

Innovative Solid Waste Management Methods in Kansas



Presented to
**Joint Committee on Energy and
Environmental Policy**

Our vision is 'healthy Kansans living in safe and sustainable environments'.
The state belongs to all of us - "Kansas Don't Spoil It"

Innovative Solid Waste Management Methods in Kansas

Recycling (Single Stream)

Composting

Landfill Gas Recovery

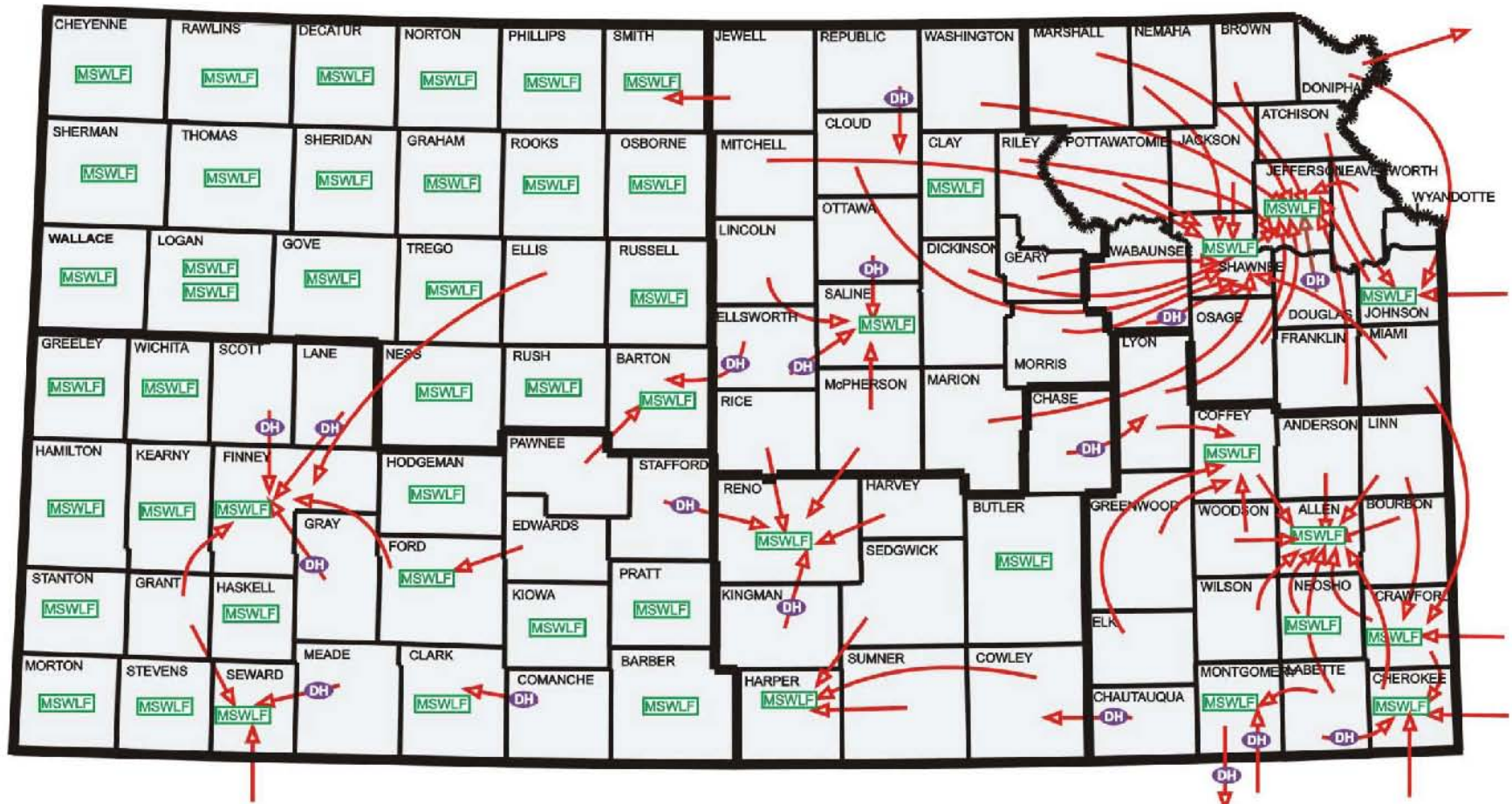
Enhanced Landfill Stabilization

Waste-to-Energy

Industrial/C&D Reuse

**Our vision is 'healthy Kansans living in safe and sustainable environments'.
The state belongs to all of us - "Kansas Don't Spoil It"**

