

ENERGY & ENVIRONMENTAL COMMITTEE

**County Board Room
Thursday, May 16, 2013
9:00 a.m.**

AGENDA

1. CALL TO ORDER
2. APPROVAL OF MINUTES: April 11, 2013
3. NEW AND UNFINISHED BUSINESS:
 - (A) PRESENTATION: Metropolitan Planning Council – Illinois Plumbing Code Revisions - Josh Ellis
 - (B) PRESENTATION: Introduction to Low Temperature Mechanical Pyrolysis (LTMP) - Fred L. Jones, Cogen Designs, Inc.
 - (C) PRESENTATION: Kane County Greenhouse Gas Baseline Calculations – Lindy Wordlaw, CNT Energy
 - (D) DISCUSSION: Recycling Green Guide - Attachment
 - (E) DISCUSSION: Electric Vehicle Charging Station Usage Data - Attachment
 - (F) DISCUSSION: Energy Efficiency Retrofit List, Kane County Facilities - Attachment
1. EVENTS – PAST, UPCOMING:
 - (A) Recycling Extravaganza Report, held on Saturday, May 11, 2013
2. PUBLIC COMMENT
3. EXECUTIVE SESSION (if necessary)
4. ADJOURNMENT to: June 13, 2013



Metropolitan Planning Council
Illinois Plumbing Code Revisions

Josh Ellis, Program Director

May 16, 2013

Kane County Energy & Environmental
Committee Meeting

Overview

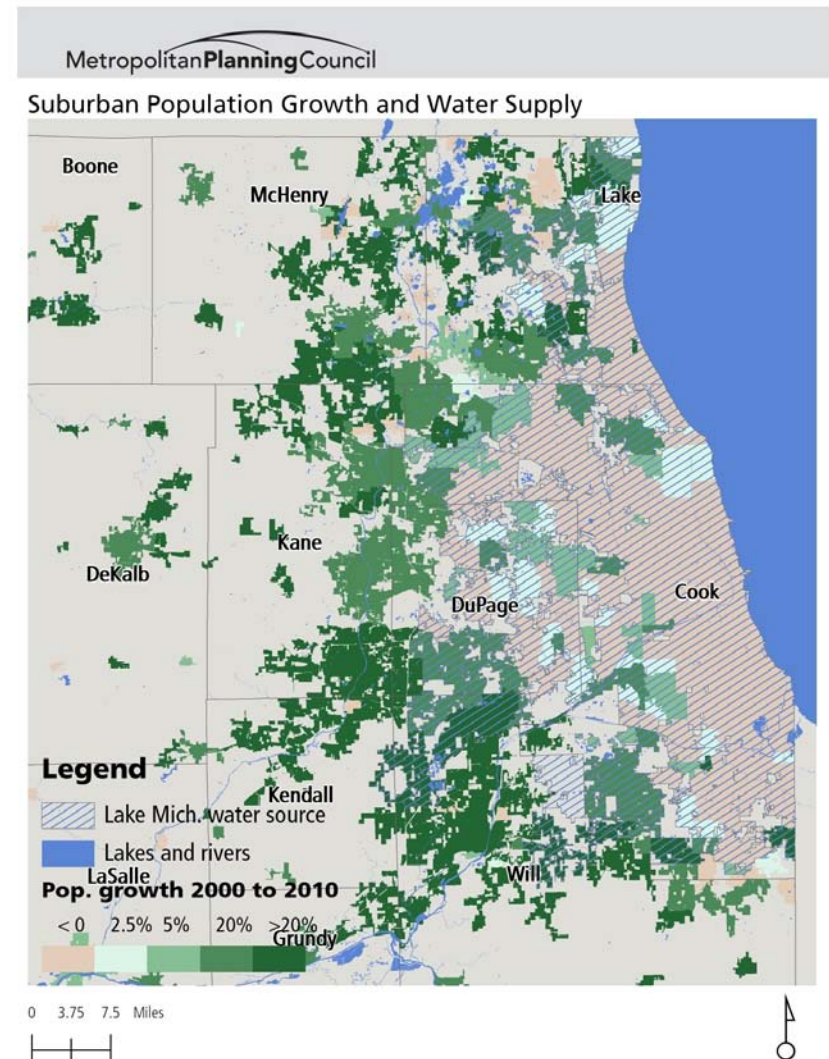
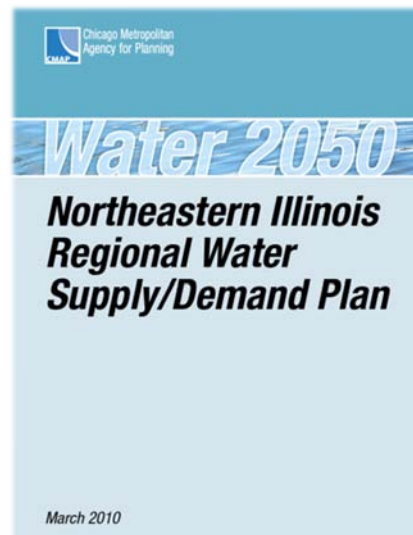
- Need for policy on water reuse
- Water reuse systems
- Concerns about water reuse
- Illinois plumbing code modernization process
- Next steps

NEED FOR POLICY ON WATER REUSE

Need for policy on water reuse

Water supply

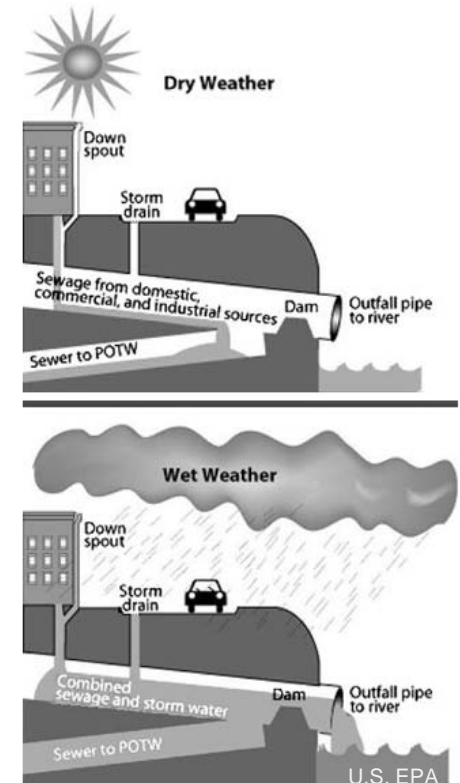
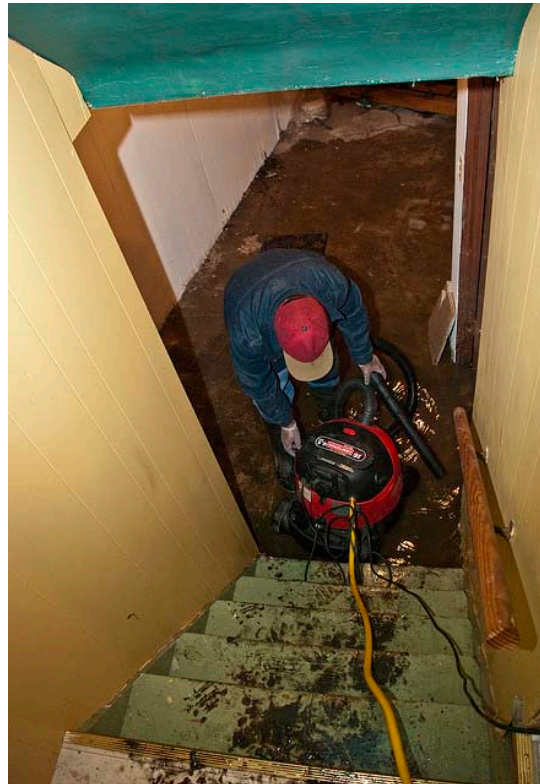
- Water loss & waste
- Scarcity & demand
- Discretionary uses
- Non-potable uses
- Costs



Need for policy on water reuse

Stormwater & wastewater

- Flooding
- Basement backups
- Combined sewer overflows
- Inflow & infiltration
- Costs



Need for policy on water reuse

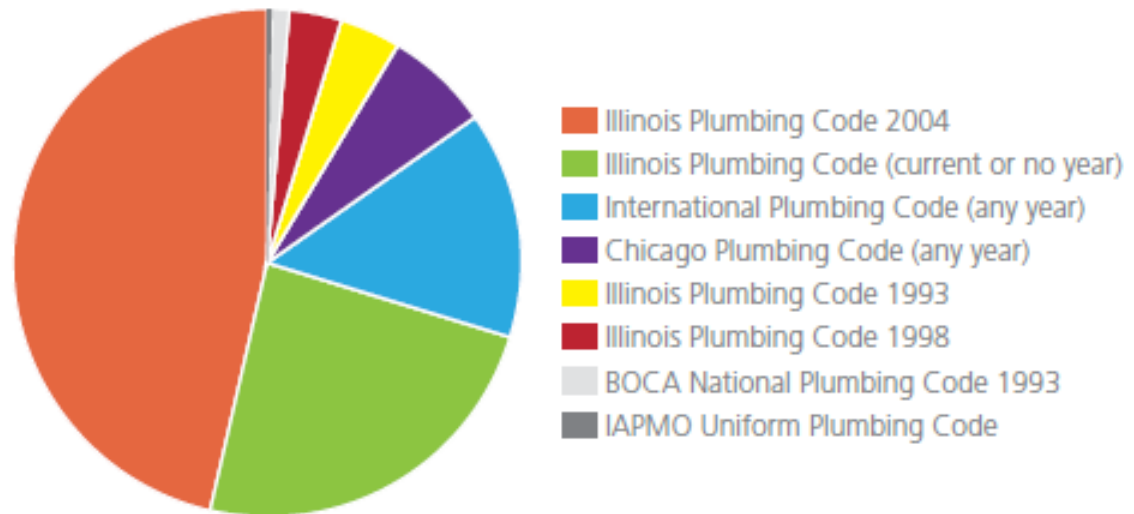
**Rain and graywater are
“free”**

**Potable drinking water,
stormwater and wastewater
are expensive**



Need for policy on water reuse

Municipalities often adopt an existing plumbing code rather than writing their own. This sample of 208 northeastern Illinois municipalities reveals a wide variety of codes in place.



WATER REUSE SYSTEMS

Water reuse systems



Matt Nichols



Colorado State University

Ryerson Woods Welcome Center

Lake County, Ill.

Water sources:

- Rainwater

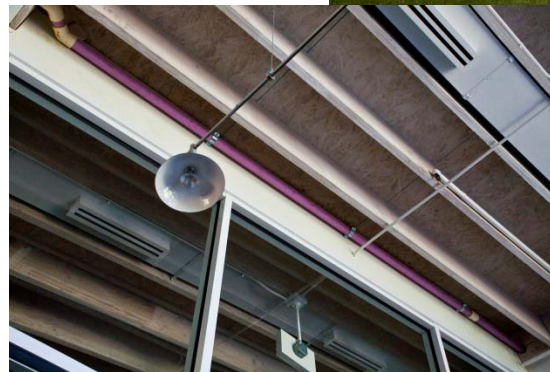
Water uses:

- Toilets
- Fire sprinklers

Treatment:

- Calcium hypochlorite

Total savings: 60,000 gallon cistern supplies all toilet flushing water



Doyle Family Home

Oak Park, Ill.

Water sources:

- Graywater

Treatment:

- Calcium hypochlorite

Water uses:

- Toilets
- Landscape irrigation (future)

Total savings: 27% reduction in potable water use



Fields Volvo Dealership

Northfield, Ill.

Water sources:

- Rainwater

Treatment:

- Calcium hypochlorite

Water uses:

- Toilets
- Landscape irrigation
- Cooling towers
- Boilers
- Vehicle washing

Total savings: 265,000 gallons/yr



Harold Washington Soc. Security Center

Chicago, Ill.

Water sources:

- Rainwater
- AC condensate
- Boiler condensate

Water uses:

- Toilets
- Laundry
- Cooling towers
- Boilers
- Vehicle washing

Treatment:

- Calcium hypochlorite



Total savings: 3.2 million gallons/yr



CONCERNS ABOUT WATER REUSE



Lint Filter



Chlorine



Water Filtration



Greywater Tank



UV Filter



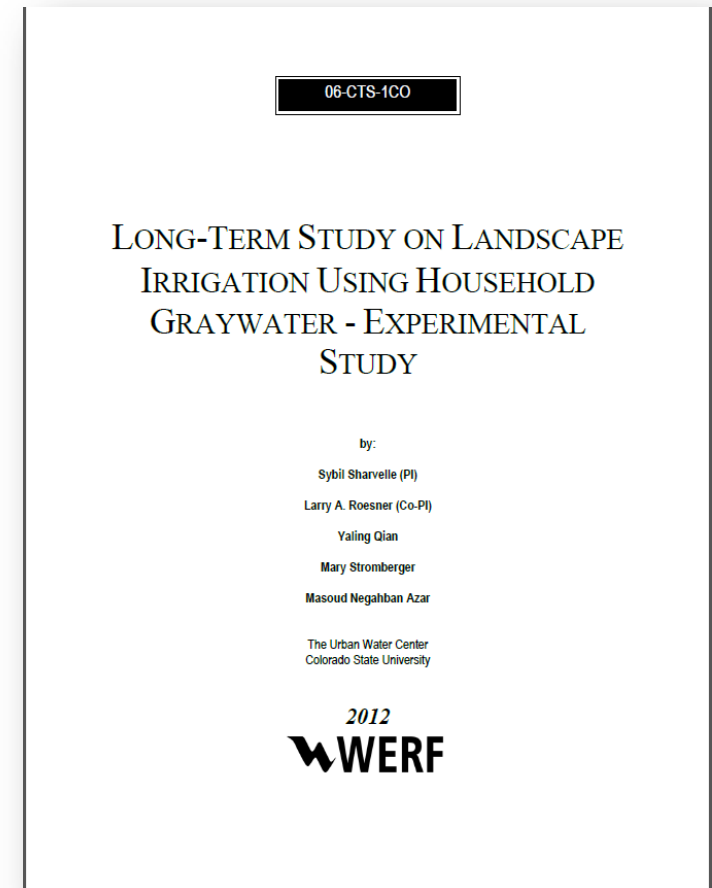
Pump to Toilet



Current national water reuse research

Graywater reuse for irrigation – CSU/WERF

- Long-term field experiments & greenhouse studies (untreated graywater)
- Checked for sodium, surfactants, antimicrobials, bacteria, nitrogen, boron
- Found no real risk for irrigation
 - No difference between surface & subsurface irrigation
 - Sodium & surfactants were slight concern for some plants, but did not increase over time
 - Increased N was beneficial



Current national water reuse research

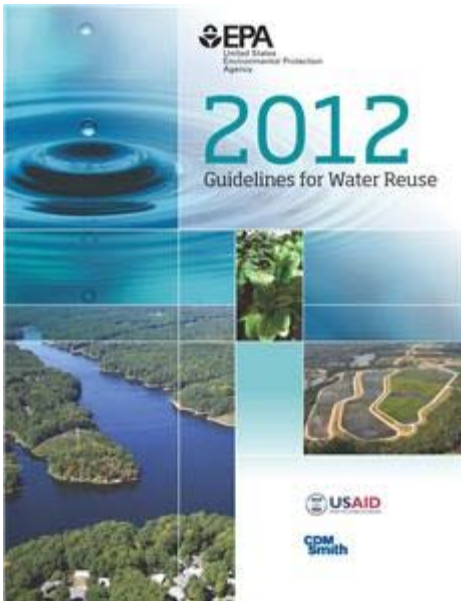
Municipal wastewater reuse - NRC

- U.S. reclaims < 1% of water; discharges 32B gal./day municipal wastewater
- 12B gal./day direct to ocean or estuary
- Reusing 6% of total supply could increase public supply 27%
- Public opinion surveys show overwhelming support for nonpotable reuse projects and non-food irrigation



Current national water reuse research

2012 EPA guidelines



- Expansion and update of 2004 guidelines
- Technology has advanced; applications have multiplied
 - “Fit for Purpose” efficiency, specific end-point water quality focus
- Extensive new case studies; 30 states and 1 U.S. territory have adopted regulations
- Framework for Total Water Management (TWM)
 - Planning and Management Considerations
 - Types of Reuse Applications
 - State Regulatory Programs for Water Reuse
 - Regional Variations in Water Reuse
 - Treatment Technologies for Protecting Public and Environmental Health
 - Funding Water Reuse Systems
 - Public Outreach, Participation, and Consultation
 - Global Experiences in Water Reuse

Matching sources to uses

POTENTIAL SOURCES



- Rooftop rainwater
- Surface stormwater
- Graywater from showers, sinks, washers
- Cooling condensate
- Steam condensate
- Groundwater ejectors
- Cooling tower "blow down"
- Process wastewater



POTENTIAL USES



- Landscape irrigation
- Green roof irrigation
- Toilet flushing
- Washing machines
- Car/truck washing
- Cooling tower "make-up"
- Boiler "make-up"

ILLINOIS PLUMBING CODE MODERNIZATION PROCESS

III. Plumbing Code & HB 4496



© 2012 Water Harvesting Solutions, Inc.



III. Plumbing Code stakeholder meetings

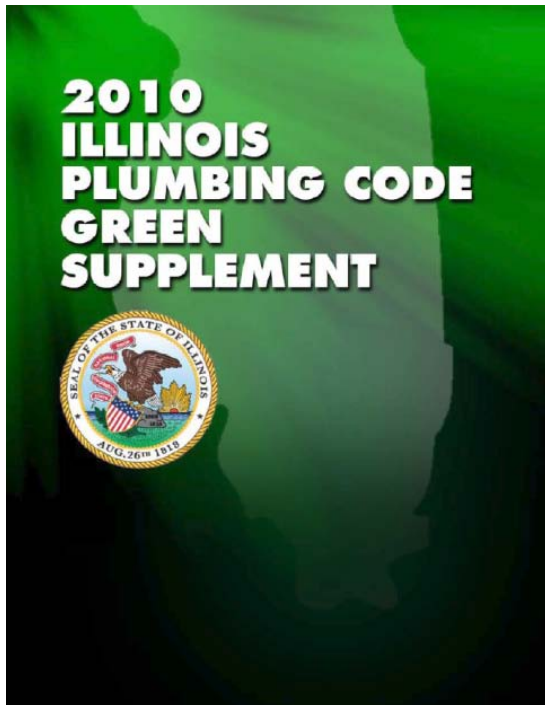
Stakeholder Group

- Pipefitters
- Plumbers
- Architects
- Public works officials
- Environmental advocates
- Planners
- Engineers
- Designers
- Laborers
- Ill. Dept. of Public Health
- And more...

