

MINUTES OF THE SENATE NATURAL RESOURCES COMMITTEE

The meeting was called to order by Chairman Carolyn McGinn at 8:38 a.m. on February 11, 2010, in Room 144-S of the Capitol.

All members were present.

Committee staff present:

Kristen Kellems, Office of the Revisor of Statutes
Corey Carnahan, Kansas Legislative Research Department
Raney Gilliland, Kansas Legislative Research Department
Grace Greene, Committee Assistant
Stanley Rasmussen, Senate Fellow, U.S. Army

Conferees appearing before the Committee:

Allie Devine, Kansas Livestock Association
Leslie Kaufman, Executive Director, Kansas Cooperative Council
Mary Jane Stankiewicz, Senior Vice President, Kansas Grain and Feed Association and Kansas Agricultural Retailers Association
Chris Wilson, Wichita Area Builders Association
Chris Cardinal, Legislative Coordinator, Kansas Sierra Club

Others attending:

See attached list.

Allie Devine, Kansas Livestock Association (KLA) (Attachment 1) addressed members of the Committee concerning proposed federal regulations and potential impacts on livestock production. Ms. Devine discussed the current impact of their sector on the environment, specifically that the entire agricultural sector represents less than 6% of total greenhouse gas emissions in the United States. Secondly, Ms. Devine addressed the following regulations which could affect the livestock industry in Kansas, including: National Ambient Air Quality Standards (NAAQS), greenhouse gas regulation, and water regulations. In addition, Ms. Devine discussed a recent petition to the Environmental Protection Agency by the Humane Society of the United States to declare confined feeding operations as new point sources of pollution. Lastly, Ms. Devine addressed concerns on behalf of the KLA that the regulations could negatively change livestock production and the State would take on an increased cost burden to implement the regulations.

Leslie Kaufman, Executive Director, Kansas Cooperative Council (Attachment 2) addressed the members of the Committee concerning potential impacts on agriculture and cooperatives from the proposed regulations of the Environmental Protection Agency (EPA) and Congress. Ms. Kaufman discussed the following topics, including: climate change, other EPA proposals, and air and water quality issues. Ms. Kaufman stated that the proposed regulations would impact businesses, energy producers and users, farmers, and consumers.

Mary Jane Stankiewicz, Senior Vice President, Kansas Grain and Feed Association and Kansas Agricultural Retail Association (Attachment 3) addressed the Committee on potential impacts from proposed EPA regulations on agribusiness in Kansas. Ms. Stankiewicz reported examples of EPA regulations which impacted Florida and the Chesapeake Bay. In addition, she discussed the 2009 case, National Cotton Council versus EPA, which ruled that biological pesticides are pollutants and residue from these pesticides is a chemical waste. Ms. Stankiewicz also discussed the proposed zero-tolerance policy for spray drift, and a potential treaty revision in the Great Lakes.

Chris Wilson, Executive Director of Kansas Building Industry Association (Attachment 4) addressed members of the Committee concerning proposed EPA regulations impact on affordable housing. Ms. Wilson stated that the lead based paint regulation will increase training and record keeping expenses and could increase a remodel project by 10-12% for the homeowner. Secondly, Ms. Wilson stated that the storm water management requirements would impact the building industry and she is concerned with "turbidity" limit compliance. Ms. Wilson stated that numerous pending or proposed regulations could increase the cost of a new home. Ms. Wilson provided a chart which detailed the priced out analysis of new home costs and the income of households who can afford the homes with the increased cost levels. Ms. Wilson stated that the economic impacts of the regulations will impact the Kansas building industry, homeowners, potential homeowners, and

CONTINUATION SHEET

Minutes of the Senate Natural Resources Committee at 8:30 a.m. on February 11, 2010, in Room 144-S of the Capitol.

Kansas in general by job losses and decreases in revenues generated by the housing industry.

John Mitchell, Director of Division of Environment, Kansas Department of Health and Environment took questions from the Committee.

The following provided additional written testimony:

Chris Cardinal, Legislative Coordinator, Kansas Sierra Club (Attachment 5)

John Mitchell, Kansas Department of Health and Environment (Attachment 6)

Kansas Prescribed Fire Council (Attachment 7)

The next meeting is scheduled for February 12, 2010.

The meeting was adjourned at 09:30 a.m.



Since 1894

TESTIMONY

To: Senate Committee on Natural Resources
Senator Carolyn McGinn, Chair

From: Allie Devine, Vice President and General Counsel

Date: February 11, 2010

Re: **Federal Regulation**

The Kansas Livestock Association (KLA), formed in 1894, is a trade association representing over 5,000 members on legislative and regulatory issues. KLA members are involved in many aspects of the livestock industry, including seed stock, cow-calf and stocker production, cattle feeding, dairy production, grazing land management and diversified farming operations.

KLA offers the following information to supplement the data provided to the Committee by John Mitchell, Division of Environment, Kansas Department of Health and Environment.

There have been numerous reports in the media over the past few years citing impacts of livestock production on the environment. Today, I'd like to provide the committee with a few key facts:

- *According to EPA, in 2007, greenhouse gas emissions from the entire agricultural sector represented less than 6% of total greenhouse gas emissions in the United States.*
- *In 2007 the entire livestock sector contributed only 2.8% of greenhouse gas emissions and of this manure management systems were estimated to be less than 1%.*
- *Within agriculture, enteric fermentation is the largest source of methane emissions followed by manure management in anaerobic digesters. In 2007 methane emissions from enteric fermentation were only 1.9% of total greenhouse gases produced in the United States and methane from manure management was only 0.7%.*
- *Nitrous Oxide is produced by biological processes that occur in soil, water, fertilization, manure land applications, retention of crop residues, irrigation, tillage practices and other agricultural practices. Soil management practices accounted for 2.9% of total greenhouse gas emissions and nitrous oxide emissions resulting from manure management systems was only 0.2% of emissions.*

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- *Finally, EPA has recognized that agricultural land use and forestry activities resulted in a net carbon sequestration of approximately 14.8% of total carbon dioxide emissions or 12.5% of total US greenhouse gas emissions.*

It is clear, from EPA's own documents, that agricultural operations and in particular livestock operations are NOT a major source of pollutants in the United States.

Despite the data, EPA is pursuing a number of regulations that will directly impact livestock operations in Kansas. My testimony follows the outline provided by Mr. John Mitchell and provides a brief idea of what these new regulations may mean to the livestock industry in Kansas.

Implications of changes to the National Ambient Air Quality Standards:

Ozone NAAQS: The lowering of the NAAQS would require the state to classify many more areas of the state as "nonattainment" which would lead to additional controls through a state implementation plan. Agricultural burning may be restricted which greatly impacts the Flint Hills. In addition, methane has been identified by EPA as a precursor to ozone which may mean application of controls especially for confined animal feeding operations. Practically, we are not certain what those controls would be.

Particulate Matter NAAQS: The Integrated Science Assessment, a scientific study, proposes that the current pm standard be lowered from the existing 24-hour PM 10 standard of 150 mg/m³ to 12-14 mg/m³. The study is one of the first steps to EPA changing the standard. If such a standard were adopted, most of the western United States would be in nonattainment. Again, this would result in state implementation plans that may include significant controls for agricultural operations including confined animal feeding operations. In other states where regional controls have been implemented such controls would include sprinkler systems; speed bumps to slow vehicles; reformation of industrial vehicle transmissions to prohibit speed in off-road vehicles; paving areas or other treatments. Practically, KSU/Texas AM research has shown that sprinklers are the most effective control. Obviously, availability of water is an issue. Costs for livestock operations to implement such controls are high.

Implications of Greenhouse Gas regulation:

Mandatory Reporting of Greenhouse Gases: As noted by Director Mitchell, the regulation applies to facilities with manure management systems meeting or exceeding the annual 25,000 metric tons of carbon dioxide equivalents (CO₂e). The regulation provides that facilities with fewer than 29,300 head are not required to report. Any cattle operation that is 29,300 head or larger should go through the analysis outlined in the regulation to determine whether they need to report. The amount of emissions varies by gender of animal; feed ration; type of manure management system, and size of the operation. Reports are due on March 31, 2011. Failure to report is a violation of the Clean Air Act and may result in a fine of up to \$37,500 per violation per day.

GHG Tailoring Rule: It is unclear exactly how this regulation will be implemented. If EPA includes fugitive emissions in the calculations or if a facility makes modifications, this regulation may be triggered forcing some confined animal feeding operations to implement controls and seek permits. This would be an extremely costly process and we are not certain what controls would need to be implemented.

Endangerment finding: On December 15, 2009 EPA issued its finding of endangerment for six greenhouse gases: Carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride. This ruling will trigger the establishment of NAAQS for carbon dioxide, which then triggers state implementation plans, and controls/permits for industry. NCBA and a coalition of industries have appealed this final rule. Again, if the rule is finalized, what controls will be adequate have yet to be determined and will take many man hours to develop and implement.

HSUS: The Humane Society of the United States has petitioned EPA to find that confined animal feeding operations endanger public health and the environment. If the EPA decides to find that CAFOs endanger public health and the environment, then EPA would be required to set new source performance standards for CAFOs based on "best demonstrated technology (BDT)". These standards would apply to any new or modified CAFO. BDT generally consists of a numeric emission standard, but if it is not feasible to prescribe or enforce a numeric standard then EPA must impose a standard that must reflect the "best technological system of continuous emission reduction which the Administrator determines has been adequately demonstrated." In addition, States would be required to develop and implement an emission reduction plan for existing CAFOs. We are not certain what such controls would be but are fairly confident controls would be costly. Again, the state's workload would be greatly impacted by such permitting requirements.

WATER

Numeric Nutrient Criteria: We appreciate the efforts of KDHE to include stakeholders in discussions of setting numeric nutrient criteria. We are concerned that these criteria will lead to additional total maximum daily load limits and attempts to regulate nonpoint source pollution. Again, these national efforts ignore the progress Kansas and other states have made in water quality improvements. Limitations on agricultural use of manure applications or fertilizers will greatly impact agricultural returns and food production. We will work with the department to assure scientific standards are adopted and resources are targeted to improve water quality. We do not want a repeat of the water issues of 2002.

Legislation: As noted by Director Mitchell the Congress is considering deleting the word "navigable" from the Clean Water Act. This would greatly expand EPA's jurisdiction and we are pleased that the state has opposed this proposal.

The Chesapeake Bay Initiative is troubling because the federal government has inserted itself into the role of state regulation. The initiative also targets local planning and agricultural operations. We are particularly opposed to proposals to rewrite federal confined animal feeding operation rules (just finalized in 2008) to include the very small operations who typically cannot afford major modifications to their operations.

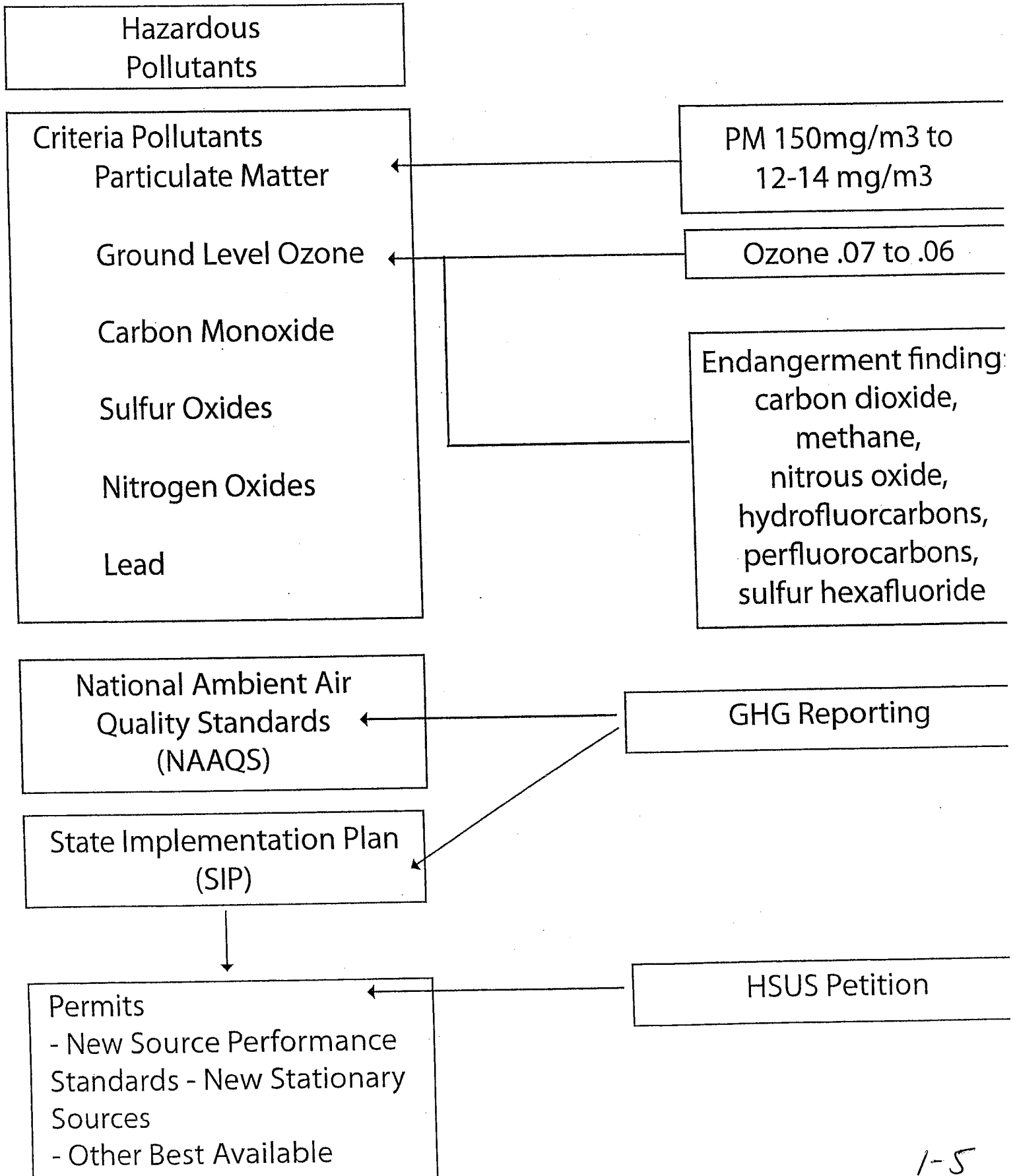
Litigation: We share KDHE's concerns that antidegradation policies will be used to further restrict development in watersheds. These policies were not designed to be tools to stop economic development in the country.