Municipal Solid Waste Management



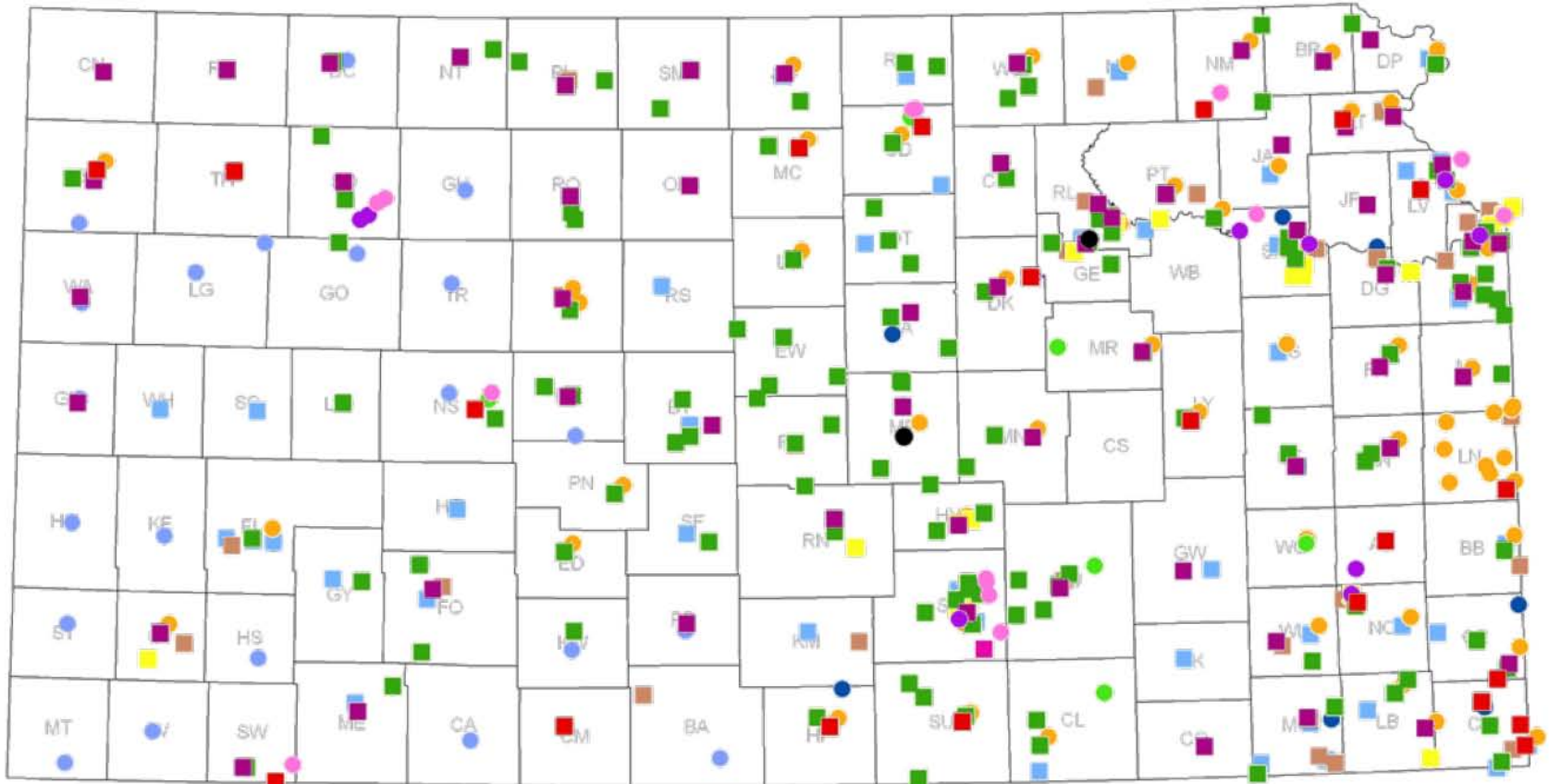
MSWLF Operating Municipal Solid Waste Landfill (52)

