

Red Hills Regional Advisory Committee Meeting

8:00 am July 19, 2016
Conference call Kansas

Members in Attendance:

Name	City	Category	Present
Suzanne Drouhard (Chair)	Danville, KS	Agriculture (cc)	Yes
Clark Bibb	Coldwater, KS	At Large Public West	Yes
Ken Brunson	Pratt, KS	Fish and Wildlife	Yes
Jim Harden	Clark County, KS	At Large Public (cc)	No
Amber Horbelt	Anthony, KS	Local Government	Yes
Hi Lewis	Wichita, KS	Industry/Commerce (cc)	No
Larry Mangan	Wellington, KS	Public Water Supply (cc)	Yes
Vacant		Agriculture (cc)	
Mark Watts	Medicine Lodge, KS	Industry/Commerce	No
Phil White	Wellington, KS	At large Public East	No
Jay Zimmerman	South Haven, KS	At Large Public	No

Others in attendance:

Diane Knowles (KWO)

Agenda: accepted as presented.

Review of Regional Action Plan: Discussion on the draft action plan resulted in consensus that it was ready for final approval by KWA.

Amber Horbelt made the motion to approve the Red Hills Action plan as presented for KWA approval. Larry Mangan seconded the motion. The motion carried.

Meeting adjourned at 8:10 am.

Red Hills Regional Advisory Committee Meeting

9:00 am June 28, 2016
Medicine Lodge Kansas

Members in Attendance:

Name	City	Category	Present
Suzanne Drouhard (Chair)	Danville, KS	Agriculture (cc)	Yes
Clark Bibb	Coldwater, KS	At Large Public West	No
Ken Brunson	Pratt, KS	Fish and Wildlife	Yes
Jim Harden	Clark County, KS	At Large Public (cc)	No
Amber Horbelt	Anthony, KS	Local Government	Yes
Hi Lewis	Wichita, KS	Industry/Commerce (cc)	Yes
Larry Mangan	Wellington, KS	Public Water Supply (cc)	No
Vacant		Agriculture (cc)	
Mark Watts	Medicine Lodge, KS	Industry/Commerce	Yes
Phil White	Wellington, KS	At large Public East	Yes
Jay Zimmerman	South Haven, KS	At Large Public	No

Others in attendance:

Sheldon Hightower (NRCS), Cameron Conant (KDA-DWR), Scott Alberg (KCC), Allison Herring (KDHE), Rich Basore (KDHE), Steve Garten (BA CO), Dollie Mathes (Sunflower H2O & RC&D), Harold Kline (Sunflower H2O), Jeff Porter (City of Medicine Lodge), Tim Hellman, Katie Goff (KWO), Kelsee Wheeler (KWO) and Diane Knowles (KWO)

Welcome and Introductions: Suzanne Drouhard welcomed everyone to the RAC meeting Self introductions were made.

Agenda: accepted as presented.

Review of March meeting Notes: Meeting notes were accepted.

Review of Water Use Reduction Regional Goal: Discussion on the draft action plan in regard to water use, the history and trends of water uses, streamflow/baseflow and possible methods to fill the information gaps. Information was also provide on various tools and programs that aid in reducing water use.

Multipurpose Small Lake Goal

Industry related Goals (3 & 4)

Produced water Overview was provided in mailing materials. There were no questions or comments.

Industry Activities to reduce freshwater use and utilize produced water were only briefly discussed by Diane reading Hi Lewis email and document provided. A summary of his email about a pilot project to recycle produced oilfield water somewhere in the Red Hills area follows. Skid-mounted plants would be used so a test could be conducted just about anywhere. The perfect place to treat would be a place where produced water is available (transportation of produced oilfield water is a MAJOR component of the cost and risk of treatment) AND near a place where the treated water can be released onto the surface and used by local farmers/ranchers. Technology can treat to just about any water quality standards that users need, but the plant under consideration does not get the water to drinking water standards. Help from

the State is needed to know where the treated water can be released and who can use it for what purpose, and of course, from someone in the Red Hills area to recommend/approve the same things.

Future meeting dates: conference call for final review of action plan in July. Next meeting to be determined after August KWA review of action plan.