Overall concerns:

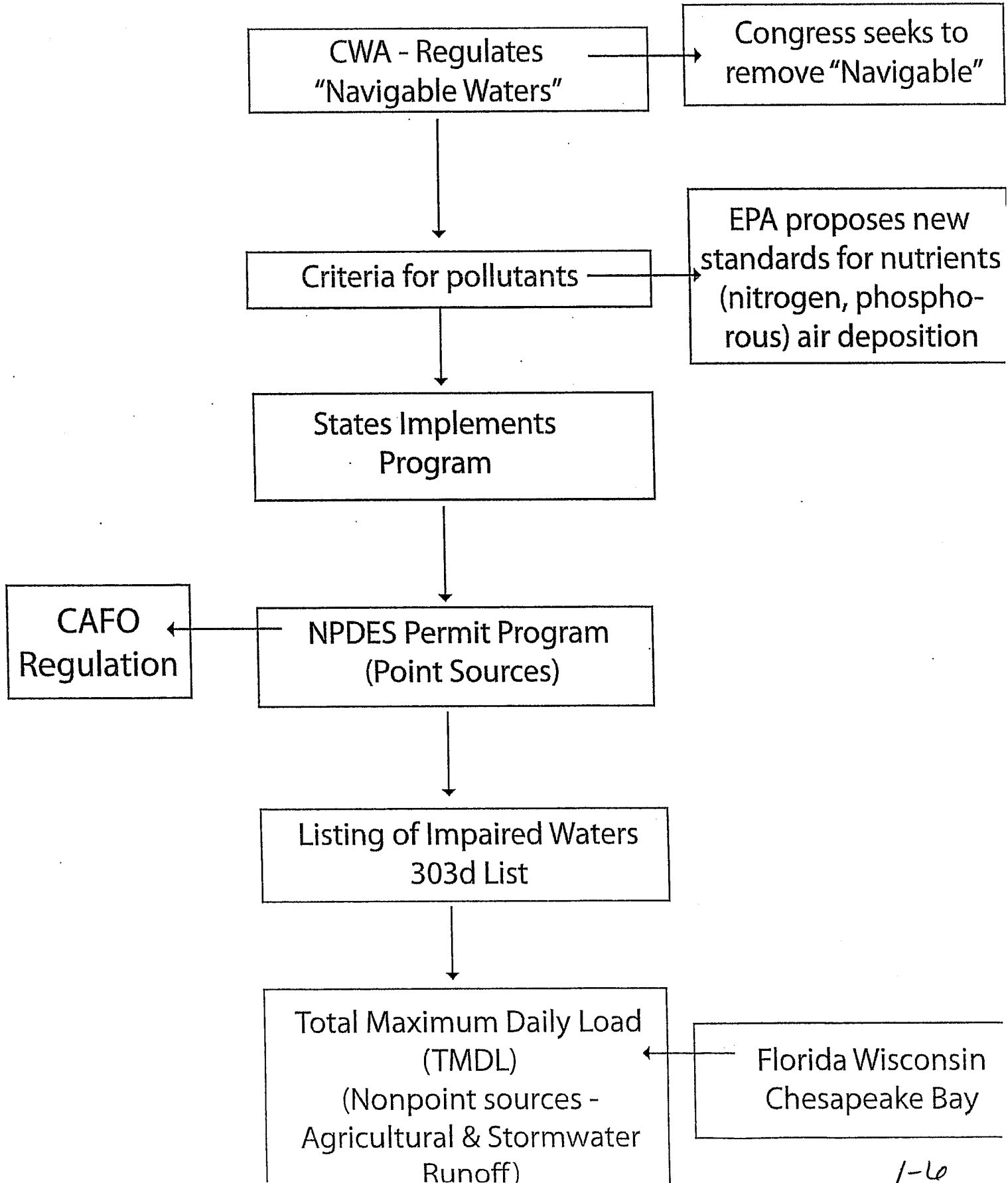
We are obviously concerned about the magnitude of the shifts being proposed. We are concerned that agriculture is being targeted and the scope of the regulations will greatly change production practices in the US to the detriment of the industry. We are also concerned that the state will not have the resources to implement the existing regulations more less additional regulations and new permit applications. This ultimately could lead to EPA stepping into the state's enforcement role and something that we do not support.

We appreciate KDHE's work to inform the committee and the regulated community of the magnitude of these issues. We ask that the Committee encourage the Governor, KDHE, and the Attorney General to file comments opposing many of these egregious proposals –specifically the lowering of NAAQS for particulate matter and the listing of additional greenhouse gases under the endangerment finding. We also ask that the committee encourage KDHE and the Governor to oppose changes to the Clean Water Act that will disrupt the progress Kansas has made in water quality. Thank you for your time and consideration of these important issues.

Air Clean Air Act



Water





816 SW Tyler St., Ste. 300
Topeka, Kansas 66612
Phone: 785-233-4085
Cell: 785-220-4068
Fax: 785-233-1038
www.kansasco-op.coop

**Senate Natural Resource Committee
Feb. 11, 2010**

Potential Impacts on agriculture and cooperatives from EPA regulation.

Chair McGinn and members of the Senate Natural Resources Committee, thank you for the opportunity to comment on regulatory impacts our members and industry could be facing. I commend you for taking a serious look at the significant changes the US Environmental Protection Agency (EPA) is proposing and appreciate your desire to know what the "real life impacts" could be on Kansans, agribusiness, refiners and farmers and ranchers. The Kansas Cooperative Council, along with our national partners, is keenly aware that many of these proposals could change the way we farm and do business in the Midwest.

The Kansas Cooperative Council is a voluntary, statewide trade association representing all forms of cooperative businesses across the state -- agricultural, utility, credit, financial and consumer cooperatives. Approximately half of our members are grain elevator/farm supply cooperatives, which are owned and governed by farmers and ranchers. Thus, what happens in rural Kansas and the agriculture industry, of which we are a critical part, is of great interest to us. The cooperative system is following a variety of federal actions that could change the way agriculture is regulated and how we go about the business of producing the safest, most abundant food, fuel and fiber supply in the world. Our focus for today will be on climate change and EPA issues.

Climate Change

Although it appears Congressional action on climate change legislation has taken a back seat for the time being, passage of comprehensive climate policy would certainly impact agriculture. Cap and Trade (Cap and Tax), or a climate tax will have components that impact businesses, energy producers, energy users, farmers and ranchers and all consumers. Even without passage of comprehensive legislation, EPA action to regulate greenhouse gas emissions (GHGs) could have many of the same impacts.

Many climate change proposals articulate goals for reducing GHG emissions by certain percentages by specific dates. One such goal is a reduction in GHGs by 80% below 2005 levels by the year 2050. What does that mean in real-life terms, though? From what we are told, that would take the US back to 1905 emissions levels. That is more than a century ago...before most houses were electrified, before computers, household appliances, central air, refrigeration, medical equipment, air travel, wide-spread automobile use, modern machinery and equipment, grain dryers...I doubt if the general populace really understands what types of drastic reductions we are talking about.

The costs of implementing climate legislation will fall on businesses and consumers. Agriculture could be especially hard-hit. In-put costs such as fuel and fertilizer are expected to increase noticeably. One projection for fuel produced out of the Midwest forecasts the possibility of a 38-50 cent per gallon increase (depending on whether it is gasoline or diesel and what the market price for allowances is at any given time). For a business such as an agriculture cooperative, that can amount to thousands of dollars in increased fuel costs over the course of a year.

For instance, if we take the mid-point between 38 and 50 cents we get 44 cents. Combined gasoline and fuel use for a moderately-sized Kansas co-op averaged roughly 75,000 gallons over the last 3 years. Take that times the 44 cent per gallon increase in cost and that co-op could see a \$33,000 increase in their fuel bill. That's fuel they use to run their equipment and deliver products and services (not fuel they sell at retail for others' use). So, where does that leave the co-op? How do they handle that additional cost of doing business?

These costs are predicated on a Waxman-Markey type of cap and trade system, with an initial emissions threshold of 25,000 tons. What if EPA proceeds under a regulatory scheme? In 2002, the Supreme Court ruled that GHGs can be covered under the Clean Air Act (CAA). EPA released an endangerment finding on GHGs in April of 2009. The CAA sets the regulatory threshold at 250 tons annually. At that limit, it is estimated that 6 million farms, hospitals, schools, churches and other types of businesses would be included.

Those are tough questions, but in the farmer-cooperative system, one way or another, the producer-owner will feel much of the burden. Cooperatives are member-owned, member-controlled and operated for the mutual benefit of the membership. If the overall cost of doing business goes up, the co-op may be able to pass some of that increase along in higher fees/prices, but that is not always the case. They must maintain competitiveness with other neighbors in the marketplace. If those costs are absorbed internally, then profit margins are reduced and patronage refunds to the farmer-owners will decrease.

The increased cost of fuel is just one of many examples of how climate change can negatively impact the agricultural sector. Kansas families and businesses, no matter where they are located, have the potential to be hit harder by climate change impacts than those in other parts of the US. Kansas, and the mid-west in general, rely more heavily on coal for electricity generation than other areas of the country. Under currently debated climate change schemes, it would take more allowances to cover emissions from coal than some other types of fuel-stock. Thus, the costs of production increase and the cost per kilowatt hour would increase. This raises the cost for residential living, manufacturing, processing, and eventually the products we all consume in our daily lives and business operations.

Other EPA Proposals

Many of the regulatory proposals coming out of the US Environmental Protection Agency (EPA) could have far reaching impacts on agribusinesses and producers. Multiple proposals, new requirements and initiatives could mean additional burdens on agribusinesses and producers, alike. It is important to remember that each time the EPA reduces threshold limits, new members come into the regulated community. A few of the many regulatory initiatives include:

Air Quality

Changing standards on ozone, particulate matter, NO₂ and SO₂ could impact the timing and/or ability to effectively manage rangeland or cropland through prescribed burning. New regulatory limits also raise questions about the ability to continue regular, essential ag activities such as harvesting, planting, field work and elevator operations. GHG reporting would be required for some entities, including certain confined animal feeding operations. A study is underway at K-State looking at whether co-op/elevator operations would likely meeting the triggers for GHG reporting.

Water Quality

Clean Water Act (CWA) Jurisdiction

Attempts to remove "navigable" from the definition of waters regulated under the CWA, if successful, would significantly broaden the jurisdiction of the EPA. Essentially, it could bring EPA right to the farm or co-op.

Permitting pesticide applications

Recently, the US 6th circuit court of appeals ruled certain pesticide application will now require an EPA permit. Previously, this type of agricultural use had been deemed a non-point source application, thus, individual permitting was not required. Under this new scenario, every applicator who applies pesticide would need to acquire a permit.

This scenario means thousands of activities not previously permitted will need to be. That process raises questions about EPA's ability to manage the number of applications and do so on a timely basis. Discussions between stakeholder groups and US EPA have been occurring and some thought is being given to a "general permit" to cover a certain period of time rather than permitting each individual application on each and every parcel of land. Still, a variety of issues remain – substantively, practically and logistically.

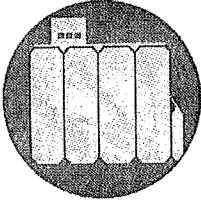
Timing of agricultural inputs is of utmost importance. Often, windows of opportunity are relatively short, and weather conditions play a significant role on timing. Delays in the process could mean applicators (private or commercial):

- lose their window of opportunity to apply;
- fewer parcels/customers are served;
- applicators are left with purchased product they cannot apply; or
- profitability is reduced

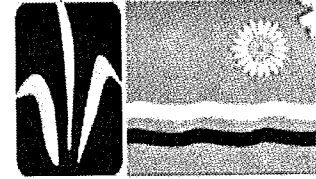
I have briefly touched on just a few of the pressing regulatory issues facing the overall agriculture sector, agribusiness and cooperatives. There is still a lot of uncertainty surrounding many of these issues and that uncertainty makes it difficult to quantify impacts. But, if the US pursues stringent environmental controls, while other nations do not, the business of agriculture could be stifled in our nation and more production will move off-shore.

We appreciate the opportunity to share our comments. If you have any questions regarding our testimony or position on this bill, please feel free to contact me at 785-220-4068. Thank you.

Leslie Kaufman, Executive Director
Kansas Cooperative Council



Kansas Grain & Feed Association
Kansas Agribusiness Retailers Association



SENATE NATURAL RESOURCES COMMITTEE

POTENTIAL IMPACTS ON AGRIBUSINESS FROM EPA REGULATIONS

FEBRUARY 11, 2010

Good morning Chair McGinn and members of the Senate Natural Resources Committee. I am Mary Jane Stankiewicz and I am the COO and Senior Vice President of the Kansas Grain and Feed Association (KGFA) and the Kansas Agribusiness Retailers Association (KARA). These associations represent 98% of the licensed grain storage capacity in the state of Kansas and also the companies that provide the crop inputs to the producers, such as seed, fertilizer, pesticides and petroleum products.

In my role at KGFA and KARA, I am able to interact with a number of my colleagues across the nation and there is an alarming precedent of various state and federal actions taking place that have the following common themes: 1) federal government is taking strides to erode state's rights; 2) there is a lack of common understanding or appreciation for production agriculture and 3) there is a belief that safe or reasonable is not good enough.

Florida. While you may not think that what is happening in Florida is relevant to you please make no mistake that this is relevant to each and everyone of us in this room. Even though the state of Florida has spent in excess of \$20 million to collect data and analyze samples and develop narrative criteria for nutrient standards which the regional EPA stated was an "impressive synthesis of technology-based standards", the environmental groups sued the state and claimed that the *narrative* criteria developed by Florida was not sufficient and that the Clean Water Act required *numeric* nutrient

Kansas Grain & Feed Association, P.O. Box 2429, Topeka, KS 66601-2429 (785) 234-0461 Fax (785) 234-2930

Kansas Agribusiness Retailers Association, P.O. Box 1517, Topeka, KS 66601-1517 (785) 234-2930

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Attachment 3 -- /

water standards to be developed – and they won by getting EPA to agree in a consent agreement that numeric standards were necessary.

EPA is now developing criteria for Florida. The fact that the federal EPA stepped in even though the state had taken action and spent significant money to address the nutrient issue is scary because it is an example of a bad combination of 2 issues: the desire of the environmental community to use the court system to manipulate the law and the willingness of the federal government to step in and take over what has always been considered the right of a state to establish water quality standards. Make no mistake this case is precedent setting and could be used in Kansas at a later date.

Chesapeake Bay – the Chesapeake Bay project involves land in New York, Pennsylvania, Maryland, West Virginia, Delaware and the District of Columbia. The Chesapeake Bay has been a poster child for the use of voluntary programs and best management practices in addressing nutrient problems. The Bay implemented plans stretching back to 1985 and was able to boast a 50% reduction in nutrient levels. However even with these strides the Obama Administration signed an executive order in May 2009 seeking to restore the Chesapeake Bay and directing \$35m be put into EPA to address these concerns.

The proposed plans are being done by EPA even though the Clean Water Act does not authorize such actions, these plans are not going through rule and regulation process for public scrutiny and comment and there has been no cost – benefit analysis done even though this area is the home to 17 million people and will impact ag and urban areas. Once again, the federal government is signaling that it is no longer good enough for a state to develop plans and achieve milestones; they are second guessing and taking over in these states.

National Cotton Council v. EPA (6th Circuit case – 2009). The 6th Circuit ruled that biological pesticides are pollutants and that residue from these pesticides (i.e. anything that is not immediately consumed by the plant) is a chemical waste. The court also ruled

that under the Clean Water Act, a spray nozzle at the end of a piece of application equipment is a point source and thus an NPDES permit will be needed before chemicals are applied.