DH Direct Haul

Our vision is 'healthy Kansans living in safe and sustainable environments'.

The state belongs to all of us - "Kansas Don't Spoil It"

Permitted Solid Waste Facilities

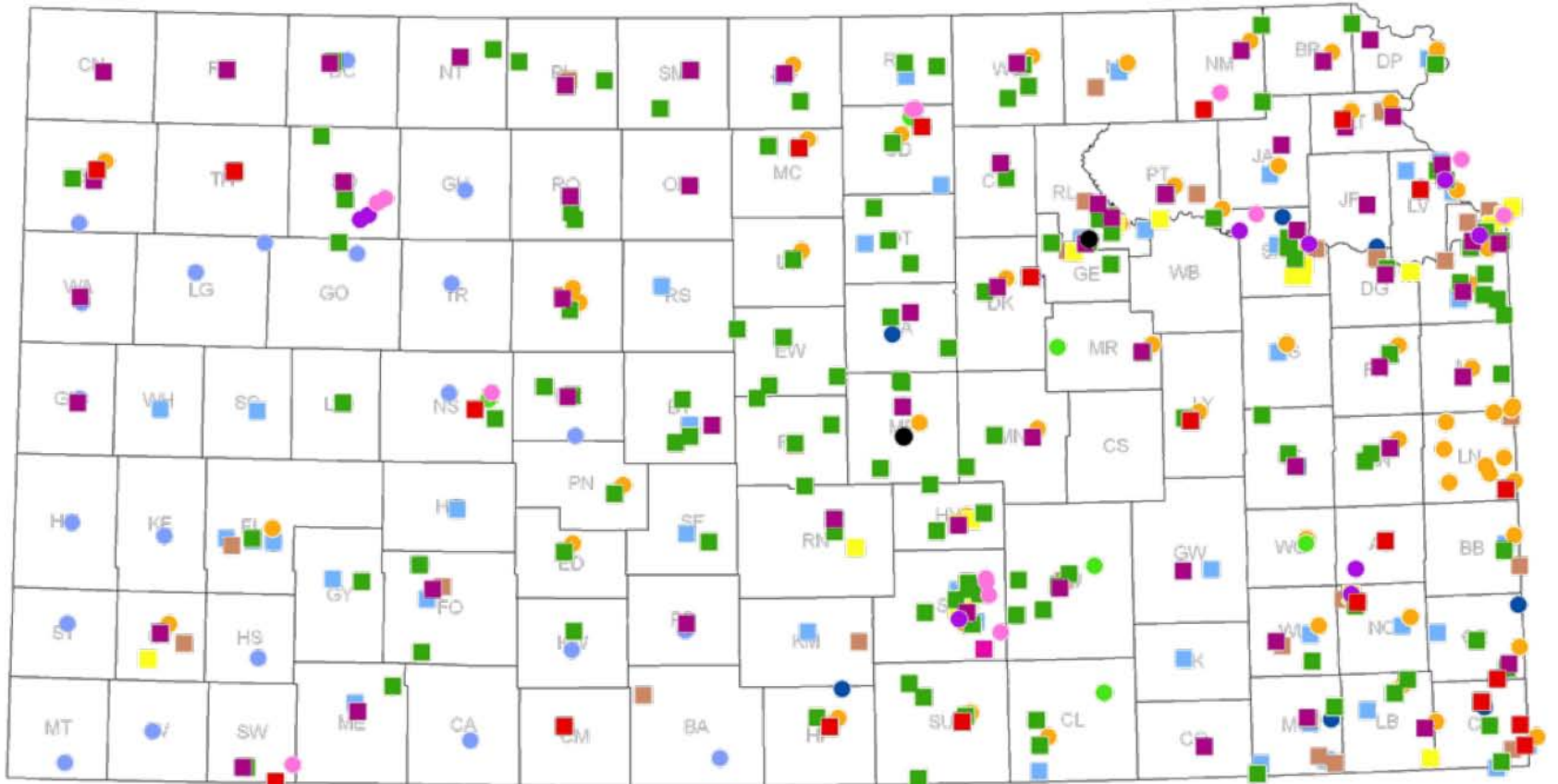


~~HOMELAND SECURITY (70)~~

Our vision is 'healthy Kansans living in safe and sustainable environments'.
The state belongs to all of us - "Kansas Don't Spoil It"