Key Issues

- Use-focused approach
- Cost-effective while balancing risk mitigation
- Use existing models
- Allow for flexibility to accommodate technological advances

Plumbing Advisory Council



Department of Public Health

April 26 – issued revisions, 45 day comment period

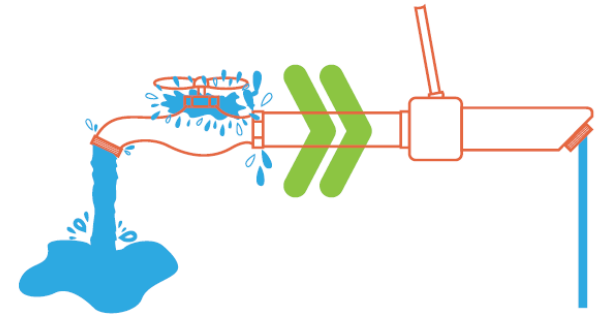
Key revisions

- Fixture standards to match WaterSense
- Rainwater and effluent reuse guidelines
- Graywater indoor reuse guidelines
- Permissive definition of “alternate water sources,” but no substantial guidance on condensate, clear water waste

NEXT STEPS

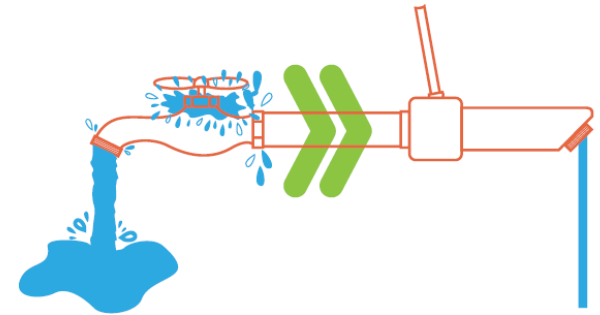
Timeline

- Public comments due in June
- Second public comment period
- JCAR



Future update needs

- Graywater outdoor reuse guidelines
- Clearwater reuse guidelines
- Consistent updating process
- Alignment with IAPMO or ICC



Contact us:

Metropolitan **Planning** Council
Josh Ellis, Program Director

jellis@metroplanning.org

@MPCJosh

www.metroplanning.org

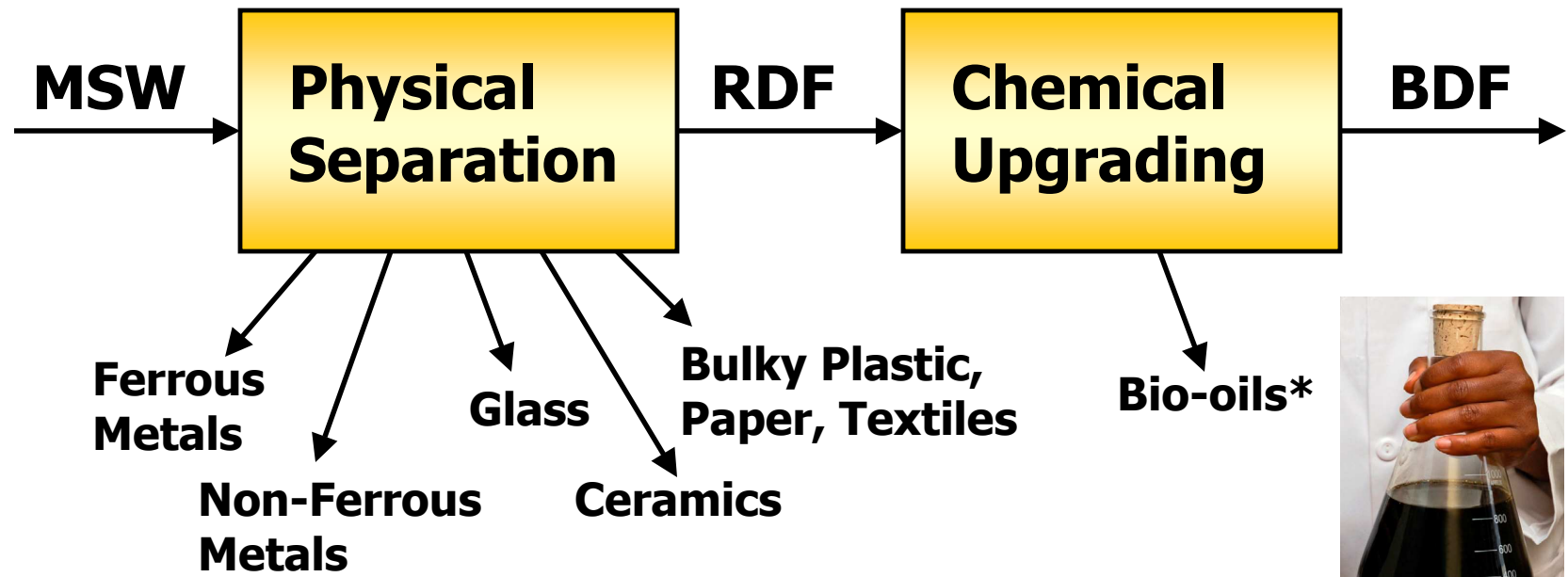
312.863.6045

LTMP Waste Solution



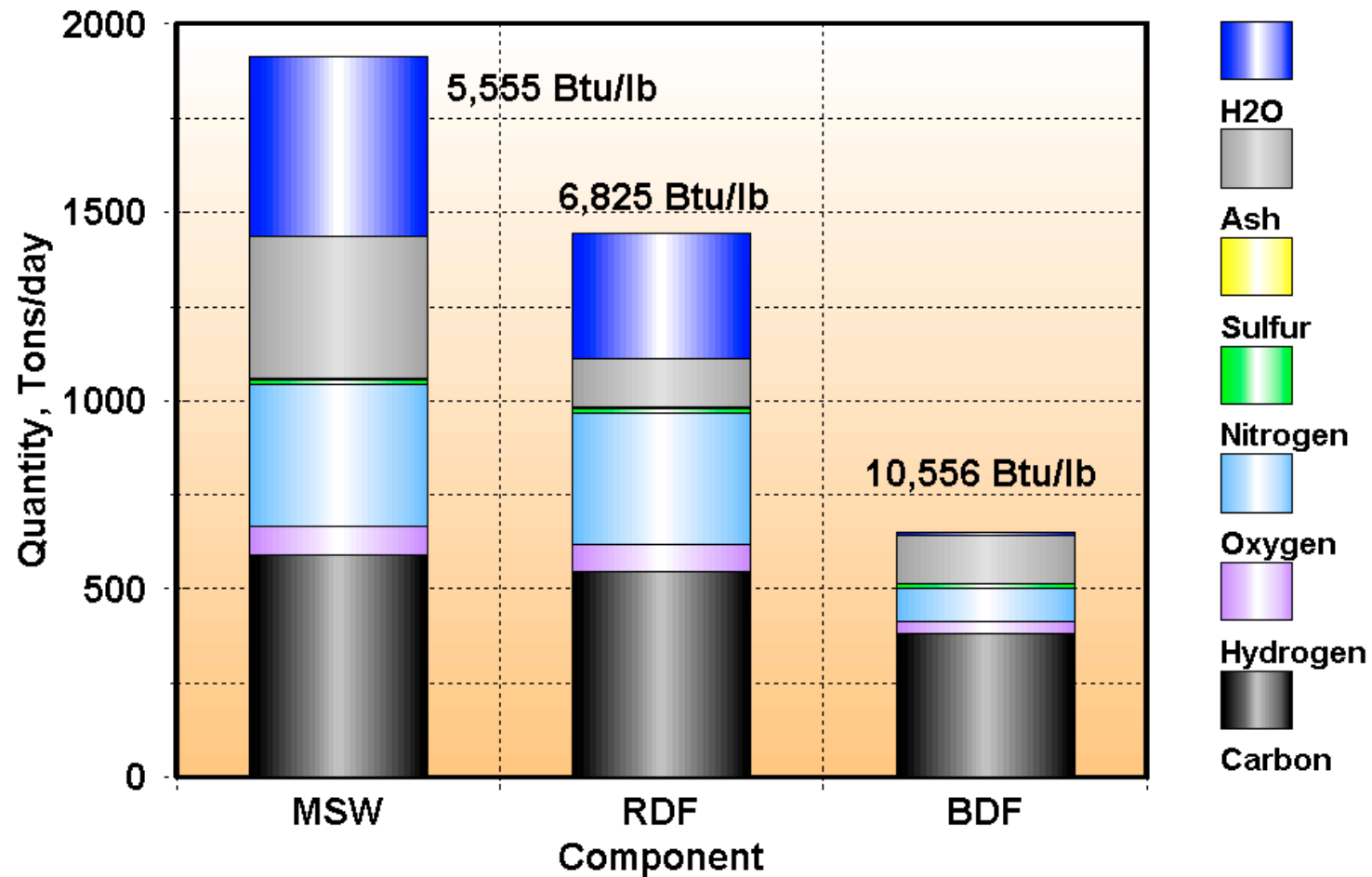
By
Fred L. Jones
Cogen Designs, Inc.

LTMP Renewable Fuels Process



*used internally

Fuel Upgrading



RDF to BDF

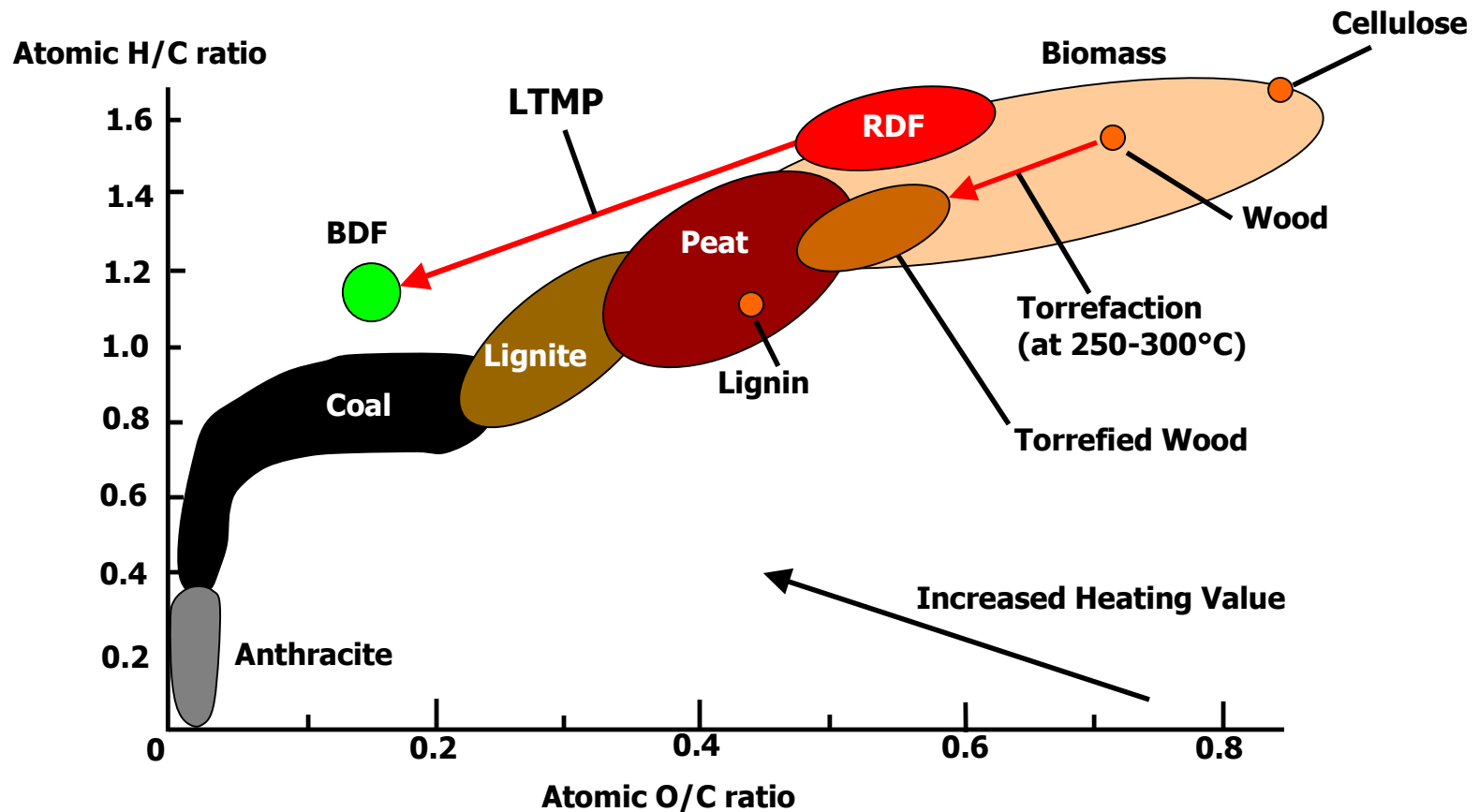


Shredded RDF



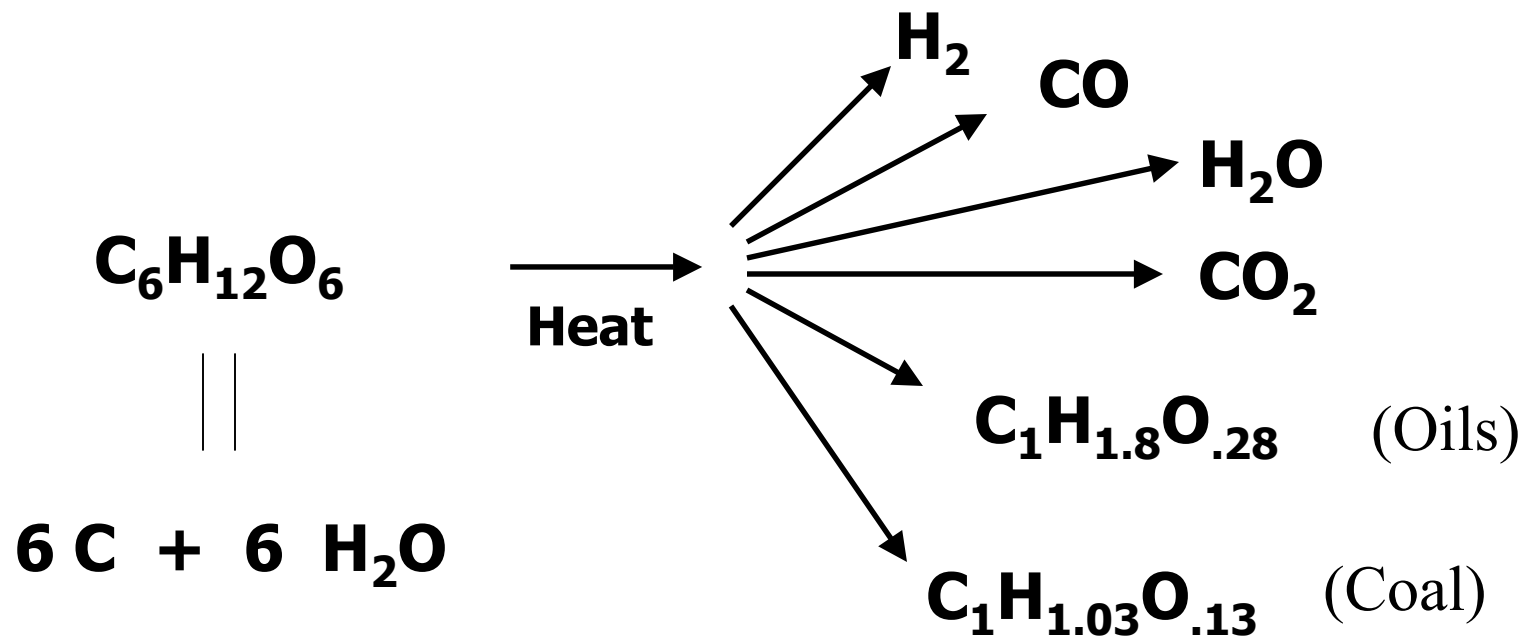
Biomass-Derived Fuel

Elemental Composition



Source: North Carolina State University

Pyrolysis



LTMP Pyrolysis Process



- **Based on low temperature twin screw extruder/mixer technology**
 - **Forty years of experience in similar applications, over 1,200 commercial extruder/mixer units in service.**
 - **Mixer produces highly consistent product quality**
 - **Process can operate on a wide variety of organic waste materials**

Unique Reactor Properties



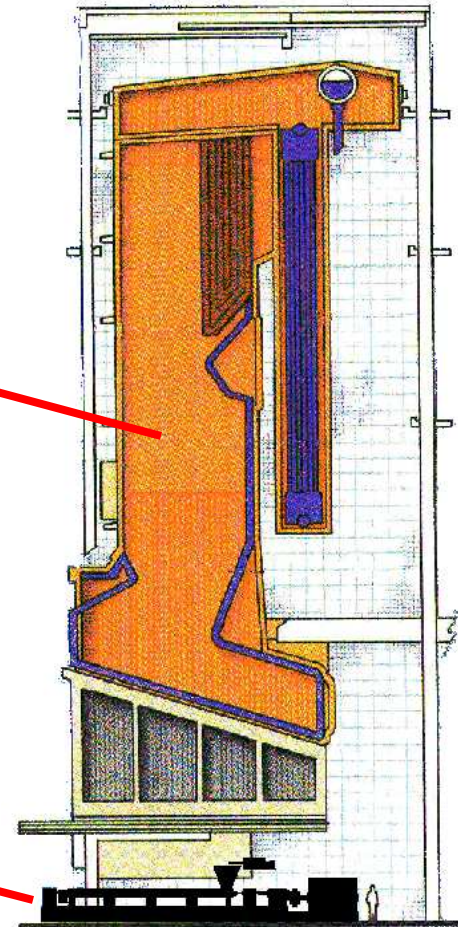
- **No incineration, combustion or burning**
- **No air or oxygen added**
- **No flame**
- **No external heat addition**
- **No circulating solids**
- **550°F max. operating temperature**
- **Single step to end product - no refining needed**

