Kansas Alliance for Wetlands and Streams, Inc.

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April 12, 2016

Dear Blue Ribbon Task Force:

I am sending the attached testimony on behalf of the Kansas Alliance for Wetlands & Streams (KAWS) and all of the undersigned partners. We have made the effort to collaborate on a response to your request for information in order to give you a clear, concise picture of the required work, entities, and potential funding mechanisms to address water quantity and quality issues in Kansas.

We appreciate your openness and stand ready to respond collectively or individually to your needs for more information.

Sincerely,

Brad Loveless
Chairman, Kansas Alliance for Wetlands & Streams

Testimony to Blue Ribbon Task Force - April 12, 2016

This testimony represents a consensus among the signatories that a comprehensive framework consisting of diverse funding sources is necessary to implement recommendations in the Vision document. While all categories in the Vision require financial support, this testimony focuses on those activities included in the Water Conservation section. Continued, sustainable support for on the ground conservation is critically important to address resource concerns identified in the Vision.

We have reviewed the document outlining potential new sources of funds to support Vision activities and agree that many of them should be pursued by the Task Force to support long term needs. However, most new sources will have a several year lag time before funds would become available due to the necessity of ensuring public support and securing legislative approval. To ensure ongoing and continued conservation efforts are sustained during the interim, we recommend the first priority of the Task Force be to ensure that State Water Plan Funds are fully restored and included in the state budget for activities for which they were originally intended. This will restore the base level of funding to be able to at least partially continue ongoing efforts and hold the line on future degradation of resources. Once Water Plan funds are fully restored, new sources to either add to existing Water Plan revenues through fee and other increases or to develop new sources of funding can be pursued.

We further recommend that a mechanism be in place to ensure that these fully restored funds are dedicated and protected for conservation use only. The public needs confidence that existing or new sources of funding (such as tax increases) for conservation will actually be used for these purposes and not diverted to fund other state programs. Restoration of Water Plans funds that are designated and protected for conservation would demonstrate a commitment by the Blue Ribbon Task Force and the legislature for achieving this.

We consider the installation of Best Management Practices and streambank stabilization projects to reduce sediment and nutrients and restore stable watershed hydrology to be the highest priorities for limited funds. We have a long history of cooperating with farmers, ranchers and land owners to deliver outreach, technical assistance and conservation practice implementation based on sound science to address and solve natural resource issues identified in the Vision. This robust system is already in place through existing programs to deliver assistance to landowners and should be used to continue significant momentum that has been established. Sustaining these efforts is an economical means to reduce future costs of continued degradation.

In summary, restoration, designation and protection of existing Water Plan funds is recommended as the first step in developing long term funding for Vision activities. It does little good to identify new sources of funding if existing funds cannot be protected. When Water Plan funds are secured for conservation, ongoing efforts will continue to hold the line on further degradation while new sources are identified and implemented.

John Strickler, Kansas Forest Service Advisory Council
Rob Manes, the Nature Conservancy
Gary Satter, Glacial Hills Resource Conservation and Development
Mary Fund, Kansas Rural Center
Jeff Neel, Kansas Alliance for Wetlands and Streams
Donn Teske, Kansas Farmers Union
Dawn Buehler, Friends of the Kaw
Jim Krueger, Kansas Association of Conservation Districts
Mike George, Ducks Unlimited
Middle Kansas and Lower Kansas Watershed Restoration and Protection Strategy groups, John Bond, WRAPS Coordinator

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April 19, 2016

TO: Blue Ribbon Funding Task Force for Water Resource Management

FROM: Leslie Kaufman, President/CEO
Kansas Cooperative Council

RE: Comments on funding demands pertaining to the *Long-Term Vision for the Future of Water Supply in Kansas* (The Vision).

We appreciate the opportunity to share our thoughts on funding water initiatives. I am Leslie Kaufman and I serve as President/CEO of the Kansas Cooperative Council. The Kansas Cooperative Council (KCC) is a 72 year-old, voluntary trade association representing all types of cooperatively structured (member-owned, member-controlled businesses) operating in Kansas. All Kansans have a vested interest in water issues and our agricultural, utility, financial and service cooperative members are among them. On the agriculture side, our members are retailers who sell, and quite often apply, fertilizer and pesticides.

Our Council strongly supports working lands conservation programs for addressing a variety of environmental and sustainability concerns. We believe firmly it is possible to incorporate conservation practices at the same time producers maintain active crop production. We also believe that technology holds great promise for furthering agricultural sustainability. Technology advances will come in many forms including digital, mechanical and biologic. As such, we look forward to continued discussions on water issues and being part of that dialog.

As you know, since passage of a 1989 act, Kansas has been funding water initiatives under the state water plan fund (SWPF). The maneuvering that took place to pass the bill is the stuff of legend. There are still a good number of policymakers and advocates who remember that day in May when the bill was brought up on the Senate floor and a call of the Senate was secured. The call sent the Kansas Highway Patrol to fetch Sen. Gus Bogina, who was recovering from bypass surgery. News reports claimed the patrol car reached 120 miles per hour during the transport. Bogina cast the final vote on the bill, passing it 21-19.

In hind sight, maybe the rough path the bill went through on the road to passage was just a foreshadowing of the bumps still ahead in terms of actually following the funding plan. The revenue sources for the state water plan fund are rooted in general public support through a state general fund (SGF) appropriation and a portion of the Economic Development Initiative Fund (EDIF) dollars and user fees. While the SWPF was not initially universally accepted, or possibly even still, the funding mechanism, as statutorily designed does achieve some degree of balance between user fees and general governmental support. But, that only holds true when the state

general fund and EDIF money called for in the statute are actually (and fully) deposited into the SWPF account.

On the fee side, our ag and farm supply members connect to the SWPF through a tax on every ton of fertilizer sold and through pesticide registration fees. Based on fiscal year 2015 data, the single largest component of SWPF revenue generated through fees or royalties comes from fertilizer fees. Pesticide registration fees come in fourth. In FY '15, fees and royalties accounted for $12,075,975 of revenue for the SWPF. Together, fertilizer and pesticide fees ($4,665,369) accounted for 38.6 percent of the fee revenue flowing into the fund in FY '15.

The agriculture industry is definitely doing our part to contribute to the current water funding formula. The numbers above do not even include the additional fees paid by agribusinesses whose offices and facilities are served via public water supply systems.

Water user fees, agricultural fees, and sand royalties consistently provide revenue for the SWPF. What has not been consistent is the state's general obligation. Although we understand why administrations over the last 10 years felt compelled to reduce or eliminate SGF and EDIF payments into the SWPF, failure to fully follow the statute has had consequences. The last year the full statutory $6 million of SGF was transferred to the SWPF was 2008. Short payments were made in 2009 and 20011. None were included in 2010 or in 2012 and after. Over time, the state water plan fund has been shorted more than $50 million in SGF and over $7 million in EDIF dollars.

Short-term pressures often cause government leaders to react to the moment and prevent long-range, big picture planning. This administration is attempting, through the water visioning process, to develop a long-range view of water management, and we applaud those efforts. As difficult as the planning process is, developing a means to fund the objectives is often a greater challenge. However, without adequate funding, the effort of creating a water vision plan has little to no chance of success. That is why this topic is of the utmost importance.

Your task force is working through funding considerations and we appreciate the time and effort you are devoting to this process. But, for our members, faith in long-term funding mechanisms has been severely undercut as we have seen, time and time again, administration after administration, swipe dedicated fee funds, reduce statutory funding obligations or completely eliminate called for funding.

Many will argue the current SWPF structure generates insufficient funds for meeting critical water infrastructure needs. This statement underscores the need for an adequately funded program and for these fees to be utilized for their intended purposes. But, before our members are ready to commit to endorsing new funding measures or increases in fees under the current structure, we must be assured that we are not creating a pool of money that gets converted to supporting other initiatives or general government and our faith in funding water initiatives needs to be re-built.

We look forward to continuing to work with the administration and stakeholders and being part of the dialogue on water strategies. Many critical water issues face this state and we want to be part of finding workable solutions. Thank you, again, for the opportunity to comment today.

To: Governor's Blue Ribbon Task Force

From: Nick Guetterman

Date: April 19, 2016

Re: Funding the Kansas Water Plan

Members of the Blue Ribbon Task Force, thank you for the opportunity to provide comments as you deliberate on how to fund the Kansas Water Plan. The State Water Plan (SWP) serves as a blueprint for planning, managing, conserving and utilizing the waters of our state; without adequate funding, however, even the best laid plans are fruitless.

The existing revenue stream for the SWP was designed to collect from both specific water users and the general public through the annual demand transfer of $6 million from the state's general fund (SGF). Unfortunately, no SGF money has been provided for years causing revenue deficiencies within the SWP and creating an unfair balance in contribution.

While this task force evaluates options for future funding of our SWP, it is important to fully understand the existing revenue strategy, and its shortcomings, before concluding that a new strategy is needed. Because water is a publicly held resource in our state and all Kansan's benefit from it being put to beneficial use, it is a logical conclusion that all citizens should help contribute in some way to fund the SWP.

If all Kansan's helped share this responsibility, the potential to adequately fund our SWP would greatly improve.

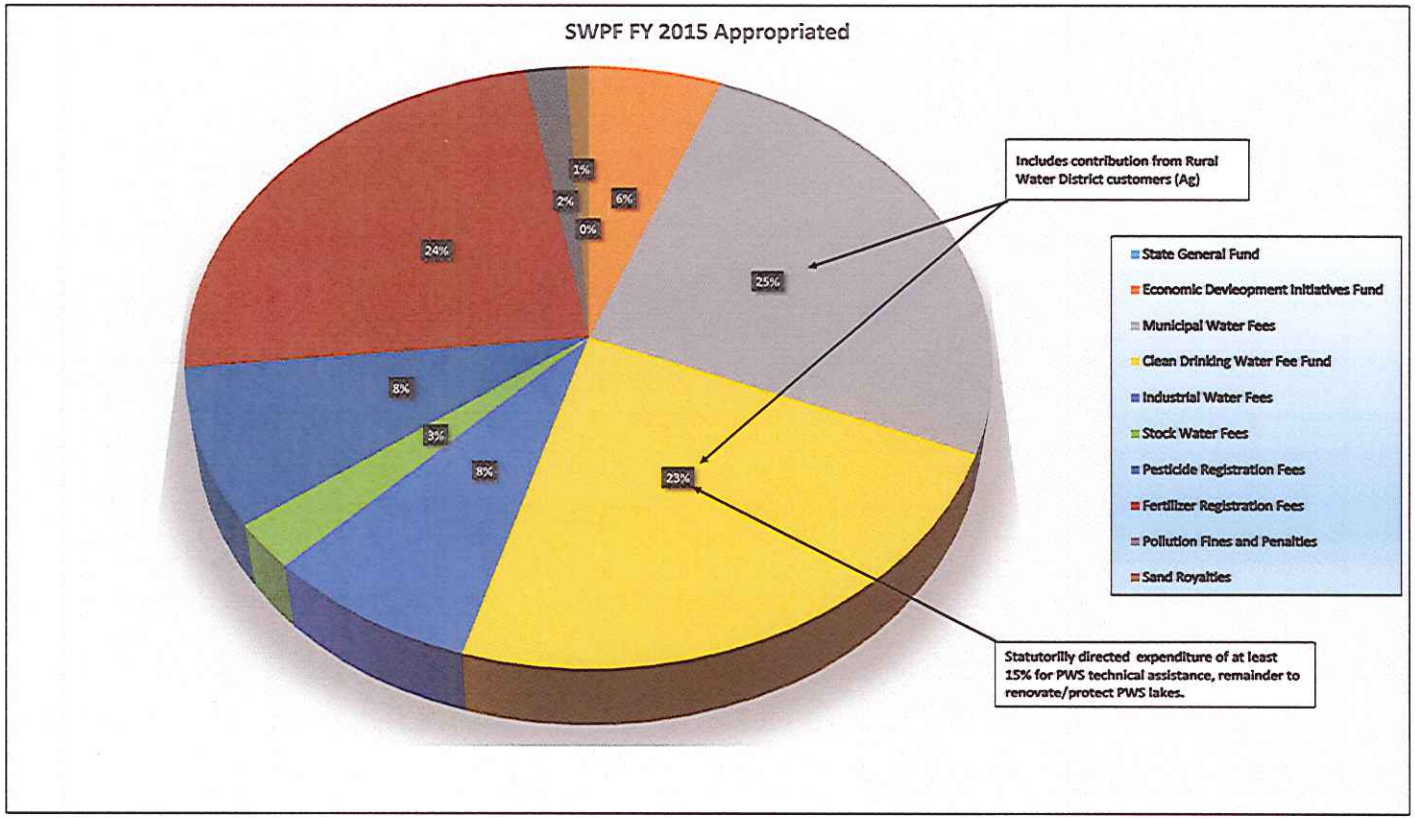
Attached is some background information demonstrating past SWP revenues to help clarify the glaring deficiency in contribution by the general public. Please note that in nearly all categories, agriculture has played a major role in financing the fund. Agricultural interests do not wish to push off the fair and equitable funding of the SWP on to other users, but we do want to clarify that much of the revenue in recent years has been unfairly placed on the back of agriculture.