Permitted Solid Waste Facilities

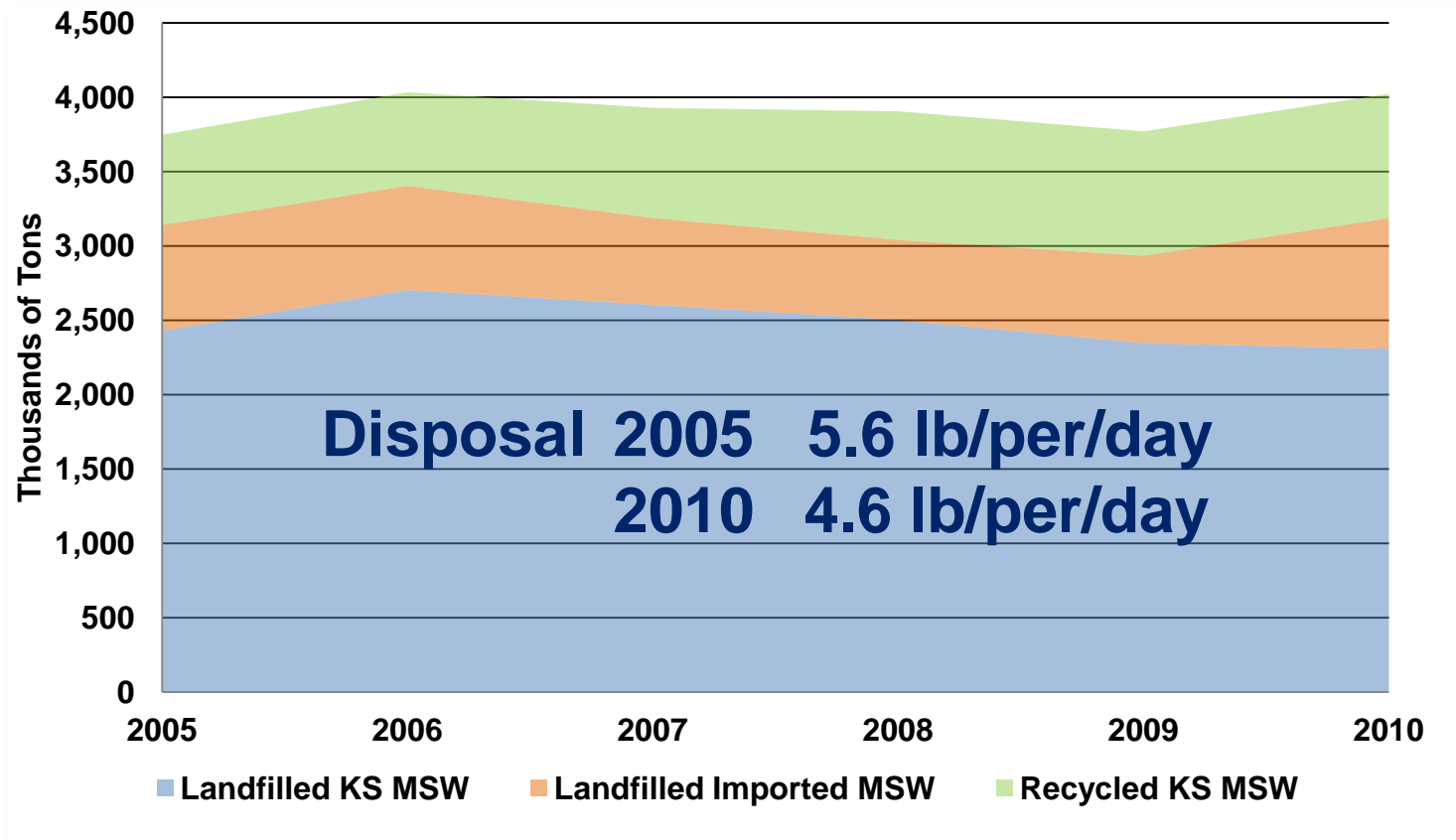


Total Facilities (585)

Our vision is 'healthy Kansans living in safe and sustainable environments'.
The state belongs to all of us - "Kansas Don't Spoil It"



MSW Recycling Continues Gradual Growth Disposal Gradually Shrinks



What is New in Recycling?

Single Stream is Spreading



Our vision is 'healthy Kansans living in safe and sustainable environments'.
The state belongs to all of us - "Kansas Don't Spoil It"

Composting Diverts Over 150,000 Tons from Landfills



Our vision is 'healthy Kansans living in safe and sustainable environments'.
The state belongs to all of us - "Kansas Don't Spoil It"

Landfill Gas Management

Pre-2005 Flares & Vents



Our vision is 'healthy Kansans living in safe and sustainable environments'.
The state belongs to all of us - "Kansas Don't Spoil It"

Current Landfill Gas Recovery

Use

Seward County Landfill

National Beef

Johnson County (Deffenbaugh)

Pipeline

Rolling Meadows (Waste Mgt)

Electricity

Oak Grove (WCA)

Electricity

Brooks Landfill (Wichita)

Ethanol Plant

Forest View (KC, KS)

Direct Use

Coffey County Landfill

Direct Use

Gas Recovery Systems



Our vision is 'healthy Kansans living in safe and sustainable environments'.
The state belongs to all of us - "Kansas Don't Spoil It"

Deffenbaugh Gas Plant Johnson County



Our vision is 'healthy Kansans living in safe and sustainable environments'.
The state belongs to all of us - "Kansas Don't Spoil It"

Waste Management Gas to Electricity Topeka Rolling Meadows



Our vision is 'healthy Kansans living in safe and sustainable environments'.
The state belongs to all of us - "Kansas Don't Spoil It"