Comparison with Incineration



200 Ton/day Incinerator

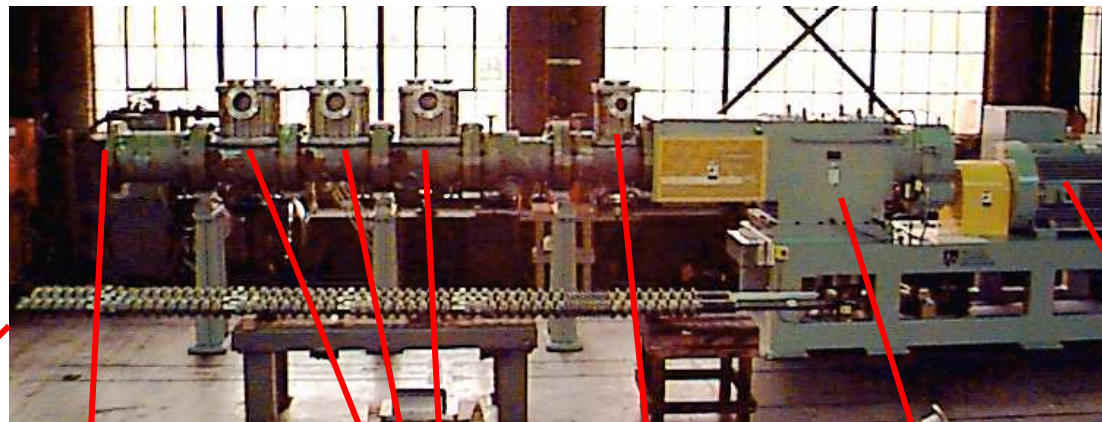
200 Ton/day Pyrolysis Reactor



Recycling Extruder



**Plastics
Extruder/
Mixer**



Augers

Discharge

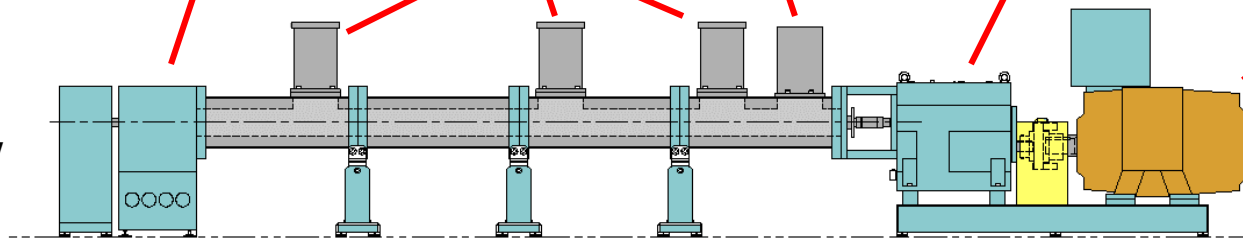
Vent Ports

Feed Port

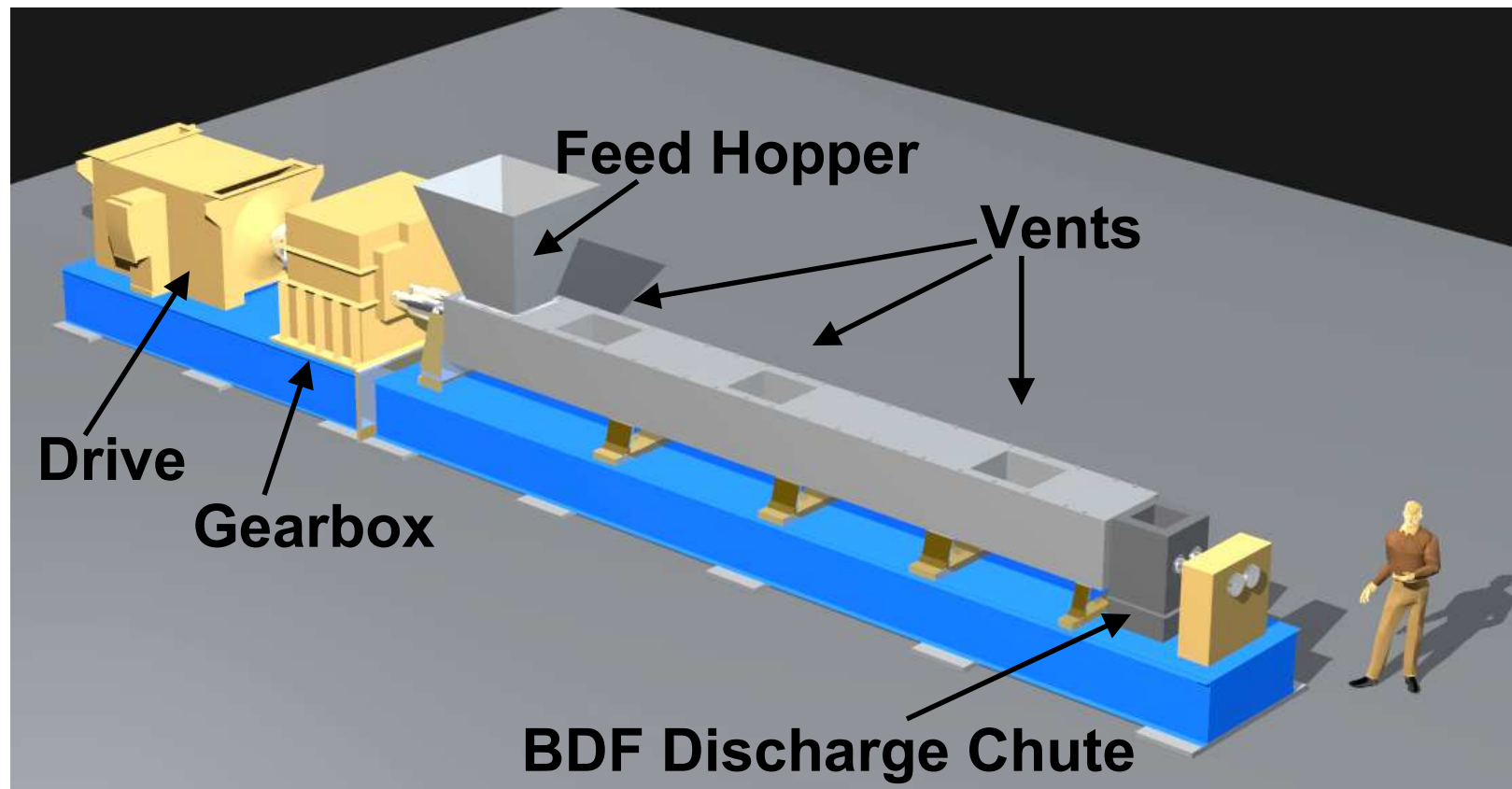
Gearbox

**Motor
Drive**

**LTMP
Extruder/
Mixer
Reactor**



Pyrolysis Reactor



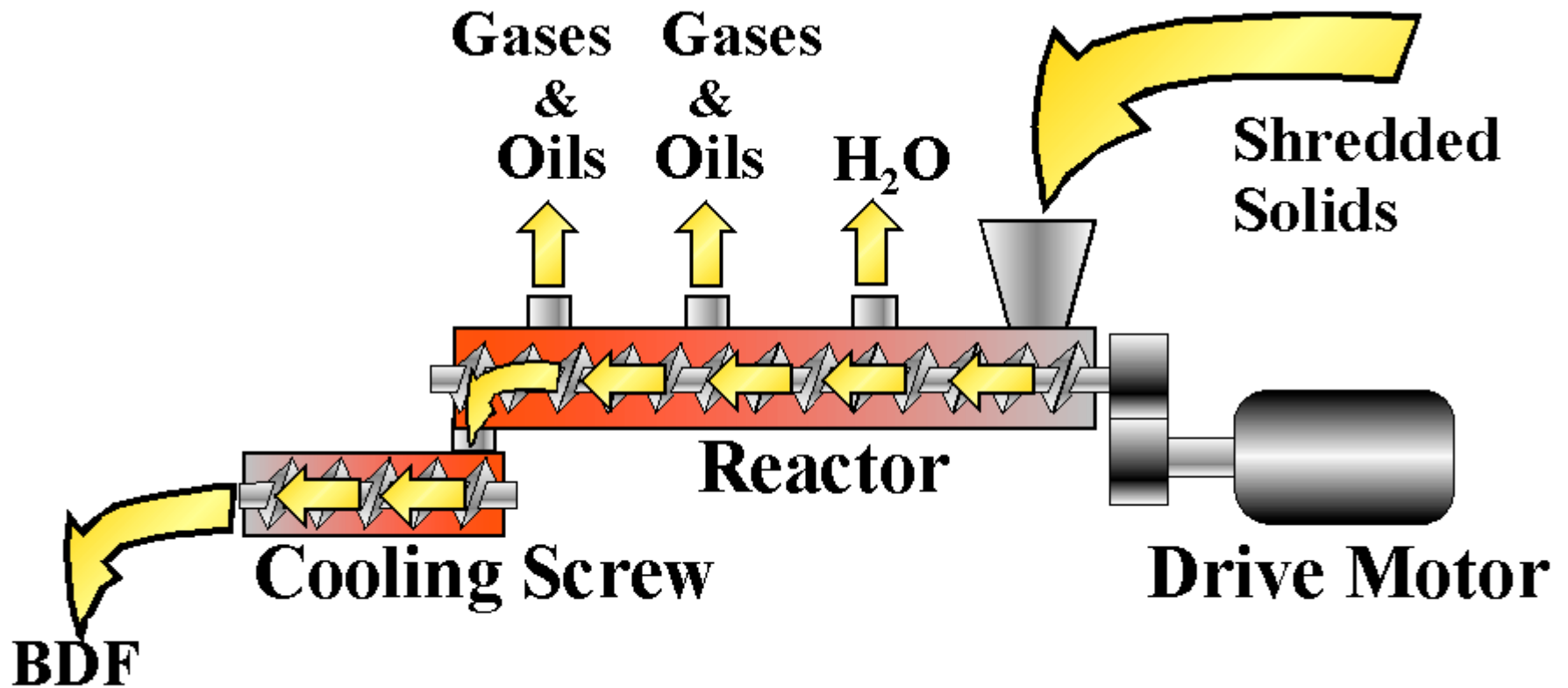
8 Tons/hr Capacity

Internal Augers

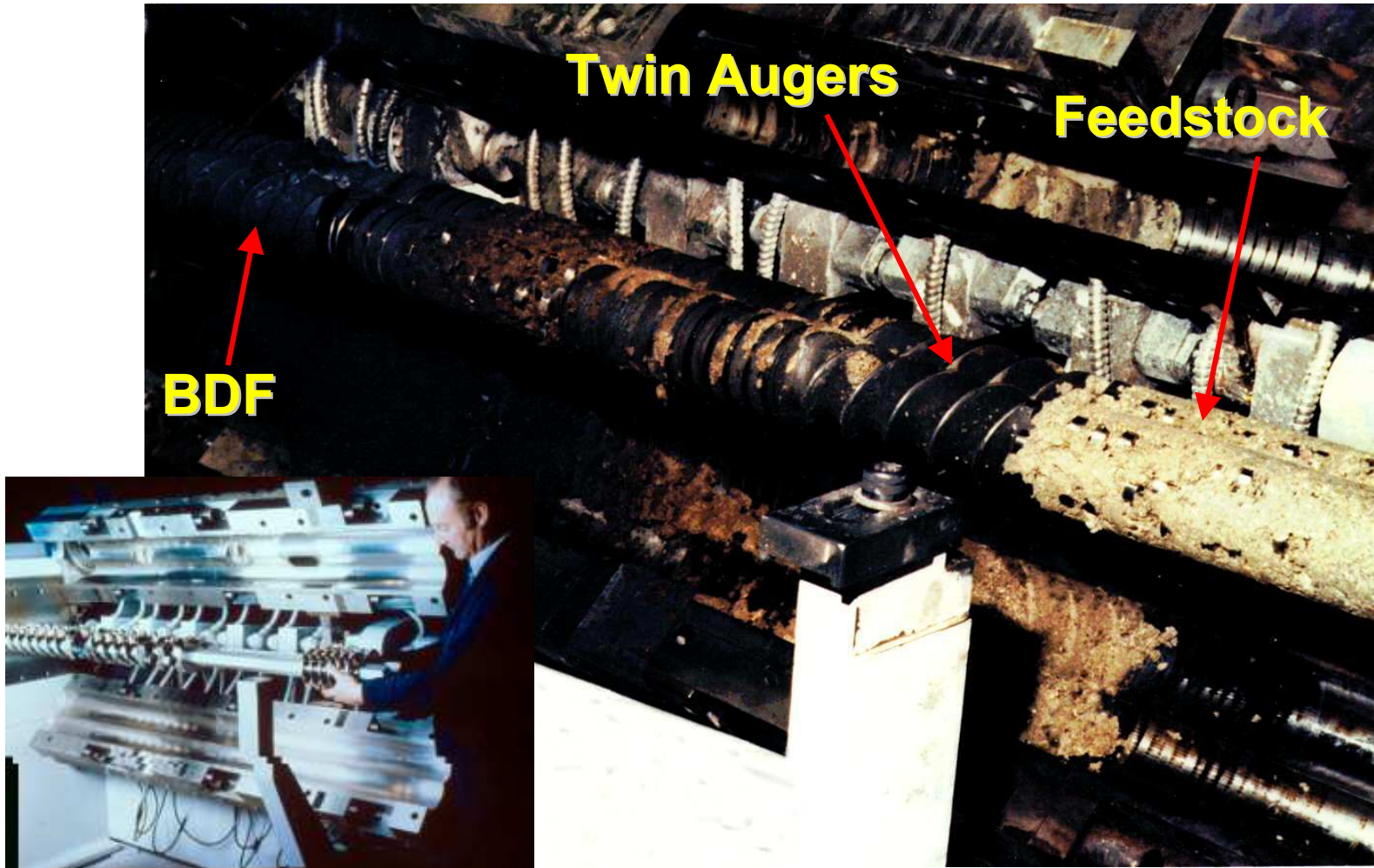


~25 Tons/hr Capacity

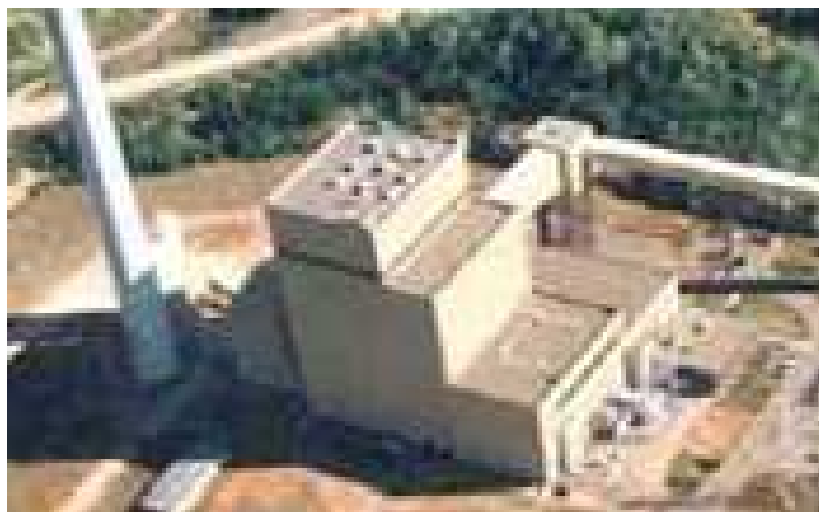
BDF Production Process



Pyrolysis at Work



Comparative Emissions



Utility

Emissions, Tons/year
37,000



Incinerator

5,270



**Small
College
Campus**
300



**BDF
Production**
234*

*minor source

Typical Coal Samples



PRB Coal

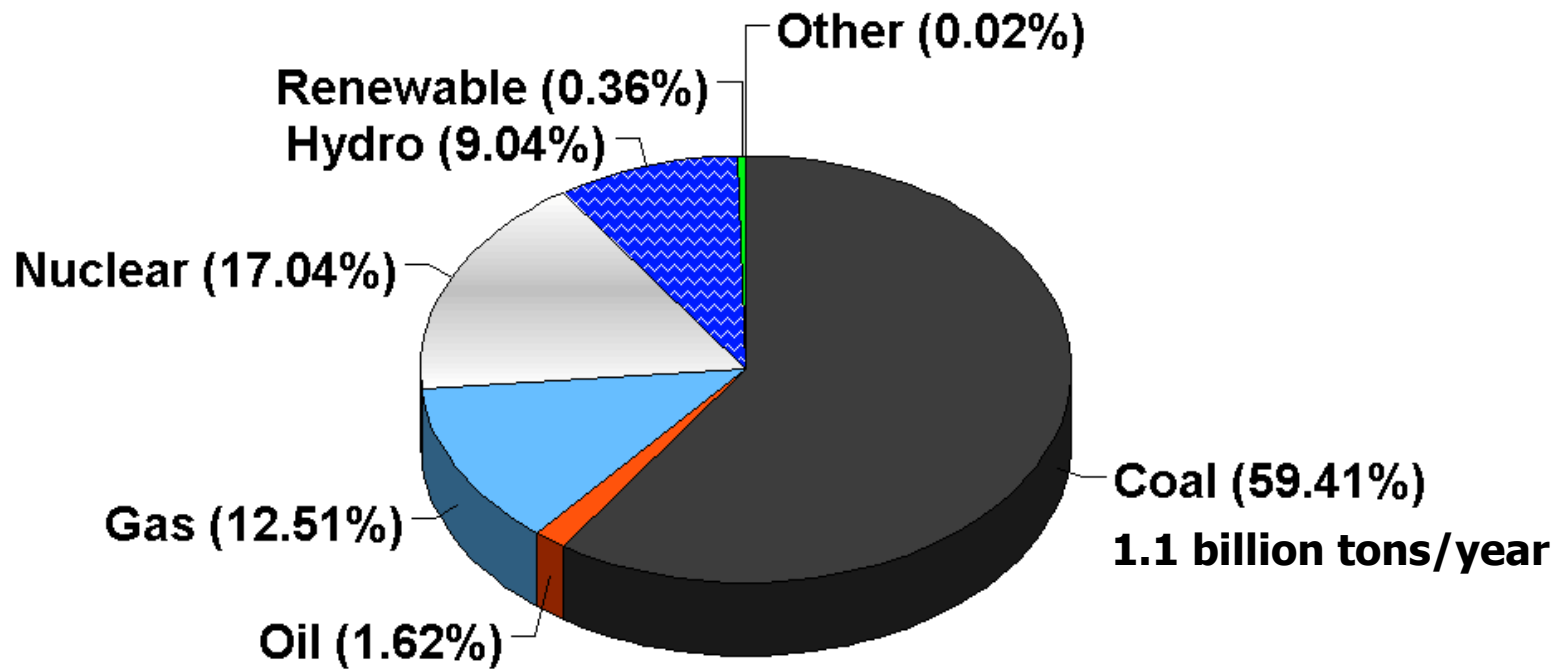
BDF (Syncoal)

Bit. Coal Mix

Why Displace Coal?