Expenditures from the SWP help fund programs and projects that help me on my farm and many others like me who make a living in production agriculture. The protection and development of our natural resources must receive funding from diverse and reliable sources.

What is missing is the state general fund (SGF) component or a dedicated statewide revenue source that would help better distribute the load and generate the revenue needed to adequately implement the Kansas Water Plan.

State Water Plan Fund Revenue Contributions

SWPF FY 2015 Appropriated	FY 2015 Appropriated	Direct Agriculture Contribution
State General Fund	$0	✓
Economic Devleopment Initiatives Fund	$800,000	
Municipal Water Fees	$3,485,674	✓
Clean Drinking Water Fee Fund	$3,229,289	✓
Industrial Water Fees	$1,077,151	✓
Stock Water Fees	$341,444	✓
Pesticide Registration Fees	$1,165,000	✓
Fertilizer Registration Fees	$3,276,000	✓
Pollution Fines and Penalties	$250,000	✓
Sand Royalties	$138,000	
Total	$13,762,558	



WaterOne

Setting the Standard for Utility Excellence

Water District No. 1 of Johnson County

To: **Members of the Blue Ribbon Task Force**

From: **Darci Meese, Government Affairs Coordinator**
WaterOne (Water District No. 1 Johnson County)

Date: **April 19th, 2016**

RE: **Comments on Funding of the Water Vision**

On behalf of WaterOne, I want to express appreciation to the Blue Ribbon Task Force for taking on the challenge of finding financial solutions to implement the Water Vision. The water issues faced in our State are diverse and it is important that all perspectives be considered in your deliberations. There is no one-size fits all solution to funding the initiatives from the Water Vision. Simply raising fees will not result in the long-term commitment of all stakeholders that will be required to develop a sustainable water model for the future.

As a water utility serving 410,000 customers in Johnson County, WaterOne understands the importance of having a plan which is why we have a 40 year master plan and a 20 year funding model. We also understand the importance of balancing our planning process with the expenditure of public funds. Many hours of staff and consultant time go into developing a rate structure that meets operational needs, without charging customers too much, too soon. The Blue Ribbon Funding Task Force must be allowed a similar opportunity to deliberate.

This Task Force has two primary questions to answer—who and when. Who should contribute to this funding solution? When should the funds be raised? Many times the phrase "three legged stool" is used in the State of Kansas to address state funding issues. This concept is applicable to water issues in that all stakeholders, the State, and the Federal Government should contribute to the solutions. The Water Vision recognizes different regions of the State face different issues. Individuals and organizations in those local areas are the best experts on what the problems are and what needs to be done to solve those problems. The 14 Regional Advisory Committees are the forum where the local stakeholders are coming together to discuss the alternatives and develop collaborative approaches to problem solving. For instance, reservoir sedimentation is an issue identified by the Kansas Regional Advisory Committee as its first goal reported back to the Water Authority. Stakeholders on reservoirs include those interested in water supply directly from the reservoir; recreational users; surrounding property owners; downstream municipal and industrial water users. Each of these identified stakeholders, in addition to the State and Corps, has an interest in the long-term sustainability of the reservoirs and therefore should all contribute to proposed solutions to the sediment problem identified by the RAC. Collaboration between those vested stakeholders along with the State and Federal governments will be the most effective model to solve Kansas water issues.

It is no secret the State is in need of money and in the halls of the Capitol there is always talk of the "fee sweep." There were two legislative proposals this Session to raise fees and while there were sound ideas in the proposals, there is no guarantee in this climate that money raised will go to water projects. The process the Governor has outlined in the Water Vision must be allowed to work. The Regional Advisory Committees, essentially the stakeholder collaborators, are identifying the issues and viable specific solutions. The Water Authority is vetting the goals brought forward by the RAC's. This Blue Ribbon Task Force is charged with developing specific funding mechanisms to make the solutions work. The

best tactic would be a cost share approach with impacted stakeholders, the State, and the Fed entering into an agreement to fund identified projects. Dollars contributed by stakeholders should be dedicated to fixing the problems that directly impact those stakeholders. A blanket fee increase to create a general bucket of funds will only pit interests across the State against one and other to compete for funding. Meanwhile the funds if not properly timed and directed, may end up funding a completely non-water related project.

The water resource issues faced in Kansas today did not develop overnight, nor will the solutions to the problems and financing thereof. We would urge this Task Force to continue to work with the Water Authority and the Regional Advisory Committees to develop equitable and sustainable financing mechanisms to ensure the quality and quantity of water in the future of Kansas.

Darci Meese | WaterOne (Water District No. 1 of Johnson County, Kansas) | Government Affairs Coordinator | 913-895-5516 direct | 913-579-9817 cell | dmeese@waterone.org

Kansas Agribusiness Retailers Association
816 SW Tyler Topeka, Kansas 66612

April 19, 2016

To: Governor's Blue Ribbon Funding Task Force for Water Resource Management

From: Randy Stookey, Vice President & General Counsel, KARA

RE: Written testimony regarding funding proposals for water resource management

Thank you for the opportunity to provide comments today regarding funding proposals for water resource management in our state. This testimony is being submitted on behalf of the Kansas Agribusiness Retailers Association (KARA). KARA is a voluntary trade association whose membership includes over 700 agribusiness firms that are primarily retail facilities that supply fertilizers, crop protection chemicals, seed, fuel, and other input products to Kansas farmers.

Our agribusiness industry members are experts in the use and application of ag chemical and fertilizer products. KARA members work with our state agricultural producers, and state and federal regulators to ensure the safe and efficient use of fertilizers and ag chemicals in optimizing farm crop production.

Funding mechanisms for the Kansas state water plan fund (SWPF) include various user fees. The legislative intent was for all water users in the state to contribute to the state water plan in some manner. As residents of the state, KARA members contribute to the SWPF through the Water Protection fee and the Clean Drinking Water fee. Additionally, the agribusiness industry contributes the following ag industry-specific funds: $100 for each ag chemical product registered annually in the state, and $1.40 per ton on each fertilizer product that is sold in Kansas.

In the state fiscal year for 2015, the fertilizer tonnage fee generated $3.39 million for the SWPF, which represented the single largest funding source to the SWPF in that year – more than either the water protection fee or the clean drinking water fee. Additionally, in FY 2015, registration fees on ag chemicals accounted for $1.28 million paid into the SWPF.

By statute, $6.0 million is required to be transferred annually from the State General Fund (SGF) into the SWPF. An additional $2.0 million is required to be transferred into the SWPF annually from the Economic Development Initiatives Fund (EDIF). This total transfer ($8.0 million) - required by law from the SGF and the EDIF - reflects the legislative intent of a "collective contribution" for the common water resource management needs of all of our citizens, due to the universal need for water by all Kansans.

However, while the funding needs for water resource management continue to grow, the "collective contribution" to fund those needs, as set out in the state water plan, has fallen well short in recent years. Information provided by the *Kansas Legislative Research Department* shows that, beginning in FY 2009, the legislature has failed to transfer a total of $50,651,755 from the State General Fund into the SWPF, as follows:

Fiscal Year	Transfer	Shortage
2009	$2,000,000	($4 million)
2010	$0.00	($6 million)
2011	$1,348,245	($4.65 million)
2012	$0.00	($6 million)
2013	$0.00	($6 million)
2014	$0.00	($6 million)
2015	$0.00	($6 million)
2016	$0.00	($6 million)
2017	$0.00	($6 million)

Similarly, *Kansas Legislative Research Department* data reflects that the last full transfer of the $2.0 million from EDIF into the SWPF was made in FY 2013. A partial transfer of $800,000 occurred in FY 2015, but no transfer from EDIF to the SWPF occurred in FY 2014, FY 2016, or FY 2017. Since FY 2014, the legislature has failed to transfer a total of $7.2 million from EDIF into the SWPF.

It is clear, then, that had recent Kansas legislatures appropriately funded the SWPF from the SGF and the EDIF, as required by law, an additional $57.85 million would have already been made available for funding many of our collective water resource management needs under the state water plan.

KARA Funding Proposal

The state water plan includes expenses for water conservation programs, including streambank stabilization, and implementation of the Conservation Reserve Enhancement Program (CREP). As the Governor's 50 Water Vision and the Blue Ribbon Task Force intends to address both concerns of water quantity and water quality, the board of the Kansas Agribusiness Retailers Association recently discussed the goal of identifying meaningful and attainable water quality projects.

While it is clear that much general revenue has not been appropriated for our broader state water plan needs, in order to address the narrow issue of water quality in our state, and to ensure further remediation of ag facilities with pesticides and fertilizers in Kansas ground water, the KARA Board sets for the following proposal: increase the current fertilizer tonnage tax by an additional 50 cents per ton, with the additional new funds - approximately $1.0 million annually – to be used to augment the Kansas Agricultural Remediation Fund, and the new water quality CREP program.

Established by K.S.A. 2-3708, *et seq.*, the Remediation Reimbursement Program and Ag Chemical Remediation Reimbursement Fund were created for the purpose of providing financial reimbursement to eligible persons for expenses incurred during the performance of agricultural chemical remediation activities ordered by the Kansas Department of Health and Environment.

Reimbursements for those remediation expenses are paid to eligible applicants from the Ag Chemical Remediation Reimbursement Fund. This fund has assisted in paying for millions of dollars in remediation costs at ag chemical and fertilizer facilities across the state.

The Ag Chemical Remediation Reimbursement Fund receives no state general fund money, and is 100% financed by annual assessments on commercial grain warehouses, custom fertilizer blender licensees, commercial fertilizer registrants, agricultural chemical registrants, and pesticide dealer fees.[1] This fund and program are essentially a form of self-insurance that provides a tremendous service to the Kansas ag industry. However, this fund is currently underfunded by around $4.5 million.