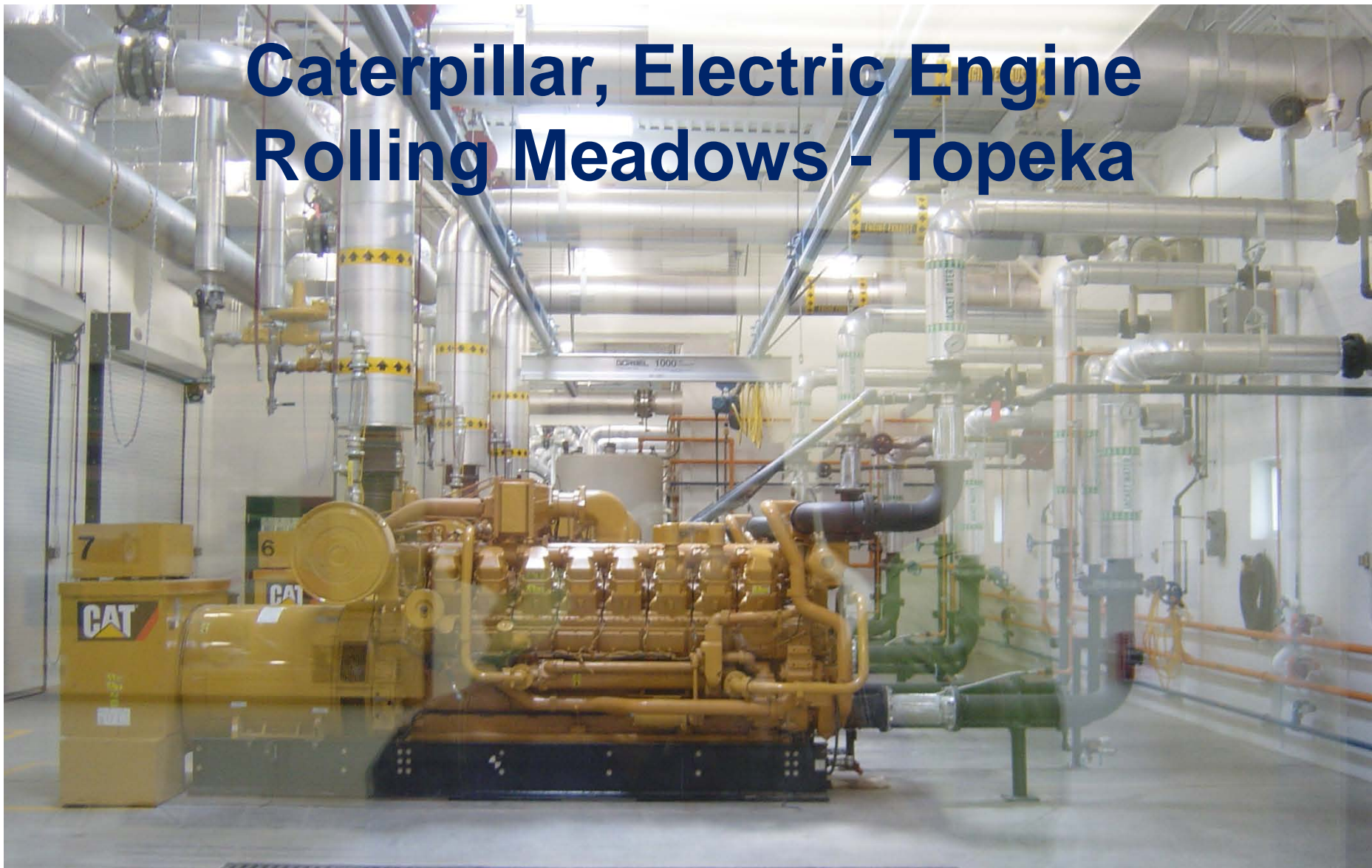


Waste Management Electricity Rolling Meadows



Our vision is 'healthy Kansans living in safe and sustainable environments'.
The state belongs to all of us - "Kansas Don't Spoil It"

Caterpillar, Electric Engine Rolling Meadows - Topeka



Our vision is 'healthy Kansans living in safe and sustainable environments'.
The state belongs to all of us - "Kansas Don't Spoil It"

WCA Oak Grove Landfill Electricity Plant – Crawford County



Our vision is 'healthy Kansans living in safe and sustainable environments'.
The state belongs to all of us - "Kansas Don't Spoil It"

Enhanced Landfill Stabilization

- **Began in 2010 – EPA approves Kansas program**
- **Overcome “dry tomb” scenarios**
- **Liquids addition**
- **Alternative final covers**
- **Benefits**
 - ✓ **Landfill stabilizes sooner**
 - ✓ **Liquids enhance biodegradation/gas production**
 - ✓ **Revenue for landfill owner (gas and liquids disposal)**
 - ✓ **Settling yields more air space**

Seward County



Our vision is 'healthy Kansans living in safe and sustainable environments'.
The state belongs to all of us - "Kansas Don't Spoil It"

Seward County



Our vision is 'healthy Kansans living in safe and sustainable environments'.
The state belongs to all of us - "Kansas Don't Spoil It"

Deffenbaugh



Our vision is 'healthy Kansans living in safe and sustainable environments'.
The state belongs to all of us - "Kansas Don't Spoil It"

Deffenbaugh



Our vision is 'healthy Kansans living in safe and sustainable environments'.
The state belongs to all of us - "Kansas Don't Spoil It"