In the past, pesticides have been regulated by FIFRA, but because of this case, the Clean Water Act now comes into play. Because of the fact that the Clean Water Act is now referenced, it will require more recordkeeping, monitoring and reporting requirements and will also subject all under these general permits to the threat of civil, criminal penalties and citizen lawsuits. EPA is now developing general permits for pesticides that will be made onto, over or near waters of the US. It is expected EPA will release their draft permits soon however, EPA and the states, including Kansas have only until April 9, 2011 to implement this program.

Spray Drift. EPA for decades has stated that small levels of spray drift is unavoidable and does not pose an “unreasonable adverse effect”. This standard is based on risk to the public or the environment. Now the EPA is proposing that spray drift cannot be applied “in a manner that results in spray drift that could cause and adverse effect to people or any off-target organism”. This shift in policy goes from science and risk based analysis to the precautionary principle of wanting to stop anything that might, somehow, somewhere cause a problem to someone or something.

While there have been great advances in technology over the past, via low drift spray nozzles, GPS guided shutoff nozzles and other items, this proposed change of a zero tolerance to any drift regardless of whether harm occurred would subject most people that ever spray chemicals in Kansas since the wind is and will always be a factor in Kansas.

Great Lakes. The US and Canada have had a long standing treaty regarding water quality and it is now being discussed and potentially revised. This treaty is binding on the upper states in the US however some of the changes that Canada is requesting and that EPA Region 5 is supportive of would include such items as: amend NAFTA to

include a binational ecosystem, use the precautionary principle (zero tolerance) instead of risk based system to analyzing contamination and the effect of nonpoint source pollution. These changes are being pushed hard by the Canadian government and unfortunately there is also support by our own government regulators. If these principles are adopted via treaty then they could spread and be implemented throughout the rest of the regions quite easily.

I echo my colleagues comments and concerns about such items as Greenhouse Gas, Cap and Trade, Dust and Climate Change, however, I wanted to touch on some other issues that some of the other conferees have not touched on so that you have more of a complete view of the extent of the proposed regulations that will impact agriculture and agribusiness.

As you can see from these examples, EPA is moving fast to implement numerous regulations and plans without regard to the practical impact to production agriculture and the economy. Normally we have been able to work with our state and regional regulators to reach reasonable solutions so that they protect the environment and people without driving us out of business, but this will not be the case if the federal government takes over the development of unreasonable and non-science based standards and rules that impact Kansans.



**STATEMENT OF THE
KANSAS BUILDING INDUSTRY ASSOCIATION
TO THE SENATE NATURAL RESOURCES COMMITTEE
SENATOR CAROLYN MCGINN, CHAIR
REGARDING REGULATIONS'
IMPACT ON AFFORDABLE HOUSING**

THURSDAY, FEBRUARY 11, 2010

Chairman McGinn and Members of the Committee, thank you for the opportunity to come before you today to report concerning regulations impacting the housing industry in Kansas. I am Chris Wilson, Executive Director of Kansas Building Industry Association (KBIA), the statewide association representing the residential construction industry in Kansas, with approximately 2300 members.

An economic analysis was completed by our national economics staff in December which will be of interest to the Committee and accompanies this statement. This analysis was done in part for the Housing Affordability Task Force which we convened to discuss issues negatively impacting housing affordability in Kansas. Attached to this statement is a document from the analysis which shows the numbers of families in Kansas that are "priced out" when costs of a new home are increased by \$1,000. Unfortunately, we have numerous pending or proposed regulations, each of which will increase the cost of a new home by several time \$1,000. A model building code new requirement for residential fire sprinklers would add \$3,000-\$7,000 or more alone.

But there are two areas of regulation I'll mention in detail today - the first is the new lead based paint regulations. Beginning in April of this year, EPA's Lead: Renovation, Repair and Painting rule takes effect.

Here's what's required under this rule:

1. Training and Certification Beginning in April 2010, firms working in pre-1978 homes will need to be certified. In addition to firm certification, an employee will also need to be a Certified Renovator. This employee is responsible for training other employees and overseeing work practices and cleaning. The training curriculum for certification, in development with the EPA, will be an eight-hour class with two hours of hands-on training. Both the firm and renovator certifications are valid for five years. A Certified Renovator must take a four-hour refresher course to be recertified.

2. Work Practices Once work starts on a pre-1978 renovation, the Certified Renovator has a number of responsibilities. Beginning with distributing EPA's *Renovate Right* brochure to the homeowner and having them sign the pre-renovation form in the booklet. Before the work starts the Certified Renovator will post warning signs outside the work area and supervise setting up

containment to prevent spreading dust. The rule lists specific containment procedures for both interior and exterior projects. It forbids certain work practices including open flame or torch burning, use of a heat gun that exceeds 1100°F, and high-speed sanding and grinding unless the tool is equipped with a HEPA exhaust control. Once the work is completed, the regulation specifies cleaning and waste disposal procedures. Clean up procedures must be supervised by a Certified Renovator.

3. Verification and Record Keeping After clean up is complete the Certified Renovator must verify by matching a cleaning cloth with an EPA verification card. If the cloth appears dirtier or darker than the card, the cleaning must be repeated. A complete file of records on the project must be kept by the certified renovator for three years. These records include, but aren't limited to: verification of owner/occupant receipt of the *Renovate Right* pamphlet or attempt to inform, documentation of work practices, Certified Renovator certification, and proof of worker training.

4. Exemptions It is important to note that these work practices may be waived under these conditions:

The home or child occupied facility was built after 1978.

The repairs are minor, with interior work disturbing less than six sq. ft. or exteriors disturbing less than 20 sq. ft.

The homeowner may also opt out by signing a waiver if there are no children under age six frequently visiting the property, no one in the home is pregnant, or the property is not a child-occupied facility.

If the house or components test lead free by a Certified Risk Assessor, Lead Inspector, or Certified Renovator.

In Kansas, however, the proposed rules for compliance with the lead program are more stringent than the EPA rules! Major differences between the federal and state program include:

- no opt-out provision (however, EPA is moving to change to no opt-out also)
- KS rules require every worker to have the training, as opposed to a supervisory employee with EPA. We estimate there are at least 40,000 people in Kansas who will have to be trained, at the cost of at least \$600 per employee - or \$24 million. Our association is working furiously on the development of online training to help comply with this requirement. Online training can help bring down the travel costs for the program, so I am taking that into account in the previous estimate. Of the 8 hours of training, 2 is required to be hands on and cannot be completed online.
- KS rules require a 3rd party test, and will not permit the company verification as required by EPA. This alone will cost the homeowner an additional \$300-400.

Overall, the rules are expected to increase the cost of a remodeling job in a pre-1978 home by 10-12%. I've heard a lot of comments from people who no longer want to work in pre-1978 homes; owners of those homes talking about doing it themselves or hiring unlicensed individuals for evening or weekend work; and owner who think they won't do the remodel job they would have before.

We believe this is a disincentive for people to do renovations in a safe manner. The pre-1978 housing stock may instead decline in condition and not have energy efficiency and safety

renovations. Kansas is also at a competitive disadvantage with other states if we go forward with being more stringent than EPA and other states.

Secondly, the Environmental Protection Agency has announced new storm water management requirements for builders that don't effectively address water quality and environmental issues – but do promise to place significant burdens on the home building industry and result in higher costs for home buyers.

Beginning last month, EPA is placing stricter limits on the amount of pollutants in storm water legally allowed to leave a construction site after a rainfall and require that water be virtually free of soil or sediment. That's a standard that no builder, anywhere, can consistently expect to achieve – and EPA's own studies show it's not the answer to reducing pollutants in our nation's waters.

A year ago, EPA proposed rules that for the first time incorporated so-called Effluent Limit Guidelines for the construction and development industry. The agency released the proposal under a court order after a lawsuit filed by an advocacy group argued that builders, whose "discharges" under the Clean Water Act are the result of rainfall and sediment running off construction sites, should be treated like commercial and industrial enterprises, which discharge water and chemicals via pipelines.

The guidelines set out requirements without regard to the type of soil on the jobsite and how likely it is to absorb excess rainwater. The "turbidity" limit – the amount of sediment in the water – does not take into account the natural turbidity of nearby streams or other water bodies. And the rules require stepped-up state enforcement, but no accompanying guidance on how to monitor compliance or money to pay for the additional administrative and inspection costs.

Further, the additional requirements are more difficult – and in some cases impossible – to meet on smaller lots and in urban redevelopment, severely hampering "smart growth" projects and transit-friendly building.

EPA specifically asked for, and NAHB provided, significant comments and alternatives that would meet these important goals at a lower cost and with less red tape, so we're quite disappointed – and frankly, bewildered – that EPA did not take our suggestions.

At the same time it finalized these onerous requirements, EPA also announced it was developing yet another rule to address storm water discharges from development.

With all of the existing rules and voluntary steps our members are already taking to improve the quality of the nation's waters, it is uncertain what might be gained from this additional and costly layer.

Thank you for the opportunity to share this information and the concerns of the homebuilding industry.

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State of Kansas Priced-Out Analysis

Area	Mortgage Rate	House Price	Monthly Mortgage Payment	Taxes and Insurance	Minimum Income Needed	Households That Can Afford House
Kansas	5.0%	\$95,000	\$483	\$163	\$27,686	802,341
Kansas	5.0%	\$96,000	\$488	\$165	\$27,977	798,674
Difference		\$1,000	\$5	\$2	\$291	-3,667
Kansas	5.0%	\$151,517	\$770	\$260	\$44,156	597,611
Kansas	5.0%	\$152,517	\$775	\$262	\$44,448	594,288
Difference		\$1,000	\$5	\$2	\$291	-3,323
Kansas	5.0%	\$253,473	\$1,288	\$435	\$73,869	332,259
Kansas	5.0%	\$254,473	\$1,293	\$437	\$74,160	330,008
Difference		\$1,000	\$5	\$2	\$291	-2,251

Fact Sheet

Final Effluent Limitation Guidelines for the Construction and Development Industry

On December 1, 2009 the Environmental Protection Agency (EPA) finalized the Effluent Limitation Guidelines (ELGs) for the Construction and Development Industry. The ELG establishes the minimum control requirements that must be met by everyone who has or needs a National Pollutant Discharge Elimination System (NPDES) construction stormwater permit issued by EPA or an authorized state. Operators will have to comply with the ELG requirements once they are incorporated in EPA's or a state's NPDES construction general permit. EPA was under a court ordered deadline to develop the Effluent Limitation Guidelines by December 1, 2009.

Although this rule is effective on February 1, 2010, EPA has established a minimum of a four year timeframe for full nationwide implementation. This is intended to provide the states and the regulated community sufficient time to develop compliance processes and a full understanding of the new requirements.

In addition to the new ELG, EPA also announced that it is committed to and has begun a rulemaking to address post-construction stormwater discharges from newly developed and redeveloped sites. This rulemaking is expected to be completed by November 2012.

What Are The Main Requirements Of The ELG?

- All construction activities that require an NPDES storm water permit must implement the following Best Management Practices (BMPs):
 - a. Erosion and sediment control should be designed, installed and maintained to:
 - Control stormwater volume, and velocity;
 - Control stormwater discharge including peak flowrates and total stormwater volume;
 - Minimize the amount of soil exposed during construction activity;
 - Minimize the disturbance of steep slopes;
 - Minimize the sediment discharge from the site by ensuring design, installation and maintenance of erosion and sediment controls address factors such as rainfall and soil types expected on the site;
 - Provide and maintain natural buffers around surface waters, unless infeasible;
 - Direct stormwater to vegetated areas and maximize stormwater infiltration, unless infeasible

- o Minimize soil compaction, unless infeasible and preserve topsoil;
 - b. Stabilize soils immediately after activities have permanently ceased or temporarily ceased on any portion for a period exceeding 14 calendar days.
 - c. Discharge from dewatering activities is prohibited, unless managed by appropriate controls,
 - d. Pollution Prevention Measures should be designed, installed, implemented and maintained to:
 - o Minimize discharge of pollutants from equipment, vehicle washing, wheel wash waters, and other wash waters. Wash waters must be treated in a sediment basin or other equivalent or better treatment;
 - o Minimize exposure of building materials and other materials on the site to precipitation and stormwater;
 - o Minimize discharge of pollutants from spills and leaks and implement prevention and response procedures,
 - e. Prohibited discharges include:
 - a. Wastewater from washout of concrete unless managed by an appropriate control;
 - b. Wastewater from washout and cleanout of stucco, paint, form release oils, curing products, and other construction materials;
 - c. Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance; and
 - d. Soaps or solvents used in vehicle and equipment washing.
 - f. Surface outlets that withdraw water from the surface are required when discharging from basins and impoundments, unless infeasible.
- Numeric Effluent Limit:
 - o All construction activities that disturb 20 or more acres of land at one time (whether contiguous or not), must meet a daily average turbidity limit of 280 NTU (turbidity measurement units). The deadline for complying with this numeric limit is August 2011.
 - o The 280 NTU effluent limit will be expanded to include all construction activities that disturb 10 or more acres of land at one time (whether contiguous or not) in February, 2014.
 - o The turbidity effluent limit must only be met for the 2-year, 24-hour storm event.
 - o Compliance with the numeric limit will require regular sampling and monitoring.
- The new ELGs set a technology “floor” that all permittees will be required to meet. Because this is a baseline, the states may adopt provisions that are more onerous than the federal minimum if they so choose, such as a lower NTU limit or a more aggressive implementation timeline.

What Technology Can Builders & Developers Use To Meet The 280 NTU Limit?

Unlike previous ELGs in which EPA has identified a “model” technology that has been demonstrated to meet the established limits, in this instance, EPA has left the determination of what methodology to use to the permit holder. EPA has stated that it believes the limit can be met through the use of a combination of BMPs; polymer-aided settling techniques, such as chitosan and PAM ; and site planning practices, such as limiting the amount of land disturbed at any one time or phasing construction activities.

Because EPA has limited data regarding the efficacy of these techniques, however, it is not certain whether the use of these practices will meet the 280 NTU limit on a consistent basis. As a result, builders and developers will likely have to go through a period of trial and error to determine which suite of control measures will achieve the required discharge limitation for each project. In fact, EPA cites the need to adjust, modify, and revise the new control techniques as one of the primary factors for the 18 month delay in implementation.

What Are The Monitoring Requirements?

Each delegated state will be responsible for determining its monitoring and compliance protocols, including frequency, location, and duration in relation to storm events, analysis parameters and quality assurance procedures. EPA intends to provide monitoring guidance (which the states may or may not follow) and has provided the following glimpse into its expectations in the Federal Register notice:

- A minimum of three samples per day will need to be collected at each discharge point while a discharge is occurring;
- Any storm event or snowmelt that generated a discharge should be monitored;
- Sampling should be conducted, at a minimum, during normal business hours;
- The use of a properly calibrated turbidimeter is sufficient;
- Reporting requirements are uncertain, but will likely include, at a minimum, monthly discharge monitoring reports (DMRs);
- EPA has also suggested that permitting authorities may want to consider requirements in their permits and mechanisms by which permittees would notify the permitting authority when they have exceeded the 10 acre disturbance threshold and monitoring is required;
- EPA has also indicated that the 18 month period will allow permitting authorities to develop any necessary training or certification programs.