KARA's proposal would increase the inspection fee on commercial fertilizers sold in Kansas, as set forth in KSA 2-1205. KARA proposes to increase the current fertilizer tonnage inspection fee ($1.67 per ton) by an additional 50 cents per ton, and then add this tonnage fee as a funding mechanism for the Ag Chemical Remediation Reimbursement Fund, along with the other fees already paid by our industry. KARA feels this as appropriate as 90-95% of the new applications to the fund are for remediation of nitrates in ground water and soil. However, the pesticide registration and grain elevator industry fees account for close to 90% of the funds into the program.

At an estimate of 2.2 million tons of annual commercial fertilizer sales, the proposal would generate an additional $1.1 million annually. In order to offset some of the expenses of the Water Quality CREP program, KARA proposes that 15% of the new revenue from the increase on the fertilizer tonnage tax ($165,000) be used to cover of the forecasted expenses for the newly passed Water Quality CREP, and that 85% of the new revenue from the increase on the fertilizer tonnage tax be allotted to the Ag Chemical Remediation Reimbursement Fund for the remediation of nitrates in ground water.

KARA's proposal would further the goals of the Governor's water vision for water quality, help off-set costs associated with implementing the new water quality CREP, and further the ability of ag chemical and fertilizer facilities to achieve remediation of ground water contamination.

KARA believes this proposal is a net positive that would address various water quality initiatives and help to alleviate much of the pressure of the remediation costs facing the ag chemical and fertilizer industry across Kansas.

Thank you for the opportunity to share our comments, and I would stand for questions at the appropriate time. Please feel free to contact me for more information at 785.234.0461.

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[1] Custom Fertilizer Blender License Fee ($125), *K.S.A. 2-1201a;* Commercial Fertilizer Product Registration Fee ($25), *K.S.A. 2-1202;* Pesticide Product Registration Fee ($160), *K.S.A. 2-2204;* Pesticide Dealer License Fee ($100), *K.S.A. 2-2469;* and, Commercial Grain Warehouse License Fee by Capacity ($0.0005 / bu), *K.S.A. 34-228.*

Mobilizing Resources to
Ensure Future Water Security for Kansans

Testimony of Allyn O. Lockner
before the Kansas Blue Ribbon Task Force for Water Resource Management
at 9 am on April 19, 2016 in Room 346-S, State Capitol Building, Topeka, Kansas

Chairman Tracy Streeter and members of the Blue Ribbon Task Force for Water Resource Management, my name is Allyn Lockner. I thank the Task Force for this opportunity to testify.

I am a retired economist (PhD) and certified public manager. My experience with water issues and policies includes serving as South Dakota Secretary of Environmental Protection, Deputy Regional Director of the U. S. Office of Surface Mining, and Director of the Kansas Water Office. Since November 2013, I have studied water issues and policies in Kansas, and elsewhere in the United States and other countries to obtain information that may be useful in developing and implement water policies for resolving water use and supply issues in Kansas. I reside at 2135 SW Potomac Dr., No. 4, Topeka, Kansas 66611-1450.

I am a member of the American Society for Public Administration and the American Academy of Certified Public Managers. I represent no person or group, only myself. No individual or group compensates me for my research and testimony.

Summary of Testimony

The following summary provides a brief overview of the testimony. It is composed of the following components:

The following sections explain the components. They contain information about the mobilization of resources for ensuring future water security for Kansans.

Fundamental Water Realities

Historians agree that human settlements and civilizations were definitely or probably abandoned or scattered because they depleted or polluted their water sources. "The most recent case is Anastazi [Anasazi] civilization in the American southwest. Many historians also blame water issues for the decline of Indus Valley civilization (either damming that resulted in problems or decline in rainfall) and Mayan civilization (usually in combination with endemic warfare)."[1]

[1] E-mail message received from Dr. Thomas Prasch, Professor of History, Washburn University, March 15, 2016.

In addition, there are several fundamental water realities.[2] They are the important conditions and situations of water as they actually exist, rather than as they may appear or might be imagined. These realities include the following:

- Water is vital for all known forms of life (human, animal, plant, etc.).
- Water kills all known forms of life (droughts, floods, pollution, etc.).
- Water quantity and water quality are inseparable for beneficial uses.
- Water cycle fluctuates continuously, leading to periods of drought and abundance.
- Water withdrawals that exceed natural recharge of fossil aquifers lead to depletion.

- No known substitutes exist for water.
- No known processes exist for producing new raw water.
- Known processes transport water quantity from where it is to where it is needed.
- Known processes treat water before it is used and returned to source.
- Known processes recycle or reprocess wastewater for subsequent beneficial uses.

- Water in rivers, lakes, reservoirs and aquifers is a common-pool (shared) resource.
- Surface and groundwater flows cross private property and government boundaries.
- Surface and ground waters are connected at some locations.
- Water in aquifers, rivers, lakes and reservoirs is public property.
- Water withdrawn from these sources under a water right is private property.

- Beneficial uses of water in Kansas are largely municipal, industrial, irrigation, stock water and recreation.[3]
- Irrigation is 85 percent of water use, located primarily in western and central Kansas.
- Municipal and industrial is 13 percent of water use, located primarily in eastern Kansas.
- Loss of storage capacity is 1 to 43 percent in the 24 lakes and reservoirs in Kansas.
- Water supply reservoir yield ranges from 4.9 to 180.9 million gallons per day (MGD) at 16 reservoirs in central and eastern Kansas.
- Years until the average 2011-2013 saturated thickness of the High Plains Aquifer in western and south central Kansas meets the minimum threshold :
    - Saturated thickness is under 50 years at several locations in northwest and southwest Kansas.
    - Saturated thickness already is below the minimum threshold at several locations in northwest and western Kansas.

These realities mean that if we Kansans do not better conserve and protect our water, nothing else in Kansas matters because life and all of its activities require water. Life depends on water. Water does not depend on life.

These realities cause me to conclude that water supply and use issues are the most vital, complex, urgent and difficult public policy issues in Kansas. The only known natural resolution

[2] Contact the author for a more detailed list of "Fundamental Water and Water Policy Realities."
[3] Data for this and the following bullets were summarized from "Long-Term Vision for the Future of Water Supply in Kansas", January 15, 2015.

of these issues is a more moist and stable climate that allows more certain overall water supply and use in Kansas. The occurrence of this outcome is unknown and uncertain. Therefore, resolution of these issues will require sufficient, stable and long-term financial and in-kind (goods and services) resources which can ensure water security for Kansans. This is the challenge facing we Kansas water stakeholders/actors --- any Kansans who affect or are affected by water and/or have a share, concern or interest in water, and acts on them. More specifically, it is the challenge facing the Task Force, Kansas voters and our elected officials.

Current Status of Ensuring Water Security in Kansas

According to the "Long-Term Vision for the Future of Water Supply in Kansas", dated January 2015 (the "Vision"), the purpose of the Task Force is "to develop a balanced, affordable and sustainable method to provide financing for water resource management and protection, including alternatives that utilize public and private partnerships".[4]

The "Vision" also contains the following statement:

Kansans act on a shared commitment to have the water resources necessary to support the state's social, economic and natural resource needs for current and future generations.[5]

The statement anchors the "Vision" of the State and the "Goals of the Fourteen Regional Planning Areas" (the "Goals"), dated August 2015. That part of the statement which says "Kansans act on a shared commitment..." means a shared promise or obligation that is essential to achieving the rest of the vision statement and everything else in the "Vision" and the "Goals".

Fulfilling the shared commitment is impossible without fulfilling the health needs of Kansans for drinking, bathing and waste disposal water. Therefore, health needs are assumed to be implied in the vision statement. Stated briefly, what the "Vision", the vision statement and the "Goals" mean is that we Kansans are committed to ensuring our future water security --- our safety, wellbeing, life and related activities that depend on water in Kansas.[6] This dependency comes from the fundamental water realities discussed above.

[4] "Vision", page 11.

[5] "Vision", page 9.

[6] This definition of water security is not broad definition. For example, *UN-Water* (2013) defines water security as "the capacity of a population to safeguard sustainable access to adequate quantities of acceptable quality water for sustaining livelihoods, human well-being, and socio-economic development for ensuring protection against water-borne pollution and water-related disasters, and for preserving ecosystems in a climate of peace and political stability". Water security has received increasing attention in recent years. This growing interest reflects the rise in concern about the condition of freshwater resources, changing hydrological cycles and their impacts on human security. Despite efforts to reform water governance, there is still evidence of growing pressures on water systems. These pressures arise from water overuse, water pollution, population growth, non-sustainable water technological practices and different biotic stressors, and are amplified by climate variability and accompanying droughts, population growth and increased economic activity. For more information on water security, see Pahl-Wostl, Claudia, Anik Bhaduri and Joyeeta Gupta, eds. *Handbook on Water Security*. Northampton, MA: Edward Elgar, 2016. Also, see Lankford, Bruce, Karen Bakker, Mark Zeitoun and Declan Conway, eds. *Water Security: Principles, Perspectives, and Practices*. New York: Routledge, 2013.

Resources Needed for Ensuring Water Security in Kansas

Water in the fossil and alluvial aquifers and in the reservoirs, lakes, rivers and tributaries is public property owned by the people of Kansas. When water reaches the withdrawal pipes or ditches, it is the private property of the water right holders. Withdrawn raw water is free to holders. While a moral incentive may exist to conserve water quantity and to protect water quality, there is no significant economic incentive for water right holders to achieve these outcomes that ensure water security.[7]

To ensure current and future water security, financial and in-kind (goods and services) resources are necessary:

1. To conserve and maintain surface and ground water quantity.
2. To increase and maintain surface and ground water quality.
3. To increase and maintain surface water storage capacity.
4. To increase and maintain surface water flood control capacity.
5. To move water from where it is to where it is needed.
6. To move water away from endangering life and property.

To achieve these outcomes, financial and in-kind resources are needed to undertake a wide range of water management methods in the fourteen regional planning areas (RPAs).

Water Management Methods

Water-related programs and projects in the RPAs would aim to resolve a variety of water issues by developing, implementing and maintaining collaborative action plans (CAPs).[8] Water stakeholders/actors would write, implement and maintain CAPs that aim to achieve program and project goals which, in turn, contribute to achievement of RPA "Goals" and realization of state "Vision" and vision statement.

The programs and projects would pursue point source pollution control; non-point source pollution control; watershed restoration and protection; conservation reserve enhancement; contamination remediation; and lake or reservoir dredging. The programs and projects would exist in intensive groundwater use control areas; locally-enhanced management areas; water conservation areas or any other water-related entities that contribute to the achievement of RPA "Goals".

[7] For additional information about water use in Kansas, see "Appendix: Water Uses in Kansas".
[8] Water stakeholders/actors in each RPA write, implement and maintain CAPs which specify the actions they will undertake together in their programs and projects to achieve an RPA "Goal". The author is writing a document that aim to assist Kansas water stakeholders/actor in writing, implementing and maintaining a collaborative action plan.

Programs and projects will use numerous different water management methods, depending on the type, size and characteristics of the water issues. These methods are ways of achieving RPA goals in accordance with CAPs. These methods include both routine water management practices and innovative water management procedures. Examples of these methods include: (Numbers do not indicate rank or priority but are for identifying methods conveniently.)