Electric Utility Fuel Use

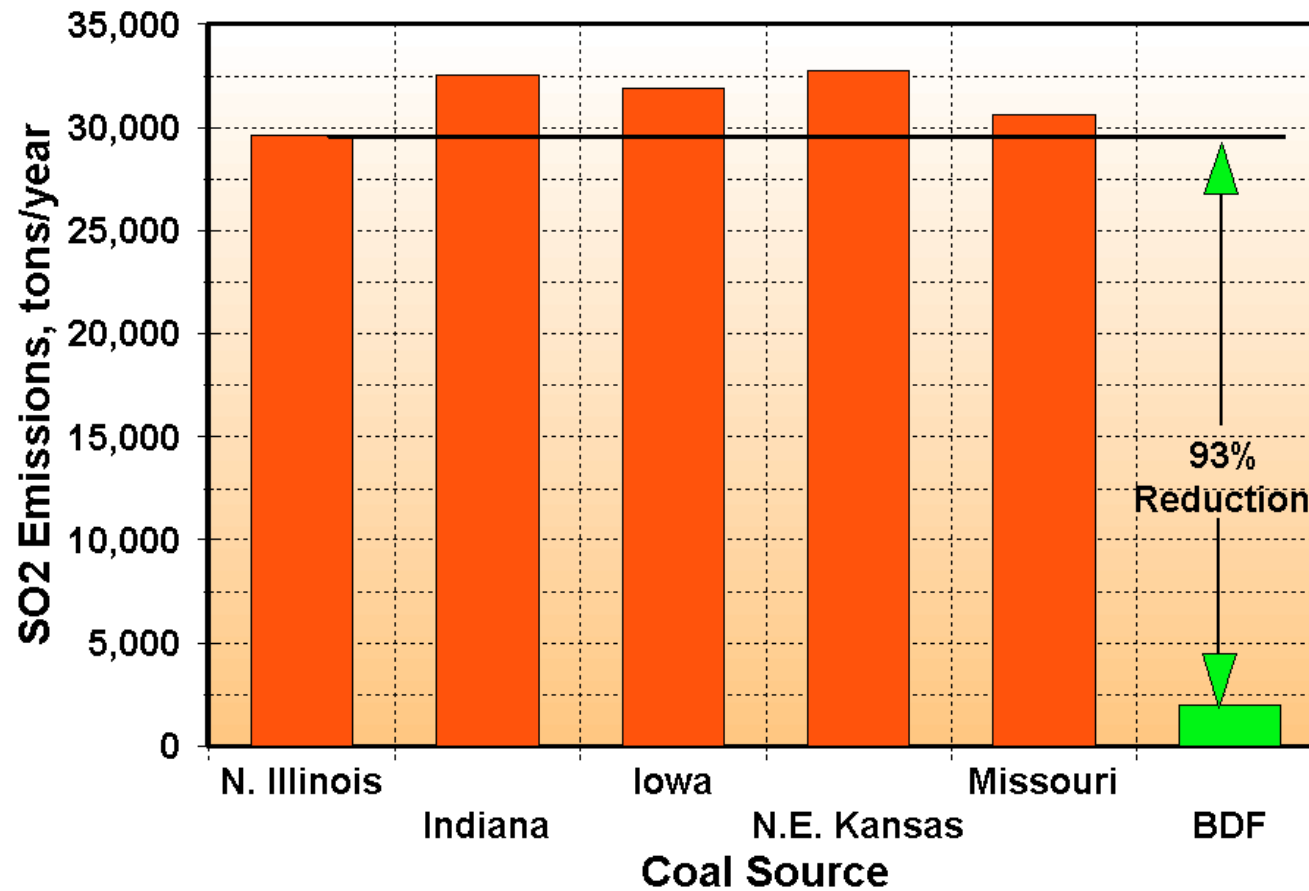


Source: US EIA

Acid Gas Emissions



100 MW Power Plant

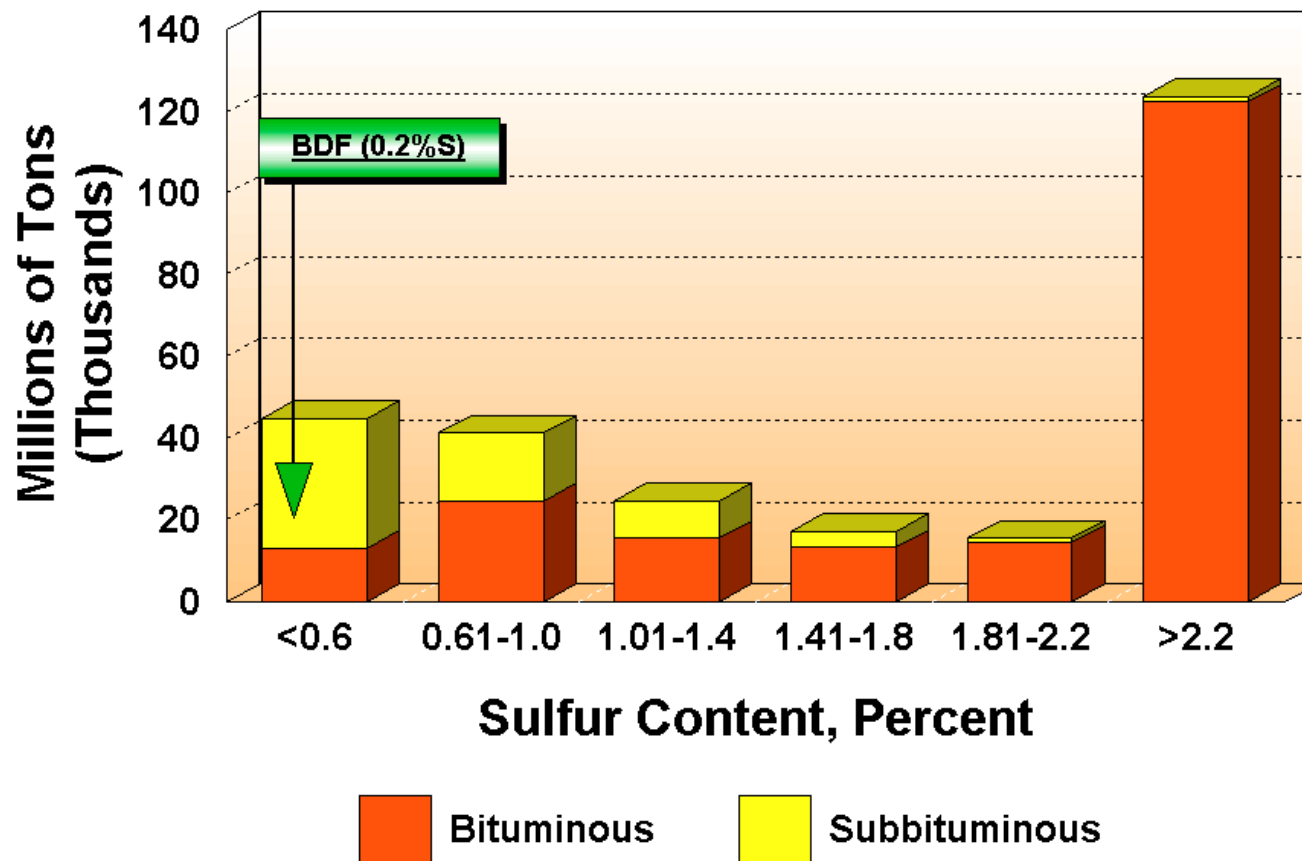


Source: Babcock & Wilcox

US Coal Reserves



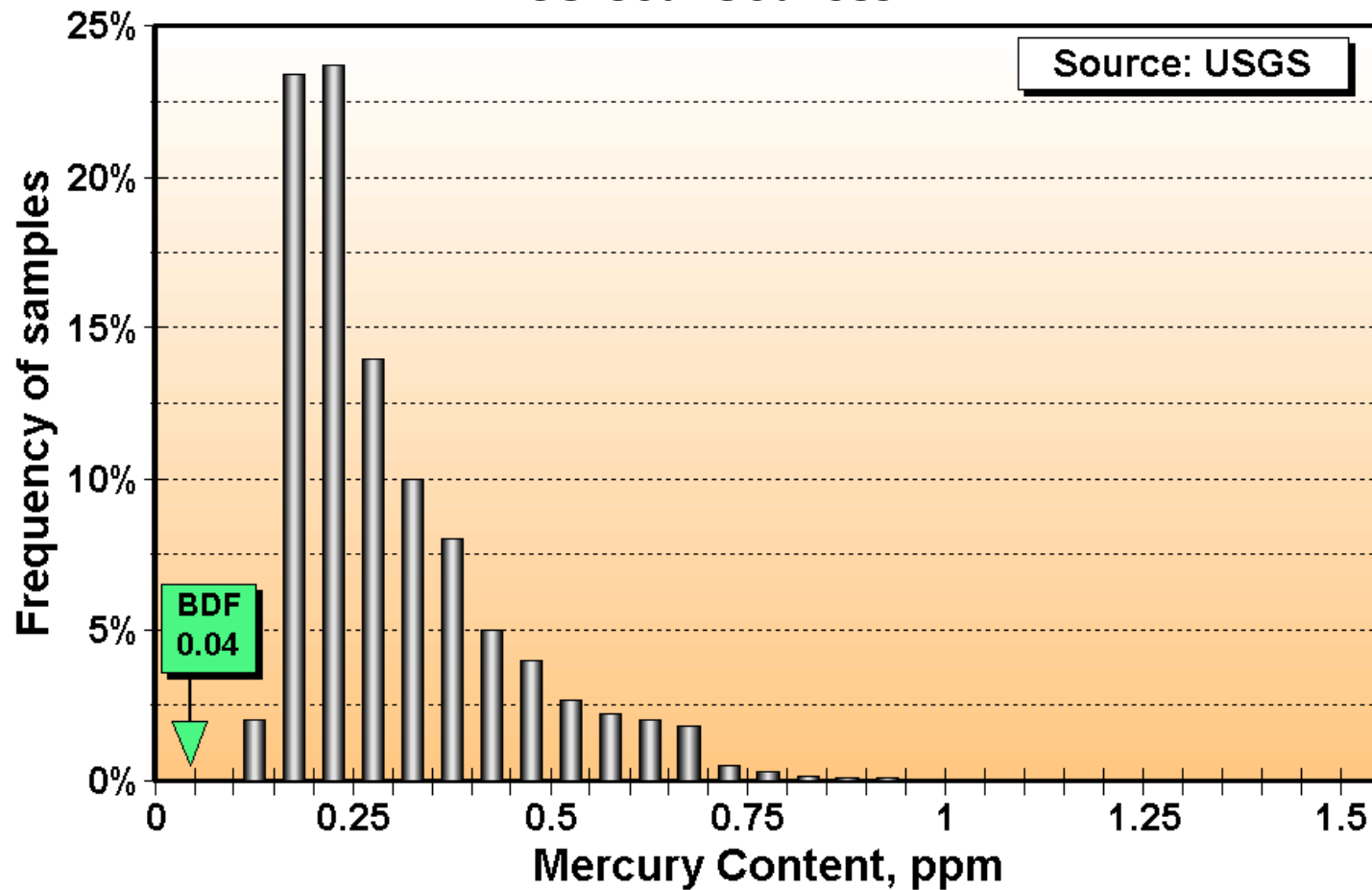
Bituminous and Subbituminous



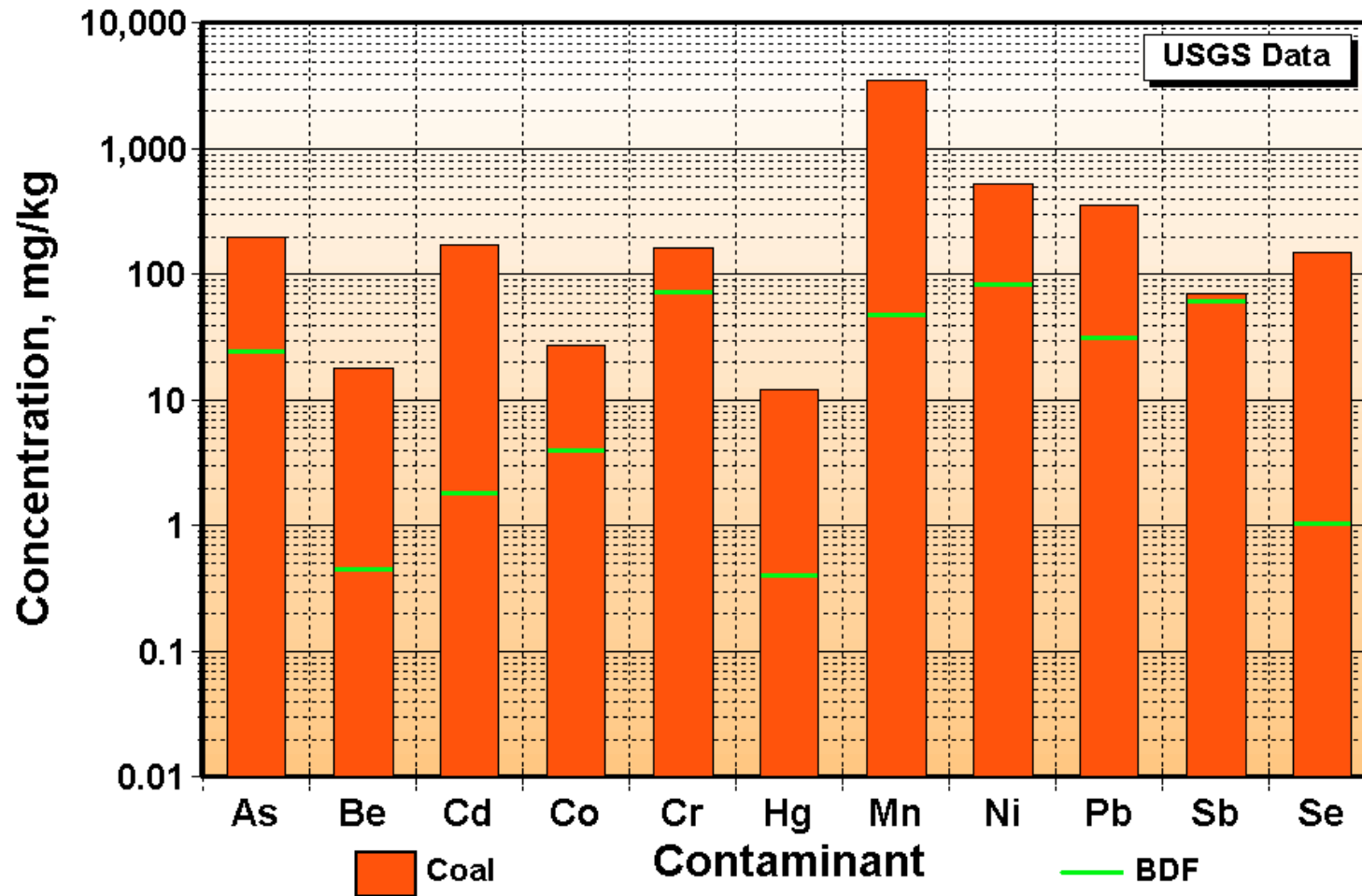
Source: US Bureau of Mines

Coal Mercury Content

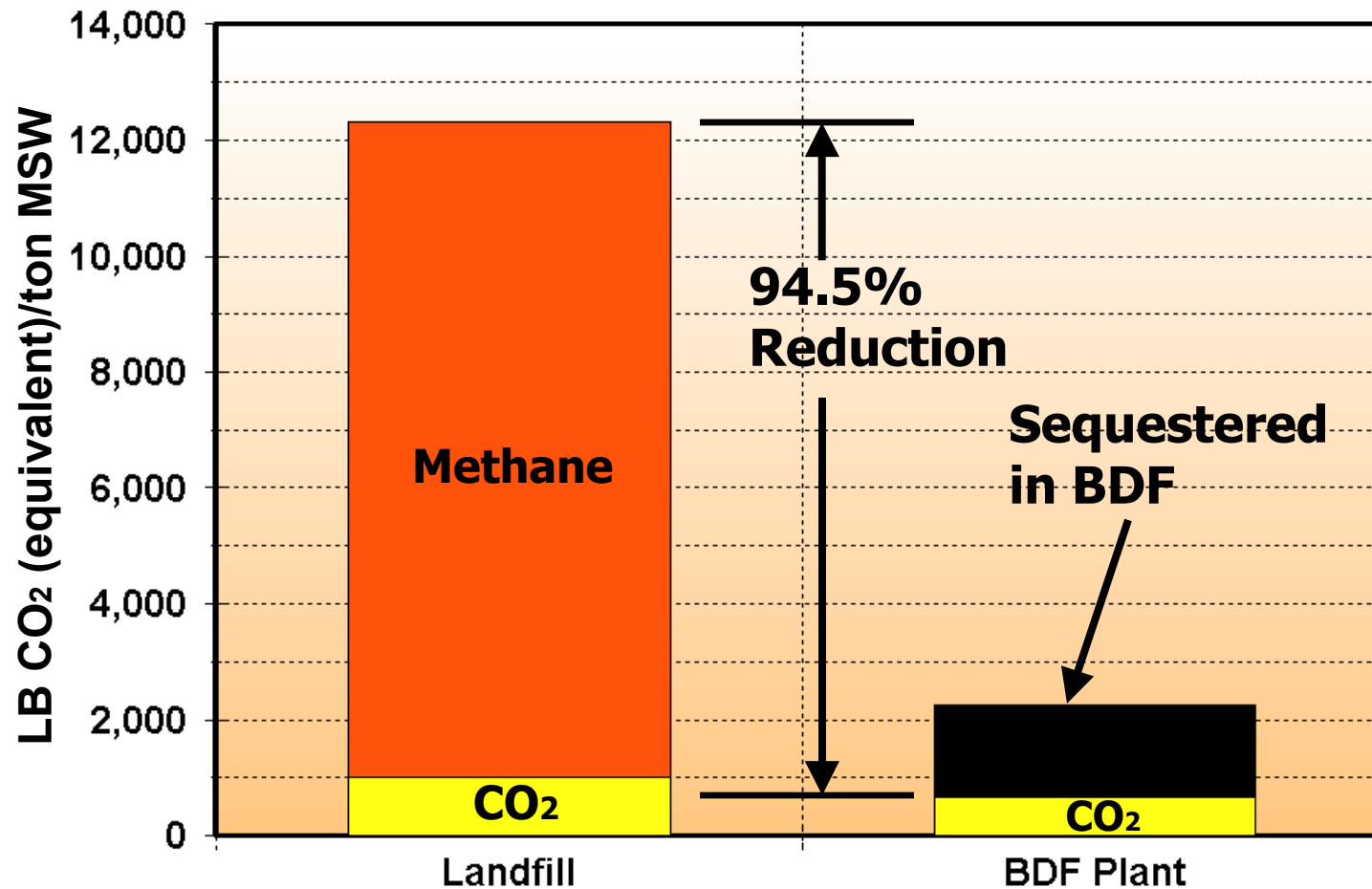
US Coal Sources



EPA Contaminants



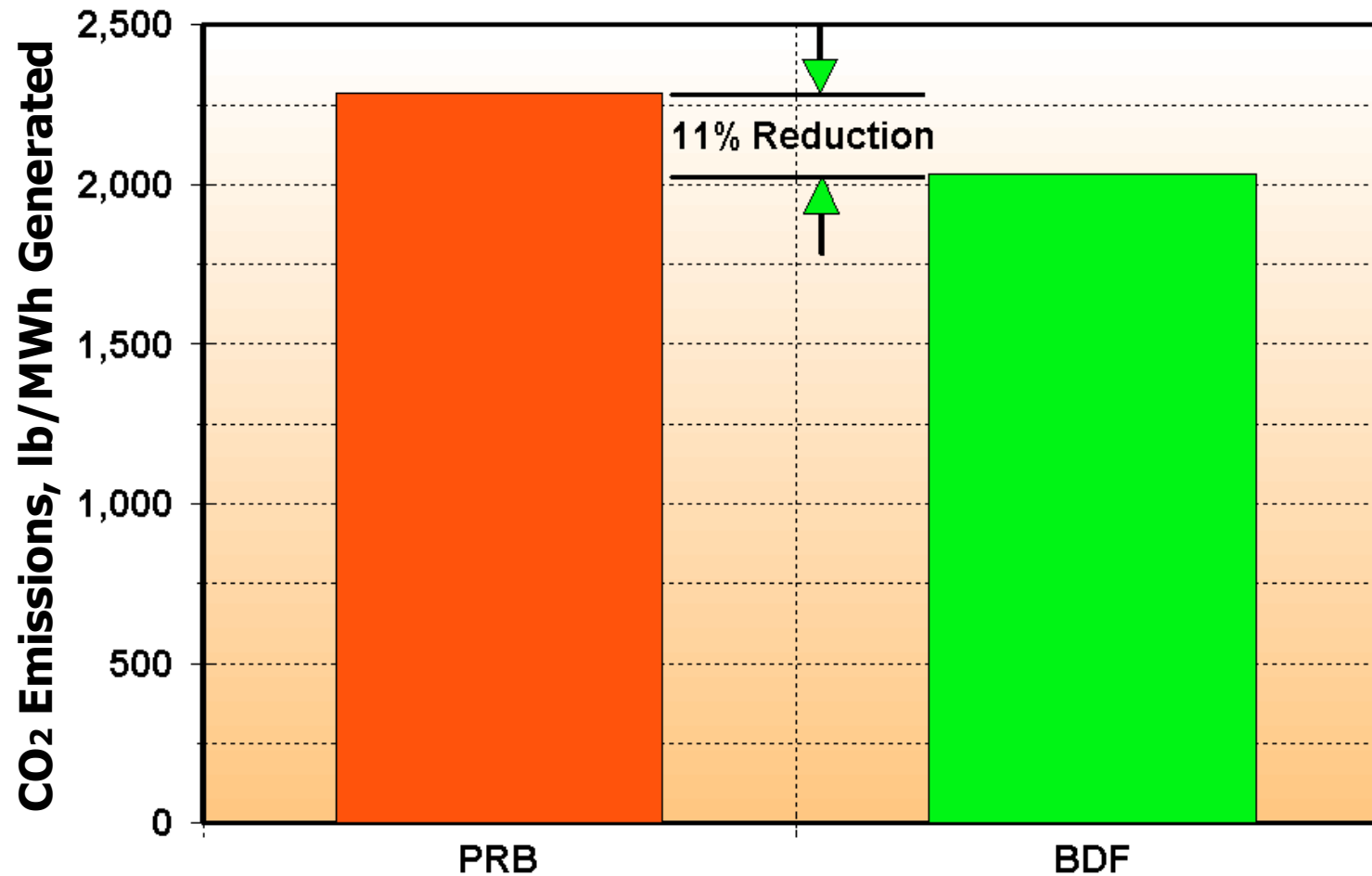
Greenhouse Gas Emissions



CO₂ Emissions at Combustion



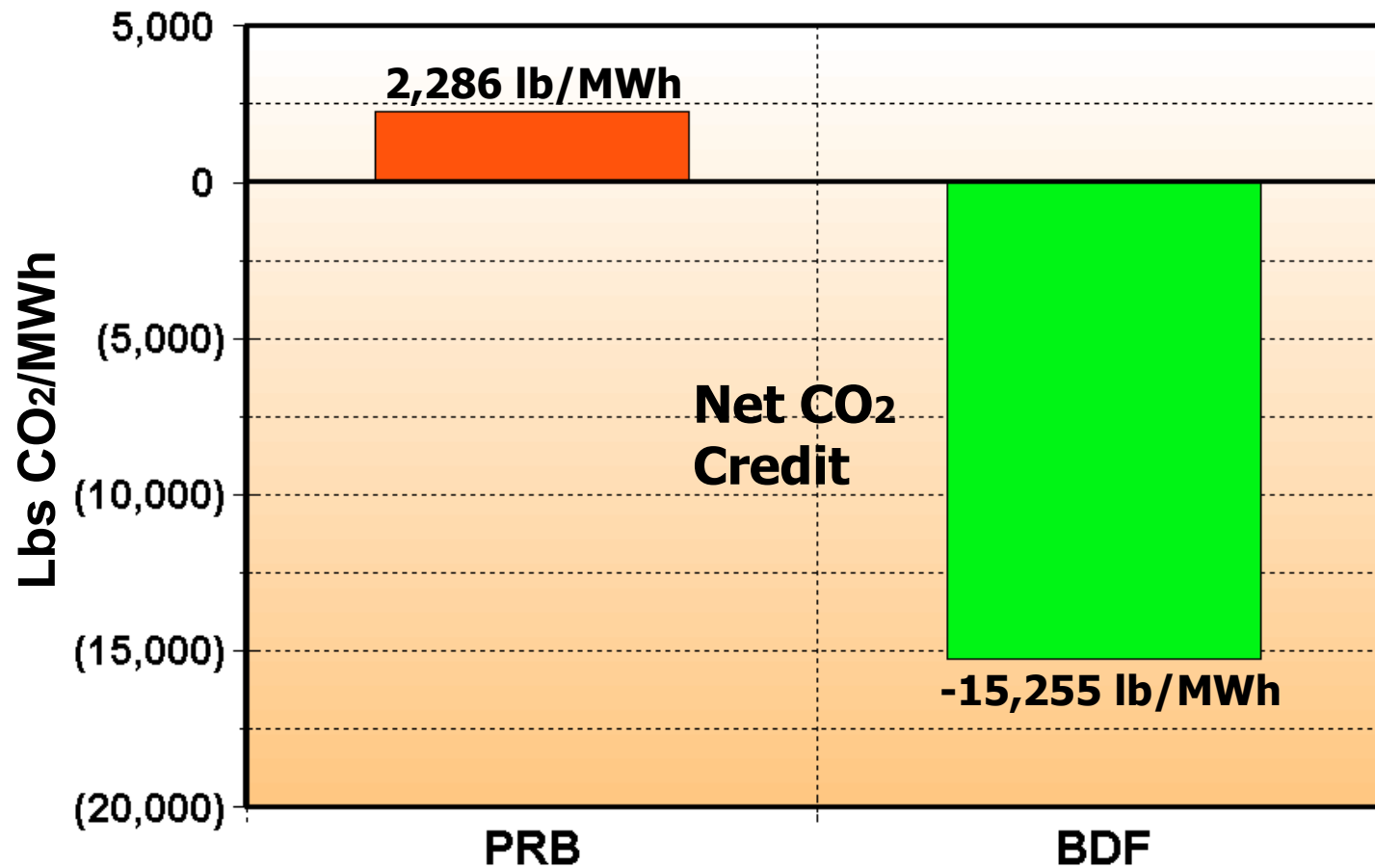
PRB Coal vs BDF from MSW



CO₂ Net Emissions



