

NEW SOURCES OF SUPPLY - DRAFT

Key themes from stakeholder outreach:

- Restore water supply lost to sedimentation through dredging and other in-lake sediment management techniques
- Where feasible and cost effective, allow for the transfer of water supplies between basins
- Increase adoption of existing policies and develop new policies and incentives to increase the reuse of water
- Reallocate water storage at any federal reservoir where such actions are possible recognizing that this is often the cheapest alternative for securing additional water storage
- Increase other sources of storage available for water supply

How can barriers to the reuse of water be overcome?

- Last year introduced grey water use policy but needs more work. Grey water can be used for multiple purposes including underground use, irrigation, yard and lawn use. We need to look at grey water policies and conduct education about these uses.
- Education is important and pointing out successes in other states as to how water is managed effectively.
- In Western Kansas grey use issues are important. Kansas should be looking at other states. It is important to the large commercial dairies and reduce the barriers to reuse that are created due to water law and the interpretation of law. Need flexibility to use resources effectively so we need a review of the current water law and policy to reduce barriers when possible.
- Education about grey water could help remove negative connotations that the public has in regards to grey water.
- When considering reuse we have to think about users that downstream currently rely on water supplies that might not be available if the water isn't returned.
- Kansas has strong water use program. Need to look at that to see where reuse is possible and reuse when applicable. Consider additional secondary uses for re-used that may become available because of technology.
- State needs standards and training to make clear and adopt and communicate this to everyone.
- From irrigation side, the consumptive conversions need to be considered. There must be a more user-friendly consumptive right conversions.
- All grey water is not created equally. Water that is used for fracking may be potentially contaminated. That water must not be returned because it could be a barrier to reuse.
- If grey water is used to irrigate in a city, a separate water system would be required. A parallel distribution system could be economically prohibitive.
- KDHE regulations can be prohibitive to reuse and have historically discouraged the direct reuse of grey water.
- Get state agencies on the same page.
- Customers believe retreated/reused water should be cheaper to purchase. The reality is the cost for processing water this is significantly more for the water supplier vs. producing fresh water. How is that cost addressed and how can consumer be educated?

- Re-look at the KWAA and how it provides for allowing water to be reused in a cost-effective way.
- Fund K-State and other regent institutions to research reuse in consideration of technology and transfer infrastructure.

What measures should be taken today to increase the water storage available for the future?

- Increase communication between reservoirs, like Tuttle Creek and Milford reservoirs. Share and move water possibly.
- Assessments of strengths and weaknesses of storage.
- ASR projects, utilize more alluvia as potential sources.
- Compact agreement related to Milford and Tuttle with the Corps of Engineers. Must be aware of how the Corps views compact terms vs Corps interpretation of the provisions in the agreements. Must have clarification.
 - For example: Last year flooding was occurring on Missouri and the Corps was releasing water from Milford at the same time.
- Work with surrounding states and obtain additional water rights.
- When looking at conservation programs, follow up with projects to determine if these ideas or efforts are working.
- Injection of oil brines, brackish water, deep source that is a truly new source. Examples would be seen in the Dakotas, Ozark, near Ft. Scott etc.
- An alternative to dredging the reservoirs, capture sediment in smaller storage basins put in at the reservoirs.
- In Eastern Kansas reservoirs were built for flood control. If elevations are raised for water storage, flood protection is minimized. Decisions need to be made on this strategy.
- Our reservoirs are shallow with wide surface areas. Sedimentation and evaporation loss will always be a challenge. A better strategy would put water supply impoundments on tributaries and use the big reservoirs as sediment traps.
- Work with Corps on storage strategies.
- State should purchase all the storage and make this a priority.
- Stabilization of banks above reservoirs is actually a way to increase storage and is working.
- Do other land use and additional conservation practices.
- In Western Kansas put in small traps in along the streambanks to take advantage of or gain new water in that area.
- EPA has restrictions to what can be done. Some of the ideas presented can't be done today, For example, some have desired to use dredging to keep coves open and use the dredged material to stabilize land but EPA regs prohibit the practice. These laws/rules need to be modified.
- To do this need to resolve the 404d permitting issues at the federal level for these smaller watershed dams. Mitigation issues are the focus of those problems need this resolved since it is a roadblock to new watershed reservoir construction.