1. Stop upfront unnecessary and wasteful water use
2. Recycle and reuse wastewater
3. Recycle and reuse storm water runoff
4. Reprocess, recycle and reuse raw sewage
5. Repair and replace leaking water lines

6. Repair and replace leaking sewer lines
7. Control underground injection of oil and gas extraction wastewater
8. Increase percentage of pumped water that reaches crop plant roots
9. Replace more water intensive crop plants with less water intensive plants
10. Improve soil health to increase water infiltration to crop plant roots

11. Reduce tilled field water runoff to rivers, lakes and reservoirs
12. Replace conventional-till farming methods with no-till or minimum-till methods
13. Replace single-crop plant species farming methods to multiple-species methods
14. Plant quick-growing crop plants that cover slow-growing principal crop plants
15. Feed soil with cover crop plants

16. Locate, build and maintain new small water storage projects above lakes and reservoirs
17. Locate, build and maintain new small flood control projects above lakes and reservoirs
18. Safeguard the water health and habitat for fish and other wildlife
19. Restore and manage damaged aquatic ecosystems
20. Require increased irrigation efficiency translates to decreased water withdrawals

21. Install and operate small hydroelectric generators below reservoirs
22. Levy fines on the deposit of trash and other solid wastes in rivers, lakes and reservoirs
23. Modernize data and monitoring systems to better prepare for droughts
24. Negotiate and implement agreed voluntary reductions of water pumped from aquifers
25. Recharge aquifers that are being depleted or are depleted with clean surface water

26. Increase soil tilth to grow crops by managing aggregated soil particles, roughness, aeration and nutrients, and water infiltration, retention and drainage to reduce pollution
27. Use contour farming which creates water breaks that allow more time for water to infiltrate the soil and reduced nonpoint water pollution
28. Use strip cropping or cultivating fields partitioned into narrow strips which are alternated annually in rotation of sewn crops and row crops which reduces water runoffs
29. Plant cover crops which are planted primarily to manage soil erosion, soil fertility, water runoffs to sustain an agroecosystem in neighboring natural ecosystem
30. Install vegetative filter strips along rivers, lakes and reservoirs or along or within cultivated fields to increase water retention, and decrease soil loss and water pollution

31. Install vegetated waterways along valleys or watercourses to control soil (rill and gully) erosion, reduce water pollution, and increase soil cohesion and biodiversity
32. Construct earth-filled or rock-filled dams to reduce sediments and pollutants entering and reducing water storage and/or flood control capacities of downstream lakes and reservoirs
33. Enhance the reservation of private and public land areas for additional soil and water conservation and additional wildlife habitat
34. Restore and protect entire watersheds that have been damaged by land-disturbing activities
35. Provide financial incentives to farmers who switch from more to less water intensive farming methods

36. Use aquifers for dry-year water storage during periods of extraordinary precipitation in areas overlying aquifers
37. Enhance identification and enforcement of point-source discharges of pollutants to rivers, lakes and reservoirs
38. Prevent and control brackish (saline) water from infiltrating and polluting alluvial and fossil aquifers
39. Prevent and control brackish water from infiltrating and polluting rivers, lakes and reservoirs
40. Use lakes and reservoirs for dry-year water storage during periods of extraordinary precipitation in watersheds

41. Collect and study data about interactions between surface and ground waters in order to ascertain the desirability and feasibility of conjunctive water governance/management
42. Construct and maintain stabilization facilities on banks of rivers above lakes and reservoirs to reduce sedimentation and pollution
43. Construct and maintain embankments (levees, dikes, etc.) to prevent flooding of a river, lake or reservoir during periods of extraordinary precipitation
44. Dredge lakes and reservoirs to restore water storage and flood control capacities and to treat and use dredged soil for beneficial uses or to store contaminated soil at safe sites
45. Continue to supply safe and adequate drinking water for all municipal homes and businesses

46. Continue to supply safe and adequate drinking water for all rural homes, farms and businesses
47. Close leaking septic tanks and contaminated drinking water wells in all economically-disadvantaged communities, and connect users to municipal or rural systems
48. Compensate municipal and rural water systems that agree to annex small water systems from potential liabilities for pre-existing problems
49. Attract local transportation dollars from the gas tax as a local match for "green streets" which integrate storm water gardens into street renovation projects
50. Invest in the purchase of water rights in over-appropriated areas to reduce or stop aquifer, river or lake depletion

51. Invest in the design, installation, operation and regulation of a "paper" water rights market to facilitate the movement of water to the most beneficial uses
52. Use monies as incentives to achieve collaboration among financially weak water stakeholders/actors who need to participate in writing and implementing action plans
53. Offset part of the revenue declines of municipal and rural water systems due to their extraordinarily successful water conservation efforts
54. Obtain more efficiency in the operation of large federal water storage and flood control projects
55. Purchase more storage capacity in federal reservoirs to satisfy the expected future increased use of water by municipal and rural water systems

56. Request earlier forecasts of when, where and how much precipitation in area so that water users know when, where and how much surface and ground water to pump in area
57. Harvest precipitation by collecting, storing and using rainwater and snowfall for irrigation and other uses from rooftops and other manmade aboveground hard surfaces
58. Modify bathrooms so that users can tap their toilet's tank-filling operation to brush their teeth and wash their hands after a flush and to drain used water into tank for next flush
59. Generate liquid water from vapor in the humid atmosphere for drinking purposes, especially during emergencies
60. Request earlier forecasts of when and how much precipitation above reservoirs so that operators of flood gates know when and how much water to release from reservoirs

61. Ascertain benefits and costs of transporting water from the Missouri River in northeast Kansas to irrigation farms and other users in northwest, west and southwest Kansas
62. Obtain timely water data and information needed to operate water systems, control water uses and reduce "non-revenue" water losses.
63. Seed clouds to increase rain or snow by application of science-based technologies, thereby increasing the local or regional water supply; seeding also used to repress hail.
64. Other (specify): _____
_____

At the present time there are no sufficient, stable and long-term financial and in-kind (goods and services) resource sources available to Kansas water stakeholders/actors to write and implement their CAPs for achieving water program and project goals.[9] In turn, achievement of these goals is essential to achieving the "Goals" of the RPAs, realizing the statewide "Vision" and vision statement, and, most vital, ensuring future water security of water stakeholders/actors.

The four preceding sections are the basis of my recommendations to the Task Force. I recommend that the Task Force mobilize financial and in-kind (goods and services) resources by taking the following actions.

[9] Funding is one of four factors essential for implementation of watershed plans. See Shaul, Travis Reinhard. "Implementation of Best Management Practices of Collaboratively Developed Watershed Action Plans in the Western Lake Erie Basin." Thesis presented in partial fulfillment of the requirements for the degree Master of Science in the Graduate School of The Ohio State University, 2014, 152 pages.

Recommendation A: Task Force asks the Governor to request State Finance Council to allocate $25,000 for preparation of a Kansas Water Security Resources Catalog.

At the present time there is no single source from which Kansas water stakeholders/actors who want to undertake water programs and projects in their regional planning areas (RPAs) can obtain essential resource information. The source would include information on all available financial and in-kind (goods or services) resources that are available from local, state and federal government sources and private sources.

The Task Force urges the writing and posting on the Internet of a catalog containing all current water-related sources of local, state, federal and private financial and technical in-kind (goods or services) that are or may be available for achieving the water "Goals" in the fourteen (RPAs). The catalog also includes sources that do not specialize in funding water-related programs or projects, such as sources that finance economic development, housing and rural development, housing and urban development, that depend on the quantity and quality of water. They may have financial resources that can be used in writing and implementing CAPs for programs and projects that contribute to the achievement of the "Goals".

Catalog should be in a format that is easy for water stakeholders/actors to use. It should contain the following information for each source of resources:

- Name of source
- Eligibility criteria
- Amount and duration of available financial resources
- Amounts and types of available in-kind resources (goods and services)
- Application form, deadline and processing time
- E-mail address and telephone number of the contact person or office
- Program and/or project cost-sharing requirements or options
- Other information applicants must know

This information would reduce the time, effort and costs incurred by the water stakeholders/actors who want to write and implement collaborative action plans (CAPs) for achieving "Goals" in their RPAs. Many CAPs, particularly those which are large, capital-intensive, and/or complex, will require resources from two or more different sources. Not only will the water stakeholders/actors have to collaborate with each other in writing and implementing CAPs. The financial and in-kind resource sources also will have to collaborate with each other if cost-sharing for the CAPs is to occur. By knowing the sources they can utilize, stakeholders/actors in the RPAs will know the financial and in-kind assistance available to them now, know the need to obtain additional assistance from other new sources, and enable them to write and implement their action plans with less uncertainty and more confidence.

A graduate student at a Kansas university, under the direction of a natural or social water scientist, would research and write the catalog and arrange for it to be posted on the internet. So that the catalog is always current, the Kansas Water Office would arrange for subsequent updates of the catalog and website.

Complete the catalog before February 1, 2017.

Recommendation B: Task Force asks the Governor to support and the Legislature to enact legislation establishing a Kansas Water Security Fee and a Kansas Water Security Fund with Fee revenues deposited to the Fund in to partly finance water programs and projects in the RPAs.

The financing of collaborative action plans (CAPs) for water programs and projects in the regional planning areas (RPAs) requires revenue that is sufficient, stable and long-term. It seems doubtful that the Kansas state and local tax system has this revenue-raising capacity.

Brief Overview of State and Local Tax System

The main sources of revenue for state and local government in Kansas are the real property tax, retail sales and use tax and the individual and corporate income taxes.

The property tax is the main source of local tax revenue for school districts, municipalities and counties. Flat or declining level of state financial support for local governments would increase pressure on these governments to rely more on property tax revenue to fund K through 12 education, police protection, fire protection, streets and roads, and other basic services. Future school district dependence on the property tax is uncertain because of pending court decisions regarding the equity and adequacy of state funding of education. In addition, limits on increasing city and county mill levies above increases in the consumer price index can constrain additional revenues from the property tax, particularly in cities and counties that experience or expect growing populations. Given these circumstances, more reliance on the property tax will likely require major reform, particularly of exclusions and exemptions, to achieve an enlarged future capacity to generate sufficient, stable and long-term revenue for ensuring water security.

Municipal and rural water systems levy fees for the collection, and treatment and distribution of water from surface and ground sources for drinking and bathing. Municipal wastewater systems levy fees for the collection, treatment and discharge of wastewater to surface water sources.

The retail sales and use tax is a major source of revenue for the State General Fund from which the Legislature appropriates monies for K through 12 education, technical and university education, and for various mental and physical health, income maintenance and social and rehabilitation services. Some municipalities and counties utilize the tax. It, too, will require reform, particularly of exclusions and exemptions, and taxation of internet sales, before it has an enlarged future capacity to generate sufficient, stable and long-term revenue for the State General Fund from which the Legislature could appropriate monies for ensuring water security.

The individual and corporate income taxes are currently also major sources of revenue for the State General Fund. There have been discussions about repealing these taxes. The Legislature has enacted legislation that reduced the rates and bases of these taxes, and repealed these taxes for some taxpayers. These taxes will unlikely have an enlarged future capacity to generate sufficient, stable and long-term revenue for the State General Fund from which the Legislature could appropriate monies for ensuring water security.

The combined effects of the above property, sales and income tax situations mean that state government is in a precarious fiscal condition now and likely decades into the future. This condition will exist unless local government and/or State General Fund expenditures are reduced. The alternatives are major state and local tax reform and/or significant economic development

and growth that results in much broader property, sales and income tax bases. Given these uncertainties, in order for Kansans to ensure their future water security they will likely have to rely on other sources for sufficient, stable and long-term financial and in-kind (goods and services) resources.

