solomon BAC chair-questioned the goal of sustainable yield and stated that we should not protect streamflow over groundwater.
- Baseflow data for the upper subbasin-GMD #4 requested BMT to present baseflow data at the next meeting. They would BMT to evaluate recent changes in surface runoff and baseflow in order to get a better understanding of declining streamflows.
- BMT staff emphasized the need for the working group to be prepared for the meetings in order to make progress. The working group process is an opportunity

for the public to provide input to the management of the basin. Since the first agenda item did not provide enough information to proceed with other agenda items it was decided to defer these remaining items until the next working group meeting.

- Open discussion on additional management strategies-it was suggested more flexibility for changes to the place of use of water rights
- Agenda items for next working group meeting will include presentation on water rights administration and regulation. The presentation will include information on IGUCAs. The trigger level study will be presented and show the group historically when they did not meet the trigger level.

May 10, 2005 (County Health Department, Stockton, Kansas)

Meeting overview:

- Presentation on water right administration, regulation and IGUCAs-Scott Ross, Water Commissioner presented information on KWAA, Appropriations Doctrine, and beneficial uses of water, fundamental tenets of any KS water right, water right impairment/administration, and data on appropriations junior and senior to the Irrigation District. He also presented information on IGUCA proceedings.
- Baseflow data for the upper subbasins-Baseflow data from the RRCA model was presented
- Updates on trigger level data for the upper subbasins
- Discussion opened for additional management strategies for the upper subbasins
 - Webster Lake Association suggested a drought response plan
 - Further research of global warming
 - Economic impact study for the alluvial valleys
 - Research on effects of decline in the Ogallala on streamflow in the basin
- BMT staff will draft management strategies and present at future public meetings. Discussions will occur over the next three meetings with the working group and the public.

September 6, 2005 (County Health Department, Stockton, Kansas)

Meeting overview:

- NRCS EQIP Quick Response Areas-A map of the QRAs was presented.
- Brainstorming session on management strategies for the lower subbasins
 - The group determined a list of concerns
 - Management options were determined for the top seven concerns
 - Management options were further identified as beneficial, effective and feasibility.
 - Group voted to determine the top management strategies
- The next meeting will determine if suggested management strategies are beneficial, effective, and feasible and a brainstorming session on the Mainstem.

November 15, 2005 (County Health Department, Stockton, Kansas)

Meeting overview:

- Water use density map, reported use 1988-2002, authorized use 1988-2002 and percent use of authorized quantities for the alluvium was presented
- BMT presented on Surfer Software and its capabilities for mapping
- Brainstorming session on management strategies for the lower forks- the group finished identifying management options as beneficial, effective, and feasible.
- Brainstorming sessions on management strategies for the mainstem and upper forks will be scheduled for the next meeting. Issues already identified for the mainstem are:
 - Low flows in the river
 - Aquatic vegetation problems during low flows
 - Need to streamline the abandonment process
 - Log jams
 - Water quality concerns for City of Beloit

March 13, 2006 (Beloit City Hall, Beloit, Kansas)**Meeting overview:**

- Don Whittemore, KGS presented “Salinity in the Solomon River Basin”- concentrations of sulfate, chloride and selenium in the stream waters and change with time and interpretation of source for portions of the Solomon basin. Assessments are generated from KDHE TMDL program.
- Brainstorming session for the Solomon River (mainstem) and Salt Creek subbasins- list of concerns was generated and ranked by a show of hands, with water quality getting the highest number of votes. The group generated a list of options for each concern.
- A graph was handed out of the streamflow conditions at Niles.
- No follow up meeting was scheduled. Working group will be notified of a meeting date once the first draft of the management strategies document is completed.

March 14, 2006 (Stockton City Hall, Stockton, Kansas)**Meeting overview:**

- BMT presented updates on data collection activities, reports on surface water flow measurements, groundwater measurements, groundwater density, and groundwater change maps and well transect datasets.
- Brainstorming on management strategies for the upper forks-concerns previously identified was reviewed and the group was able to add or comment to the list. No comments or additions were made. Results of the previous session were reviewed. All suggestions and management strategies were categorized and a handout was given to the group. The group generated a list of additional concerns. All new options and comments were recorded for inclusion to the management option list.
- No future meetings were scheduled. Once the management strategy document is completed based on input from working group a meeting will be scheduled.