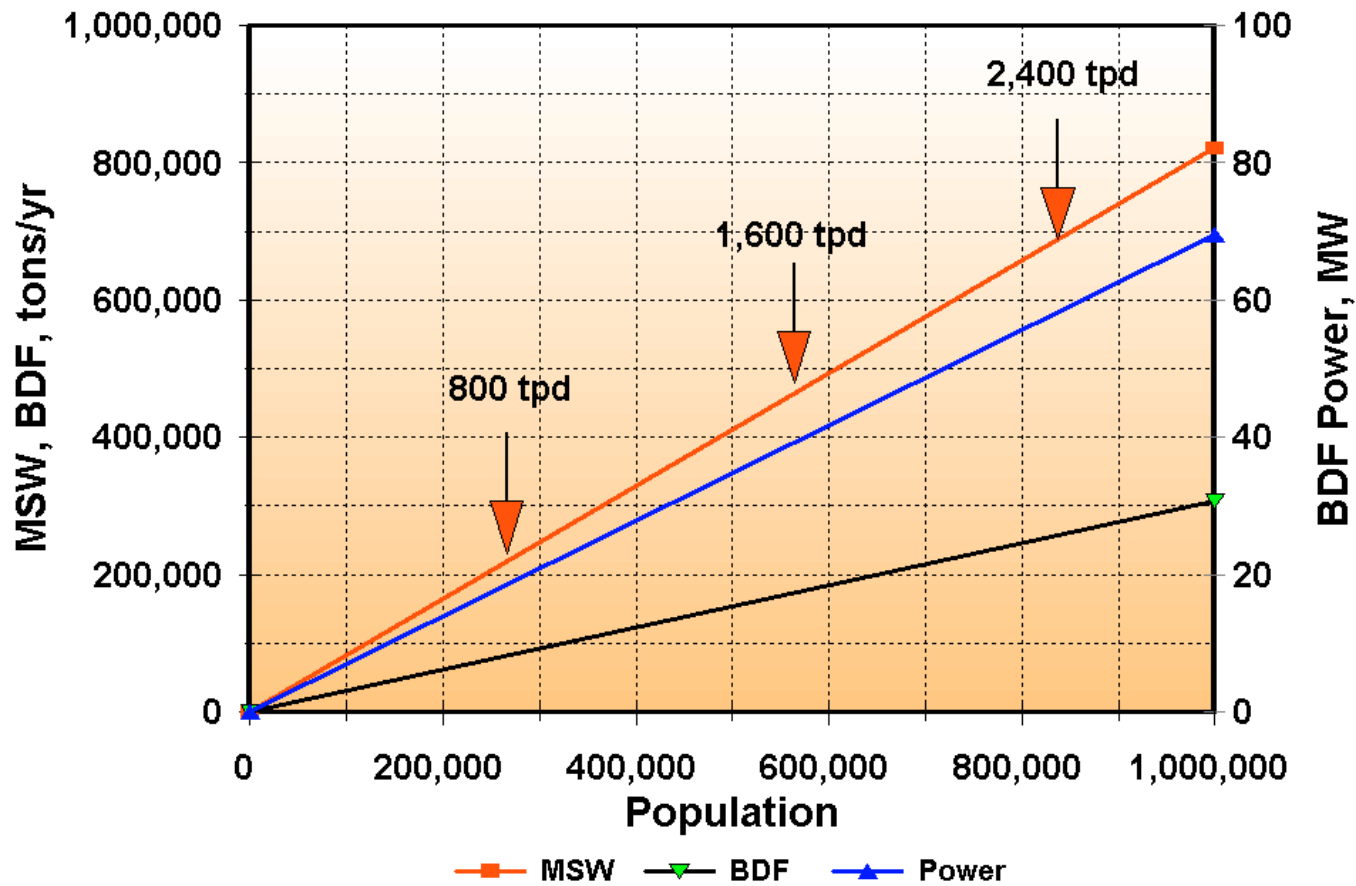
PRB Coal vs BDF from MSW



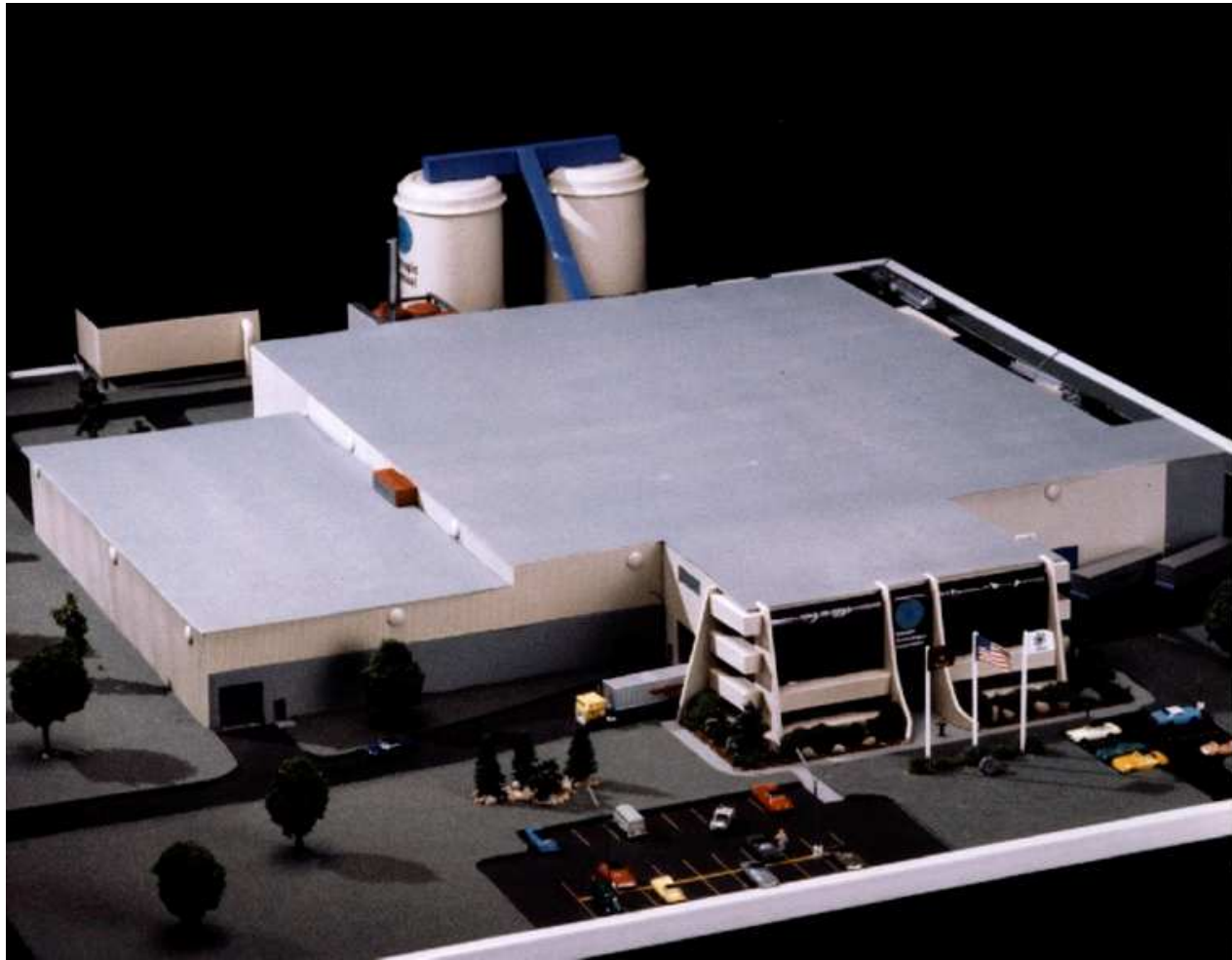
LTMP Plant Scaling



Output vs Population



Commercial Plant - 800tpd



Commercial Plant - 800tpd

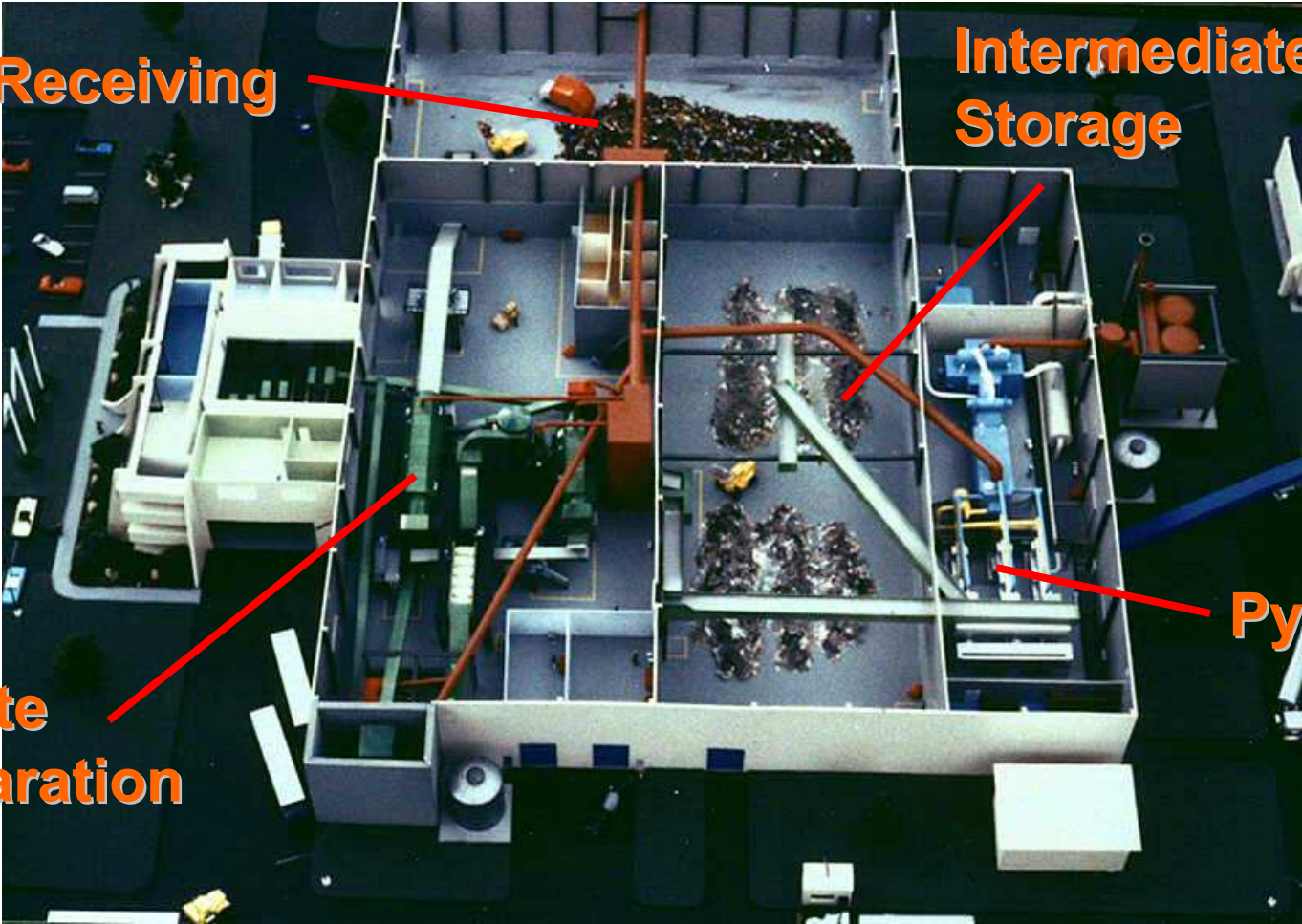


Waste Receiving

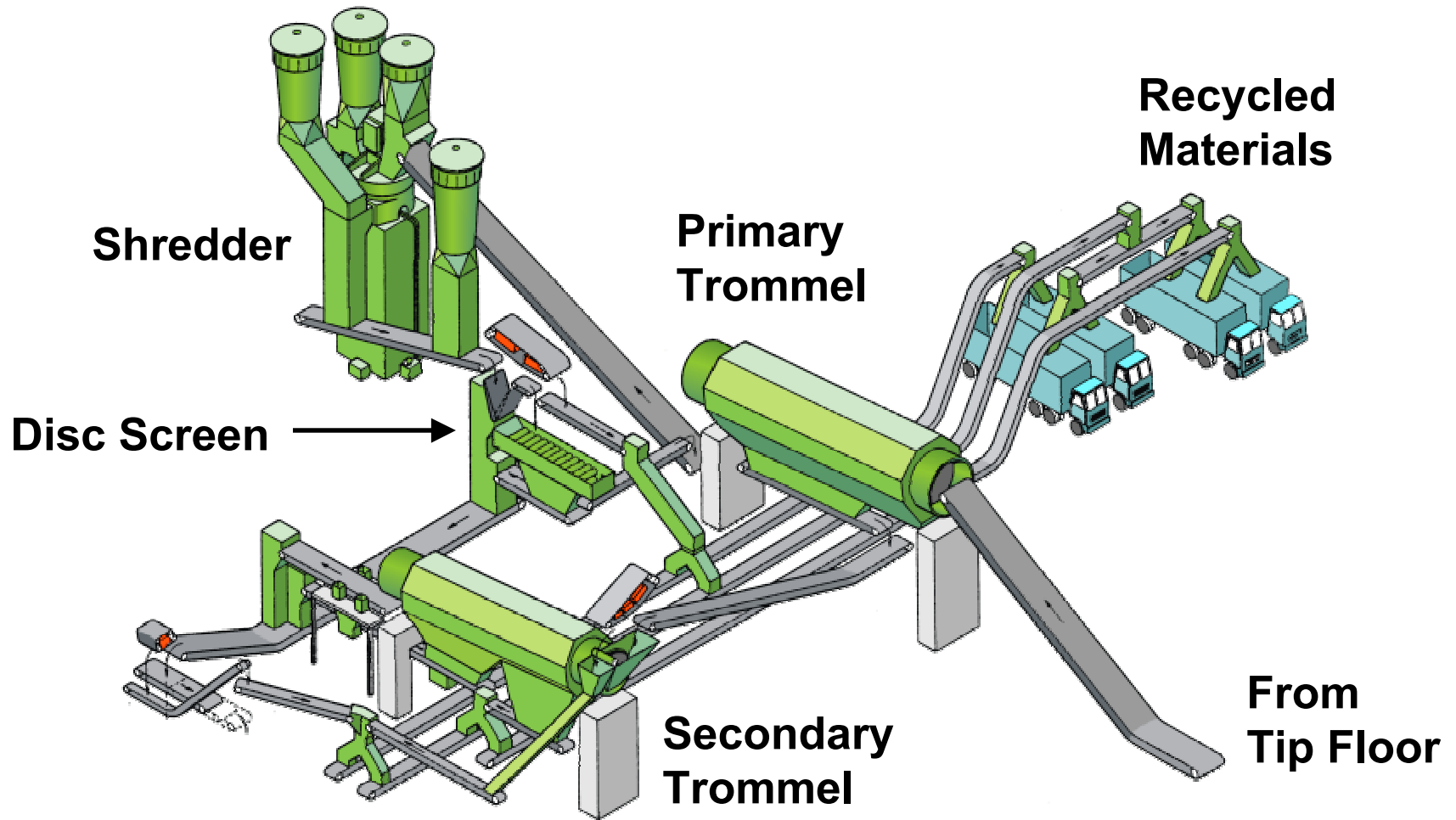
Intermediate Storage

Waste Separation

Pyrolysis



Primary Sorting



Tip Floor Conveyor



Feed To Trommel



Trommel Screen



Disc Screen



Air Classification



Metals Recovery

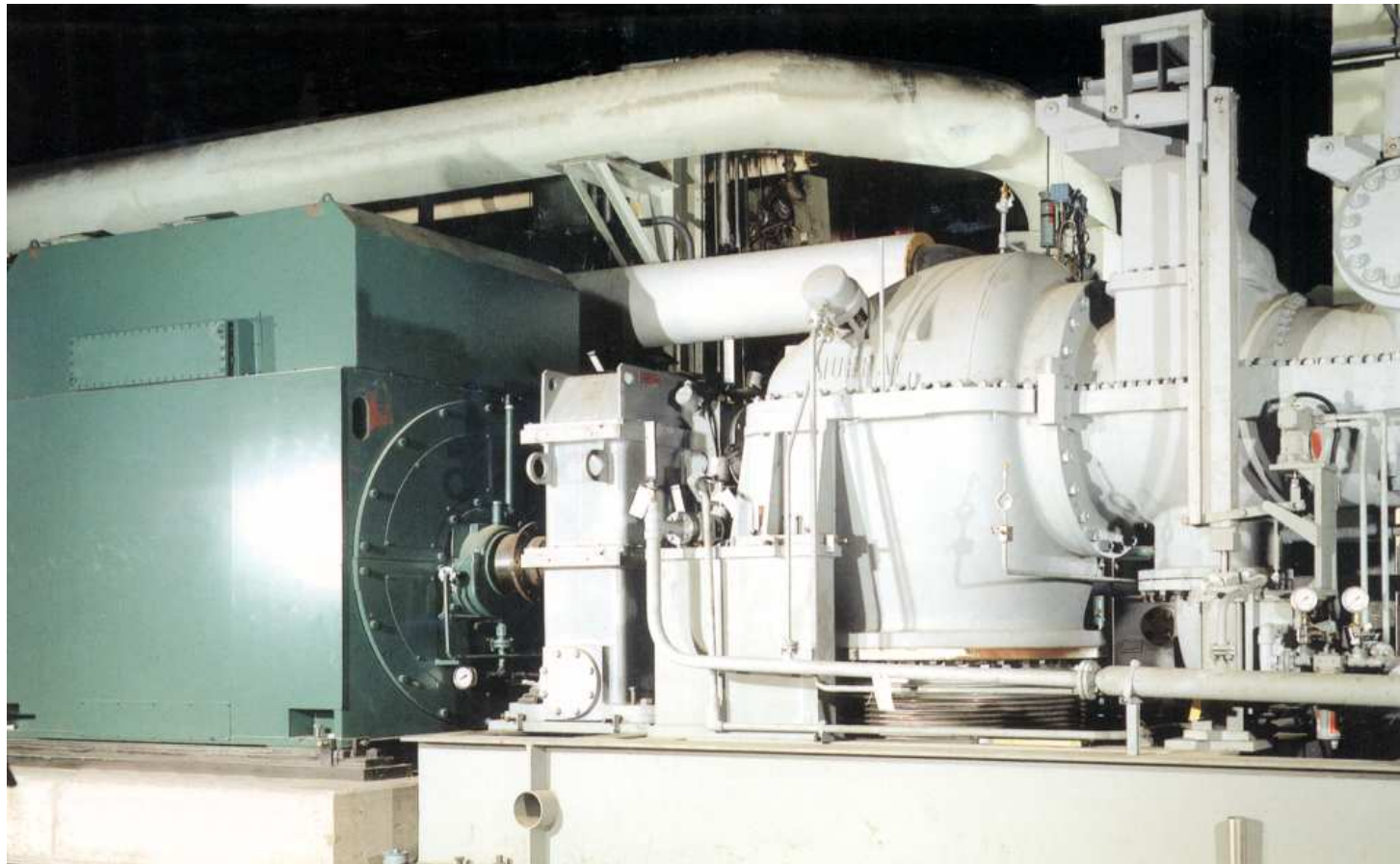


**Ferrous Metals:
Magnetic Separator**

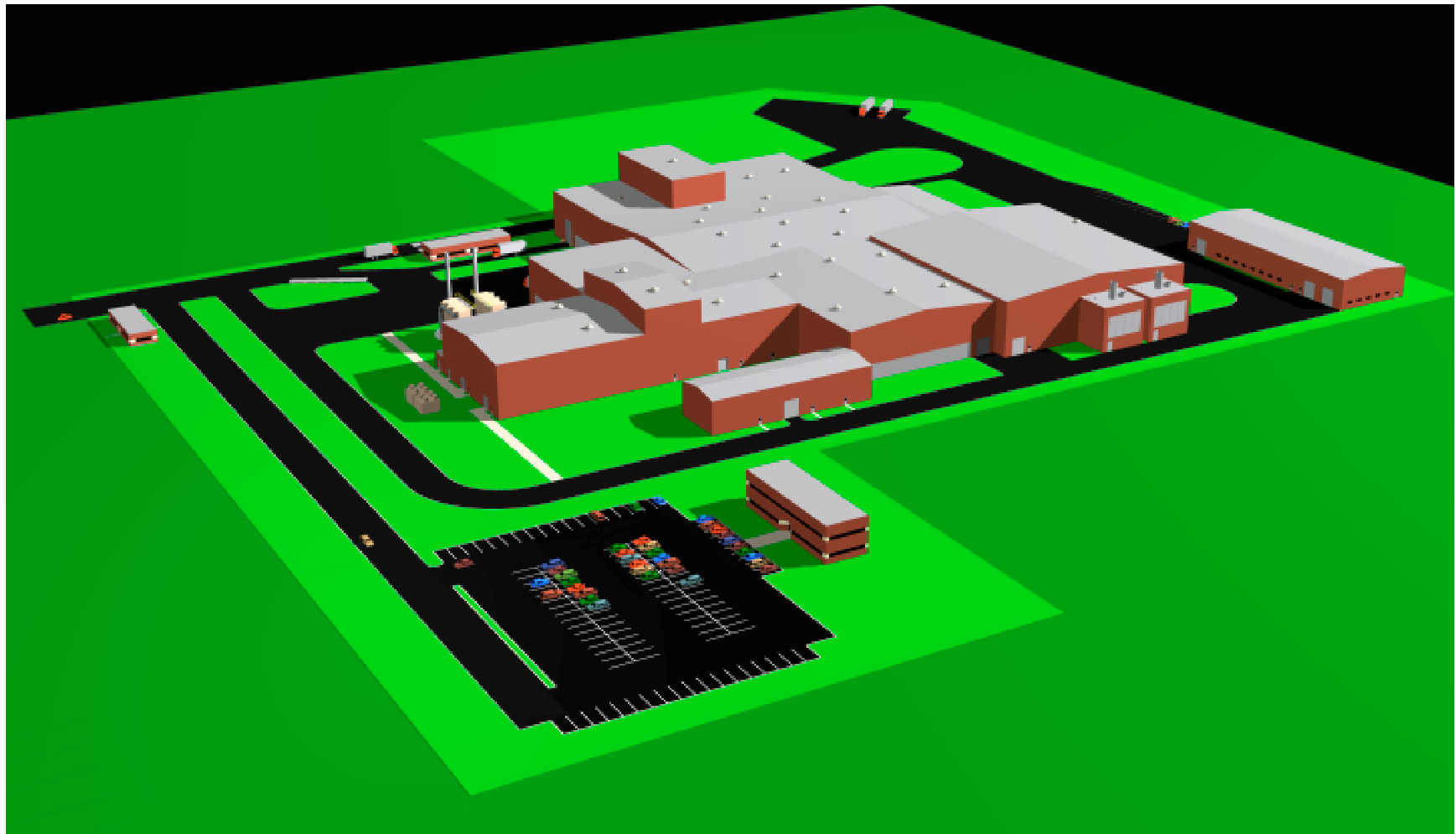
**Non-Ferrous Metals:
Eddy Current Separator**