There needs to be awareness that future water security in Kansas will maintain and perhaps expand economic development and growth in the state. In turn, taxable properties, sales and incomes will be maintained and perhaps expanded for financing state and local government services. Conversely, future water insecurity will likely reduce economic activities and the taxable bases of these taxes. Under these circumstances, the options are to reduce government services, increase tax rates, or some combination.

In addition to the property, sales and income taxes, Kansas state government collects other revenues. It collects a motor fuels tax which is a fee paid by motorists who benefit from using streets, roads and highways. It also collects a toll which is a fee paid by motorists who benefit from driving on the Kansas Turnpike. Lastly, it collects a severance tax which is a fee collected from entities that extract crude oil and natural gas, thereby depleting these natural resources. These fees can be precedents for financing water security in Kansas.

Current State Water Plan Revenues

The existing revenue sources for the State Water Plan in Kansas are fees, fines and royalties which generated $13.0 million in Fiscal Year 2015.[10] They were $0.8 million from economic development fund transfer; $3.1 municipal water fees; $2.8 million clean drinking water fee fund; $1.1 industrial water fees; $0.4 stock water fees; $1.3 pesticide registration fees; $3.4 million fertilizer registration fees; $0.2 million pollution fines and penalties; and $0.1 sand royalties. [All amounts rounded to the nearest one-tenth million.]

The statutory fee, fine and royalty rates are as follows:[11]

- Water protection fees are $.03 cents/1000 gallons for water sold at retail by PWS; water appropriated for industrial use; and water appropriated for stock water use.
- Fertilizer and pesticide fees are $1.40/ton from inspection fees on fertilizer sold, offered or exposed for sale or distributed in Kansas; $100 annual fee assessed for registration of agricultural chemical distributed, sold or offered for sale in state.
- Sand royalty fee of $0.15/ton on sand sold.
- Fines levied for water pollution: violation of terms relating to PWS; commission of prohibited acts in operation of PWS; violation of law governing disposal of solid or hazardous waste.
- Clean drinking water fee: $0.03/1000 gallons on retail PWS; 101/106 of the receipts go to State Water Plan Fund; 85 percent used to renovate and protect lakes used as PWS; 15 percent used for on-site technical assistance for PWS.
- State General Fund: by statute, $6 million transferred to State Water Plan Fund.

[10] For more detailed information about fee and agency revenues, and program and project expenditures for State Water Plan, see the "2016 Kansas Water Authority Annual Report to the Governor and Legislature", pages 18 and 19.

[11] "Funding for Water Projects in Kansas: State Water Plan and Others," prepared and distributed by Margaret Fast, Kansas Water Office to the Kansas Regional Advisory Committee on February 25, 2016.

- Economic development initiative fund (lottery): by statute, $2 million transferred to the State Water Plan Fund.

Transfers from the State General Fund and the economic development initiative fund has been reduced or stopped during recent fiscal years.

Brief reviews of the Kansas state and local tax system and financing of the State Water Plan highlight the need for a Kansas Water Security Fee and a Kansas Water Security Fund. Both are necessary to partly or fully finance water stakeholders/actors who write, implement and maintain collaborative action plans (CAPs) for water-related programs and projects in the fourteen regional planning areas (RPAs).

Kansas Water Security Fee

The Task Force asks the Governor to support and the Legislature to enact a Kansas Water Security Fee and earmark the revenues for deposit in a Kansas Water Security Fund (discussed below) to be used to pay part of the costs of ensuring water security in Kansas.

The fee would have the following features:

- The base of the fee would be the quantity of all water pumped for beneficial purposes under water rights of water right owners during a calendar year.
- The rate of the fee would be either a flat fee regardless of the quantity of water withdrawn during a calendar year or, to encourage more water conservation and protection, a tiered fee (discussed below) according to the quantity of water withdrawn during a calendar year.
- The fee would increase economic rewards to water stakeholders/actors who would pay a lower fee when they conserve water quantity, protect water quality and restore water storage and flood control capacities in their RPAs.
- The fee would increase economic costs to stakeholders/actor who would pay a higher fee when they over-use water, pollute water and reduce water storage and flood control capacities in their RPAs.
- Stakeholders/actors who are water right holders would earn a credit on their annual Kansas Water Security Fee bill equal to the amount of their documented financial and/or in-kind assistance to a program or project that contributes to the achievement of a "Goal" for their RPA.
- The rate of the fee would be increased annually by the Kansas Water Authority, proportionally equal to the increase, if any, of the consumer price index published for all urban consumers by the United States Department of Labor.
- The voting water stakeholders/actors in a regional planning area (RPA) would have the option to "piggy-back" a regional water security fee on the Kansas Water Security Fee in order to raise additional revenue to pay for water programs and projects in their RPA.
- Water right holders could have the option to pay the annual fee in quarterly installments instead of one payment, thereby making the fee less burdensome for water right holders to pay.
- The fee could be introduced in phases over a period of years, such as four years, to facilitate water right holder adjustment to paying the fee.

- In order to achieve more certainty for the water right holder, the fee is based on the mean average of acre-feet of water pumped during the three most recent calendar years instead of the most recent calendar year.
- In order to ensure long-term financing for long-term water security programs and projects in the fourteen RPAs, the statute authorizing the Kansas Water Security fee shall require that a vote of eighty percent of the members of the House and Senate to vote for lowering the fee in two successive regular annual sessions of the Legislature.

These features appear in the operation of a flat and a tiered Water Security Fee. Data and calculations illustrate the operation.

Water Rights and Water Pumped Data

Assume that the Kansas Legislature enacted and the Governor signed a bill that established a Kansas Water Security Fee. How might it work?

After being steered to the person with the data in the Kansas Department of Agriculture, I asked him to provide the following information:

1. The total number of water rights in existence in Kansas during each of the three most recent calendar years.

2. The total quantity of water withdrawn under those water rights in Kansas during each of the three most recent calendar years.

The following table shows the information e-mailed to me.[12]

Year	Number of Water Rights	Acre-Feet of Water Pumped
2012	35,510	5,711,609
2013	34,232	5,058,990
2014	34,633	4,894,551

One acre-foot of water equals 325,851 gallons of water.

The number of acre-feet of water pumped by water right holders each year may vary widely because the amount and timing of precipitation varies widely. To achieve more certainty for water right holders, averages of the annual number of water rights and the annual quantity of water pumped under the rights in 2012, 2013 and 2014 were calculated. The following calculations were performed.

[12] Information obtained via e-mail from Kenneth Kopp, Kansas Department of Agriculture, on February 5, 2016. James Bagley, in the same department, informed the author via telephone on February 10 that "NUM_FILES" reported by Mr. Kopp is the same as the "number of water rights".

The mean average number of water rights in existence during the three-year period is 34,792. (35,510 + 34,232 + 34,633 = 104,375 divided by 3 = 34,792)

The mean average number of acre-feet of water pumped during the three-year period is 5,221,717. (5,711,609 + 5,058,990 + 4,894,551 = 15,665,150 divided by 3 = 5,221,717)

The mean average number of acre-feet of water pumped per water right during the three-year period is 150 acre-feet. (5,221,717 acre feet divided by 34,792 water rights = 150)

The Kansas Department of Agriculture, Division of Water Rights, informed the author that it does not track historical ownership related to water rights.[13] Therefore, the average number of water rights owned by a holder could not be calculated. The number probably varies among holders and depends on the size of the holder's water-use operation.[14]

Flat Kansas Water Security Fee

Assume that a flat Kansas Water Security Fee of $20 per acre-foot of water pumped is enacted into law. (For comparison purposes, a $20 fee per acre-foot is equivalent to 6.14 cents per 1,000 gallons pumped.)

With an annual fee of $20 per acre-foot pumped, a water right that pumped the mean average of water during a year would pay an annual fee of $3,000. ($20 fee per acre-foot pumped multiplied by 150 pumped acre-feet equals $3,000.) Estimated total annual revenue produced during the year the Fee for the Kansas Water Security Fund would be $104.4 million. (34,792 water rights multiplied by $3,000 average fee per water right equals $104.4 million.)

In order facilitate the adaptation of water rights holders to the full flat water security fee, the fee may be implemented over a period of years and would be in full effect thereafter. For example: $5 the first year, $10 the second year, $15 the third year, and $20 the fourth year and each year thereafter.

If the rate of pumped water continued, over $100 million would be deposited to the Kansas Water Security Fund annually and be available to water stakeholders/actors in writing and implementing collaborative action plans (CAPs) that aim to achieve the goals of their programs and projects. In turn, the achievement of these goals would contribute to the achievement of the "Goals" of the fourteen regional planning areas and ultimately to the realization of the statewide water "Vision", thereby increasing the likelihood of ensuring water security for Kansans.

Tiered Kansas Water Security Fee

A tiered fee is based on quantity of acre-feet of water pumped per year under a water right. It is a fee that increases per acre-foot of pumped water as the water right holder moves from lower to higher levels of pumped water.

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[13] E-mail message received by the author from Kenneth Kopp on March 9, 2016.

[14] Since irrigation farms are the major water users in Kansas, the range in the number of acres for these farms suggests a wide range in the sizes of water right holders. See 2012 Census of Agriculture – "Kansas": Table 10: Irrigation 2012 and 2007.

Tiered fee is best explained by an illustration. Assume water right holders pump a wide range of quantities of water under their water rights.[15] Also, assume the Tiered Kansas Water Security Fee has the following characteristics:

Tiers of Acre-Feet of Water Pumped per Year under a Water Right	Tiered Fee per Acre-Foot of Water Pumped per Year under a Water Right
Tier One: 1 to 200	$4
Tier Two: 201 to 400	$8
Tier Three: 401 to 600	$12
Tier Four: 601 to 800	$16
Tier Five: 801 to 1,000	$20
Tier Six: 1,001 to 2,000	$24
Tier Seven: 2001 to 4,000	$28
Tier Eight: 4,001 to 6,000	$32
Tier Nine: 6,001 and above	$36

The following examples illustrate the estimated fees that would be paid under the above tiered fee for different quantities of acre-feet of water pumped under a water right.

- If 100 acre-feet are pumped under a water right during a year, the fee would be $400 for the year. (100 times $4 equals $400 in tier one)
- If 300 acre-feet are pumped under a water right during a year, the fee would be $1,600 for the year. ($800 in tier one plus $800 in tier two equals $1,600)
- If 500 acre-feet are pumped under a water right during a year, the fee would be $3,600 for the year. ($800 in tier one, plus $1,600 in tier two, plus $1,200 in tier three equals $3,600)
- If 700 acre-feet are pumped under a water right during a year, the fee would be $6,400 for the year. ($800 in tier one, plus $1,600 in tier two, plus $2,400 in tier three, plus $1,600 in tier four equals $6,400)
- If 900 acre-feet are pumped under a water right during a year, the fee would be $10,000 for the year. ($800 in tier one, plus $1,600 in tier two, plus $2,400 in tier three, plus $3,200 in tier four, plus $2,000 in tier five equals $10,000)

[15] This assumption is based on the wide range in the sizes of irrigation farms in Kansas. See 2012 Census of Agriculture – "Kansas": Table 10: Irrigation 2012 and 2007.