What Happens If My Average Discharge Exceeds 280 NTU?

The numeric turbidity limitation is a daily maximum meaning an owner or operator will not be in violation of the limitation if individual samples of their discharges exceed the limitation as long as the average of the samples taken over the course of a day are below the limitation. If a daily discharge exceeds the limit, the discharger could be found in violation of the permit. The state permitting authorities, when establishing the monitoring and reporting procedures, are expected to also determine how they will assess and enforce the standard.

When Will The ELG Be Implemented In My State?

For those states that have not yet been authorized to administer the NPDES program (Idaho, Massachusetts, New Hampshire, New Mexico, District of Columbia), EPA will include the ELG requirements in its Construction General Permit when it is reauthorized in July 2011. For the delegated states that have their own state construction general permits, they must each incorporate the ELG limits and obligations the next time they issue a new construction general permit. If a state adopts a 5 year permit prior to February 1, 2010, it is not required to impose the ELGs until the permit is renewed in 2015. Some states, such as Maryland, however, have publicized their intent to adopt the ELG into their state permits as soon as the rule is finalized (i.e., immediately). Attached is a list of state permit expiration dates which can be used to determine when the ELG will be incorporated and become effective in your state.

Importantly, because EPA is phasing in the numeric limits and monitoring requirements, while the non numeric part of the ELG will be effective as soon as it is implemented into the state permits after February 1, 2010, no one disturbing 20 acres or more should have to meet the numeric limits until August 2011 (the only exception to this would be if a state purposely accelerated the ELG's adoption). Likewise, no one disturbing 10 acres or more should be required to meet the numeric limit prior to February, 2014.

In the end, the rule will not be fully implemented until all state and EPA general permits have expired and new general permits are issued that incorporate the ELG, which will take approximately five years. During that time, builders and developers should be vigilant in monitoring and participating in their state's efforts to revise their construction general permits.

What Can Builders & Developers Do To Avoid The Numeric Limit?

The 280 NTU limit only applies when the total amount of disturbed area on the project at any one time is at or above the specified acreage threshold (i.e., 10 or 20 acres). As a result, the only way to avoid the limit and its associated obligations is to reduce the area of disturbance to below the threshold (i.e., 9.9 or 19.9 acres). This can be done throughout the entire project or during specific phases. For example, if a project initially disturbs 10 or more acres of land at one time during construction activity, but after completion of clearing and grading and infrastructure installation the site is stabilized prior to or during commencement of vertical construction, then

the sampling requirements and turbidity limitations would cease to apply at the point where the total disturbed land area at the site is less than 10 acres at one time. However, in all instances where the amount disturbed at any given time is greater than the specified threshold, the numeric limit will have to be met. As above, EPA expects the states to determine what type of recordkeeping and/or notification procedures operators must follow to keep track of how much land is disturbed at any given time and when the limit applies.

Why Is EPA Developing Another Stormwater Rule?

EPA's ELG rule addresses the active phase of construction and EPA believes the post construction discharge from construction activities should be addressed through a different rulemaking. Also, Environmental groups have vowed to sue EPA to force post-construction stormwater discharge limits as a way to control runoff after construction is complete. Therefore, EPA is in the initial stages of developing a rule to address post construction stormwater requirement. NAHB will provide input to EPA on this rulemaking process.

What Process Will EPA Follow For This New Rule?

EPA intends to develop a rulemaking addressing stormwater discharges from newly developed and redeveloped sites under CWA section 402(p). EPA has published a draft Information Collection Request, 74 FR 56191 (October 30, 2009) for public comment seeks information and data to inform the rulemaking. The survey is for the construction industry, and state and municipalities. EPA plans to develop this rule in the fall of 2012. See http://www.epa.gov/npdes/pubs/ind_questionnaire.pdf

What Could The New Rule Require?

The new rule could require that your pre development hydrology mimics your post development hydrology. Low Impact Development practices may be mandated through the state construction general permits. A 2008 National Research Council (NRC) calls for "radical changes" to EPA's stormwater control program. The report *Urban Stormwater Management in the United States*, says the lack of requirement for post-construction stormwater controls in the construction industry's general permit is a "glaring shortcoming." NAHB is reviewing these materials and plans to submit comments.

The ELG rule language and list of State permits and their expiration dates is attached. The ELG is available on EPA's website <http://www.epa.gov/waterscience/guide/construction>

If you have any questions or comments contact Ty Asfaw easfaw@nahb.com or telephone 202-266-8124.



Listening sessions and Stakeholder input: Stormwater Management Including Discharges from New Development and Redevelopment

Summary

The U.S. Environmental Protection Agency (EPA) is planning to open a public input period and hold listening sessions to inform a rulemaking to strengthen national stormwater regulations and to establish a comprehensive program to reduce stormwater discharges from new development and redevelopment.

Background on Stormwater

Developed sites, such as subdivisions and commercial shopping centers, can significantly alter the hydrology of a site and can have a negative impact on receiving waterbodies.

Generally, as sites are developed, there is an increase in impervious areas where water cannot infiltrate into the ground, leading to increases in stormwater runoff volume. This additional stormwater volume, as well as the introduction of pollutants such as fertilizers, sediments and deposition of vehicle emissions contributes to increased stormwater impacts. Many of these developed areas are outside of currently regulated areas and are contributing to waterbody impairment.

EPA requests input on ways to strengthen the stormwater program, including the promotion of practices that retain stormwater on-site through infiltration, evapotranspiration, or stormwater reuse to reduce these impacts nationwide. EPA is considering how to strengthen the municipal separate storm sewer system (MS4) permit regulations, including expanding

the MS4 regulated area to include rapidly developing areas and establishing specific post construction requirements for stormwater discharges from new development and redevelopment, both inside and outside the MS4 boundary, that may be contributing to waterbody impairments.

Proposed Regulatory Considerations

1. Expand the area subject to federal stormwater regulations.
2. Establish specific requirements to control stormwater discharges from new development and redevelopment.
3. Develop a single set of consistent stormwater requirements for all MS4s.
4. Require MS4s to address stormwater discharges in areas of existing development through retrofitting the sewer system or drainage area with improved stormwater control measures.
5. Explore specific stormwater provisions to protect sensitive areas.

The Locations and Dates for the Five Listening Sessions are:

- January 19, 2010, 10:00 a.m. to 3:00 p.m. at EPA Region 5 Office, 77 W. Jackson Blvd., Chicago, IL 60604
- January 20, 2010, 10:00 a.m. to 3:00 p.m. at EPA Region 9 Office, 75 Hawthorne Street, San Francisco, CA 94105
- January 25, 2010, 10:00 a.m. to 3:00 p.m. at EPA Region 8 Office, 1595 Wynkoop Street, Denver, CO 80202-1129
- January 26, 2010, 10:00 a.m. to 3:00 p.m. at EPA Region 6 Office, 1445 Ross Avenue, Suite 1200 Dallas, Texas 75202
- January 28, 2010, 10:00 a.m. to 3:00 p.m. at EPA HQ Office, Ariel Rios Building, 1200 Pennsylvania Ave. NW, Washington, DC 20004

For further information about this Notice, please write to:

Ms. Holly Galavotti
U.S. Environmental Protection Agency, Office of Water (4203M)
1200 Pennsylvania Ave. N.W.
Washington, D.C. 20460
e-mail: galavotti.holly@epa.gov

You can view or download the complete text of the *Federal Register* notice on the Internet at: <http://www.epa.gov/npdes/stormwater/rulemaking>.



The Economic Impact of Home Building in Kansas

Income, Jobs, and Taxes Generated

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Attachment:

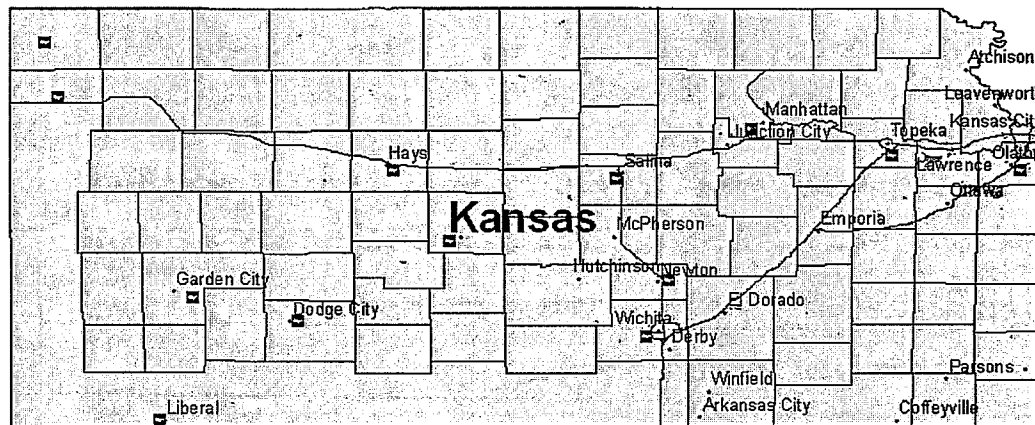
**Local Impact of Home Building—Technical Documentation for the NAHB
Model Used to Estimate the Income, Jobs, and Taxes Generated**

Executive Summary

Home building generates substantial economic benefits for the state in which it takes place, including income and jobs for residents of the state, and revenue for the state government and local governments within the state. The National Association of Home Builders (NAHB) has developed a model to estimate these economic benefits.

The model captures the effect of the construction activity itself, the ripple impact that occurs when income earned from construction activity is spent and recycles in the state's economy, and the ongoing impact that results from new homes becoming occupied by residents who pay taxes and buy goods and services produced within the state. In order to fully capture the positive impact residential construction has on a state's economy, it's important to include the ripple effects and the ongoing benefits.

Since the NAHB model was initially developed in 1996, it has been used to estimate the impacts of construction in over 600 projects, local jurisdictions, metropolitan areas, non-metropolitan counties, and states across the country. This report presents estimates of the impacts of building 100 single family homes in the State of Kansas (see map below), representative of the homes being built in the state in calendar year 2008.



The NAHB model produces impacts on income and employment in 16 industries and local government, as well as detailed information about taxes and other types of local government revenue. Aggregate results are summarized below. Subsequent sections of the report show detail by industry and type of tax or fee revenue generated. Substantially greater detail is available in the attached technical documentation. For example, pages 10 and 11 of the documentation list the items counted as spending on retail trade, an important aspect of estimating both the ripple effects and ongoing benefits.

- The estimated one-year economic impacts of building 5,617 single-family homes in Kansas include

- **\$1.2 billion** in income for Kansas residents,
- **\$209.4 million** in taxes and other revenue for the state and local governments in the state, and
- **19,952 jobs** in Kansas.

The figure for taxes includes revenue from all sources, such as permit and impact fees, for the state government and all local jurisdictions within the state combined. They are also one-year impacts that include both the direct and indirect impact of the construction activity itself, and the impact of local residents who earn money from the construction activity spending part of it within the state. Jobs are measured in full time equivalents—i.e., one reported job represents enough work to keep one worker employed full-time for a year, based on average hours worked per week by full-time employees in the industry.

- The additional, annually recurring impacts of building 5,617 single-family homes in Kansas include

- **\$185.7 million** in income for Kansas residents,
- **\$64.2 million** in taxes and other revenue for the state and local governments in the state, and
- **3,526 jobs** in Kansas.

These are ongoing, annual local impacts that result from the new homes being occupied and the occupants paying taxes and otherwise participating in the state economy year after year. The ongoing impacts also include the effect of increased property taxes, based on the difference between the value of raw land and the value of a completed housing unit on a finished lot, assuming that raw land would be taxed at the same rate as the completed housing unit.

The above impacts were calculated assuming that new single-family homes built in Kansas in 2008 have an average price of \$253,474; are built on a lot for which the average value of the raw land is \$5,217; require the builder and developer to pay an average of \$3,600 in impact, permit, and other fees to local governments; and incur an average property tax of \$3,545 per year. In addition to the property tax, governments in Kansas provide infrastructure that is initially bond-financed, then charged to new homes through a special assessment to pay off the bonds. The special assessment on an average new home in Kansas was determined to be \$20,000 and that amount was effectively added to the house price to best estimate the full impact of new construction. This information was obtained from the Kansas Association of REALTORS®; the Property Valuation Division, Kansas Department of Revenue; various Home Builder Associations across Kansas; and the U.S. Census Bureau.



**The Economic Impact of Home
Building in Kansas**

**Income, Jobs, and
Taxes Generated**

**Detailed Tables
on
Income, Jobs,
and Taxes**

Impact of Building 5,617 Single-Family Homes in Kansas

Summary

Total One-Year Impact: Sum of Phase I and Phase II:

Total Income in Kansas	Business Owners' Income	Wages and Salaries	State and Local Taxes ¹	Jobs Supported
\$1,176,345,500	\$340,888,800	\$835,457,100	\$209,430,900	19,952

Phase I: Direct and Indirect Impact of Construction Activity:

Total Income in Kansas	Business Owners' Income	Wages and Salaries	State and Local Taxes ¹	Jobs Supported
\$758,744,600	\$211,853,700	\$546,891,200	\$118,388,700	12,458

Phase II: Induced (Ripple) Effect of Spending the Income and Taxes from Phase I:

Total Income in Kansas	Business Owners' Income	Wages and Salaries	State and Local Taxes ¹	Jobs Supported
\$417,600,900	\$129,035,100	\$288,565,900	\$91,042,200	7,494

Phase III: Ongoing, Annual Effect that Occurs When New Homes are Occupied:

Total Income in Kansas	Business Owners' Income	Wages and Salaries	State and Local Taxes ¹	Jobs Supported
\$185,664,000	\$51,095,000	\$134,569,000	\$64,239,800	3,526

¹ The term local taxes is used as a shorthand for local government revenue from all sources: taxes, fees, fines, revenue from government-owned enterprises, etc.