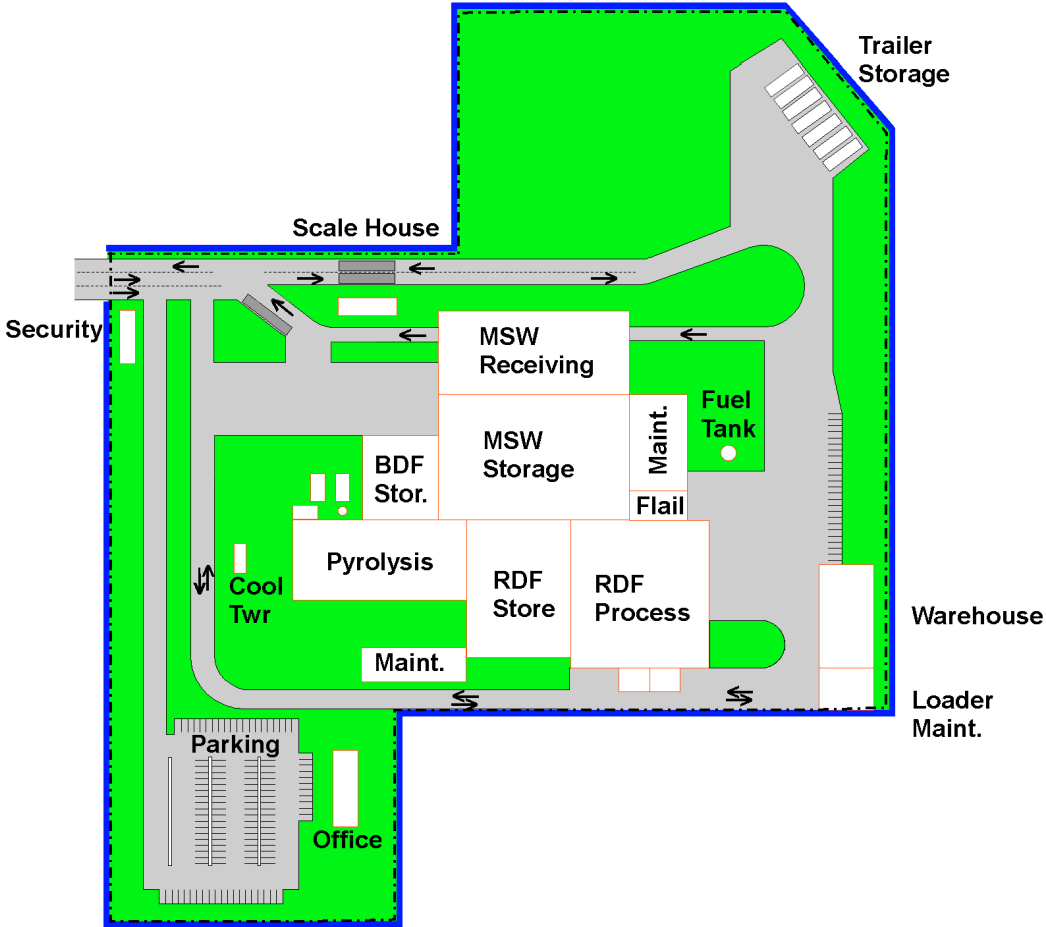
Steam Turbine Generator



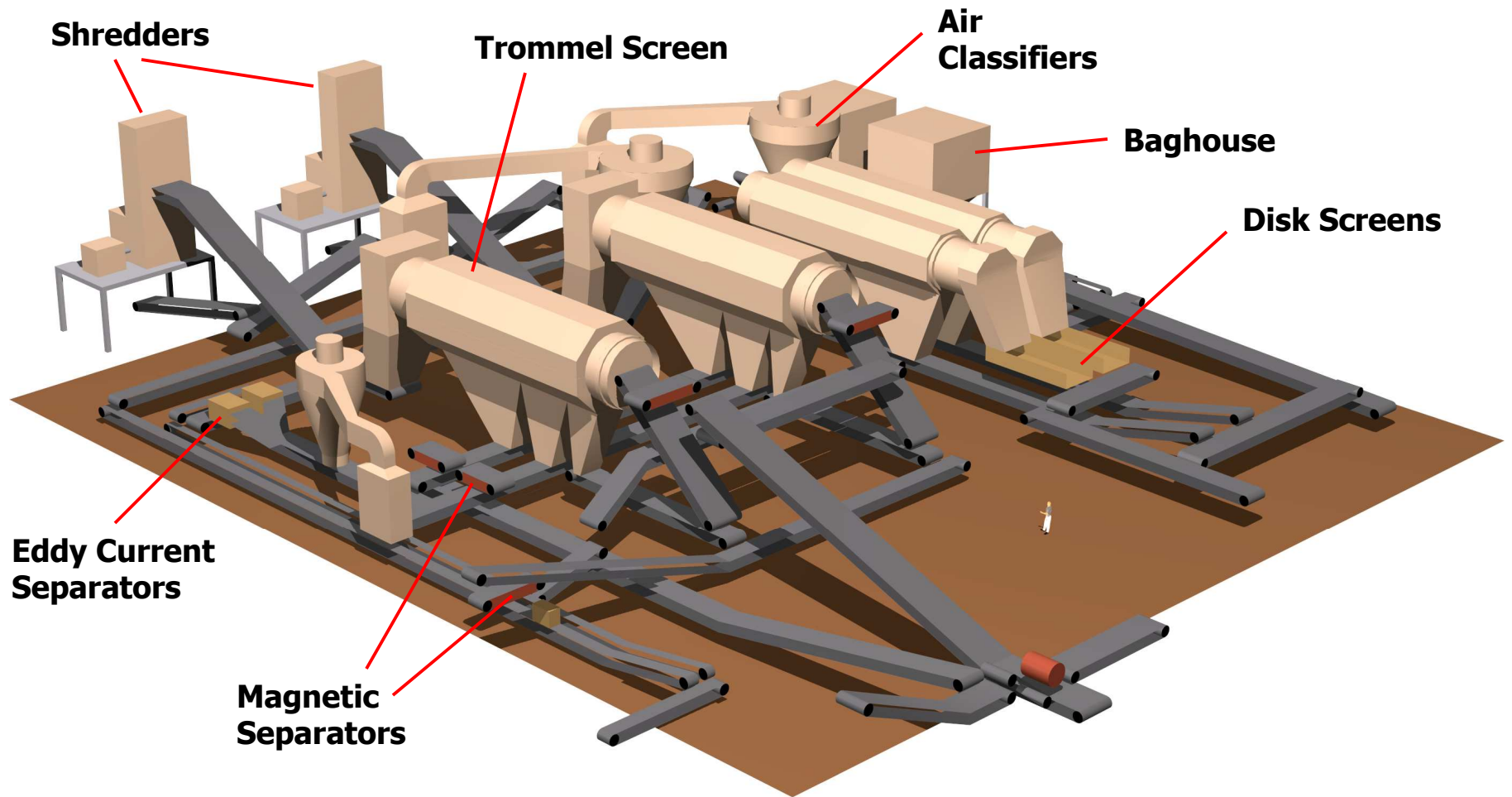
Plant Layout - 2400 tpd



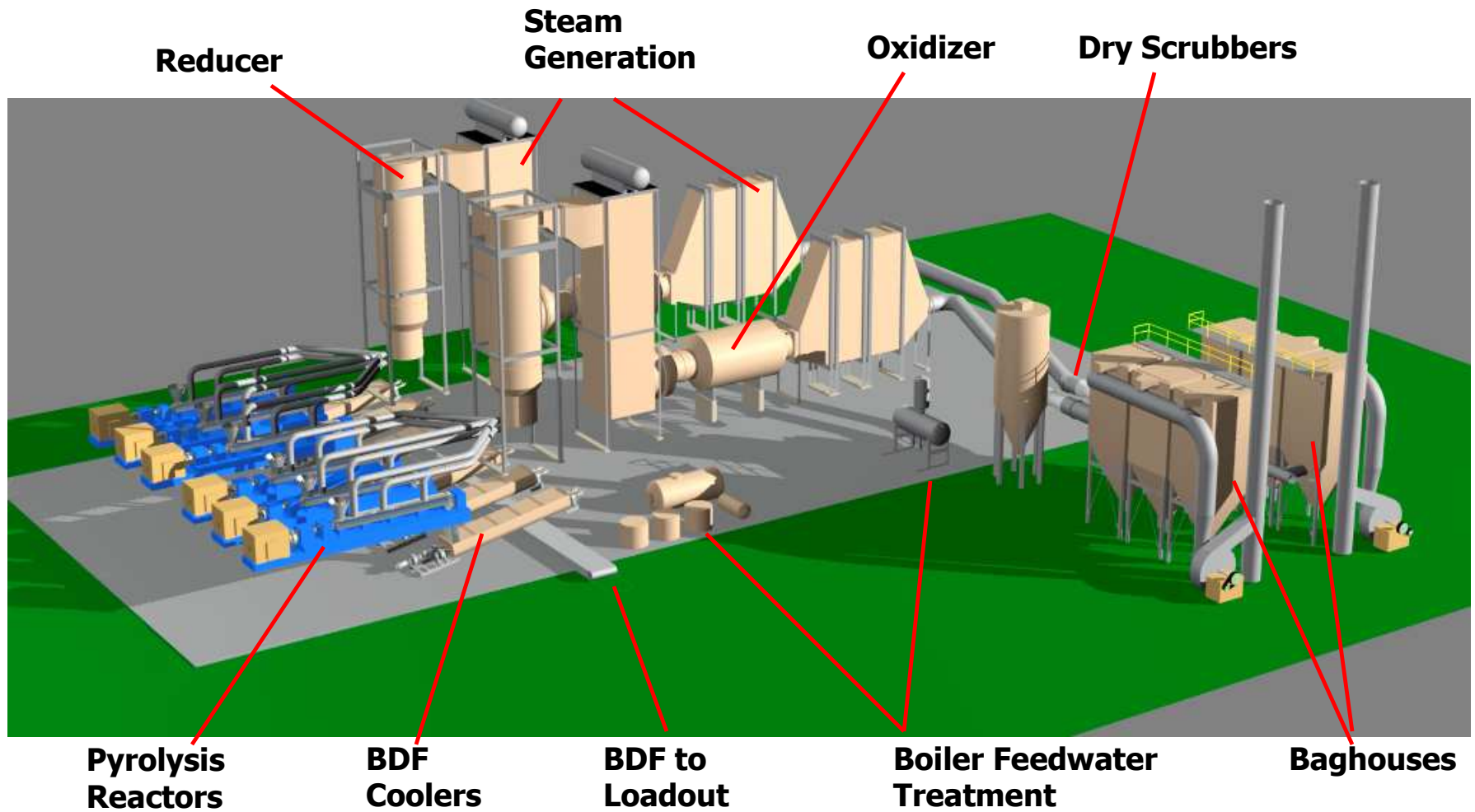
Site Layout - 2400 tpd



RDF Preparation - 2400 tpd



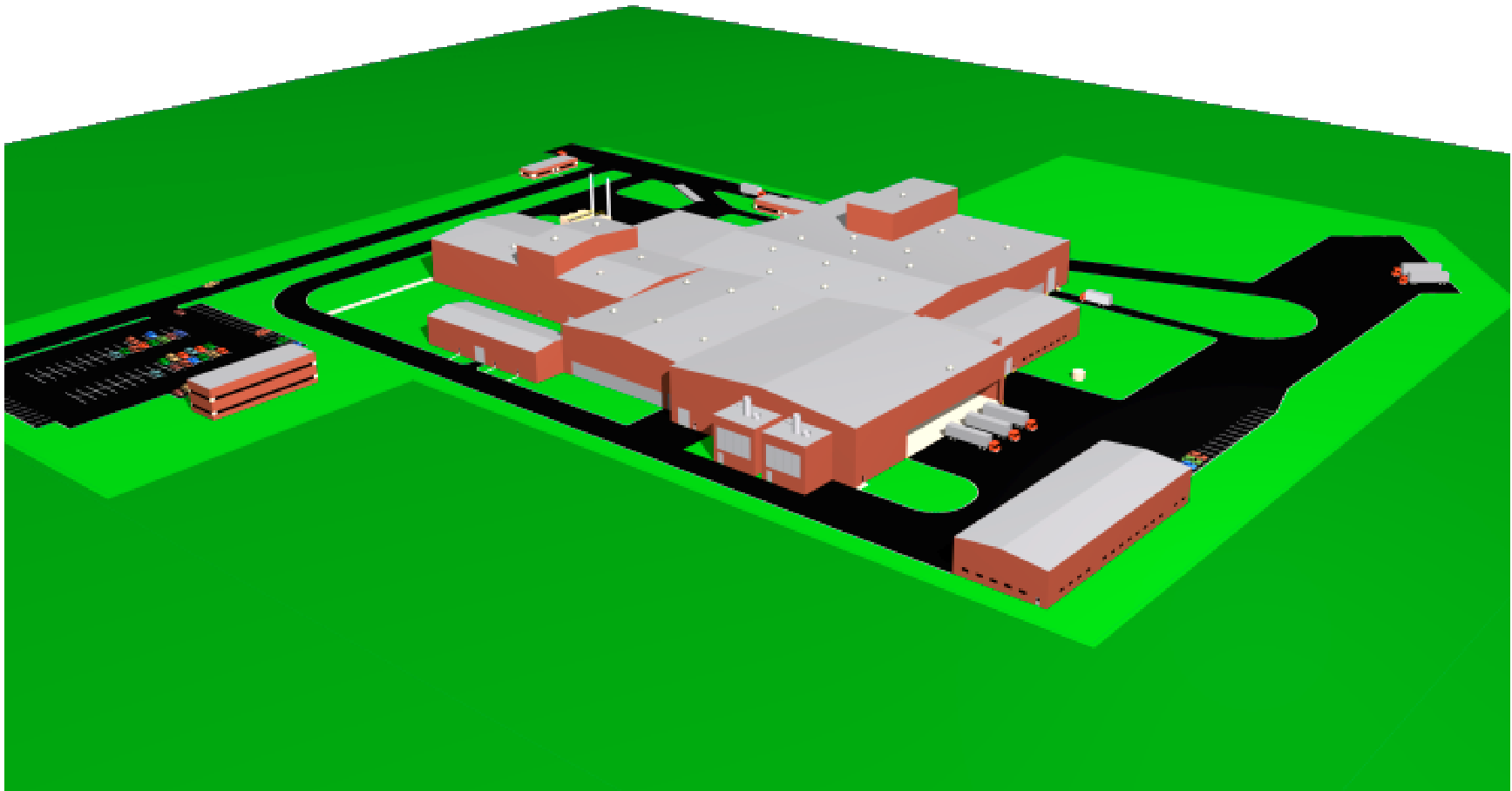
Pyrolysis Area - 2400 tpd



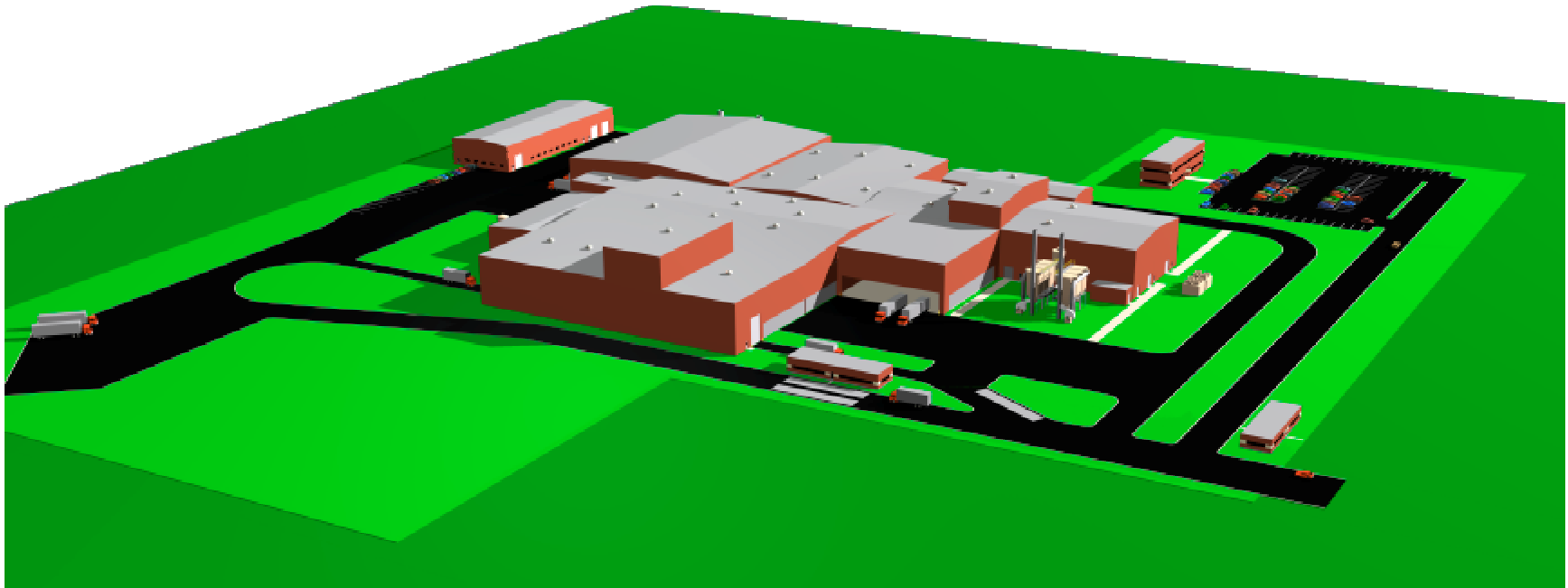
Commercial Plant - 2400 tpd



RDF Production / Recyclables Loadout Areas



Commercial Plant - 2400 tpd



Bio-Derived Fuel Loadout Area

Before/After



Completed Project Site



Reducing Emissions in Kane County

Kane County Energy & Environmental Technology Commission
May 16, 2013



Lindy Wordlaw, Energy Program Manager
A Division of the Center for Neighborhood Technology

Helping consumers, communities and businesses control energy costs and become more energy efficient

- Energy Efficient Buildings
 - Implement retrofit programs
 - Regional Program: Energy Impact Illinois (EI2)
- Dynamic Pricing and Smart Grid
 - ComEd’s Residential Real Time Pricing Program
 - Ameren’s Power Smart Pricing program
- Energy Planning
 - Kane County energy plans
 - Sustainability Audit; Emissions
 - Baseline energy analysis for 286 municipalities in the region



KANE COUNTY EMISSIONS
 SUPPLEMENT TO EMISSIONS SPREADSHEET
 PREPARED BY THE CENTER FOR NEIGHBORHOOD TECHNOLOGY

EMISSIONS
 An analysis of Kane County’s 2011 operations finds emissions of over 17,000 metric tons of carbon dioxide equivalent (mtCO₂e) across four categories: 5,200 mtCO₂e direct emissions, 9,300 mtCO₂e indirect emissions from electricity use, and 2,500 mtCO₂e emissions from “Scope 3” employee commute and business travel sources, along with an estimated 28 mtCO₂e of direct biogenic carbon emissions from the use of biodiesel fuel.