- If 1,500 acre-feet are pumped during a year, the fee would be $24,000 for the year. ($800 in tier one, plus $1,600 in tier two, plus $2,400 in tier three, plus $3,200 in tier four, plus $4,000 in tier five, plus $12,000 in tier six equals $24,000)
- If 3,000 acre-feet are pumped during a year, the fee would be $64,000 for the year. ($800 in tier one, plus $1,600 in tier two, plus $2,400 in tier three, plus $3,200 in tier four, plus $4,000 in tier five, plus $24,000 in tier six, plus $28,000 in tier seven equals $64,000)
- If 5,000 acre-feet are pumped during a year, the fee would be $124,000 for the year. ($800 in tier one, plus $1,600 in tier two, plus $2,400 in tier three, plus $3,200 in tier four, plus $4,000 in tier five, plus $24,000 in tier six, plus $56,000 in tier seven, plus $32,000 in tier eight equals $124,000)
- If more than 6,000 acre-feet are pumped during a year, the fee would be $156,000, plus the fee for the amount of pumped water that exceeded 4,000 acre-feet. ($800 in tier one, plus $1,600 in tier two, plus $2,400 in tier three, plus $3,200 in tier four, plus $4,000 in tier five, plus $24,000 in tier six, plus $56,000 in tier seven, plus $64,000 in tier eight equals $156,000 plus the quantity of pumped water exceeding 6,000 acre-feet times $36 per acre-foot)

In summary, as more water is pumped under a water right increases, the holder begins paying the fee of $4 and, tier by tier, pays a higher fee as more water is pumped under the water right. The Tiered Kansas Water Security Fee provides more economic incentive for water right holders to conserve and protect pumped water than does the flat Kansas Water Security Fee.

Stakeholders/actors would also have more incentive to achieve these outcomes when they write and implement CAPs that aim to achieve the goals of their programs and projects. In turn, achievement of these goals would contribute to the achievement of the "Goals" of the fourteen regional planning areas and ultimately to the realization of the statewide water "Vision", thereby increasing more the likelihood of ensuring water security for Kansans.

Design of the actual Tiered Kansas Water Security Fee includes the number and sizes of the tiers and fee amount for each tier. The design depends on the actual number of water rights and annual quantity of water pumped under water rights, and the chosen fee amounts per acre foot of pumped water to stimulate water conservation, and the chosen amount of monies to be generated for the Kansas Water Security Fund (discussed below).

If a tiered schedule is enacted into law, it should state that water right holders cannot divide their water rights into smaller ones that would allow them to pay lower marginal fees per acre-foot at a lower tier.

Scenarios of Flat Kansas Water Security Fees and Revenues Generated: Irrigation Farms

Irrigation farms use 85 percent of the water used in Kansas.[16] The total irrigated land in Kansas was 2,881,262 acres in 2012.[17] The number of irrigation farms is 6, 205. The sizes of the farms range between one and 2,000 acres or more.

[16] "A Long-Term Vision for the Future of Water Supply in Kansas," January 2015, page 72.
[17] Data on irrigation farms in Kansas taken from 2012 Census of Agriculture – "Kansas": Table 10: Irrigation 2012 and 2007.

The average number of acres irrigated per farm varies between about 2.5 acres and nearly 3,264 acres. The mean average of irrigation land per farm was 464 acres. (2,881,262 acres divided by 6,205 equals 464 acres)

The average number of acre-feet of water pumped per irrigation farm was not available and the average number of water rights per water right holder was not available. In order get an idea of the order of magnitude of this water use category, we can make some calculations based on plausible scenarios.

- Scenario A: The average-size irrigation farm of 464 acres is assumed to hold one water right and pumps an average of 150 acre-feet of water per year, based on the average number of acre feet of water pumped per water right (see discussion above). This amounts to 0.32 of an acre-foot of water pumped per acre. Assume the annual Kansas Water Security Fee is $10 per acre foot. The total annual fee is $1,500. (150 acre-feet times $10 equals $1,500 to irrigate 464 acres) The estimated total annual revenue produced by the Kansas Water Security Fee from all irrigation farms is $9.3 million for the Kansas Water Security Fund. ($1,500 times 6,205 irrigation farms equals $9.3 million)
- Scenario B. If the average annual acre-feet pumped are assumed to be 464 (one foot pumped per acre) and the assumed annual Kansas Water Security Fee is $10 per acre-foot, the total annual fee is $4,464. (464 acre-feet times $10 equals $4,646 to irrigate 464 acres) The estimated total annual revenue by the Kansas Water Security Fee from all irrigation farms is $28.8 million for the Kansas Water Security Fund. ($4,646 times 6,205 irrigation farms equals $28.8 million)
- Scenario C. If the average annual acre-feet pumped are assumed to be 696 (1.5 feet pumped per acre) and the assumed annual Kansas Water Security Fee is $10 per acre-foot, the total annual fee is $6,960. (696 acre-feet times $10 equals $6,960 to irrigate 464 acres) The estimated total annual revenue produced by the Kansas Water Security Fee from all irrigation farms is $43.2 million for the Kansas Water Security Fund. ($6,960 times 6,205 farms equals $43.2 million)
- Scenario D. If the average annual acre-feet pumped are assumed to be 696 and the assumed annual Kansas Water Security Fee is $20 per acre-foot, the total annual fee is $13,920. (696 acre-feet times $20 equals $13,920 to irrigate 464 acres.) The estimated total annual revenue produced by the Kansas Water Security Fee from all irrigation farms is $86.4 million for the Kansas Water Security Fund. ($13,920 times 6,205 farms equals $86.4 million)

The above scenarios are based on an average size irrigation farm. Since the sizes of these farms vary widely, the actual annual amount of Water Security Fee paid by these farms would also vary widely.

Kansas Department of Revenue Collects Kansas Water Security Fee

The Kansas Department of Revenue (KDOR) would obtain information about right holders and the water pumped during the most recent calendar year from the Kansas Department of Agriculture. KDOR would collect revenues from the Water Security Fee and deposit them in the Kansas Water Security Fund administered by the Kansas State Treasurer.

Summary of Kansas Water Security Fees and Revenues

With a flat annual Kansas Water Security Fee of $20 per acre-foot pumped, a water right that pumped the mean average of water during a year would pay an annual fee of $3,000. The estimated total annual revenue produced during the year would be $104.4 million.

The annual $20 fee could be paid in installments during the year. The fee could be introduced in phases over a period of years, such as four years.

A Tiered Kansas Water Security Fee is discussed and examples are provided. It aims to encourage more water quantity conservation and perhaps more water quality protection than can be achieved under a Flat Kansas Water Security Fee.

With a Kansas Water Security Fee of $20 per acre-foot, if the average-size irrigation farm is assumed to pump 1.5 feet per acre, the total annual fee is $13,920. The estimated total annual revenue produce annually by the fee from all irrigation farms is $86.4 million.

Other estimates are possible. They depend on the amount of fee per acre-foot of water pumped, the amount of water pumped per water right and the amount of water pumped per irrigation farm, and the design of the Kansas Water Security Fee.

All revenues generated by the flat or tiered fee would be deposited in the Kansas Water Security Fund.

Kansas Water Security Fund

The Kansas Water Security Fund would invest in the wide array of water management methods discussed above. These methods would be undertaken by water stakeholders/actors who write and implement CAPs that achieve program and project goals that, in turn, contribute to the achievement of RPA "Goals" and the realization of the statewide "Vision", thereby ensuring future water security for Kansans.

The programs and projects would undertake groundwater withdrawal reduction and stabilization; groundwater recharge; groundwater pollution control; point source surface water pollution control; non-point source surface water pollution control; watershed restoration and protection; conservation reserve enhancement; contamination remediation; and lake or reservoir dredging. The programs and projects would exist in intensive groundwater use control areas; locally-

enhanced management areas; water conservation areas or any other water-related entities that contribute to the achievement of RPA "Goals".[18]

The Kansas Development and Finance Authority would issue revenue bonds that are supported by the revenue generated by the Kansas Water Security Fee for the Kansas Water Security Fund. Revenue bonds would be issued as monies are needed for the development and implementation of collaborative action plans in the RPAs that require unusually large, up-front, capital-intensive and long-term investments. Revenues from the Kansas Water Security Fee to the Fund would be dedicated to pay the interest and principal on the bonds over a period of several years. Future Kansas water stakeholders/actors who pump water and benefit from the programs and projects would pay the Fee necessary for financing the programs and projects from which they receive benefits.

The Kansas Pooled Money Investment Board would invest idle monies of the Kansas Water Security Fund in short-term United States government securities, high quality corporate bonds and preferred stocks, and mutual funds. Earnings from the investments would be deposited to the Fund. Investments would be sold as monies are needed to pay for investments in the development and implementation of collaborative action plans (CAPs) in the RPAs.

Percentages of the monies in Kansas Water Security Fund would be invested in five categories. The following list is illustrative percentages and categories:

- 80 percent: This percentage (or 85 percent, see Kansas Water Security Reserve Fund below) of monies would be invested in writing implementing and maintaining CAPs for water programs and projects in the fourteen RPAs. CAPs may be implemented by water stakeholders/actors in the following types of entities in the RPAs: intensive groundwater use control area; locally-enhanced management area; water conservation area, municipal government, county government, conservation district, special district government, for-profit organization, not-for-profit organization or any other of water stakeholders/actors or any other water stakeholder/actor entity that aims to participate in a program or project that contributes to the achievement of the "Goals" of the RPAs and realize the "Vision" of Kansas. The RACs would submit the CAPs to the KWA for review and approval. The above-discussed water management methods are the types that the Kansas Water Security Fund would finance alone or cost share with other resource sources. The latter resource sources are addressed in other recommendations. Fund investments may be via matching grants to entities that want to develop and implement CAPs in the RPAs or no- or low-interest loans to these entities. Also, grants and loans would be allocated among RPAs annually with 50 percent allocated on the average annual amount of water pumped over the most recent years in the RPAs and 50 percent on the population of the RPAs. An alternative is to allocate grants and loans among RPAs on a first-come-first-served basis. If an RPA does not use its annual allocation, monies would be returned to the Fund and available for allocation among all RPAs the following year.
- 10 percent: Collection, analysis, synthesis, explanation and distribution of water and related natural and social facts needed to develop, implement and maintain CAPs in the

[18] The Kansas Interlocal Cooperation Act may be useful when two or more local governments that want to collaborate on a water program or project. See *Kansas Statutes Annotated* 12-2901 and the following sections.

fourteen RPAs. This work would include that done by natural and social water scientists at Kansas universities and other knowledgeable research entities. These scientists would collaborate with water stakeholders/actors by responding to their questions and offering technical advice to them that would enable water stakeholder/actors to make informed decisions when they write, implement and maintain CPAs for their programs and projects in the RPAs.

- 1 percent: Collection, arrangement and multi-media presentation of facts and evidence about Kansas water uses, policies and trends to residents of all ages in the fourteen RPAs.
- 4 percent: Out-of-pocket management and related costs of supporting the writing, implementation and maintenance of CAPs in the RPAs by the Kansas Water Authority and personnel in the Kansas Water Office, the water-related programs of the Department of Agriculture, Department of Health and Environment, Department of Wildlife, Parks and Tourism, and the Kansas Corporation Commission. These costs would also include performance and financial audits. These actions would be taken within the frameworks of integrated water management (IWM) and adaptive water management (AWM). IWM emphasizes the variety of and connections among different uses to which water is put and the diversity of benefits it brings to life, economies, environments and communities in the RPAs. AWM addresses these uncertainties and complexities by increasing and sustaining the capacity of water stakeholders/actors to learn while managing water --- learning to manage by managing to learn --- in the RPAs. Staffs of the above agencies learn as they support water stakeholders/actors. Natural and social water scientists also learn as they collect, analyze, synthesize and explain facts and provide advice to stakeholders/actors.
- 5 percent: Establishment of Water Security Reserve Fund that would be 10 percent of the Kansas Water Security Fund. The Reserve Fund is for drought, flood and pollutant spill preparedness. It would be used to make grants and/or loans to municipal and rural systems unable to supply water to homes and businesses and farms during extraordinary drought and flood periods. After the Reserve Fund reached 10 percent of the Security Fund, the 5 percent would drop to zero and remain at zero until the Reserve Fund dropped below 10 percent of the Security Fund. If the Reserve Fund remained at 10 percent, the revenues would be diverted to the Security Fund for writing, implementation and maintenance of CAPs and raise the percentage in the Security Fund from 80 to 85 percent. Monies in the Reserve Fund would be invested as the monies in the Security Fund are invested until they are needed to combat droughts, floods or pollutant spills.