Direct Combustion of Waste With Energy Recovery

- **Frito-Lay (Topeka)**
- **Ash Grove Cement (Chanute)**
- **LaFarge Cement (Fredonia)**
- **Various Alfalfa Driers**



**Our vision is 'healthy Kansans living in safe and sustainable environments'.
The state belongs to all of us - "Kansas Don't Spoil It"**



**Our vision is 'healthy Kansans living in safe and sustainable environments'.
The state belongs to all of us - "Kansas Don't Spoil It"**



**Our vision is 'healthy Kansans living in safe and sustainable environments'.
The state belongs to all of us - "Kansas Don't Spoil It"**



**Our vision is 'healthy Kansans living in safe and sustainable environments'.
The state belongs to all of us - "Kansas Don't Spoil It"**





Our vision is 'healthy Kansans living in safe and sustainable environments'.
The state belongs to all of us - "Kansas Don't Spoil It"



**Our vision is 'healthy Kansans living in safe and sustainable environments'.
The state belongs to all of us - "Kansas Don't Spoil It"**



Our vision is 'healthy Kansans living in safe and sustainable environments'.
The state belongs to all of us - "Kansas Don't Spoil It"



Other Innovative Waste Management Methods In Kansas

Our vision is 'healthy Kansans living in safe and sustainable environments'.
The state belongs to all of us - "Kansas Don't Spoil It"



ICM Biomass Gasifier Harvey County Landfill



Our vision is 'healthy Kansans living in safe and sustainable environments'.
The state belongs to all of us - "Kansas Don't Spoil It"

Asphalt Shingle Recycling

Bettis Asphalt

Topeka

Asphalt Sales

Olathe

R2R (Roof to Roof)

Olathe

Herzog

Elwood

Others





**Power Plant
Waste Recycling
Jeffrey Energy
Center
Pottawatomie Co., KS**

- Scrubber Sludge (gypsum) use as soil amendment
- Flyash use in construction

Multiple Drinking Water Treatment Plants Lime Sludge Use on Agricultural Fields



Our vision is 'healthy Kansans living in safe and sustainable environments'.
The state belongs to all of us - "Kansas Don't Spoil It"