	Emissions		Emissions by Scope (Metric tons CO ₂ equivalent (CO ₂ e))			
	Metric tons CO ₂ equivalent (CO ₂ e)	Biogenic Emissions Metric tons CO ₂ equivalent (CO ₂ e)	Scope 1 Emissions	Scope 2 Emissions	Scope 3 Emissions	Biogenic Scope 1 Emissions
2011 Emissions						
Buildings	12,040	0	2,780	9,261		
Fleet	2,466	28	2,466			28
Employee Commute	2,331	0			2,331	
Non-Fleet Business Travel					182	
Total by Scope			5,246	9,261	2,513	28

Emissions from County Operations

Emissions from County Operations, 2011

2011 Emissions	Emissions		Emissions by Scope (Metric tons CO ₂ equivalent (CO ₂ e))			
	Metric tons CO ₂ equivalent (CO ₂ e)	Biogenic Emissions Metric tons CO ₂ equivalent (CO ₂ e)	Scope 1 Emissions	Scope 2 Emissions	Scope 3 Emissions	Biogenic Scope 1 Emissions
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Employee Commute	2,331	0			2,331	
Non-Fleet Business Travel					182	
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Countywide Emissions

Municipal Energy Profile Project (MEPP)

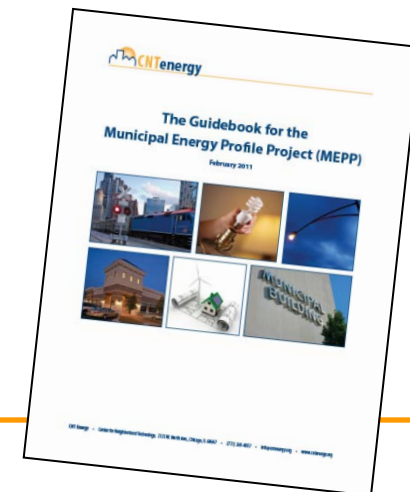
- Funded by the Illinois Clean Energy Community Foundation (ICECF)

- In cooperation with



- 276 municipalities

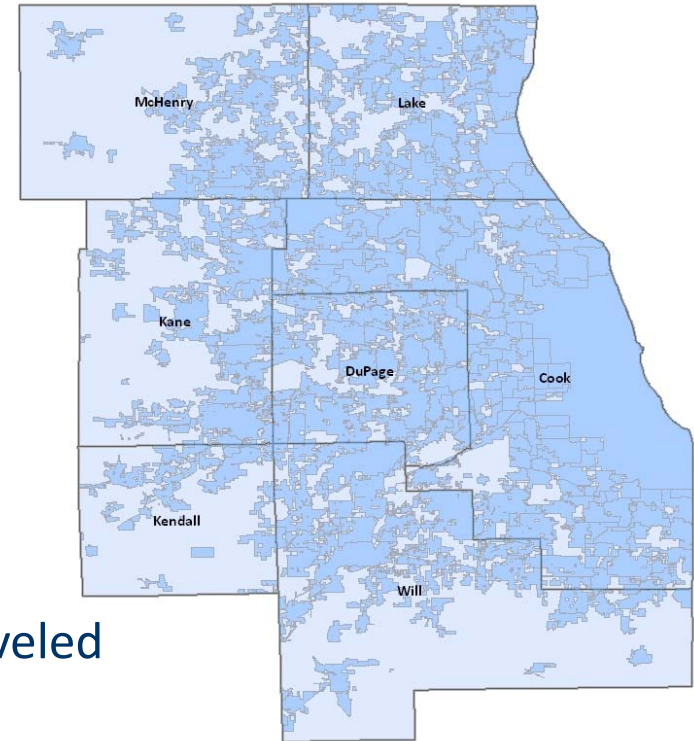
- Workshops + Guidebook + Free Technical Assistance



What's In Each Municipality's Energy and Emissions Profile?

Municipal Energy & Emissions Profile

- 2007 community-wide energy and emissions data
- 7 page report
- 5 sections:
 - Section 1: Using Your Profile
 - Section 2: Electricity Consumption
 - Section 3: Natural Gas Consumption
 - Section 4: Transportation - Vehicle Miles Traveled
 - Section 5: Emissions Profile



Section 1: Using Your Profile

- Baseline Metrics or “Benchmarking”



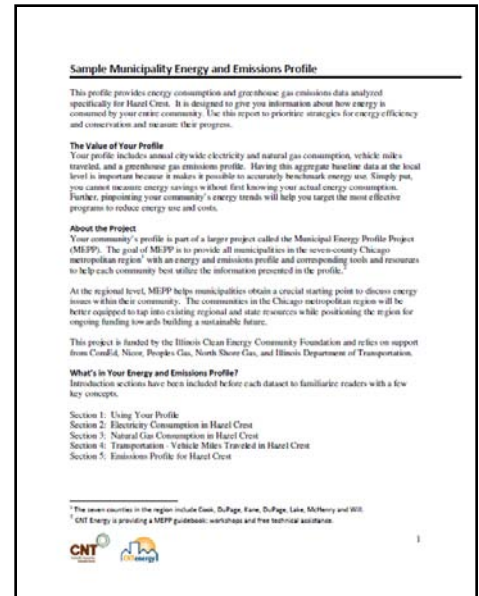
You can't measure your success without knowing where you started from.

- Accurate Data

Factual consumption data “trumps” estimates provided by other sources; helps better project savings estimates.

- Data Indicators

Flag areas of opportunity for savings.



Section 1: Using Your Profile

- Baseline Metrics or “Benchmarking”

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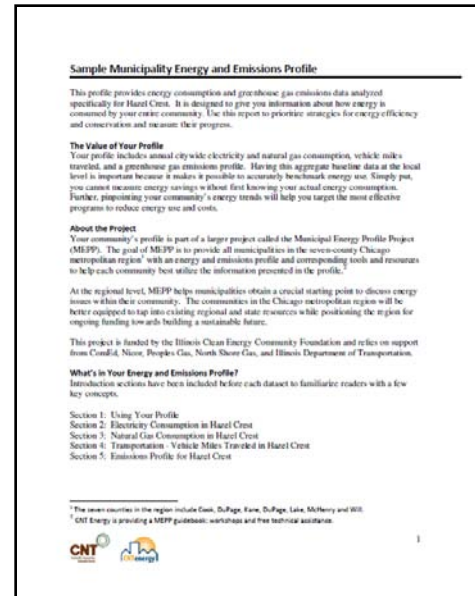
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Section 1: Using Your Profile

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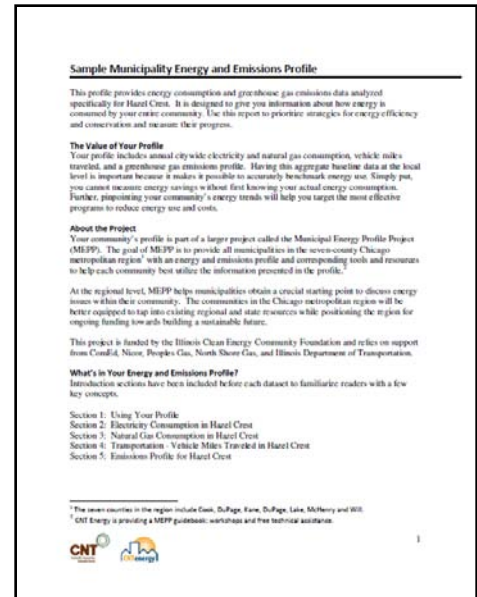
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- Data Indicators



Flag areas of opportunity for savings.



Section 2: Electricity Consumption

Total consumption and by sector

- Residential
- Commercial and Industrial (C & I)
 - Businesses
 - Schools
 - Municipalities
 - Hospitals
- Compared to County

Table 1. Total Electricity Consumption (kWh), 2007

	Aurora	Kane County
Residential	511,268,374	1,341,605,907
C & I	867,479,172	3,609,892,179
Total	1,378,747,546	4,951,498,086

Figure 1. Aurora's Electricity Consumption by Sector, 2007

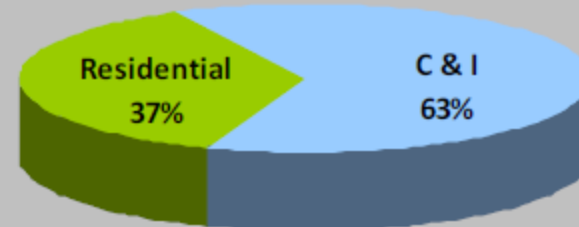
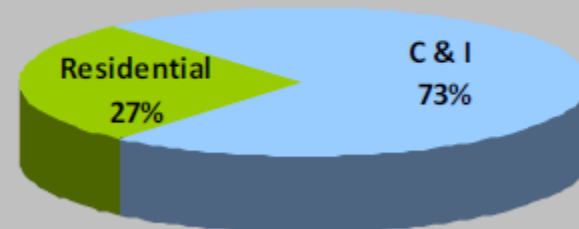


Figure 2. Kane County's Electricity Consumption by Sector, 2007



Section 2: Electricity Consumption

Consumption and costs at the household level

- May help identify energy trends in your community

Table 2. Residential Electricity Consumption & Costs, 2007

	Aurora	Kane County
Number of Households	58,187	163,555
Average kWh per Household	8,787	8,203
Average Annual \$ per Household*	\$945	\$883

*Calculated using average residential sales per kWh (ICC Utility Sales Statistics 2007)

Section 3: Natural Gas Consumption

Total consumption and by sector

- Residential
- Commercial and Industrial (C & I)

Table 3. Total Natural Gas Consumption (Therms), 2007

	Aurora	Kane County
Residential	54,184,951	164,810,974
C & I	37,399,656	150,546,211
Total	91,584,607	315,357,185

- Compared to county

Figure 3. Aurora's Natural Gas Consumption by Sector, 2007

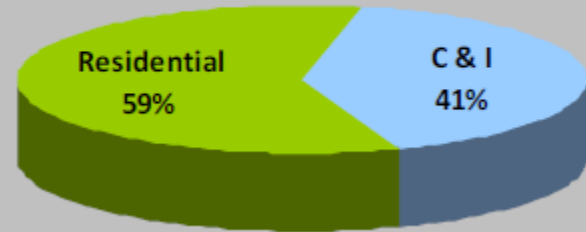
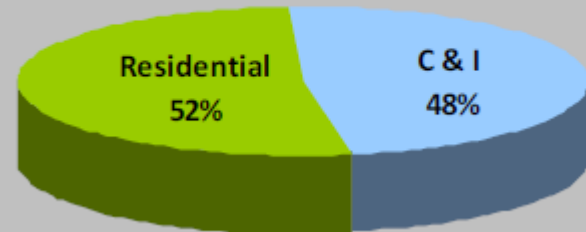


Figure 4. Kane County's Natural Gas Consumption by Sector, 2007



Section 3: Natural Gas Consumption

Consumption and costs at the household level

- May help identify energy trends in your community

Table 4. Residential Natural Gas Consumption & Costs, 2007

	Aurora	Kane County
Number of Households	58,187	163,555
Average Therms per Household	931	1,008
Average Annual \$ per Household*	\$827	\$895

*Calculated using average residential sales per therm (ICC Utility Sales Statistics 2007)

Factors that impact HH energy consumption

Electricity	Natural Gas
<ul style="list-style-type: none">• square footage• presence and efficiency of air conditioning• efficiency of lighting• efficiency of appliances and systems• occupant behavior	<ul style="list-style-type: none">• square footage• building age• building envelope efficiency• efficiency of the furnace, boiler and water heater• occupant behavior• building operations and maintenance

Section 4: Transportation - Vehicle Miles Traveled

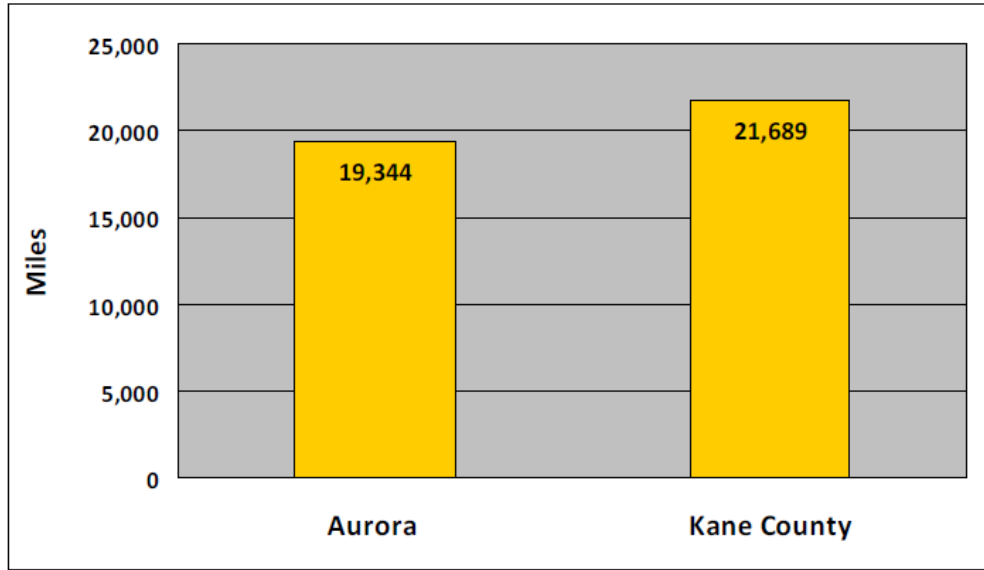
Transportation accounts for the second largest use of energy after the energy use in buildings

Table 5. Vehicle Miles Traveled (VMT), 2007

	Aurora	Kane County
Total On-Road VMT	1,240,003,225	3,648,483,852
Household VMT	1,125,561,259	3,547,369,537

- Total On-Road VMT
- Total HH (Household) VMT
- Average VMT per HH
- Comparison to County

Figure 5. Average Vehicle Miles Traveled per Household, 2007



Factors that affect HH VMT

Place-Based Factors	Demographic Factors
<ul style="list-style-type: none">• access to jobs• proximity to businesses and• amenities• availability/accessibility to public• transportation• community walkability	<ul style="list-style-type: none">• income• household size• workers per household

Section 5: Emissions Profile

- Emissions calculations
 - 6 major categories of greenhouse gases regulated under the Kyoto Protocol
 - Energy and transportation are by far the biggest contributors
- Total community-wide emissions

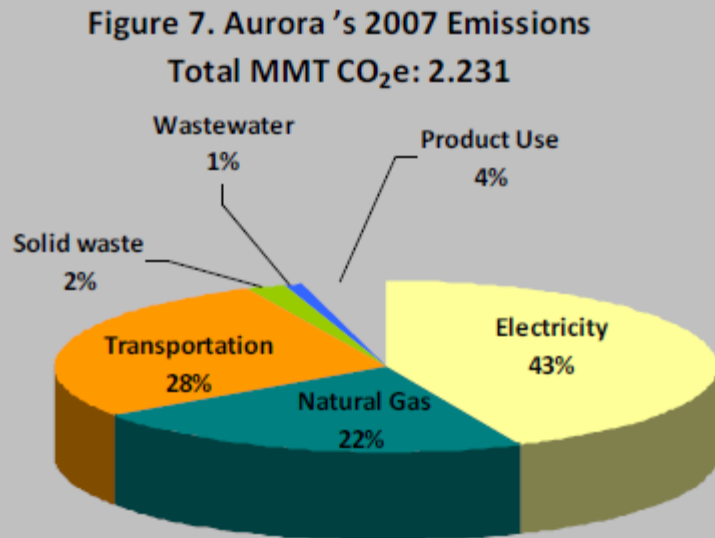
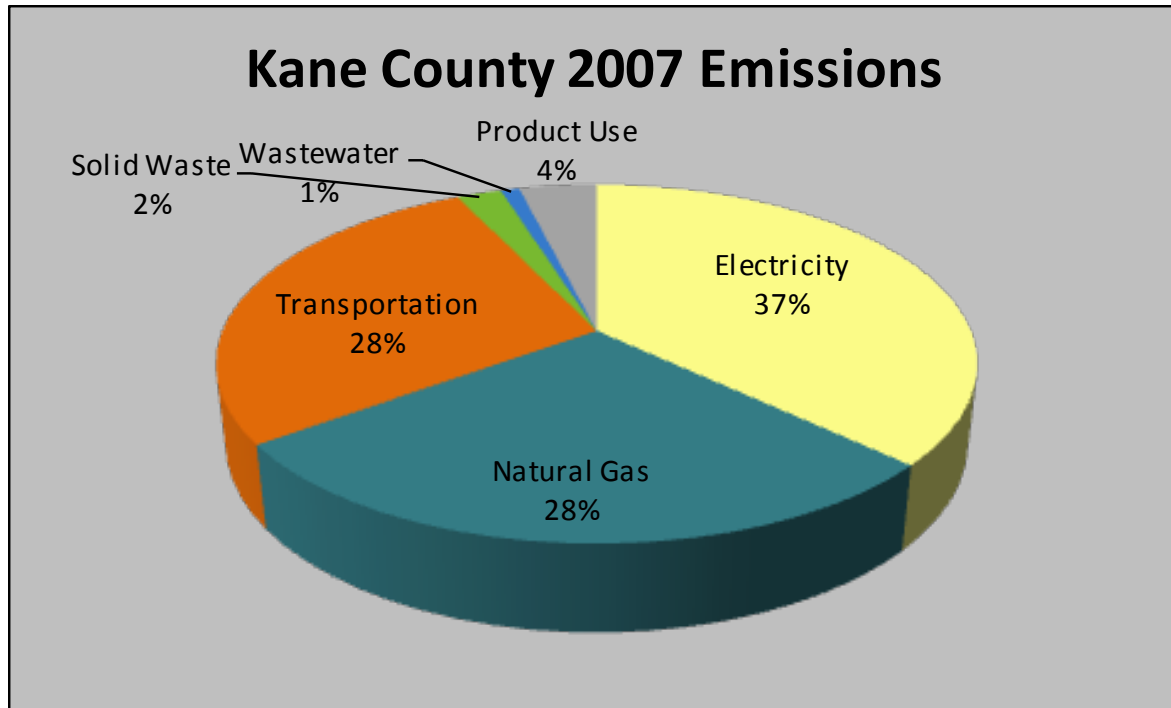


Table 6. Aurora's Emissions by Sector, 2007

Sector	MMT CO ₂ e
Electricity	0.967
Natural Gas	0.487
Transportation	0.622
Solid Waste	0.043
Waste Water	0.022
Product Use	0.09
TOTAL	2.231