**Impact of Building 5,617 Single-Family Homes in Kansas
Phase I—Direct and Indirect Impact of Construction Activity**

A. Income and Jobs in Kansas by Industry

Industry	Total Income in Kansas	Business Owners' Income	Wages and Salaries	Wages & Salaries per Full-time Job	Number of Jobs Supported in Kansas
Construction	\$522,588,300	\$134,777,700	\$387,810,600	\$45,000	8,621
Manufacturing	\$77,300	\$5,000	\$72,300	\$47,000	2
Transportation	\$1,330,100	\$181,500	\$1,148,600	\$37,000	31
Communications	\$7,798,200	\$2,382,400	\$5,415,800	\$68,000	79
Utilities	\$2,216,300	\$860,300	\$1,356,100	\$77,000	18
Wholesale and Retail Trade	\$76,588,100	\$14,022,700	\$62,565,500	\$33,000	1,878
Finance and Insurance	\$16,622,000	\$1,347,800	\$15,274,300	\$76,000	201
Real Estate	\$32,391,600	\$28,514,700	\$3,876,900	\$47,000	83
Personal & Repair Services	\$5,318,600	\$2,006,200	\$3,312,400	\$30,000	110
Services to Dwellings / Buildings	\$3,029,900	\$602,800	\$2,427,100	\$30,000	80
Business & Professional Services	\$73,222,100	\$21,814,200	\$51,408,000	\$53,000	976
Eating and Drinking Places	\$2,516,000	\$338,400	\$2,177,600	\$18,000	119
Automobile Repair & Service	\$2,518,700	\$781,800	\$1,736,900	\$30,000	58
Entertainment Services	\$436,100	\$89,500	\$346,500	\$41,000	8
Health, Educ. & Social Services	\$98,900	\$26,600	\$72,300	\$35,000	2
State and Local Government	\$624,200	\$0	\$624,200	\$49,000	13
Other	\$11,368,200	\$4,102,100	\$7,266,100	\$40,000	180
Total	\$758,744,600	\$211,853,700	\$546,891,200	\$44,000	12,458

B. State and Local Government General Revenue by Type

TAXES:		USER FEES & CHARGES:	
Business Property Taxes	\$2,860,000	Residential Permit / Impact Fees	\$20,221,200
Residential Property Taxes	\$0	Utilities & Other Govt. Enterprises	\$7,657,400
General Sales Taxes	\$44,971,900	Hospital Charges	\$5,046,700
Specific Excise Taxes	\$1,758,400	Transportation Charges	\$922,700
Income Taxes	\$18,181,900	Education Charges	\$7,303,600
License Taxes	\$1,471,500	Other Fees and Charges	\$7,245,100
Other Taxes	\$748,400	TOTAL FEES & CHARGES	\$48,396,600
TOTAL TAXES	\$69,992,000	TOTAL GENERAL REVENUE	\$118,388,700

**Impact of Building 5,617 Single-Family Homes in Kansas
Phase II—Induced Effect of Spending Income and Tax Revenue from Phase I**

A. Income and Jobs in Kansas by Industry

Industry	Total Income in Kansas	Business Owners' Income	Wages and Salaries	Wages & Salaries per Full-time Job	Number of Jobs Supported in Kansas
Construction	\$18,178,700	\$6,970,500	\$11,208,200	\$45,000	249
Manufacturing	\$80,600	\$6,200	\$74,400	\$47,000	2
Transportation	\$2,004,200	\$281,500	\$1,722,700	\$31,000	55
Communications	\$23,617,300	\$8,008,700	\$15,608,600	\$67,000	232
Utilities	\$10,991,100	\$4,346,100	\$6,645,100	\$77,000	87
Wholesale and Retail Trade	\$64,689,400	\$12,167,500	\$52,521,900	\$30,000	1,773
Finance and Insurance	\$16,322,200	\$1,474,400	\$14,847,900	\$68,000	219
Real Estate	\$67,799,200	\$59,684,400	\$8,114,800	\$47,000	173
Personal & Repair Services	\$14,239,000	\$6,491,700	\$7,747,300	\$30,000	257
Services to Dwellings / Buildings	\$3,348,500	\$666,200	\$2,682,300	\$30,000	89
Business & Professional Services	\$41,841,600	\$12,170,500	\$29,671,100	\$48,000	624
Eating and Drinking Places	\$18,957,400	\$2,549,900	\$16,407,400	\$18,000	893
Automobile Repair & Service	\$9,279,100	\$2,827,300	\$6,451,800	\$30,000	214
Entertainment Services	\$4,458,800	\$1,228,500	\$3,230,300	\$34,000	96
Health, Educ. & Social Services	\$50,782,500	\$6,476,900	\$44,305,600	\$44,000	997
State and Local Government	\$60,739,900	\$0	\$60,739,900	\$46,000	1,330
Other	\$10,271,400	\$3,684,800	\$6,586,600	\$32,000	205
Total	\$417,600,900	\$129,035,100	\$288,565,900	\$39,000	7,494

B. State and Local Government General Revenue by Type

TAXES:		USER FEES & CHARGES:	
Business Property Taxes	\$12,376,300	Residential Permit / Impact Fees	\$0
Residential Property Taxes	\$0	Utilities & Other Govt. Enterprises	\$15,029,700
General Sales Taxes	\$22,635,200	Hospital Charges	\$6,101,500
Specific Excise Taxes	\$7,609,200	Transportation Charges	\$507,800
Income Taxes	\$11,056,900	Education Charges	\$4,019,800
License Taxes	\$1,722,800	Other Fees and Charges	\$8,497,200
Other Taxes	\$1,485,600	TOTAL FEES & CHARGES	\$34,156,100
TOTAL TAXES	\$56,886,100	TOTAL GENERAL REVENUE	\$91,042,200

**Impact of Building 5,617 Single-Family Homes in Kansas
Phase III—Ongoing, Annual Effect That Occurs Because Units Are Occupied**

A. Income and Jobs in Kansas by Industry

Industry	Total Income in Kansas	Business Owners' Income	Wages and Salaries	Wages & Salaries per Full-time Job	Number of Jobs Supported in Kansas
Construction	\$9,416,200	\$3,582,600	\$5,833,600	\$45,000	130
Manufacturing	\$39,000	\$2,900	\$36,100	\$47,000	1
Transportation	\$714,900	\$98,900	\$616,000	\$34,000	18
Communications	\$10,713,900	\$3,616,400	\$7,097,500	\$67,000	105
Utilities	\$5,688,200	\$2,244,100	\$3,444,100	\$77,000	45
Wholesale and Retail Trade	\$31,494,000	\$5,925,200	\$25,568,800	\$30,000	864
Finance and Insurance	\$10,082,000	\$914,600	\$9,167,500	\$67,000	137
Real Estate	\$19,379,300	\$17,059,800	\$2,319,500	\$47,000	49
Personal & Repair Services	\$5,494,200	\$2,509,400	\$2,984,800	\$30,000	99
Services to Dwellings / Buildings	\$1,708,500	\$339,900	\$1,368,600	\$30,000	45
Business & Professional Services	\$19,131,900	\$5,640,200	\$13,491,700	\$48,000	284
Eating and Drinking Places	\$9,273,100	\$1,247,300	\$8,025,800	\$18,000	437
Automobile Repair & Service	\$4,338,400	\$1,322,100	\$3,016,300	\$30,000	100
Entertainment Services	\$2,697,400	\$740,200	\$1,957,200	\$31,000	62
Health, Educ. & Social Services	\$22,382,400	\$2,942,700	\$19,439,600	\$44,000	444
State and Local Government	\$25,532,700	\$0	\$25,532,700	\$46,000	558
Other	\$7,577,900	\$2,908,700	\$4,669,200	\$32,000	147
Total	\$185,664,000	\$51,095,000	\$134,569,000	\$38,000	3,526

B. State and Local Government General Revenue by Type

TAXES:		USER FEES & CHARGES:	
Business Property Taxes	\$5,501,300	Residential Permit / Impact Fees	\$0
Residential Property Taxes	\$19,501,600	Utilities & Other Govt. Enterprises	\$8,194,600
General Sales Taxes	\$10,061,400	Hospital Charges	\$5,466,300
Specific Excise Taxes	\$3,382,300	Transportation Charges	\$225,800
Income Taxes	\$4,915,800	Education Charges	\$1,787,200
License Taxes	\$765,800	Other Fees and Charges	\$3,777,400
Other Taxes	\$660,400	TOTAL FEES & CHARGES	\$19,451,300
TOTAL TAXES	\$44,788,500	TOTAL GENERAL REVENUE	\$64,239,800



The Economic Impact of Home Building in Kansas

Income, Jobs, and Taxes Generated

Prepared by the
Housing Policy Department

December 2009

National Association of Home Builders
1201 15th Street, NW
Washington, DC 20005
202-266-8398



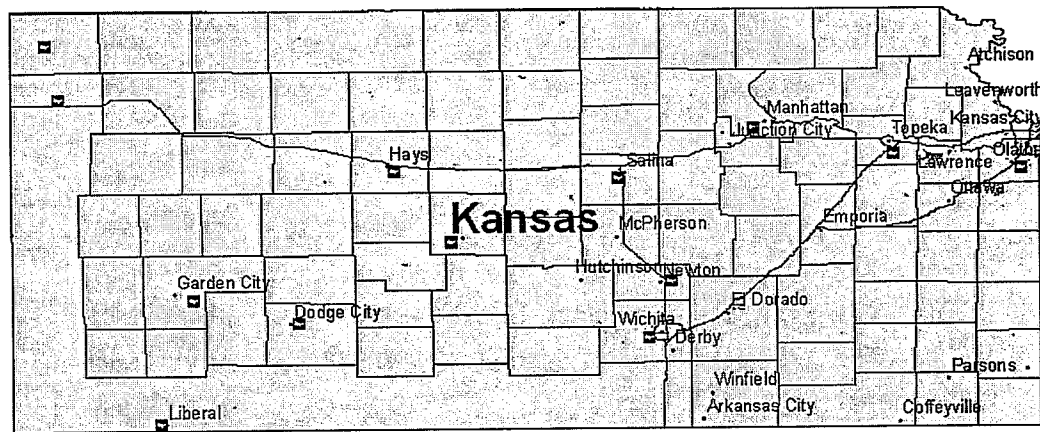
National Association of Home Builders

Introduction

Home building generates economic impacts in the state where it takes place, including income and jobs for residents of the state, and revenue for the state government and local governments within the state. It also typically imposes costs on state and local governments—such as the costs of providing primary and secondary education, police and fire protection, and water and sewer service. Not only do these services require annual expenditures for items such as teacher salaries, they typically also require capital investment in buildings, other structures, and equipment that state and local governments within the state own and maintain.

This report presents estimates of the impacts of building 5,617 single family homes in the State of Kansas (Figure 1), based on the number and types of homes built in the state in 2008.

Figure 1.



The economic benefits generated by this level of home construction in the State of Kansas are reported in the NAHB document *The Economic Impact of Home Building in Kansas: Income, Jobs and Taxes Generated*. This report presents estimates of the costs—including current and capital expenses—that new homes impose on the state government and all jurisdictions within the state, and compares these costs to the revenue. The results are intended to answer the question of whether or not, from the standpoint of state and local governments, residential development pays for itself—and, if so, how quickly.

Costs Compared to Revenue

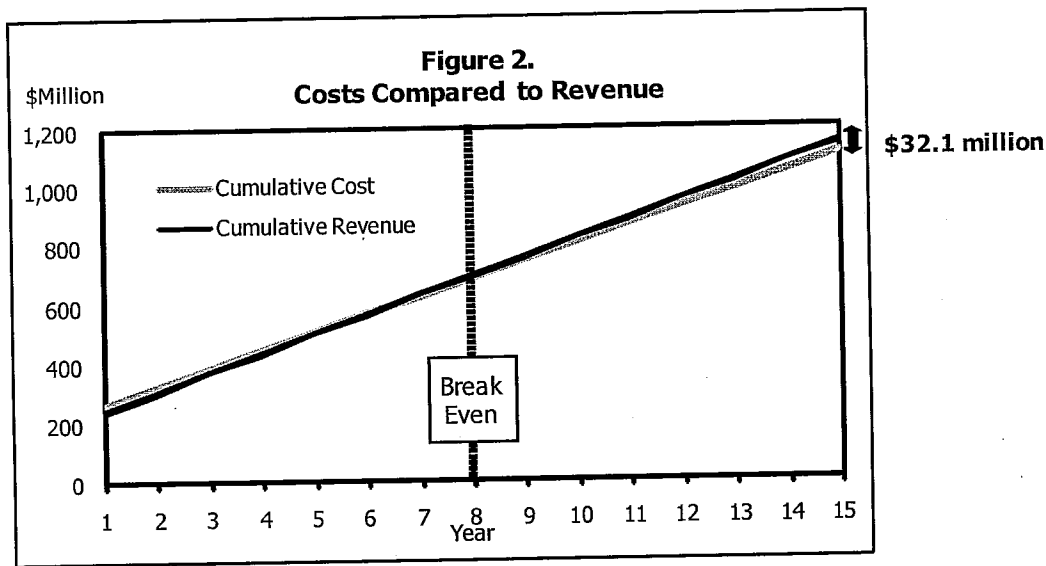
This section summarizes the cost-revenue comparison. The relevant assumptions about the single-family homes built in Kansas in 2008 (including their average price, property tax payments, construction-related fees incurred and special assessments) are described in *The Economic Impact of Home Building in Kansas: Income, Jobs and Taxes Generated*.

- In the first year, 5,617 single-family homes built in Kansas result in an estimated
 - **\$241.6 million** in tax and other revenue for the state government as well as local governments in the state,¹
 - **\$29.9 million** in current expenditures by the state and local governments to provide public services to the net new households at current levels, and
 - **\$226.4 million** in capital investment for new structures and equipment undertaken by the state local governments

The analysis assumes that the state and local governments finance the capital investment by borrowing at the prevailing rate of 4.40 percent on tax-exempt bonds.²

- In a typical year after the first, the 5,617 single-family homes result in
 - **\$64.2 million** in tax and other revenue for state and local governments, and
 - **\$59.7 million** in state and local government expenditures needed to continue providing services at current levels.

- The difference between government revenue and current expenditures is defined as an "operating surplus." If it is assumed that the operating surplus is used first to service and then to pay down the debt, all debt incurred by investing in structures and equipment at the beginning of the first year can be entirely paid off by the end of the eighth year. After that, future operating surpluses will be available to finance other projects or reduce taxes. After 15 years, the homes will generate a cumulative **\$1,140.9 million in revenue** compared to **\$1,108.8 million in costs**, including annual current expenses, capital investment, and interest on debt (Figure 2).



¹ This assumes that homes are occupied at a constant rate during the year, so that the year captures one-half of the ongoing, annual revenue generated as the result of increased property taxes and the new residents participating in the local economy.

² The analysis assumes that there is currently no excess capacity, that local governments invest in capital before the homes are built, and that no fees or other revenue generated by construction activity are available to finance the investment, so that all capital investment at the beginning of the first year is financed by debt. This is a conservative assumption that results in an upper bound estimate on the costs incurred by local governments. For information about the particular interest rate on municipal bonds used, see page 2 of the technical appendix.

Method Used to Estimate Costs

The method for estimating revenue for the Kansas State government and local jurisdictions in the generated by home building is explained in the attachment to *The Economic Impact of Home Building in Kansas: Income, Jobs and Taxes Generated*. This section describes how costs to state and local governments are estimated.