Priority Goals

KWA feedback on regional goals: Amber Kummer reported on the April KWA meeting and status of and comments on regional action plans.

Blue Ribbon Task Force: Diane Knowles provided a brief explanation of the working draft funding for the state Water Plan under development by the Task Force. The table is available at <http://www.kwo.org/BlueRibbonTaskForce.html>

Timeline for Action Plans: Diane Knowles provided an overview for action plan final development timeline. KWA has August and October meetings scheduled to review and approve regional action plans. Once approved by KWA, action plans activities will be incorporated into the *Kansas Water Plan*.

Water Use Reduction Regional Goal: Discussion occurred on the draft action plan in regard to adding back in details that had been simplified and adding steps and or word to clarify intentions.

Specific discussion included:

- Using the 10-year average water use for the period ending 2015 as baseline for water use.
- Streamflow gages and measurements to better identify changes in streamflow contributions from tributaries to main stream to aid in evaluation usage effect on baseflow. Specifically a continuous monitoring gage on Elm Creek prior to entering the Medicine Lodge River. The present USGS gage locations do not provide this.
- Experts identifying additional locations;
- May need more streamflow measurements/locations in regard to the Lake project.

Ken Brunson reported the fire destroyed the heart of the red cedar infestation in Barber County and with the snow and rain that followed the rangeland is recovering nicely. There are local efforts working to aid in removal of dead trees as well as replace fences. Many landowners have reported stream flow returning after the fire.

The Nature Conservancy and K-State are working to delineate the area of burned trees, and compare streamflows and rangeland effects with that of the area to the west. NRCS and NFWS are hoping to partner to offer cost-share for clearing live cedars and maybe dead cedars. The RCPP \$3.6 million project will probably roll out in 2017.

Conservation Programs were discussed by Sheldon Hightower, NRCS-Hutchinson Regional Office. Major programs for this region include: A woody debris practice in 2017; Environmental Quality Incentive Program (EQIP) for Climate Change Mitigation will monitor rain; other EQIP programs including prescribed burn and brush removal practices.

In addition, FSA is offering emergency funding for fence rebuilding.

Lake Goal (Goal 2)

Mark Watts spoke on behalf of local leadership for lake development. Sunflower H2O will assume leadership with Sunflower RC&D acting as the fiduciary and contracting agency. Sunflower H2O will call on counties and water suppliers to determine interest and monetary support. Propose to use the HorseThief reservoir and Benefit District as a

model. See the project as benefiting the areas with future water supply, economic development, quality of life, water supply during drought and possibly a hydropower component.

The RAC was in agreement to add leadership identity to the action plan.

Industry Water Use Goals (3 & 4)

Hi Lewis explained the pilot produced water treatment project status and challenges. The project would operate for 60 days with water sampling required each day by KDHE. Approximately 200 barrels would be treated per eight hour day. Estimated cost is \$300,000-\$800,000 depending on leasing of equipment. Anticipate operating next summer.

Tim Hellman was present operator with produced water for treatment. Location under consideration (willing landowner) would use the treated water for livestock, but has no irrigation.

RAC was in agreement to add actions to Goal 3 to encourage reuse by well owners/operators for fracking by contacting all well owners, requesting voluntary use of treated produced water for fracking and providing well owners with information.

Add to Goal 4 action to identify storage sites for freshwater storage for fracking activities of oil and gas operators.

No public comments or agency reports.

The next meeting will be a conference call to finalize the regional goals action plan, sometime in July.

Red Hills Regional Advisory Committee Meeting

9:00 am March 16, 2016
Medicine Lodge Kansas

Members in Attendance:

Name	City	Category	Present
Suzanne Drouhard (Chair)	Danville, KS	Agriculture (cc)	Yes
Clark Bibb	Coldwater, KS	At Large Public West	Yes
Ken Brunson	Pratt, KS	Fish and Wildlife	Yes
Jim Harden	Clark County, KS	At Large Public (cc)	No
Amber Horbelt	Anthony, KS	Local Government	Yes
Hi Lewis	Wichita, KS	Industry/Commerce (cc)	Yes
Larry Mangan	Wellington, KS	Public Water Supply (cc)	Yes
Gregory Shelor	Minneola, KS	Agriculture (cc)	No
Mark Watts	Medicine Lodge, KS	Industry/Commerce	Yes
Phil White	Wellington, KS	At large Public East	Yes
Jay Zimmerman	South Haven, KS	At Large Public	No