The current sources of revenue to the State Water Plan Fund may be revised or retained.

Summary and Conclusion

The Water Security Fee and the Water Security Fund, together, would have features that are based on human nature in social-economic exchanges between and among persons.[19]

[19] Social exchanges occur between and among persons. The exchanges are the human relationships that are formed by the use of a subjective benefit-cost analysis and the comparison of alternatives. These exchanges make the following assumptions about human nature:

- Humans seek rewards and avoid punishments.
- Humans are rational beings.
- The standards that humans use to evaluate rewards and costs vary over time and from person to person.

A common phrase is "when there's a will, there's a way". "Will" is the determination, resolve or willpower to do something. "Way" is the method, means or technique to do something.

Kansas water stakeholders/actors, working with natural and social water scientists, are likely to know the way to achieve RPA "Goals" and realize the state "Vision" and vision statement. But the will of stakeholders/actors to undertake the way is sometimes absent. So where there's no will there's no implementation of the way. The Water Security Fee and the Water Security Fund can help to generate the will to write, implement and maintain the way. For example, investments in programs and projects would increase economic rewards to stakeholders/actors when they receive financial assistance for their participation in developing and implementing collaborative action plans in their RPAs.

Interrupted long-term water programs and projects in the RPAs would be costly to stop permanently or to stop temporarily and restart. Instead of relying on already committed state and local general fund property, sales and/or income taxes to pay for ensuring water security in the fourteen RPAs, the Kansas Water Security Fee has the potential to generate sufficient, stable and long-term revenues for the Kansas Water Security Fund that would pay for investments that are necessary to ensure the future water security of Kansans. This security would make life, economy and environment in the fourteen RPAs more sustainable and resilient in the future.

Legislation should include a provision that revenue from the Water Security Fee and balances in the Water Security Fund are beyond the easy diversion by the executive or legislative branch of Kansas State government if and when, for example, the State General Fund is confronted with budget shortfalls. Reliable long-term funding may be achieved by requiring a super majority, such as eighty percent, of the members of both the House and Senate of the Legislature during two consecutive regular sessions to divert monies from the Fund. Language achieving this effect would be included in *Kansas Statutes Annotated* or *Kansas Constitution*.

Draft and introduce the legislation establishing the Kansas Water Security Fee and the Kansas Water Security Fund before March 1, 2017, and pursue thereafter until enacted into law.

Recommendation C: Task Force asks the Governor to propose and the Legislature to approve investments of monies from the Kansas Water Security Fund in programs and projects that enhance and maintain water-based recreation and are well-suited to RPA "Goals".

Recommendation B addressed largely consumptive water uses. [20] Recommendation C addresses non-consumptive water uses.[21] One type of non-consumptive uses is water –based recreation. It is not addressed directly in the statewide "Vision" and vision statement and in the "Goals" of

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Exchanges make the following assumptions about the nature of relationships:

- Relationships are interdependent.
- Relational life is a process.

For more information about social exchanges, human nature and relationships, see https://en.wikipedia.org/wiki/Social_exchnage_theory.

[20] For a definition of consumptive water uses, see https://en.wikipedia.org/wiki/Consumptive_water_use.

[21] For a definition of non-consumptive water uses, see http://www.ecologydictionary.org/NON-CONSUMPTIVE_WATER_USE.

RPAs. However, they can have vital effects on water-based recreation. It needs to be included in the CAPs of water programs and projects when well-suited to RPA "Goals".

Water-based recreation is a category of recreation which means "refreshment of strength and spirits after work; a means of refreshment or diversion".[22] While other uses of water require humans to work, water-based recreation rebuilds human strength and spirit after work.

Water-based recreation is in-stream, in-lake and in-reservoir uses of water. These uses include:

- Fish propagation
- Fishing
- Water fowl propagation
- Hunting
- Swimming

- House boating
- Speed boating
- Pleasure boating
- Sailing
- Canoeing

- Rafting
- Water skiing
- Jet skiing
- Wading
- Small hydroelectric generation

- Camping near water
- Sightseeing
- Water parks
- Shoreline maintenance

Some uses, such as fish propagation, require aquatic ecosystem management. Others, such as land-based wildlife breeding, require a minimum amount of water to be viable. Still others require river, lake and reservoir bank stabilization and shoreline maintenance. These conditions do not exist when a streambed, lakebed or reservoir has low water flow or level or is completely dry.

Some uses also require a specific quality of water to be feasible. This condition does not exist when a stream, lake and reservoir contains sediments, pollutants or blue-green algae.

[22] http://www.merriam-webster.com/dictionary/recreation.

Some water-based recreation, for example water fowl hunting, depends on the restoration and maintenance of healthy wetlands. Water fowl depend on unpolluted water being present at or near the surface of the soil all year or for varying periods of time during the year.

Achievement and maintenance of water quantity and quality are implied in the statewide "Vision" and the "Goals" of many regional planning areas (RPAs). However, their impacts on water-based recreation are not fully identified and explained.

Water-based recreation is supported by many types of commercial enterprises that provide goods and services to people who engage in this recreation. The existence and performance of these enterprises depend on the size and condition of water-based recreation.

The users of water-based recreation and their suppliers of goods and services receive rewards from the recreation in accordance with the above definition. These rewards will be made possible partly because water stakeholders/actors in the RPAs use monies from the Kansas Water Security Fund to invest in the writing, implementing and maintaining collaborative action plans (CAPs) that achieve the "Goals" of the RPAs. These rewards would be enhanced by investing in maintaining existing or developing new water-based recreation in RPAs as long as such recreation is consistent with RPA "Goals". The other part of the investment in this recreation would be paid by users of water-based recreation programs and projects. These investments would likely be existing license or permit fees paid by users of water-based recreation at specific streams, lakes and reservoirs in the RPAs.

The benefits of enhanced water-based recreation are not confined to the recreational uses of water itself. The economic impact of additional state investment from the Kansas Water Security Fund in enhanced water-based recreation would be reflected in the following factors:

- Total visitor spending
- Non-state visitor spending
- Full-time and part-time jobs
- Amount of labor income
- Number of business firms
- Gross sales revenue
- Value added (equivalent to gross domestic product)
- Land values
- Structure values
- State and local property, sales and income tax revenues

The sizes of these factors would be determined by the "multiplier" of the Fund investment. The size of the multiplier is determined by the percentage of the investment dollars that is spent by recipients who work on writing, implementing and maintaining CAPs for water programs and projects. Their spending spreads throughout the RPAs surrounding the water-based recreation and elsewhere in Kansas. In addition, the investment will result in programs and projects that provide additional water-based recreation facilities and services that attract additional spending on this recreation by residents of the RPAs and visitors from elsewhere in Kansas and from outside the state.

Boating alone has significant economic impacts in Kansas. In 2008 the Recreational Marine Research Center at Michigan State University completed a study of boating in the five Kansas congressional districts for the National Marine Manufacturers Association.[23] The study covered the number of registered boats, the number of boating-related businesses and employment, and the economic activity related to recreational boating. Economic activity included spending, sales, jobs, labor income and value added.

Start this recommendation before July 1, 2017 and pursue thereafter until achieved.

Recommendation D: Task Force asks the Kansas Water Authority and Governor and Legislature to request the Kansas congressional delegation to work to obtain additional new federal monies to partly finance more water programs and projects in the RPAs.

Monies are available from different federal sources for different types of water programs and projects. These monies are necessary in order to partly or fully finance CAP programs and projects that contribute to the achievement of RPA "Goals" and, in turn, ensure future water security in Kansas. There is a need obtain as much of these monies as possible from these sources.

The United States does not have national (not federal) water policies that specify, among other things, national water issues, national priorities for resolving these issues, and national monies required to fund the priorities. Without national priorities, the U. S. Congress over the years has authorized and appropriated federal monies for a collection of separate water programs and projects.

Given the absence of national water policies, the Kansas Water Authority (KWA), with support from the Kansas Water Office (KWO) and advice from the regional advisory committees (RACs), would identify specific RPA water programs and projects for additional federal funding. KWA would specify annually for each program and project the partially-written collaborative action plan (CAP) that is waiting for federal funding to implement and maintain the CAP. For example, information from the CAP might include:

- RPA "Goal" to be achieved;
- Actions that are waiting for financing;
- Estimated total cost of all actions; and
- Percentage of total costs to be paid by federal monies.

KWA would submit this information to the Governor and Legislature and ask for their approval to submit the information to the delegation and request that it work with other members of Congress to obtain additional appropriations for water programs and projects. The likelihood of obtaining additional federal monies may be increased if the water programs and projects in RPAs are willing to serve as demonstrations for possible use elsewhere in the United States and even other countries.

[23] "Kansas Boating by Congressional District" was obtained from the Kansas Department of Fish, Wildlife, Parks and Tourism on February 18, 2016.

Three illustrations indicate how the Kansas congressional delegation may obtain more federal monies to ensure future water security in Kansas.

- The feasibility of changing from growing water intensive crop plants to growing less water intensive crop crops might be facilitated by growing more of plant crops that can be processed into the foods in the New Food Pyramid 2016[24] It illustrates the research-based food guidance developed by the U. S. Department of Agriculture, Center for Nutrition Policy and Promotion, and supported by the U. S. Department of Health and Human Services. The pyramid is a graphic that illustrates the principles of good nutrition representing the bulk of a healthy diet. Largest portions are bread, cereal, rice and pasta group are at the bottom. The next largest are vegetable and fruit groups. The next largest are the milk, yogurt and cheese group, and the meat, poultry, fish, dry beans, eggs and nuts group. Fats, oils and sweets are to be used sparingly. A determination would have to be made about which parts of the nutritionally recommended food crops at or near the bottom of the pyramid can be grown with less water and the climate in Kansas. Incentives for growing more of these food crops might be amended to the federal farm program legislation.
- Stopping future loss of water quality and water storage and flood control capacities at federally-constructed reservoirs will likely require the U. S. Department of Agriculture and the U. S. Environmental Protection Agency to participate in the funding of one or a combination of the water management methods discussed earlier. Reversing current loss of water storage and flood control at federally-constructed reservoirs will require the U. S. Army Corps of Engineers to undertake total or at least partial financing of the dredging of these facilities.
- The Kansas Water Office and the U. S. Army Corps of Engineers published a report titled "Update of 1982 Six State High Plains Aquifer Study: Alternate Route B", dated January 2015. A project for diverting water from the Missouri River in northeast Kansas to west central and southwest Kansas requires much more data, information and analysis about the technical, economic, environmental, social, legal and political characteristics and feasibilities before informed decisions can be made. Federal monies would be required to pay part or all of the costs of this undertaking.

Obtaining the additional federal monies will require close and consistent collaboration among the Kansas Water Authority, the Governor, the Legislature, and members of the Kansas congressional delegation.