The general approach is to assume that state and local jurisdictions supply residents of new homes with the same services that they currently provide, on average, to occupants of existing structures. The amount that any jurisdiction spends is available from the Census of Governments, where all units of government in the U.S. report line item expenses, revenues, and intergovernmental transfers once every five years to the Governments Division of the U.S. Census Bureau. Census of Governments accounts can be aggregated for the Kansas State government and every local government in the state, and then used to produce total annual expenses per average housing unit (Table 1):

Table 1.
Annual Kansas State and Local Government Expenses
Per Single-Family Housing Unit
(in 2008 Dollars)

Education	\$6,245
Police Protection	\$543
Fire Protection	\$213
Corrections	\$385
Streets and Highways	\$175
Water Supply	\$269
Sewerage	\$86
Health Services	\$1,216
Recreation and Culture	\$261
Other General Government	\$991
Electric Utilities	\$223
Gas Utilities	\$19
Public Transit	\$9
Total	\$10,636

Not surprisingly, cost per housing unit varies substantially across the major service categories. Education accounts for the largest share of annual expenses, followed by the shares for publicly provided health services and miscellaneous general government functions.

In deriving the above estimates, water supply and sewerage expenses are allocated based on gallons of water consumed per day by single-family and multifamily households. Streets and highway expenses are allocated based on average number of vehicle trips generated on weekdays. Education is allocated based on average number of children age 5 through 18. The

remaining expenses listed in Table 1 are assumed to be proportional to household size and are allocated to single-family and multifamily units based on average number of persons per household.³

There are several factors present in most parts of the country that tend to reduce education expenses per housing unit. The first is the average number of school-aged children present in the units. According to the American Housing Survey, there is, on average, only a little over one school-aged child for every two households in the U.S. The number is about 0.6 per household for single-family and under 0.4 per household for multifamily. So education costs per housing unit are lower than costs per pupil, simply because there is less than one pupil per household.

Beyond that, a share of households typically send their children to private schools. According to the National Center for Education Statistics (NCES), the share is 12.6 percent of all school-aged children nationally. As public monies are very rarely used to pay for private instruction, this tends to further reduce K-12 public school expenses, although the extent to which that occurs varies from place to place. Moreover, according to the NCES another 1.7 percent of students nationwide, ages 5 to 17, with a grade equivalent of kindergarten through grade 12, are homeschooled, which further acts to reduce the cost of public education.

In addition to current expenses, providing services to residents requires that state and local governments make capital expenditures for items such as schools and other buildings, equipment, roads, and other structures.

Table 2.
Kansas State and Local Government Capital
Per Single-Family Housing Unit
(in 2008 Dollars)

Schools	\$9,328
Hospitals	\$254
Other Buildings	\$9,164
Highways and streets	\$5,805
Conservation & development	\$34
Sewer systems	\$2,377
Water supply	\$9,651
Other structures	\$3,359
Equipment	\$337
Total	\$40,310

³ Information about vehicle trips comes from *Trip Generation*, published by the Institute of Transportation Engineers. Information about water consumption comes from *Analysis of Summer Peak Water Demands*, a study undertaken by the City of Westminster, Colorado Department of Water Resources and Aquacraft, Inc. Water Engineering and Management. Information about household size and number of children comes from the American Housing Survey, conducted by the U.S. Census Bureau for the Department of Housing and Urban Development.

The process of estimating capital costs involves several steps. The general approach uses parameters from a conventional economic model (a production relationship, where costs are expressed as a function of labor and capital) estimated with state level data. State and local government capital in each state can be derived through a procedure that has been established over several decades in the technical literature on public finance (see the technical appendix for details). The parameter estimates are then applied to a particular area, where information is available for every variable except capital. The stock of capital emerges as a residual in the calculation. Consistent with the approach used to estimate current expenses, the amount of capital in each category is expressed as the amount necessary to accommodate an average housing unit (Table 2).

To implement these numbers, several conservative assumptions are made to avoid understating the costs. In contrast to the way current expenses were handled, intergovernmental transfers are generally not taken into account here—it is assumed that state and local governments undertake all capital investment without any help from the states. The exception is highways and streets, for which the amount of current expenditures per dollar of capital is typically quite low. It is further assumed that none of this demand for capital can be met through current excess capacity. Instead, the state and local governments invest in new structures and equipment at the start of the first year, before any homes are built. To the extent that this is not true—that, for instance, some revenue from impact or other fees is available to fund part of the capital expenditures—interest costs would be somewhat lower than reported here.

To compare the streams of costs and revenues over time, the analysis assumes that half of the current expenses and half of the ongoing, annual revenues are realized in the first year. This would be the case if construction and occupancy took place at an even rate throughout the year. Revenues in the first year also include all of the one-time construction impacts such as impact and permit fees.

The difference between revenues and current expenses in a given year is an operating surplus. At the start of the first year, capital investment is financed through debt by borrowing at the current municipal bond interest rate,⁴ and the interest accrues throughout the year. Each year after that, the operating surplus is used first to pay the interest on the debt, if any exists, then to pay off the debt at the end of the year. Results for the 5,617 single-family homes built in Kansas in 2008 are shown in Table 3.

The difference between revenues (the third column) and all costs, including interest on the debt, is shown in the last column. Again, the assumption that any operating surplus is being used to service the debt, and then to retire as much debt as possible at the end of the year applies. Revenue net of costs and interest is negative in the first year, but turns positive beginning in year two.

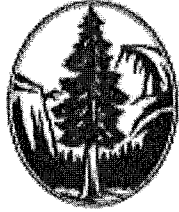
⁴The interest rate on municipal bonds is the monthly Bond Buyer 20-year General Obligation Municipal Bond Index available on the Federal Reserve Board's Web site:
http://www.federalreserve.gov/releases/h15/data/Monthly/H15_SL_Y20.txt.

Table 3. Results for 5,617 Single-Family Homes

Year	Current Expenses	Revenue	Operating Surplus	Capital Investment Start of Year	Debt Outstanding End of Year	Interest on the Debt	Revenue Net of Costs and Interest
1	29,872,400	241,550,80	211,678,40	226,422,500	24,708,600	9,964,500	-24,708,600
2	59,744,800	64,239,800	4,495,000	0	21,301,000	1,087,400	3,407,600
3	59,744,800	64,239,800	4,495,000	0	17,743,400	937,400	3,557,600
4	59,744,800	64,239,800	4,495,000	0	14,029,300	780,900	3,714,100
5	59,744,800	64,239,800	4,495,000	0	10,151,700	617,400	3,877,600
6	59,744,800	64,239,800	4,495,000	0	6,103,500	446,800	4,048,200
7	59,744,800	64,239,800	4,495,000	0	1,877,100	268,600	4,226,400
8	59,744,800	64,239,800	4,495,000	0	0	82,600	4,412,400
9	59,744,800	64,239,800	4,495,000	0	0	0	4,495,000
10	59,744,800	64,239,800	4,495,000	0	0	0	4,495,000
11	59,744,800	64,239,800	4,495,000	1,894,300	0	0	2,600,700
12	59,744,800	64,239,800	4,495,000	0	0	0	4,495,000
13	59,744,800	64,239,800	4,495,000	0	0	0	4,495,000
14	59,744,800	64,239,800	4,495,000	0	0	0	4,495,000
15	59,744,800	64,239,800	4,495,000	0	0	0	4,495,000

Cumulatively, revenue net of costs and interest is sufficient to pay off all debt by the end of year eight. After that, revenue net of costs generated by the 5,617 single-family homes is roughly \$4.5 million per year.

Table 3 shows net revenue temporarily dropping from \$4.5 million to \$2.6 million in year 11, due to a cost increase that occurs because capital equipment purchased at the start of the first year becomes fully depreciated and needs to be replaced at that time. All other capital investment consists of structures of various types, and these tend to have considerably longer service lives.



SIERRA
CLUB
FOUNDED 1892

CHRIS CARDINAL
LEGISLATIVE COORDINATOR
785-550-2432
CHRIS@PRINCIPLESTRATEGY.COM
SIERRA CLUB, KANSAS CHAPTER
9844 GEORGIA, KANSAS CITY, KS 66109

RE: PRESCRIBED BURNING IN THE FLINT HILLS
BEFORE THE HOUSE ENERGY AND UTILITIES COMMITTEE

THE FOLLOWING IS A COLLECTION OF EXCERPTS FROM THE REFERENCED PAPERS
WHICH SUPPORT A 3 YEAR BURN CYCLE

ANNUAL PRAIRIE BURNING AND INTENSIVE EARLY-STOCKING
HARMS THE PRAIRIE CHICKEN

Human impacts on tallgrass prairies and their biota have been severe. Among recent impacts is the shift from mosaic or rotational burns in fall and spring to broadscale artificial burns annually in the spring, coupled with “early intensive cattle stocking. (1)

These declines are closely associated with different burning regimes: where spring burning regimes and associated early intensive cattle stocking are common, prairie-chickens are declining dramatically, whereas where spring burning is rare and/or rotated, populations are stable. We suggest that this relatively new management technique works to the great detriment of the Greater Prairie-Chicken—and indeed to that of an entire suite of species that depend on prairie vegetation that is not burned yearly. (1)

In short, **spring burning followed by early intensive stocking of cattle** on an annual basis make the prairie all but uninhabitable for these species. This technique, combined with other problems (e.g., invasion of the prairies by *Sericea cuneata* [Fabaceae], resulting in spraying for control), **could easily place the species in serious danger of regional extirpation or even extinction altogether.** (1)

Direct effects of fire on birds include destruction of nests, while indirect effects may involve changes to vegetation, which favor some bird species over others. Greater-Prairie Chickens (*Tympanuchus cupido*), Henslow’s Sparrows (*Ammodramus henslowii*), and Dickcissels (*Spiza americana*) respond negatively to annual fire. (2)

Birds and other organisms dependent on this habitat have declined concomitantly, and many species have become of high conservation concern. **Emblematic of this habitat is the greater prairie-chicken (*Tympanuchus cupido*), a species whose fate has followed the prairie’s fate.** Even where tallgrass prairie remains—where it has not succumbed to the plow—it is impacted by land management, particularly those practices associated with cattle ranching (Robbins et al. 2002). Chief among these management tools is prescribed fire. (3)

Our data suggest that both male and female greater prairie-chickens favor a patchwork of burned and undisturbed tallgrass prairie. (3)

The management practice of spring burning in the Flint Hills has been intensified (100% of pastures) to improve forage value and utilization by livestock (Applegate and Horak 1999). Consequently, **minimum nesting cover values for Greater Prairie-Chickens often are lacking in the Flint Hills of Kansas and Oklahoma due to a combination of annual spring burning and intensive grazing stimulated by the burning regime.** "Good" range management is good for livestock production in this setting, but is detrimental to prairie grouse because there is "virtually no cover for spring nesting" (Clubine 2002:2). (4)

In the Flint Hills of Kansas (Applegate and Horak 1999) and Oklahoma (Horton and Wolfe 1999), there has been an increase in extensive spring burning to increase pasture utilization by livestock. Although this may be good for livestock production, it can significantly diminish the residual cover needed by hens and broods. (4)

THE BEST SOLUTION IS A 3-YEAR PATCH BURNING REGIME

Management Recommendations: Rejuvenate nesting cover by rotational disturbance management every 3-5 yr, with prescribed burning being the most desirable disturbance (Kirsch et al. 1973, Westemeier and Buhnerkempe 1983, Toepfer 1988, Applegate and Horak 1999, Westemeier and Gough 1999). (4)

Clubine (2002) reported that **patch burning and grazing**, which involves rotationally burning a third of a parcel, **offers ranchers an environmentally sensitive alternative which doesn't greatly diminish livestock yields.** This could dramatically improve nesting conditions, however, by leaving as much as 2/3 of the range unburned throughout the nesting season. (4)

This (Intensive Early-Stocking) system is profitable for ranchers, but results in a high percentage of land in this region receiving fire treatment nearly every year, an interval shorter than that believed to be the historical fire interval of 3-4 yr (Robbins and Ortega-Huerta 2002). The spring timing of these burns also differs from the historical timing of lightning-set fires, which were usually ignited in late summer. (2)

Patch burning involves burning roughly one-third of a given area in each year (Fuhlendorf and Engle 2001). This creates focal points of intense herbivory, results in a fire-return interval of 3 yr, leads to increased structural heterogeneity, and, at least initially, appears to be productive in terms of herbivore response. **This management regime is probably closer to the natural patterns and processes of tallgrass prairie** (Howe 1994). (2)

In effect, for prairie to represent a viable habitat for these species, **a mosaic of burn frequencies of 1-5 years is necessary** (Knapp and Seastedt 1998). Hence, a system centered around

rotational prescribed burning, combined with reduced grazing pressure, is highly recommended. (1)

Management practices will need to change if we hope to conserve viable populations of this species. **A key change involves the timing and extent of fires and the associated extent of cattle grazing.** Cattle gain weight more quickly when foraging on recently burned prairie (Zimmerman 1997), a result of increased forage quality and primary productivity; therefore, ranchers have an economic incentive to continue with spring burns. Yet such burns need not cover vast areas nor affect the same areas year after year. **A rotation of smaller burns (and their associated grazing pressure)—the basic idea of patch burning (Johnson 1997, Fuhlendorf and Engle 2004)—would create the patchwork of burned and unburned prairie necessary for the greater prairie-chicken. (3)**

Recommended 70-80% grass and 10-20% forbs as optimal grassland composition, and habitat should be 75% grassland and 25% cropland; **prescribed fire best applied on 4-yr rotation; large pastures were best because they promoted a variety of grazing intensities with different habitat uses” (5)**

Our data suggest some tallgrass prairie snakes avoid freshly burned tallgrass prairie but can recolonize burned areas within a single growing season. **We recommend that unburned areas be maintained adjacent to prescribed burns in managed tallgrass prairies to serve as snake refugia. (6)**

Fire frequency has significant effects on the biota of tallgrass prairie...concern has been expressed that **widespread annual burning, sometimes in combination with heavy livestock grazing, negatively impacts the biota of remaining prairie remnants. A common management recommendation, intended to address this problem is to create a landscape with a mosaic of different burn regimes.** Fire frequency effects were manifested primarily in changes in abundance of common species. (7)

Burning is necessary to maintain a tallgrass prairie but **should be done only every three to four years on a pasture rotation basis;** that is, burning one-third to one-fourth of an area each year. Generally, burning for best prairie chicken management occurs after early April, about the same time as first nest initiation. This will cause some nest losses, but hens will re-nest. If pasture burning is rotated annually, suitable habitat will be available for subsequent nesting. In the long run, this type of burning benefits prairie chicken populations. (8)

To provide prime nesting conditions, two management techniques can be used: 1) moderate to light grazing to maintain the proper height and density of vegetation and create edges; and 2) burning every three to four years to create nesting cover. If occasional burning is not done on moderately grazed pastures, the residual growth will reach a density discouraging hen use...**A good technique is to control burn only a third of the pastures every year. (8)**