Others in attendance:

Bill Hunter (Sunflower RC&D area), Steve Garten Barber Co. Comm), Robert Wimer (NRCS), Wyatt Sperry (NRCS), Jeff Lanterman (KDA-DWR), Scott Alberg (KCC), Richard Basore (KDHE), Allison Herring (KDHE), Lee Adams (Harper Co.), Jeff Porter (City of Medicine Lodge), Jerry McNamer (Barber Co), Kevin Nolan (Lake Arrowhead), Katie Goff (KWO), Kelsee Wheeler (KWO), Diane Knowles (KWO), Brian Dunnigan (Olsson Assoc.), Aaron Ball Olsson Assoc.), Darren Hennen (Olsson Assoc.) and Chad Johnson (Olsson Assoc.)

Welcome and Introductions: Steve Garten, Barber County Commissioner welcomed everyone to Barber County and the new county building. Suzanne Drouhard welcomed everyone to the RAC meeting self introductions were made by everyone.

Approval of Agenda: Agenda: Agenda was accepted with one addition for a report on KWA/Legislative visits from Mark Watts.

KWA/Legislative Day in Topeka: Mark Watts, who represented the RAC at the January activities in Topeka, reported on the successful interaction with state legislators in January. He encouraged others to participate in the future, as he found the activities very beneficial.

Review of October Meeting Notes: Meeting notes were approved. (Motion from Mark Watts, second by Phil White, carried.)

Regional Updates

KDA-DWR: Jeff Lanterman reported that rules and regulations to extend the time frames for term permits are one of the changes in the works. One benefit is that a Water Conservation Area (WCA) of more than 5 years can be developed.

NRCS-Hutchison Office: Robert Wimer reported programs available include conservation stewardship, EQIP and conservation easements. A program new to the area, Regional Conservation Partnership Program (RCPP) is also available. Examples of areas the program can address included irrigation efficiencies, riparian areas, upland game birds, and multi state interests such as Grand Lake. A couple of approved RCPPs now include parts of Kansas to address irrigation efficiencies in the Kansas GMDs and Grand Lake (Oklahoma & Kansas).

Ken Brunson added that there is a newly approved healthy grassland initiative in the process of developing the rules that include the red hills along with the flint hills. Measures to control and manage eastern red cedar are part of that project.

KCC: Scott Alberg reviewed his report on the estimated oil and gas production water use in the region in 2013. This was prepared since not all of this water use is reported to DWR. Scott also noted he has provided data to Diane on chloride concentrations in various formation water by county for future reference.

KDHE: Richard Basore announced the availability of low interest loans for watershed restoration and protection projects. Allison Herring noted Mike Tate has retired as Bureau of Water director, Jaime Gaggero will be filling the position beginning later this month.

Action Plan Discussion

Industry related Goals (3 & 4)

Hi Lewis provided an overview of issues related to treating and reuse of produced water from the industry perspective. He then outlined ideas and needs for a pilot project to recycle produced oilfield water somewhere in the Red Hills. The pilot project would be similar to one in Oklahoma which treated the water to levels acceptable for surface discharge. The Oklahoma project was treatment by reverse osmosis (RO) on steroids, with electricity being the major cost at about 2 cents per gallon. The electrical cost can be prohibitive to the industry treating and reusing produced water. Hi suggests the state work with electric providers to subsidize that cost.

A skid-mounted plant would be placed near a produced water source, possible a disposal well (transportation of produced oilfield water is a MAJOR component of the cost and risk of treatment). Ideally this would also be near storage and usage locations for use by local farmers/ranchers. Coordination with various state agencies will be needed to know where the treated water can be released and who can use it for what purpose.

Hi also explained that fresh water is preferred for drilling but produced water could be used for fracing. One major issue is in the handling (storage and transportation) of the saline water. Any leakage of the saline water from storage or pipelines is a liability to avoid. Use of county bar ditches for temporary pipelines could address the transportation issue to some degree.