Start this recommendation before January 1, 2018 and pursue thereafter continuously.

[24] Access the complete pyramid by typing "New Food Pyramid 2016" in the search box of a search engine on a personal computer.

Recommendation E: Task Force asks the Kansas Water Authority and Governor and Legislature to request individual Kansans and statewide nongovernmental organizations in Kansas to collaborate, organize and finance private Water Security Foundations.

At the present time, Kansans do not have privately-funded statewide or RPA organizations for undertaking directly or for assisting others to conserve the quantity and to protect the quality of surface and subsurface water throughout the state. These activities would assist the State of Kansas to realize its "Vision" and vision statement, and the regional planning areas (RPAs) and achieve their "Goals".

The Task Force urges individual Kansans and statewide nongovernmental organizations in Kansas to collaborate, organize and finance a Kansas Water Security Foundation. The organizations include health, agricultural, business, industrial, social, religious and other entities which have members or pursue activities that depend on the quantity and quality of water in Kansas. The Foundation would possess the tools and programs to collaborate and form partnerships with programs and projects in RPAs financed by the Kansas Water Security Fund and accelerate the implementation and maintenance of one or more of the water management methods discussed earlier. Examples of what might be the focus of the Foundation include:

- Water Quantity. Through increased collaboration, the Foundation can work together with water stakeholders/actors, particularly land owners, to reduce or stop water erosion to our rivers, lakes and reservoirs thereby achieving the co-existence of working lands and healthy water sources.
- Water Quality. Whether planting trees along rivers, reintroducing river meanders, or stabilizing river, lake or reservoir banks, the Foundation can conserve water, protect water, and restore critical habitat.
- Compliance Solutions. When a regulated entity needs a solution to a compliance problem, the Foundation can offer natural solutions that benefit the economy and environment, while saving taxpayers money.
- Research and Technology. With innovations and new technologies, the Foundation can calculate the ecological and economic outcomes of water programs and projects, allowing smarter conservation and protection to happen faster.
- Boundary Spanning. With the capability of working on interrelated water problems, the Foundation can complement the work of regional planning areas (RPAs), Kansas state government, and federal agencies limited by geographical boundaries and legal mandates.

Examples of the types of Foundation market-based activities may include any of the water management methods discussed earlier. More specifically, it may provide water right holders with a variety of incentives to convert their consumptive water rights to non-consumptive instream water rights. It may also include incentives to replace income from marginally productive areas, to replace feed for lost feed production; to fund irrigation projects that reduce water withdrawals; to obtain permanent donations of water rights; and to increase flexibility in managing water rights.

The Foundation would solicit contributions from individual and family endowments and estates, water stakeholder/actor donations and gifts, charitable organization grants, contributions from

business and industrial firms and others. The Foundation would invest its assets in short-term United States government securities, and high quality corporate bonds and preferred stock, and mutual funds. Monies would be available to pay for the water management methods discussed earlier. The Foundation would join, complement and strengthen the work of other entities engaged in developing and implementing collaborative action plans for achieving the "Goals" of the fourteen regional planning areas.[25]

Monies from the Foundation would be invested in the implementation of collaborative action plans (CAPs) in the fourteen RPAs. CAPS may be implemented by the following entities in the RPAs: point source pollution control project; non-point source pollution control project; watershed restoration and protection project; conservation reserve enhancement project; contamination remediation project; lake or reservoir dredging project; intensive groundwater use control area; locally-enhanced management area; water conservation area, purchase of water rights or another water-related entity that aims to contribute to the achievement of the "Goals" of the RPAs. The RACs would coordinate requested Foundation funding with other requested sources of funding (see recommendation B) and submit the CAPs to the KWA for review and approval.

In addition to or in place of the Kansas Water Security Foundation, any regional advisory committee (RAC) may ask individuals, families and organizations within its RPA to establish and finance an RPA Water Security Foundation. It would proceed to do so in essentially the same way described for the Kansas Water Security Foundation. An advantage of the RPA Foundation is that it would operate only within the RPA and individuals, families and organizations financing the Foundation would be assured that investments would be made in the RPA and not in one or more of the other thirteen RPAs in Kansas.

Start this recommendation before April 1, 2017 and pursue thereafter until achieved.

Recommendation F: Task Force asks the Kansas Water Authority, Governor and Legislature to request the Kansas Volunteer Commission to lead the establishment and operation of Kansas Water Security Volunteers in the regional planning areas (RPAs).

At the present time, Kansans participate in a limited number of small private voluntary organizations that focus their attention on a wide range of natural resources in Kansas with limited focus on water quantity conservation and water quality protection. Volunteer work on these topics needs to be expanded.

Task Force urges formation of Kansas Water Security Volunteers in each regional planning area (RPA). It is composed of individuals and groups who join together and volunteer their time, knowledge, skills and abilities in doing work that contributes, directly or indirectly, to achieving RPA "Goals". Also, individuals and groups ask existing or organize new associations which "adopt" all or parts of rivers, reservoirs and lakes for which they work to achieve water security.

[25] See https://en.wikipedia.org/wiki/Oregon_Water_Trust . For freshwater trusts, see https://en.wikipedia.org/The_Freshwater_Trust.

Such citizen involvement would encourage or undertake water education, research, science, conservation, protection, restoration, manual work, and other activities that contribute to water security in the RPA. Personnel and equipment at nearby military bases in Kansas and minimum security prisoners at nearby state penal institutions are also possible participants in some RPAs.

To lead this undertaking, the Kansas Volunteer Commission is an organization whose mission is to "empower all Kansans to meet community needs through service. [Its vision] will be an innovative, proactive and responsive leader in service and volunteerism in the state of Kansas. [The Commission] will expand opportunities, initiate collaborations and create opportunities to build the resources of and strengthen service and volunteerism in Kansas."[26] It would collaborate with other volunteer persons and groups that are now or will be active in each RPA. An example of a related activity is the Commission's Kansas Outdoor AmeriCorps Action Team, Kansas Department of Wildlife, Parks and Tourism.

Start this recommendation before March 1, 2017 and pursue thereafter until achieved.

Blue Ribbon Task Force Can Help Voting Kansans
and Elected Officials Make Vital Water Security Choices.

Blue Ribbon Task Force adoption of recommendations A through F would collectively mobilize financial and in-kind resources that contribute significantly to achieving water "Goals" of the fourteen regional planning areas (RPAs). These outcomes, in turn, contribute to realizing the statewide "Vision" and specifically the vision statement:

Kansans act on a shared commitment to have the water resources necessary to support the state's social, economic and natural resource needs for current and future generations.

In turn, these outcomes would contribute significantly to reversing the downward path to water insecurity in Kansas to an upward path to water security in the state.

- If the Task Force chooses the upward path to future water security, then the state "Vision" and vision statement, and regional "Goals" are valid. Kansans will live within their growing water means and ensure their increasing future water security.
- If the Task Force chooses to remain on the downward path to future water insecurity, then state "Vision" and vision statement and regional "Goals" are void. Kansans will live within their declining water means and experience increasing future water insecurity.

Pursuing the upward path begins with the Task Force fulfilling its purpose. Its recommendations will affect answers to whether and, if so, how much:

- the water storage capacities and flood control capacities of lakes and reservoirs are reduced, stabilized or restored in the future?
- the conservation of water quantity in aquifers, rivers, lakes and reservoirs is reduced, stabilized or increased in the future?

[26] http://kanserve.org

- the protection of water quality in aquifers, rivers, lakes and reservoirs is reduced, stabilized or increased in the future?

These actions will be difficult when they exclude, purposely or accidently, specific aquifers or parts of aquifers, specific rivers or stretches of rivers, or specific lakes or reservoirs in which Kansas water stakeholders/actors have high personal stakes and are unwilling to surrender. The question to them is "How much financial and in-kind resources are they willing to provide for the upward path to stabilize or improve their stakes?" Their answers will determine how much ensured future water security they obtain for themselves in the RPAs.

Earlier I stated that I have concluded that water use and supply issues are the most vital, complex, urgent and difficult public policy issues in Kansas. The statewide "Vision" and vision statement and the RPA "Goals" are a good start by identifying the issues. Building on the issues, I have concluded that we need a group of Kansas persons and organizations to help change our downward path of future water insecurity to an upward path of future water security in the fourteen RPAs. To establish this group, we need Kansans who are widely known and highly respected to form and participate in a Kansas water security movement that focuses on informing 2.9 million Kansans, particularly 1.6 million voting Kansans, and asking them to learn about the issues and communicate their concerns about future water security to their elected state and local officials. The Blue Ribbon Task Force could be the beginning of a group to start the movement by making financial and in-kind resources recommendations that begin to mobilize resources and change us from the downward to the upward path.

Other Kansans also have recommendations about mobilizing resources to ensure our future water security. I am willing to meet with them and discuss all recommendations so our voters and elected officials can ensure that security.

Mobilizing resources is necessary but probably is not sufficient to ensure water security. Other conditions are likely necessary, but they are beyond the scope of this hearing and, if wanted, can be discussed in another setting.

Thank you again for the opportunity to testify. I will gladly respond to your comments and questions.

Appendix: Water Uses in Kansas

The Kansas Department of Agriculture, Division of Water Resources, provides useful information about water uses in Kansas.[27]

"Kansas water users generally divert about 5 million to 6 million acre-feet per year of surface water and groundwater for beneficial uses – irrigation, power generation, public water supplies, industrial processes, stockwatering and other purposes. This is about 1.6 trillion to 1.9 trillion gallons per year, enough to fill Milford Lake 14 to 17 times (not counting flood storage). This amount of water would cover one section of land 1.5 to 2 miles deep. In Kansas, about two-thirds to three-quarters of total water diverted is from groundwater supplies known as aquifers, and the balance is from surface water supplies including streams, reservoirs, and ponds.

Ten to 20 percent of the diverted water is used for non-consumptive uses such as hydroelectric power generation or once-through cooling at thermoelectric power plants. Non-consumptive uses return water to the stream or aquifer from which it was sourced.

Eighty to 90 percent of the diverted water is used for consumptive uses – that is, uses in which all or most of the diverted water is evaporated, ingested or otherwise permanently removed from the local source of supply.

On average, irrigation makes up 85 percent of the consumptive use of water in Kansas. This can vary significantly depending on weather conditions. Municipal (public water supply) is next, accounting for about 10 percent of total consumptive use of water in the state. The remaining five percent of consumptive water use is for industrial, recreation, stockwatering, hydraulic dredging and other uses.

Although the state population continues to increase, water use has trended down over time due to efficiency improvements and installation of water flow meters, which generally provide more precise measurements than previous methods.

The 1990-2008 average total consumptive water use in Kansas was 4.3 million acre-feet per year. Based on a 2009 estimated population of 2.8 million people in Kansas (U.S. Census Bureau website), the average water consumption works out to about 1,380 gallons per person per day. This is slightly higher than the 2005 national average of 1,360 gallons per person per day (U.S. Geological Survey, 2009).

These per capita figures include the amounts for irrigation, industrial, and other uses of water, and are not the amount actually consumed by individuals and used for household purposes. The 2005 average water use for domestic purposes in Kansas was 81 gallons per person per day, below the national average of 98 gallons per person per day (U.S. Geological Survey, 2009)."

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[27] This information is from a section of a website titled "Water Use Reporting" and was accessed at http://agriculture.ks.gov/divisions-programs/dwr/water-appropriations/water-use-reporting on February 15, 2016.