What steps can be taken to make the best use of abundant water supplies, such as the Missouri River, to benefit Kansans?

- Build an aqueduct from White Cloud to western Kansas. This expensive project should be a federal issue that could bring abundant supplies towards areas of need.
- Aqueduct is a really poor idea due to the amount of money it would take and the limited period of the year it would be available for use (only when high flow) it doesn't make sense. We need to spend money on items that will matter in the state.
- Develop an intrastate water avenue to move water across the state like the aqueduct.
- As a prior appropriation state we need to file to establish a date early on to establish this concept to our neighboring sister states in regards to the Missouri River. Put something on the table and work from there.
- Look at a bigger midwest or multi-state to partnership in a resupply effort that would have results for more than a couple decades.
- Start staking the claim on Missouri River water and develop an understanding of the states' policies to know what we have to do to address those issues, in addition to the engineering aspects of the project.
- The less you have to move water, the more economical you will be in the long run.
- Elevate the priority of big projects to get them moving and address federal permitting issues that will arise.
- Address the technical aspects of reservoir management.
- The opportunity to address wind energy potential in the state is a Kansas project and evaluate how these items can be worked together.
- Secure funding at the State level and prepare for the litigation that will occur. Fund an interstate account and prepare today for this and be more involved in interstate matters and issues regarding water.
- KDOT is the largest landowner in state. Could those right-of-ways be used for the aqueduct infrastructure?
- You can write a good compact, but when drought happens, you will probably end up in court.

Of the feedback you have heard related to New Sources of Supply, which do you feel would lead to the greatest probability of achieving the Vision?

- Aqueduct- (2)
- Communication between reservoirs. (1)
- Consider short term and long term ideas don't see you have to do just one, consider short term and decades.
- Need to look at infrastructure to use when large rain or flooding events occur and effectively capture water from those events.
- Water from the Missouri River is a long term supply. Need to look at all projects, yet take small steps to collect water and realize we may be trying to take these resources too far.

- It will all depend on what is economically reasonable and feasible and focus on those. Protect our reservoirs and find better ways to store excess water.
- Water banking is going on in western Kansas water that goes in the water bank is bought nearly immediately. Don't underestimate the Missouri idea, look carefully at what people are willing to pay and what they will be willing to pay.
- Opportunities to do something different like maybe going into plumes, looking at alternative water supply sources and a wide variety of scales.

Do you have any other ideas related to New Sources of Supply not reflected in this summary that the Vision Team should consider?

- New reservoirs.
- Protection of inflows from outside of the state.
- Brackish water.
- Raise pool levels of existing reservoirs.
- Dredging used to be considered as an emergency only action. We are looking at this differently and are looking at spending this money. Some dredging loses up to 80% of the capacity gained from one or two major runoff events, maybe not good. Also species considerations.
- Look to California for ideas about conservation.
- Potential use of old reservoirs as a silt trap and build new ones.
- We have to look beyond technology, condemnation and interstate issues. If we pass these up and use new water that can be treated in state and not get into these interstate issues.
- Conservation and education.
- Rerouting water or engineered strategy to move the sediment downstream. Louisiana could use that sediment as they are sediment-starved.
- Does evaporation reduce the resource gained?
- Consider new state reservoirs, not just new federal reservoirs.
- Resources are limited and the team must prioritize the resources where it will accomplish the best cost-benefit ratio.
- Not "new sources" of supply we should focus on that it really isn't new water but these will really need to be think of new ways to work with this water not view it as new water.
- Water quality matters, must keep this in mind, if the water isn't useable it, little benefit is provided.
- National groups and forums and interstate discussions must be participated in by Kansas.
- Send KSU researchers to Israel to study water reuse and how to distribute this type of water.