Goal of a pilot project would be to prove the produced water can be treated for reuse. The pilot would look at treating 250-500 barrels per day probably something around 300 b.

It was noted that the Red Hills region is the only area looking at this issue although there are other regions of the state interested in the results and potential water supply.

Also noted it could prove to be a win/win for Barber County.

Hi outlined the steps needed are the identification of a source of produced water, near a disposal well, with an area receptive to surface disposal (discharge) of sufficient size with power accessible.

Discussion followed making the following points:

- A wetland might be acceptable for the discharge;
- Post treatment water analysis would be needed;
- Nice to get a cost /benefit;
- Based on 20% waste, estimated 10 acres needed; and
- At 2 cents per gallon to treat that is about \$65/acre foot.

Multipurpose Small Lake Goal process was presented by Olsson Associates. This overview provided six major activities to lake development along with time frames. Major areas presented were environmental permitting, land acquisition, mitigation of impacts, water treatment and distribution; funding and construction. The first steps forward would be dam and reservoir planning and design based on defined project purpose and public input. Examples were provided of possible permits needed, potential funding sources, and similar projects the firm has work on.

It was estimated 8-12 years to fully develop the project and get to the construction phase.

Next steps would be to complete a detailed engineering study, after defining fully the project purpose.

Discussion touched on eminent domain, reservoir size, engineering study cost, who pays of the study, how to pay for the project, total cost of the project, earthquake potential/effects, a hydro-electric component, sale of water to the City of Wichita, the possible uses of the reservoir and that watershed conservation should be considered in any plan to reduce siltation.

The RAC consensus was that public input will be needed to help define the needs the reservoir will meet. Despite the 2013 study indicating supply may not be needed based on projections, it was suggested that there is still a need in the region for reliable fresh water and this could aid in maintaining and growing population. (Population decline occurs due to lack of or poor water.) The engineering study would follow fulling defining the project.

Diane will contact the RAC to determine a date for the next meeting, possibly mid- late June.

Red Hills Regional Advisory Committee Meeting

9:00 am January 21, 2016

Medicine Lodge Kansas

Members in Attendance:

Name	City	Category	Present
Suzanne Drouhard (Chair)	Danville, KS	Agriculture (cc)	Yes
Clark Bibb	Coldwater, KS	At Large Public West	Yes
Ken Brunson	Pratt, KS	Fish and Wildlife	Yes
Jim Harden	Clark County, KS	At Large Public (cc)	Yes
Amber Horbelt	Anthony, KS	Local Government	No
Hi Lewis	Wichita, KS	Industry/Commerce (cc)	No
Larry Mangan	Wellington, KS	Public Water Supply (cc)	No
Gregory Shelor	Minneola, KS	Agriculture (cc)	No
Mark Watts	Medicine Lodge, KS	Industry/Commerce	Yes
Phil White	Wellington, KS	At large Public East	Yes
Jay Zimmerman	South Haven, KS	At Large Public	Yes

Others in attendance:

Carl Jarboe (NRCS), Wyatt Sperry (NRCS), Cameron Conant (KDA-DWR), Scott Alberg (KCC), Robert Torres (Pratt County), Jeff Porter (City of Medicine Lodge), Katie Goff (KWO), and Diane Knowles (KWO)

Welcome and Introductions: Suzanne Drouhard welcomed everyone to the RAC meeting. Self introductions were made by everyone.

Approval of Agenda: **Agenda:** There were no additions or corrections to the agenda as presented.

Review of October Meeting Notes: Meeting notes were accepted with spelling corrections.

Review and development of Water Use Reduction Regional Goal: Discussion on the draft action plan in regard to water use, the history and trends of water uses, streamflow/baseflow and possible methods to fill the information gaps. Information was also provided on various tools and programs that aid in reducing water use.

Specific discussion included:

- suggested changes to the brief background information to correct reported use regarding industry and how to estimate the water used in the oil and gas production that is not required to report actual use;
- inconsistencies in reporting water sold to industry by irrigators; how to determine pumping (irrigation) effects on streamflow in the region, including irrigation upstream out of the Red Hills;
- the need for defining the groundwater/ surface water interaction historically on the region's streams; and
- the need to define the Red Cedar infestation, water use and effect on the region's water resources.