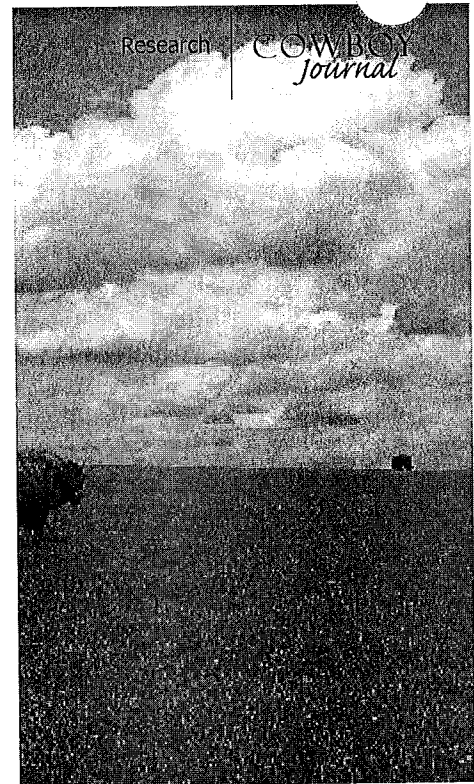
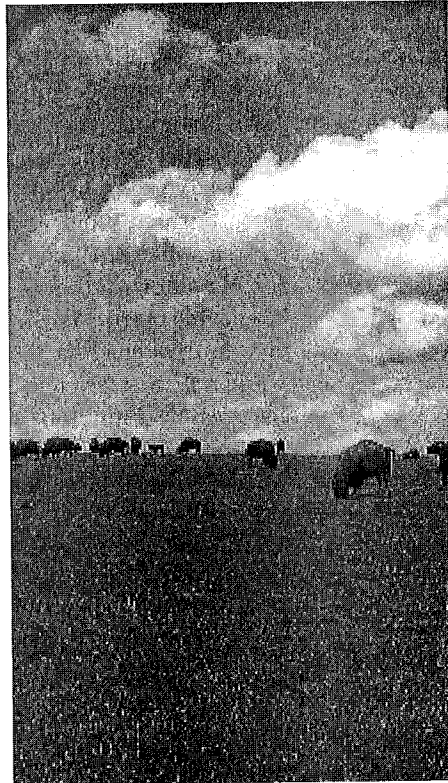
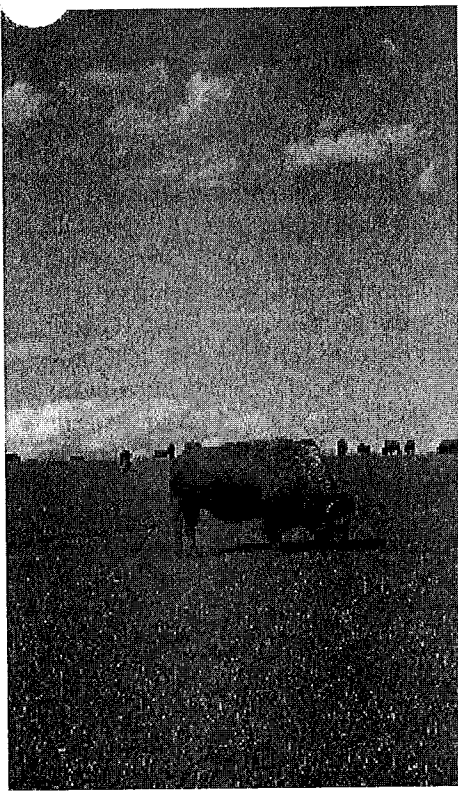
A patchy burn (about 20% unburned area) is most desirable for wildlife. This leaves adequate cover for upland and big game and a winter food supply of various nuts and acorns. Prescribed fires, in general, greatly increase the diversity of wildlife species, as well as population densities on all vegetation types (R. Komarek, 1963; Marshall, 1963). (9)

Historical evidence suggests that pre-settlement tallgrass prairie fires took place at irregular intervals of perhaps 3–10 yr in any given area. Fires were ignited by both American Indians and by lightning at various times of the year but especially in late summer. Contemporary use of fire in tallgrass prairie is a necessary and powerful management tool that can yield dramatic results in terms of the response of both vegetation and birds. **Fire and grazing today rarely operate at the same frequency or with the same seasonality as they did historically, and certainly not at the same scale.** (2)

Current widespread use of annual or near-annual burning in the spring, together with widespread lack of burning in other areas, promotes a single type of grassland habitat available to birds. Such uniformity of management does not provide adequate habitat for the suite of tallgrass prairie bird species. **A shift to more varied fire regimes, which still maintain the profitability of ranching, would allow for greater avian species diversity and potentially higher nest success as well.** (2)

Based on the trends and patterns documented herein, as well as on our observations of prairie species across the Flint Hills region in recent years, **we and numerous colleagues involved with tallgrass prairie biotas are convinced that the spring burning regime with early intensive livestock grazing represent a serious threat to numerous elements of biodiversity.** (1)

Fire frequency has significant effects on the biota of tallgrass prairie, including mammals, vascular plants and birds. Recent concern has been expressed that widespread annual burning, sometimes in combination with heavy livestock grazing, negatively impacts the biota of remaining prairie remnants (7)



Sparking a new trend

Researchers discover the benefits of a new rangeland management technique

By **Leslie N. Smith**, Sand Springs, Okla.

Before western settlement and the bison's population decline, these massive animals roamed the tallgrass prairie and grazed its nutritious grasses and forbs. To the average person, their movements may have seemed random, even pointless. But to experts, their roaming patterns have become a source of information that can benefit cattle ranchers and conservationists alike.

Performing research

Sam Fuhlendorf, professor and researcher for Oklahoma State University's natural resource ecology and management department, worked with researchers at Oklahoma's Tallgrass Prairie Preserve to confirm theories he developed about bison's roaming habits.

"Historically, bison grazing patterns followed fire," Fuhlendorf said. "Fires were started by light-

ning or natives, and the unburned areas were not grazed much and accumulated fuel to burn later."

Knowing this, Fuhlendorf said he wondered whether the cattle would follow the same pattern as bison if he burned small areas of land. He wanted to know if the cattle would benefit from it and how native grassland species would be affected. To come to a conclusion, Fuhlendorf designed a study involving patch burning.

"We took two sections of land and used different management techniques for each," Fuhlendorf said. "In the first section, we divided it into six subsections, burning one subsection in the spring and one in the fall. The other section was completely burned once."

At the end of three years, each of the subsections in section one had been burned, leaving six patches in different stages of re-

growth, Fuhlendorf said. All of section two was at the same stage of regrowth.

To test the effects the patch-burning system had on cattle production, researchers stocked sections one and two with the same number of cattle and let them graze at their will, Fuhlendorf said. The cattle were tracked to determine where they grazed in the sections, and weight and growth statistics were collected.

"We completed the same study in three areas around Oklahoma," Fuhlendorf said. "One study was done at the Tallgrass Prairie Preserve, one at Stillwater's research station and the other at the Marvin Klemme Research Station."

Saving time and money

Some advantages were immediately obvious. When researchers burned all of section two, they

Bison graze on a previously burned patch of land on Oklahoma's Tallgrass Prairie Preserve. (Photo by Steve Winter)

incurred monetary and time costs associated with relocating the cattle, Fuhlendorf said. With patch burning, the cattle did not have to be moved from the section.

As researchers collected statistics and results, more benefits of patch burning were revealed.

"Forage quality on recently burned patches is much greater than forage that has grown," Fuhlendorf said. "So, there is less need for supplemental feed.

"Animals graze everything in burned areas, even weeds they don't otherwise eat, because they are more palatable, more nutritious and have fewer tannins when they are in the early stages of regrowth."

Producers are able to maintain the same livestock production in both sections, but they feed less with the frequent burn scenario, Fuhlendorf said.

"Another benefit to cattle production is risk management," said Bob Hamilton, director of science and stewardship at the Tallgrass Prairie Preserve.

Patch burning provides a reserve patch and diversified forage options, Hamilton said.

"By having pasture in a multi-year rotation, you have higher fuel levels and thus better control of invasive species," Hamilton said.

One of the invasive species that affects forage quality, sericea lespedeza, is taking hold in much of eastern Oklahoma, Fuhlendorf said. With patch burning, these weeds do not increase.

"Sericea lespedeza seed lasts a long time in the soil, and one herbicide treatment won't work," Hamilton said. "With patch-burn grazing, we turn a weed into a forage species, and the cattle eat away your problem."

Oklahoma faces ecological catastrophes with the encroachment of Eastern redcedar, said Dwayne Elmore, assistant professor and wildlife extension specialist at OSU. Burning in the summer will provide for a hotter fire that will burn wood, like cedar, but you can still get a hot burn in winter with the right conditions, he said.

"The elimination of herbicide use, redcedar and noxious weeds are very beneficial aspects of patch burning," Elmore said.

Helping native wildlife

Although ranchers can benefit from patch burning, they are not the only ones who may find patch burning helpful.

"People are interested in more than just livestock on their land," Fuhlendorf said. "You can manage land for wildlife with fire."

Native species from insects to small mammals respond well to patch burning, Fuhlendorf said. Patch burning makes a greater variety of habitat and helps increase species diversity in the prairie.

"Any wildlife species that evolved here did so with a fire and grazing interaction," Elmore said. "The good thing about patch burning is it's very dynamic.

"You can change the scale of the burn in terms of size, time of year and intensity to control for the species you want. For example, to maximize quail management, smaller burns of less than 50 acres are ideal."

While quail are birds commonly associated with the prairie, many other grassland birds benefit from patch burning, as well. One species that responds positively to patch burning is prairie chickens, Hamilton said.

"Prairie chickens are interesting in that during the spring and summer, just for a few months, they seek out very different patch types in a fairly short amount



Stacy Dunkin, a NREM graduate student, starts a fire on an OSU research range during last August's patch-burning study. (Photo by Steve Winter)

of time," Hamilton said. "In the spring, males look for very short vegetation where they can strut.

"Once hens breed, they seek patches with quite a bit of vegetation already on them so they can hide. Then, as soon as their eggs hatch, the hens try to take their babies to a patch with less dense vegetation because it is so difficult for the babies to get around."

By having a diverse landscape, you have a much broader array of grassland birds because different ones require different vegetation, Hamilton said.

What you should know

While patch burning can be useful to ranchers and conservationists, researchers think there are some things both groups should know before implementing a new management plan.

"The producers need to be

comfortable with a forby, weedy initial response," Hamilton said. "People should know that patch burning takes a little more management, and they should be comfortable with having a messier looking landscape. Have trust in the plant community that it will respond and recover."

This leads to another benefit of patch burning. If you start and change your mind, you can burn the rest of your land with no loss on investment, Hamilton said.

"If I were a producer, I would want to know the bottom line, that is, weight gain and cost cuts," Elmore said. "Weight gains don't differ from traditional burns, patch burning costs substantially less, and it kills noxious weeds.

"It removes the need for interior fencing, which is a huge cost, and it greatly reduces handling time," Elmore said.

For those who used fire management before, trying patch burning will not be a big change, but for those who have not, it will be harder, Elmore said.

"We tell people to pick a section of land they are comfortable with and try patch burning for two to three years," Elmore said.

Then, if they are comfortable and it meets their objectives, he recommended they do it for the rest of their land.

"With the adoption curve, it takes a while for new information to take hold and be used," Elmore said. "Once people consider patch burning against the traditional alternatives, we believe they will decide to adopt this technique." ▲

For additional information on patch burning, visit <http://fireecology.ok-state.edu> or call Sam Fuhlendorf at 405-744-9646.



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**INFORMATION IN RESPONSE TO QUESTIONS FROM SENATE
NATURAL RESOURCES COMMITTEE
(FOLLOWUP TO JANUARY 21, 2010 PRESENTATION)**

Senator McGinn asked a question regarding concentration of Particulate Matter of less than 2.5 microns (PM_{2.5}). Staff within the KDHE Bureau of Air put together the enclosed graph showing all PM_{2.5} monitoring site locations in Kansas and the annual mean average from 2006-2008.

Senator McGinn asked a question regarding the location of the Mine Creek monitoring station. This monitoring location is just south of LaCygne and monitors for PM_{2.5}, SO₂, Ozone, and NOx. A map is enclosed showing all monitoring sites presently being operated in Kansas for the evaluation of the ambient air.

Senator Taddikan asked a question regarding the Tier of diesel engine required to meet the existing and proposed MACT. Tier II diesel engines comply with the existing MACT with documentation from the manufacturer. Tier III diesel engines are scheduled to be out in 2011 and will comply with the existing MACT.

The proposed MACT presents several variations (remember this is not a final rule). These scenarios for the proposed MACT are listed in the enclosed document.

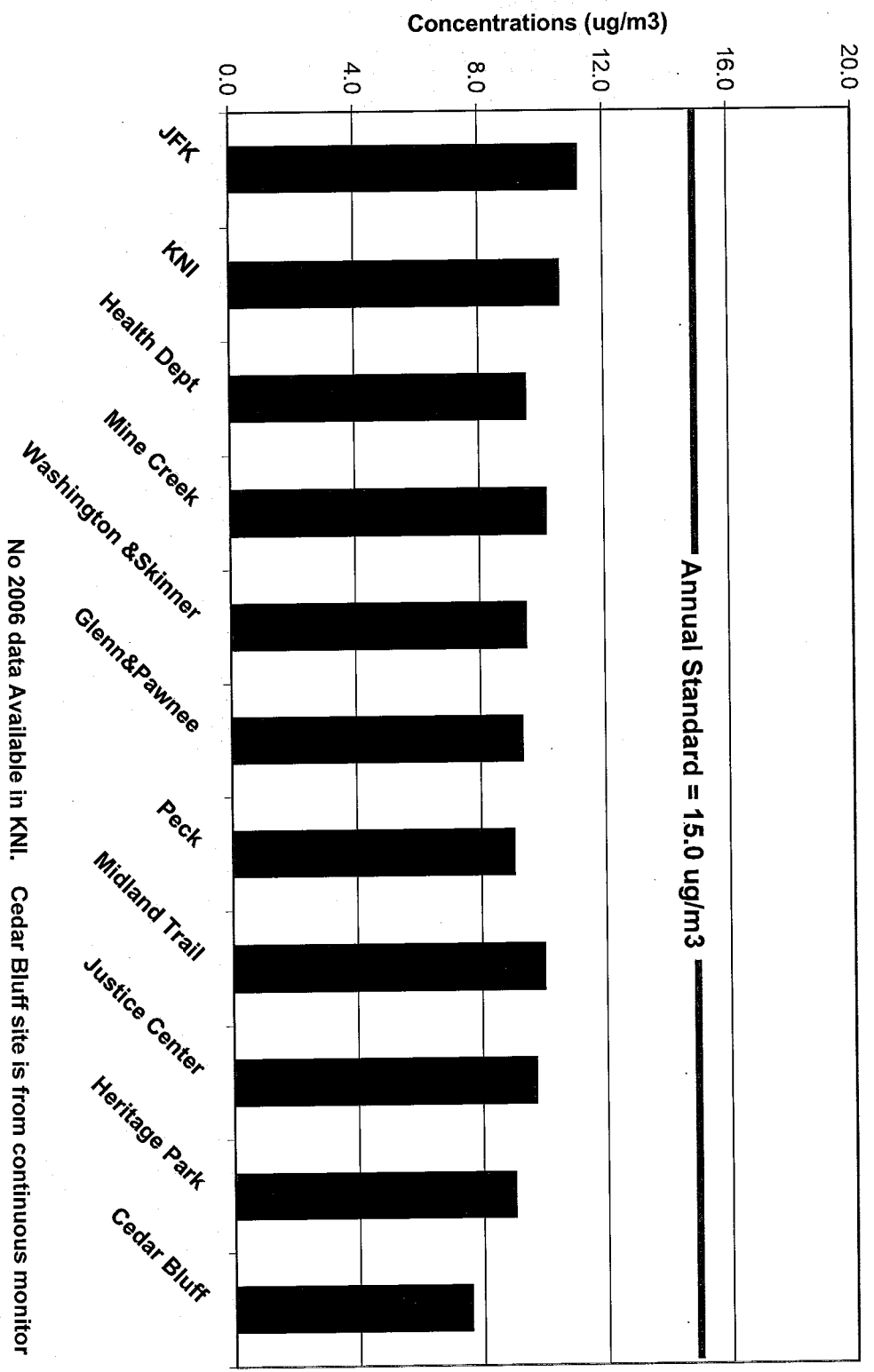
Senator McGinn asked a question regarding the impact on farming operations as it pertains to concentrations of PM_{2.5}. KDHE's analysis of the data from Kansas monitoring sites shows is that the impact of plowing fields is very low. Studies have been done regarding emissions from plowing operations and show that the emissions are very similar to road dust emissions which are predominately PM₁₀ as opposed to PM_{2.5}. Additionally, the particulate material resulting from these operations only travels several hundred feet.