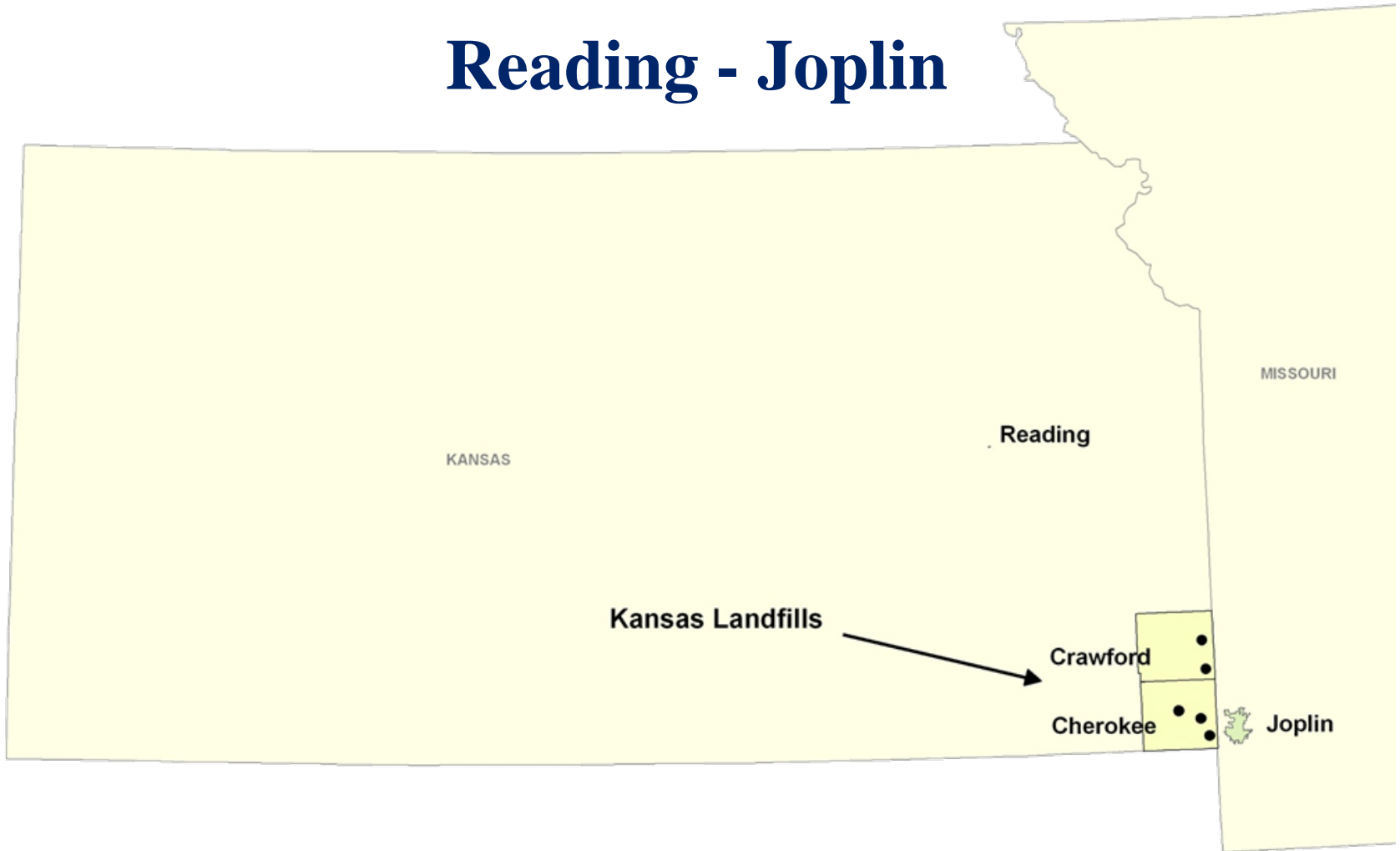
Beneficial Use of Various Organic Waste Streams

Land Application

- Del Monte, Topeka
- Tyson, S. Hutchinson
- Tony's Pizza, Salina

Managing Tornado Debris

Reading - Joplin



Our vision is 'healthy Kansans living in safe and sustainable environments'.
The state belongs to all of us - "Kansas Don't Spoil It"



Our vision is 'healthy Kansans living in safe and sustainable environments'.
The state belongs to all of us - "Kansas Don't Spoil It"



**Our vision is 'healthy Kansans living in safe and sustainable environments'.
The state belongs to all of us - "Kansas Don't Spoil It"**



**Our vision is 'healthy Kansans living in safe and sustainable environments'.
The state belongs to all of us - "Kansas Don't Spoil It"**



**Our vision is 'healthy Kansans living in safe and sustainable environments'.
The state belongs to all of us - "Kansas Don't Spoil It"**



**Our vision is 'healthy Kansans living in safe and sustainable environments'.
The state belongs to all of us - "Kansas Don't Spoil It"**





**Our vision is 'healthy Kansans living in safe and sustainable environments'.
The state belongs to all of us - "Kansas Don't Spoil It"**



Our vision is 'healthy Kansans living in safe and sustainable environments'.
The state belongs to all of us - "Kansas Don't Spoil It"



**Our vision is 'healthy Kansans living in safe and sustainable environments'.
The state belongs to all of us - "Kansas Don't Spoil It"**





Our vision is 'healthy Kansans living in safe and sustainable environments'.
The state belongs to all of us - "Kansas Don't Spoil It"



**Our vision is 'healthy Kansans living in safe and sustainable environments'.
The state belongs to all of us - "Kansas Don't Spoil It"**



**Our vision is 'healthy Kansans living in safe and sustainable environments'.
The state belongs to all of us - "Kansas Don't Spoil It"**



Questions?



www.kdheks.gov

Our vision is 'healthy Kansans living in safe and sustainable environments'.
The state belongs to all of us - "Kansas Don't Spoil It"

