Flint Hills Smoke Management Plan

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Flint Hills Burning and Air Quality

- Flint Hills burning caused ozone exceedances in KC in 2003 and KC and Wichita in 2009 & 2010
- EPA & KDHE have met with agricultural representatives from 2003 to present
  - Research, education, outreach & field training
- EPA denied KDHE’s request to flag 2009 ozone exceedance data due to lack of SMP
- KDHE contacted by ag groups in 2009
- Commitment to develop Smoke Management Plan in 2010
- Committee formed and multiple meetings in 2010 on developing SMP
April 12, 2003 – Fire and Smoke Plumes

Our Vision – Healthy Kansans living in safe and sustainable environments.
April 11, 2010 Fire and Smoke Plumes

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8-hour Ozone Standard

Existing Standard

Proposed Standard

05-07 Average
06-08 Average
07-09 Average
08-10 Average

Kansas City  Park City  Peck  Wichita HD
Why have a smoke management plan?

- To reduce impacts on public health
  - Emissions include Nitrogen Oxides, Volatile Organic Compounds and particulate matter
  - Nitrogen oxides and volatile organic compounds combine to form ozone
- To help meet national air quality standards
- To receive exceptional event flag in case of air quality exceedance

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What happens when air quality standards are exceeded?

- State Implementation Plan (SIP) preparation
- Economic development curtailed
- New rules to reduce NO\textsubscript{x} & VOC emissions
- Potential sanctions for failure to meet standard
- Increased costs for fuel, electricity, goods, etc.
- Citizens breathing polluted air

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About the Plan

- Is voluntary for prescribed burns of rangeland
- Includes restrictions on some types of burning in April
- Includes tools to assist land managers and local fire officials in making burn decisions
- Has a pilot program to evaluate use of a burn checklist
- A web site with a tool to predict smoke plume movement and other burn resources
- Includes plans for outreach and education

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Chapter 1 - Introduction

- Air Quality Impacts From Flint Hills Burning
  - History

- Flint Hills Ecosystem
  - Topography & geology
  - Climate
  - Animal species & habitats
  - Preservation of tallgrass
  - Historic fire cycles & roll of fire

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Chapter 2 - Reasons for Having a SMP

- Health Concerns
- National Ambient Air Quality Standards
- EPA Interim Fire Guidance
- Nonattainment Consequences & Costs
  - State Implementation Plans
  - Reasonably Available Control Technology regulations
  - Transportation Conformity, potential loss of federal highway funds
- Maintaining Flint Hills & Ag Economy
  - Description of intensive early stocking
  - Discussion of weight & financial gains
  - Potential for prairie loss for areas not burned

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Chapter 3 - Reducing Downwind Impacts of Flint Hills Burning

- Review Need for Burning
- Fire Management Practices
  - Air quality, timing, transport wind, mixing height, dispersion
  - Humidity, fuel moisture, temperature
  - Ignition & burn techniques
- Smoke Plan Pilot Project – Spring 2011
  - Greenwood & Chase counties
  - Fire Management Practices booklet

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Chapter 4 - Restrictions on April Burning

- Counties Affected
  - Butler, Chase, Chautauqua, Cowley, Elk, Geary, Greenwood, Johnson, Lyon, Marion, Morris, Pottawatomie, Riley, Sedgwick, Wabaunsee & Wyandotte

- Examples of restricted burns
  - Crop residue
  - Land clearing
  - Yard waste

- Types of burning allowed
  - Agricultural burning to manage prairie and grasslands
  - CRP burning
  - Other burns approved by local authorities on case-by-case basis

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Chapter 5-Outreach, Education & Public Notification

- **Outreach**
  - Fire training events
  - Fire & Smoke Planning Resource website (www.ksfire.org)
  - Broadcast and print media
  - Group presentations

- **Audience**
  - General public
  - Land managers
  - Fire officials

- **Message**
  - Health effects
  - Fire management practices
  - April burn restrictions
Chapter 6 - Surveillance and Enforcement

- **Surveillance**
  - Air monitoring
  - Review of Satellite imagery
  - Post burn season survey of land managers

- **April Burn Restrictions Enforcement**
  - Local fire officials/emergency managers
  - KDHE district offices
Chapter 7 - Data Collection, Research Needs & Long Term Strategies

- Data Collection Pilot program for 2011
- Research Needs
  - Characterize emissions & remote sensing
  - Monitoring studies
  - Timing & frequency
  - Management techniques
  - Health impacts
  - Prairie Chicken
- Long Term Strategies
  - Computer modeling of air quality impacts

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Chapter 8 - Contingency Measures

- Expand April burn restrictions to counties surrounding Flint Hills
- Require fire management practices checklist, notification, & data collection
- Require burn approvals based on weather & pre-existing conditions
- Establish time-of-day windows for burning
- Burn bans based to potential air quality impacts

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Implementation of The Plan

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Plan Implementation

- Let us know what types of outreach and training work best
- Provide input and feedback on the web site, fire management practices and other tools
- Participate in the pilot program in Chase and Greenwood Counties
  - How can the checklist be improved?
- Do your own pilot if you are in another county
- Attend an Extension fire training program
Plan Implementation

- Participate in the reg development process for the April restrictions
- Provide burn information for 2011 to your local fire official for the data collection effort
  - Kansas State University research
  - No landowner-specific information in report
- Pass on information regarding the plan to friends, neighbors and local officials
- Remember that the Plan will change as knowledge and conditions change
QUESTIONS?

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