Data evaluation from across Kansas has shown that a much larger component of PM_{2.5} concentration is due to sulfate and nitrate components from fertilization application. This can be minimized by the utilization of Best Management Practices (BMP's) in the application of these fertilizers.

A question was raised regarding the process US EPA currently uses to set National Ambient Air Quality Standards (NAAQS). As an example KDHE has provided a document that briefly describes the process utilized and a short history of the NAAQS for Ozone.

KDHE has been in contact with representatives from State Universities that have a better understanding of the health data utilized for the establishment of NAAQS and how this health data is interpreted to ultimately arrive at a final NAAQS concentration for an airborne contaminant. The names of these contacts have been provided to Legislative Research staff.

Kansas PM2.5 Annual Mean Average from 2006-2008

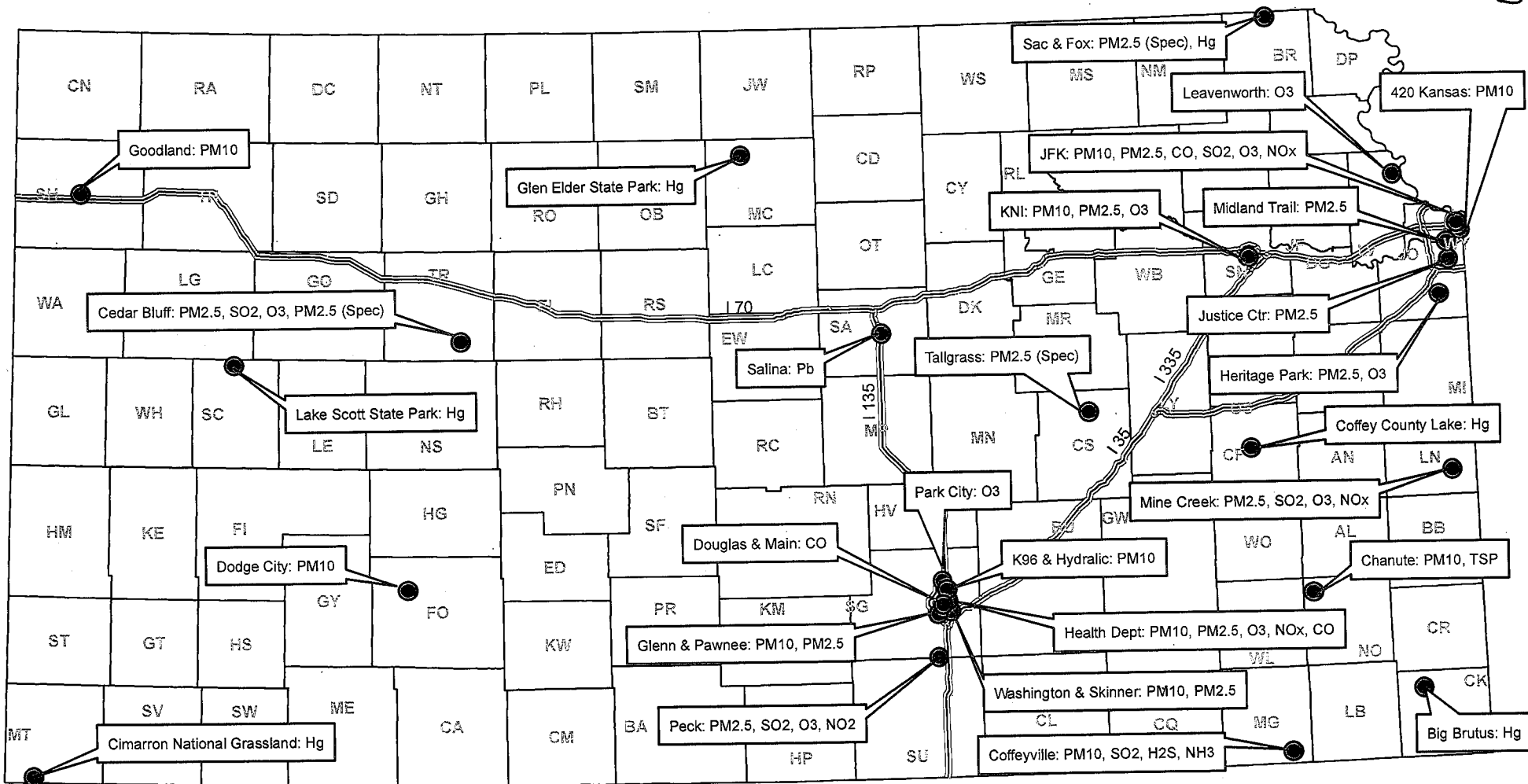


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6-2

Kansas Air Monitoring Sites, January 2010

6-3



6-3

6-9

Existing MACT Part ZZZZ

New engines being installed at current Class I facilities >500 hp

Diesel engines of Tier II (2002) or Tier III (2011) comply with the MACT with documentation from manufacturer.

Tiers require manufacturers to comply with the emission limits from new engines.

Proposed RICE MACT Info Small Area Source Non-Emergency Engines

New engine = initially installed after June 12, 2006

Existing engine = initially installed before June 12, 2006

- Existing Compression Ignition engines (diesel engines) less than 300hp are deemed in compliance and only need to follow maintenance plan.

-New diesel engines less than 300hp are in compliance if a new tier certified engine is purchased after June 12, 2006.

-New diesel engines greater than 300hp are in compliance if a new tier 2 is purchased after June 12, 2006.

- Existing diesel engines greater than 300hp may not be in compliance if a new tier 2 is purchased before June 12, 2006 and will require testing.

-Existing diesel engines greater than 300hp purchased before June 12 2006, may not be compliant.

- New spark ignition engines are compliant if a manufacturer certified engine was purchased after June 12, 2006.

-Existing spark ignition lean burn engine less than 250hp is deemed in compliance and only needs to follow maintenance plan.

-Existing spark ignition lean burn engine greater than 250hp may not be in compliance and would need testing.

Existing spark ignition rich burn engine greater than 50hp may not be in compliance and would need testing.

Present court order requires EPA to have the rule completed by 2/2010. Rule is final 3 years from publication date.

DERA Grant Funding

We have funded irrigation replacement engines in previous grant cycles.

DERA allows for:

- 75% for replacement of old engine (typically called repower)
- 100% to upgrade engine to a higher tiered engine.

In future grant cycles, we will treat irrigation engine replacements and upgrades the same as we have for off-road diesel in the past.

Establishing National Ambient Air Quality Standards

Section 109 of the Clean Air Act (CAA) requires the Environmental Protection Agency (EPA) to set National Ambient Air Quality Standards (NAAQS) for pollutants that are harmful to public health and the environment. There are two types of national air quality standards.

- **Primary standards** protect public health, including the health of sensitive populations such as asthmatics, children, and the elderly.
- **Secondary standards** protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings.

The EPA has established NAAQS for six principal pollutants: ozone, carbon monoxide, lead, nitrogen dioxide, particulate matter, and sulfur dioxide.

The CAA also authorizes the EPA to regulate other air pollutants, such as volatile organic compounds and hazardous air pollutants. Instead of regulating these pollutant concentrations present in ambient air, the EPA regulates sources of these pollutants by establishing emissions limits.

Revisions to the NAAQS

Section 109 of the CAA further requires the EPA Administrator to review the NAAQS at 5-year intervals and make revisions as appropriate. The Administrator may review and revise criteria or issue new standards earlier or more frequently.

Section 109, as revised by the CAA Amendments of 1977, establishes the Clean Air Scientific Advisory Committee (CASAC) to provide independent advice to the EPA Administrator for the NAAQS. The CASAC is composed of seven members, including at least one member of the National Academy of Sciences, one physician, and one person representing State air pollution control agencies. The EPA Administrator is not required to follow the recommendations of the CASAC.

Ozone Standard History

- 1971 - EPA established a 1-hour ozone standard of 0.085 parts per million (ppm).
- 1979 - EPA revised the 1-hour ozone standard to 0.120 ppm.
- 1997 - EPA introduced the 8-hour ozone standard of 0.085 ppm.
- 2003 - The transition occurred from the 1-hour to the 8-hour ozone standard of 0.085 ppm.
- 2008 - EPA revised the 8-hour ozone standard to 0.075 ppm.
- 2010 - EPA proposed to revise the 8-hour ozone standard in the range of 0.060 to 0.070 ppm, EPA also proposed a new secondary ozone standard.

Public Health & Welfare

In 2008, the Clean Air Scientific Advisory Committee recommended an 8-hour ozone standard in the range of 0.060 to 0.070 ppm. When EPA issued the 2008 8-hour ozone standard, they set it

at 0.075 ppm. EPA recently announced that they were going to reconsider the 2008 8-hour ozone standard. The 2010 standard will be based on the same scientific and technical data available when the 2008 ozone standard was issued, which includes more than 1,700 scientific studies by academia, research institutions, and government scientists. The proposal to lower the ozone standard is based on the conclusions reached by CASAC , which are briefly summarized below.

Ozone exposure at concentrations as low as 0.060 ppm affects public health by –

- Reducing lung function and inflaming airways, which can aggravate asthma or other lung diseases;
- Increasing susceptibility to respiratory infections, medication use, and doctor and hospital visits for individuals with lung disease;
- Increasing the risk of premature death from heart or lung disease; and
- Placing children at increased risk, as their lungs are still developing and they are more likely to be active outdoors.

Cumulative ozone exposure affects public welfare by –

- Decreasing the natural defenses of vegetation to disease and insect damage.;
- Reducing crop yields; and
- Injuring plants and trees.

The EPA has proposed an accelerated timeline for implementing the new ozone standards. The final 2010 ozone rule is scheduled to be signed by the EPA Administrator by August 31, 2010. Kansas' designation recommendations will be due to the EPA by January, 2011 and become effective no later than August, 2011. A revision to the State Implementation Plan (SIP) demonstrating how Kansas will meet the 2010 ozone NAAQS will be due to the EPA by December, 2013.

Kansas Prescribed Fire Council

Our Mission: To promote greater understanding of the safe, legal, and responsible use of prescribed fire as a natural resource management tool.

The **Kansas Prescribed Fire Council** was formally established in September 2008 to protect private landowner rights and public land manager options to responsibly use prescribed fire as a grassland natural resource management tool.

In a statewide effort the Council:

- encourages the exchange of information, techniques, and experience among fire practitioners;
- provides for broad-based education and outreach on the benefits of prescribed fire; and
- provides a platform to address prescribed fire advocacy across the state.

The Council was birthed from the **Kansas Grazing Lands Coalition** with great interest from a diverse group of entities and individual ranchers.

The Council has over 50 member groups and about three dozen individual ranchers participating in the Council. The Council operates from established by-laws and is governed by a steering committee.

Steering Committee members:

Brian Alexander, Barber County rancher

Jason Hartman, KS Forest Service

Tim Christian, KGLC

Dr. Walt Fick, KSU

Randy Small, Wilson County rancher

Mark Neely, Ft. Riley

Barth Crouch, Playa Lakes Joint Venture

Prescribed fire is used by variety of individuals, local, state, and federal agencies, and organizations throughout Kansas. Eastern Kansas in particular (and the Red Hills) has a long history of the use of fire as a sound management tool for grazing lands.

Grasslands constitute significant economic, biological, recreational, and aesthetic resources of statewide importance. Kansas grassland acres amount to over 19 million acres or about 36 percent of the land in the state. Fire is essential to the maintenance and improvement of a large percentage of these acres.

Frequent fires, set by lightning strikes and early Native Americans, have shaped Kansas' ecosystems for thousands of years. The plants and animals of the prairie are accustomed to frequent fires and many depend on these fires for their survival.

Some benefits of fire include:

- Maintaining healthy prairies
- Controlling certain invasive woody species (ERC in my area) and other invaders
- Maintaining quality wildlife habitat of both game and nongame species
- Improving grass and forb stands and aesthetics
- Fire can help control diseases
- Effectively managing fuels in the wild land/urban interface,
- Perpetuating fire dependent ecosystems and associated species, and
- Providing for responsible smoke management for safety, health, and air quality concerns

Prescribed fire is a safe way to apply a natural process, ensure ecosystem health, and reduce wildfire risk. Prescribed burning is carried out by experienced, trained, and certified land managers on both public and private lands throughout Kansas.

These professionals assess grassland conditions, determine the type of fire needed, and then write a "prescription" for the application of fire using predicted weather conditions and safety measures. Well-timed prescribed fires reduce the risk of catastrophic wildfires and the resulting smoke impacts to urban air quality. No other tool can so effectively remove the hazardous buildup of wild land fuels.

A three-tiered KS PFC Certified Burning Program is under development to enhance the skills of land managers and acquaint burners with regulations and offer opportunities for more advanced training. This is a goal for the Council to implement by the spring of 2010.

Smoke from prescribed fires is a sign that certain lands are being cared for properly. Careful planning is taken by prescribed fire managers to minimize any potential smoke impacts on public health and safety; as a result, prescribed fire activity is conducted when weather conditions are most favorable. On the other hand, uncontrolled wildfires are usually coupled with extreme weather conditions that impact firefighter and public safety.

The Council has a Smoke Management Team and we are engaging the Kansas Department of Health and Environment, Bureau of Air Quality, in talks to begin developing a suitable smoke management plan to help Kansas meet its EPA air quality goals and allow ranchers to continue the use of prescribed fire as a management tool.

For more information on the Kansas Prescribed Fire Council contact us at 620-241-3636, or visit the KGLC web site, www.kglc.org.