Water Right Tools: Cameron Conant provided an overview and web page references of some tools for water savings within the water appropriation rules and regulations.

- Multi-Year Flex Accounts are a 5 year term permit based on water use of the water right that allows the water right holder to use a specified quantity over a 5 year period, potentially allowing greater water use in some years

offset by lesser use in others within the period. The MYFA provides a water right some flexibilities that may also have a water conservation component. <http://agriculture.ks.gov/divisions-programs/dwr/water-appropriation/multi-year-flex-accounts>

- Water Right Conservation Program (WRCP) protects the water appropriation when not using the appropriation with enrollment, which is for 5-10 years in areas closed to new appropriations, or areas where the Chief Engineer deems it is in the public interest.
- Water Conservation Areas (WCAs) can be developed by one or more water user in eligible areas using a consent agreement with the Chief Engineer. The agreement can allow flexibility of use, acres points of diversion or other factors. Presently this could apply in the designated use areas that are fully appropriated in the Region. <http://agriculture.ks.gov/divisions-programs/dwr/managing-kansas-water-resources/wca>
- Designated Use Areas (DUAs) are used to determine water availability for a new appropriation along with a 2-mile circle safe yield calculation. There are 79 DUA areas in south central Kansas, each with recharge calculation components in rules and regulations that determine if that area still has water available. About 17 (or portions of these) in the Red Hills region are fully appropriated.

Water Saving Tools and Programs: Wyatt Sperry and Carl Jarboe provided a brief overview of available programs through NRCS and local conservation districts that could address Red Cedars in the area. Both EQIP and state cost share programs could be used for cutting brush and prescribed burning to then keep them out. Discussion occurred on how this would fit toward the reduction of water use Regional Goal Action Plan and what information is needed to quantify the problem. Getting county conservation districts to offer these programs and then getting landowners to participate were determined to be the key in areas where infestation is a problem.

Industry related Goals (3 & 4)

Produced water Overview was provided in mailing materials. There were no questions or comments.

Industry Activities to reduce freshwater use and utilize produced water were only briefly discussed by Diane reading Hi Lewis email and document provided. A summary of his email about a pilot project to recycle produced oilfield water somewhere in the Red Hills area follows. Skid-mounted plants would be used so a test could be conducted just about anywhere. The perfect place to treat would be a place where produced water is available (transportation of produced oilfield water is a MAJOR component of the cost and risk of treatment) AND near a place where the treated water can be released onto the surface and used by local farmers/ranchers. Technology can treat to just about any water quality standards that users need, but the plant under consideration does not get the water to drinking water standards. Help from the State is needed to know where the treated water can be released and who can use it for what purpose, and of course, from someone in the Red Hills area to recommend/approve the same things.

Regulatory Perspectives were provided by Scott Alberg. He pointed out that oil and gas production is profit driven and there are currently no majors operating in Kansas, only Kansas companies (small). Goal discussion and feasibility were discussed with the 4% reduction goal deemed doable mostly due to reduced activity. The recycling goal will require willing operators. There was agreement that having something ready when production ramps up again would be in the area's interest. Mark Watts offered to reach out to producers that might be interested.

Multipurpose Small Lake Goal was touched on briefly to determine the RAC is interested in a meeting with Sunflower H2O coalition and a consulting firm with experience in developing a small local lake in another state.



Red Hills Regional Advisory Committee Meeting Notes

Future meeting dates suggested were April 14 or sometime March 7-21, Diane will contact the RAC to determine a date.

Membership: Suzanne Drouhard, Chair, Danville, KS; Clark Bibb, Coldwater, KS; Ken Brunson, Pratt, KS; Jim Harden; Amber Horbelt, Anthony, KS; Hi Lewis, Wichita, KS; Larry Mangan, Wellington, KS; Gregory Shelor, Minneola, KS; Mark Watts; Phil White, Wellington, KS; Jay Zimmerman, South Haven, KS
KWO Planner: Diane Knowles, 785-296-3185; diane.knowles@kwo.ks.gov