Section 5: Emissions Profile

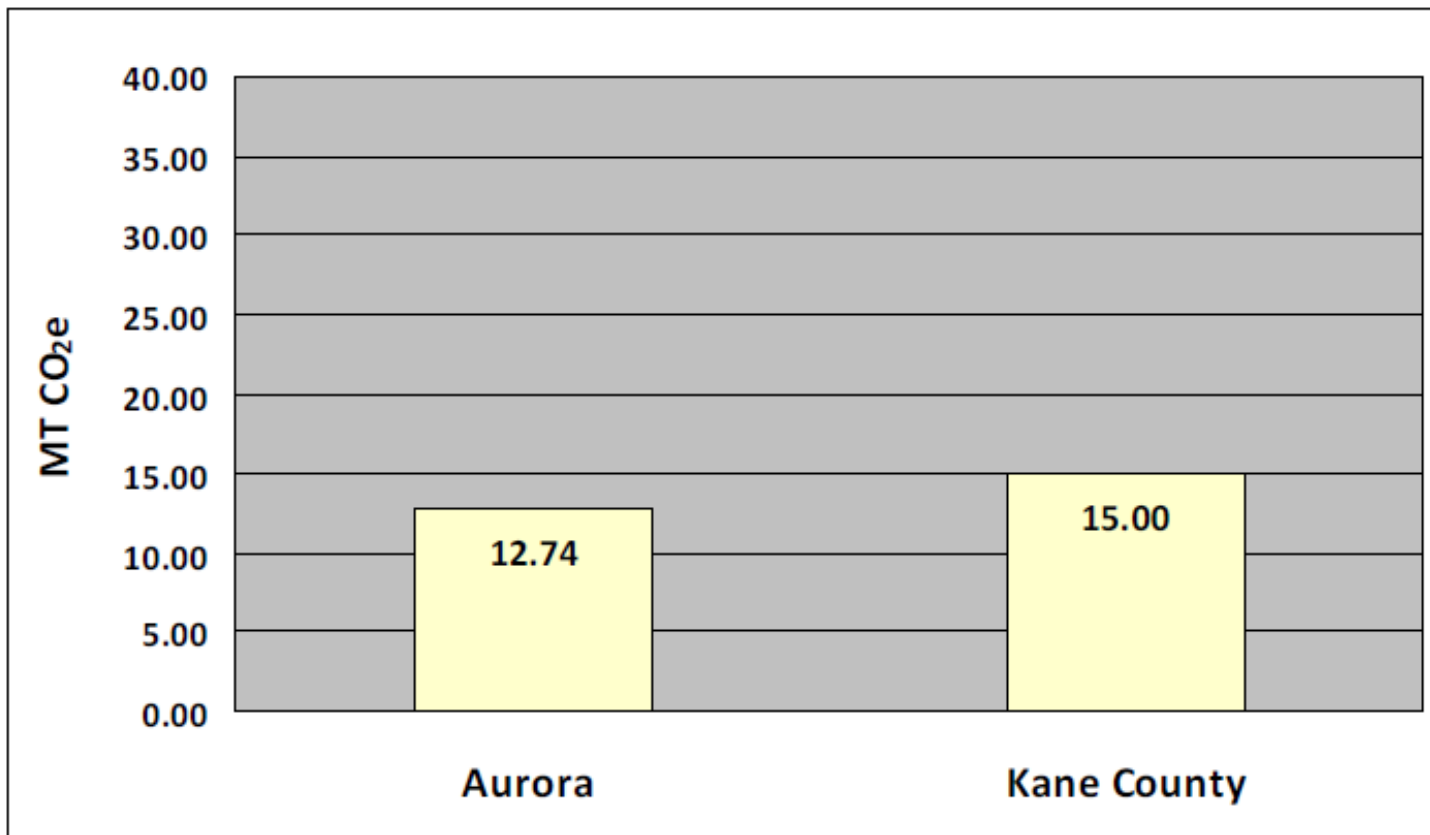


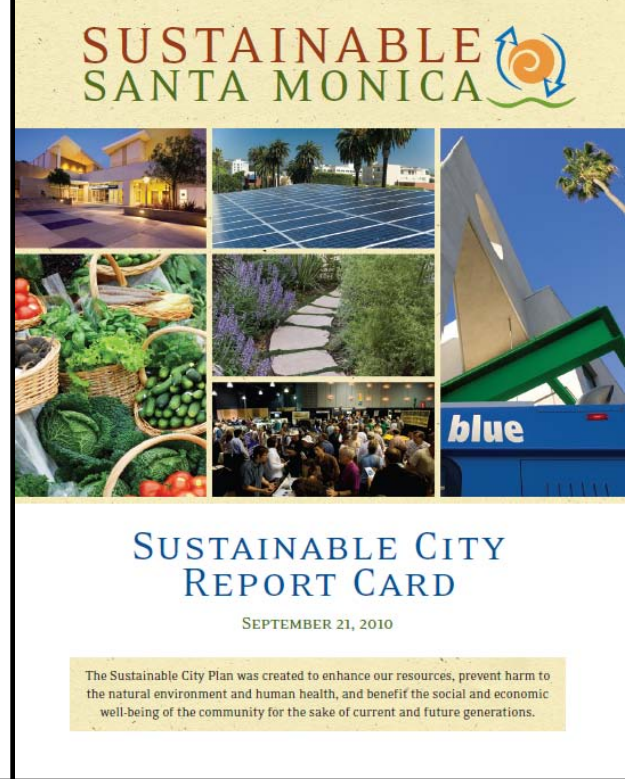
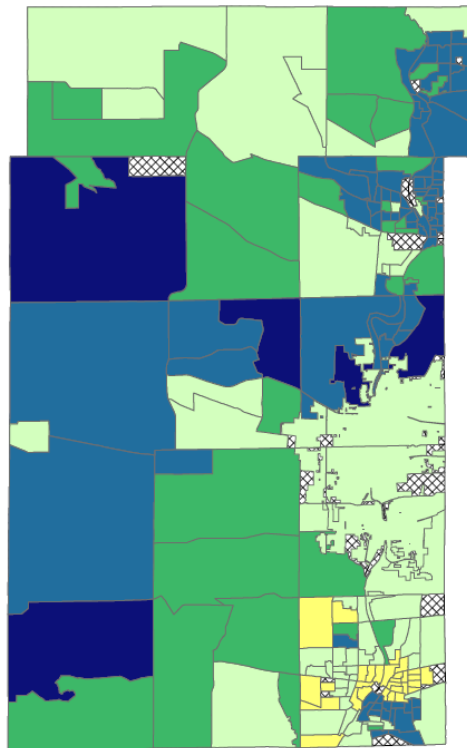
Section 5: Emissions Profile

Per capita emissions

- Comparison to county

Figure 8. Per Capita Emissions, 2007





Benefits of having REAL energy/emissions data

- **Accurate data** for program design and financial modeling
- **Data indicators** allow efficient selection and targeting of strategies with highest impact
- **Ongoing performance measurement** to closely track progress

Next Steps: How can municipalities and/or Kane County use these profiles?

Next Steps:

How do you define Kane County's role?

Addressing government operations (only)

or

Kane County as “the Convener”

- sharing ideas/serve as ‘sounding board’
- providing learning/technical assistance opportunities for municipalities
- seeking funding for countywide efforts/strategies to reduce emissions (energy + VMT)
- support existing efforts to reduce energy and VMT
- facilitate action through partnership

Next Steps: Potential for Partnerships

- Build partnerships among community stakeholders
- Connect and share with other local governments
- Learn from best practices, but be innovative



Questions & Answers

Lindy Wordlaw, AICP, Energy Program Manager

lindy@cntenergy.org

773.269.4012



Kane County RECYCLES

Green Guide

2013-2014

Kane County Division of Environmental Resources

This will be the last Green Guide to be distributed via newspaper insert.

To receive a paper copy in the coming years: please call or email to get on the mailing list for a paper copy of the annual guide, or go online to sign up for the paperless electronic version to be emailed each spring.

Phone: 630-208-3841

Email: recycle@countyofkane.org

Web: www.countyofkane.org/pages/recycling

Business Recycling

Do you recycle at your business?

Do you recycle at your business? If not, this article will help get you started. The 1996 mandatory commercial recycling ordinance in Kane County requires all businesses and multi-family dwellings to recycle. It also requires waste haulers to provide recycling services to their customers. The Recycling and Hauler Ordinance can be found in the County Code, Chapter 11, Art. IV, Sec. 11, online at sterlingcodifiers.com/IL/KaneCounty.



The Q Center in St. Charles composts all pre- and post-consumer food scraps. They practice the 3 Rs, apply energy and water conservation measures, and commit to environmentally sensitive purchasing practices. See more at: www.qcenter.com/about-us/greencommitment/

Inside . . .

- Electronics Landfill Banpg. 2
- Electronic Recycling in Kane Countypg. 3
- Drop-Offspg. 4
- Household Recycling Guidelines...Pull-out (front)
- A-Z List of Recycle OptionsPull-out (back)
- Latex Paint Recycling and Disposalpg. 5
- Stop Junk Mail for Goodpg. 5
- Plastic Bag Recyclingpg. 5
- Household Hazardous Wastepg. 6
- Business Quantity Hazardous Wastepg. 6
- Medications/ Pharmaceuticals/ Needlespg. 6
- Motor Oil, Household Batteriespg. 7
- Recycling Extravaganza Eventspg. 8
- Confidential Document Shreddingpg. 8
- Compost Bins & Backyard Compostingpg. 8

Which materials can be recycled?

Lots (see the center pull-out poster)! A big part of what makes business recycling successful is single-stream recycling, where all recyclables can be combined in one container. If your waste stream presents more unique or complex needs, you can talk to your waste and recycling hauler about options.

Will recycling service cost more?

It doesn't have to. But like all services it does have a cost. By diverting materials from your trash into recycling, you can cut costs by reducing either the frequency of collection or the size of your dumpster. That savings can offset the cost of your recycling service. This model is a proven method for minimizing cost and improving efficiency of service, while recovering valuable resources through recycling. Call your waste hauler and request that they work with you to customize your waste and recycling service.

You already recycle?

Wonderful! Do you also minimize waste, print on both-sides of your paper, narrow your margins in your printed documents, or use reusable food-ware? Do you compost your food scraps, use energy efficient lighting, or practice water conservation? If you are a sustainable business, let us know and we'll add you to the list of Kane County Green Businesses.

Questions?

Questions about starting service should be directed to your current waste hauler. If you have questions about the Ordinance or about the Kane County Green Business List, please contact the Kane County Recycling Coordinator, Jennifer Jarland, at 630-208-3841 or recycle@countyofkane.org.

To download an electronic version of this guide and for the most updated information, please see

www.countyofkane.org/pages/recycling

Electronics Landfill Ban

Be Resourceful: Recycle your Electronics!

Worldwide, an estimated 20-50 million tons of electronics are discarded annually, and the US EPA estimates that 85% of it ends up in landfills. But that is changing; Illinois is one of 25 states that now have electronics related legislation.

The Illinois Electronic Products Recycling and Reuse Act, which took effect in 2008, required manufacturers who sell their products in Illinois to establish recycling programs for their discarded and unwanted products. Beginning in January of 2012, the law was amended, expanding the list of electronic items banned from state's 48 active landfills. There are 17 electronic items banned from the landfill. *See box below.*

Recycling opportunities abound. Since electronic equipment is no longer collected with regular trash and the Act requires that it be recycled, there are a growing number of free public collection events and permanent drop-off locations available. The legislation specifies that there be no fee for residents to recycle their electronics, so all recycling programs should be free of charge. The legislation promoted growth in the recycling industry making it possible to recycle nearly all household electronics, going beyond the items listed in the legislation. See page 3 for Kane County Electronics Recycling locations.

This **product stewardship** law created a system in which the product manufacturers are responsible for recycling their equipment at end-of-life. Most commonly, the manufacturers work with certified recyclers (see Responsible Recycling box below) to receive, process, and recycle electronics for them. The certified recyclers in turn work with communities and local governments to hold residential recycling collection events and establish permanent drop-off locations.

Electronics contain many **valuable resources** such as gold, cadmium, lead, and silver that can be reclaimed, reused, and recycled. Recycling, rather than dumping these materials, uses far less energy than mining and refining raw metals and reduces the amount of energy and other resources used in new product manufacturing. It makes good sense to recycle these materials.

Further resources and information can be found on the EPA website: www.epa.state.il.us/land/electronic-waste-recycling



The following electronic items are banned from Illinois landfills (Public Act 97-0287)

Televisions	Electronic Keyboards	Video Game Consoles	Digital Converter Boxes
Monitors	Facsimile Machines	Electronic Mice	Videocassette Recorders
Printers	Scanners	Small Scale Servers	Portable Digital Music Players
Cable Receivers	Satellite Receivers	Computers (including desktop /notebook/netbook/tablet)	Digital Video Disc Recorders & Players
Stereo Equipment	Speakers		

Note on Responsible Recycling:

While some companies offer to pay you for your electronics, it is good to be informed about their processing and data security practices, and to make sure they are registered electronics recyclers. The Illinois EPA maintains a list of registered recycling companies and collectors who are managing and recycling end-of-life electronic equipment in an environmentally and socially responsible manner, including an assurance that your data will be securely erased. The list can be found at: www.epa.state.il.us/land/electronic-waste-recycling/recycler-list. If a company or individual is not on this list, they may not be following responsible recycling practices.

This information is provided with funding from the **Illinois EPA Electronics Reuse and Recycling Grant.**

Kane County Electronics Recycling

In 2012, Kane County residents recycled over 800,00 pounds of electronics and 70,000 pounds of books through this monthly event!

Free Electronics Recycling Collection Events

Kane County Monthly Collection Event Electronics and Book Recycling

540 S Randall Road, St. Charles • 630-208-3841
2nd Saturday of each month

Please notice NEW Winter Hours.

Summer 2013: Apr 13, May 11, Jun 8, Jul 13, Aug 10, Sept 14 (8am-2pm)

Winter '13-'14: Oct 12, Nov 9, Dec 14, Jan 11, Feb 9, Mar 8 (8am-12noon)

- We unload for you! Please stay comfortably in your vehicle.
- Open to all Kane County residents. Businesses please contact a recycler directly.
- Kane County works with an R2 (Responsible Recycling) certified and EPA Registered recycler.
- Rest assured that all data stored on computer hard drives will be completely erased or destroyed under the highest security, so it is not necessary to wipe your drives before recycling.

We take **BOOKS** of any age, in any condition, either paperback or hard cover. They are assessed for reuse, redistributed if possible, and the rest are recycled.

Other Monthly Collection Events

City of Aurora Call 630-256-4636 for dates, times and items accepted
Westside Central Garage, 720 N. Broadway Ave., Aurora
Eastside Customer Service Center, 3770 McCoy Drive, Aurora

Village of Montgomery

10 Civic Center Ave, Montgomery; 630-896-8080 ext. 1114
3rd Saturday of each month; 9am – 12 noon
Accepts electronics; appliances; batteries; metal; car fluids

Permanent Electronic Recycling Drop-offs

These free Kane County Drop-offs are self-serve locations. Be prepared to unload into provided areas.

Batavia Public Works Department Self-Serve Electronics Drop-off

200 N Raddant Road, Batavia, 630-454-2310 **Hours:** Mon – Fri, 8am – 3pm

Elgin ReStore Electronics Recycling Drop-off

800 N State Street, Elgin, 847-742-9905 **Hours:** W– F, 9–6 / Sat, 9–4

Geneva Public Works Department Self-Serve Electronics Drop-off

1800 South Street, Geneva, 630-232-1501 **Hours:** Mon – Fri, 8am – 3pm

St. Charles Public Works Department Self-Serve Electronics Drop-off

1405 S 7th Avenue, St. Charles, 630-377-4405 **Hours:** Mon – Fri, 8am – 3pm

West Dundee Electronics Drop-off

900 Angle Tarn, West Dundee, 847-551-3815 **Hours:** Mon – Fri, 8am – 3pm

See website www.countyofkane.org/pages/recycling for a list of additional locations, and for a list of companies that provide electronics recycling services for business.



Items Accepted

Answering Machines	MP3 Players /
Cable/Satellite boxes	Portable Music
Cables/Cords	Players
Calculators	Network Equipment
Camcorders	(servers, hubs,
Cameras	mainframes)
CD Drives	Phones
Cell Phones / PDAs	Postage Machines
Christmas Lights	Power Tools
Circuit Boards	Printers
Computers	Scanners
(CPUs, Laptops,	Servers
Tablet PCs)	Small Home Appliances
Copy Machines	(blenders, fans, toasters,
Digital Converter	hair dryers, etc)
Boxes	Stereos / Receivers
Digital Recorders	Switch Boxes
DVD Players	Tape Drives
Fax Machines	Telephones
Hard Drives	Toner and Printer
Keyboards	Cartridges
Media	(must be contained
(software, floppy	in a bag)
discs, CDs, DVDs,	TVs – all types & sizes
cassette tapes,	Typewriters
VCR tapes)	Vacuums
Mice	VCRs
Microphones	Video Game Consoles
Microwaves	Video Game
Modems	Controllers
Monitors – all types	Word Processors
	Zip Drives

Items NOT Accepted

- White Goods/Large Appliances
- Extra-large wood speakers
(please remove speakers from wooden box, dispose of wood, and bring speaker mechanism for recycling)
- Batteries not contained in equipment (see page 7)
- Household Hazardous Waste (see page 6)

This information is provided with funding from the Illinois EPA Electronics Reuse and Recycling Grant.

Drop-off Locations

Trash, Recycling & Yard Waste

Batavia - Advanced Recycling Transfer Station
(formerly Veolia)
Location: 766 Hunter Dr., Batavia, IL 60510
Contact: 630-879-3587
Hours: Sat 6am-10am Only (for Residential drop-off pricing)
Accepts for: **Recycling** - Roofing shingles, household recycling, cardboard, containers, paper, etc.
Reuse - Untreated lumber, pallets, clean wood
Mulching - Yard waste, branches, leaves
Landfilling - Household garbage, treated lumber
Cost: \$25 for mixed acceptable materials up to a quantity equal to a level pickup truck bed-full;
Saturday special for Residents, cash or credit card only.

Household Recycling

Aurora – Association for Individual Development (AID) Recycling Drop-offs

Location: 309 W. New Indian Trail Court, Aurora, IL 60506
AID building is east of the school, bin is on south side of building near overhead garage doors.
Contacts: 630-966-4145 or 630-966-4121, the-association.org
Hours: M-F 9:30-3:30 open for electronic drop-off
24/7 for other materials, no electronics after hours
Accepts: aluminum, cardboard, plastic bottles, plastic bags, scrap metal, tin cans, and electronics

Carpentersville – Village Hall

Location: 1200 Besinger Drive, Carpentersville, IL 60110
Contact: 224-293-1631
Hours: 24/7
Accepts: Household containers and paper; see Recycling Guidelines center pull-out

Elgin – Association for Individual Development (AID) Recycling Drop-offs

Location: 1135 Bowes Road, Elgin, IL 60123
Please deposit recyclables in AID bin at back of building near dumpsters.
Contact: 847-931-6237, the-association.org
Hours: M-F 9:30-3:30 open for electronic drop-off
24/7 for other materials, no electronics after hours
Accepts: aluminum, cardboard, plastic bottles, plastic bags, scrap metal, tin cans, and electronics

Elgin – Waste Management

Location: 7N904 Rt 25, Elgin, IL 60177
Contact: 847-608-7543, www.cityofelgin.org
Hours: 24/7 parking lot dumpster
Accepts: Household containers and paper; see Recycling Guidelines center pull-out

Virgil Township - St. Peter and Paul Church

Location: Meredith Road, Virgil, IL 60151
Contact: 800-930-7321
Hours: 24/7
Accepts: Household containers and paper; see Recycling Guidelines center pull-out

Paper Recycling

Paper Recycling Paper Retriever has green parking lot bins throughout Kane County for large quantities of newspaper, office paper, magazines, junk mail. To find a bin nearest you, see (www.paperretriever.com) or call 1-800-874-1301.

St. Charles – RockTenn Paper Recycler

Location: 417 S 37th Ave., St. Charles, IL 60174
Contact: 630-443-3538
Hours: M-F 8-4
Accepts: **Paper Only** Newspaper, cardboard, catalogs, magazines
Payment: does pay for quantity or consistency

Yard Waste & Organics

Elgin - Midwest Compost/ DuPage Yard Waste

Locations: **Midwest Compost** • 1320 Spaulding Rd., Elgin, IL 60120 • 847-931-2900
DuPage Yard Waste • 1195 W Washington St., West Chicago 60185 • 630-876-8900
Website: www.midwestcompostllc.com
Hours: M-F 7-4 (Open mid-April through mid-December)
Accepts: Clean residential yard waste: Leaves, grass, branches, sod, dirt in brown paper bags, or in bulk.
Cost: \$2/bag or equivalent; cash, credit or check.

South of Kane – Green Organics in Kendall County

Location: 1270 E Beecher Rd., Bristol, IL 60512
630-553-6409
Website: www.greenorganicinc.com
Hours: M-F 7-4 (Summer Sat 7-12)
Accepts: Clean residential yard waste: Leaves, grass, branches in bulk. Food scraps (no meat)
Cost: call for pricing

Building Material Re-use

Aurora – ReStore – Habitat For Humanity

Location: 4100 Fox Valley Center Drive, Aurora
Contact: 630-585-5508
Hours: Tu-F 10-8 / Sat 10-6 / Sun noon-6/ Mon closed
Accepts: used building materials, furniture, electronics, small appliances

Elgin – ReStore – Habitat For Humanity

Location: 800 N State St., Elgin (Rt 31)
Contact: 847-742-9905, www.habitatnfv.org
Hours: W-F 9-6/ Sat 9-4 / Sun-Tu closed
Accepts: used building materials, furniture, electronics, small appliances, unused latex paint

Donate: Homeowners and contractors can donate surplus items (tax deductible), reducing the amount of building materials that would otherwise go to landfills. The lists of what we can & cannot accept will change, depending on inventory and sales. Please always call before bringing materials to ReStore. Please understand that if we feel that we cannot sell an item, we reserve the right to decline the donation.

Purchase: This center sells surplus or gently used building materials at significant savings to the general public. Proceeds from sales support the mission of the Habitat for Humanity organization.

Latex Paint

Unlike oil-based paints, which are considered household hazardous waste, today's latex (water-based) paint has a very low level of toxicity. Disposing of it as hazardous waste is unnecessary and very expensive, so most facilities do not accept it. Therefore, the Illinois EPA and Kane County encourage people with unwanted latex paint to use other options.

Buy a smaller can. The best way to reduce waste is by buying only as much as you need.

Use it up. Add an extra coat or paint something else. Use an old piece of cardboard, some scrap lumber, or the inside of your garage. Let the empty can dry and recycle it.

Recycle it. ReStore (800 N State Street, Elgin, 847-742-9905) will receive for free full unused cans of latex paint for reuse. Earth Paint Collection Systems (www.earthpaintscs.com or 847-231-6044) may have locations near you to recycle opened cans of liquid latex paint. Recycle empty paint cans and lids; a thin coating of dried paint on the inside walls and bottom is ok.

Donate or share it. Find a friend or neighbor who needs to paint a small area.

Dry it out. Dried latex paint can be disposed of in your regular household trash. Add kitty litter, sawdust, or shredded paper and stir it in to help the paint dry more quickly. Once solidified, place cans in trash, lids in recycling.

Store it for later. If you want to save the leftover paint for touch-ups, just cover the opening with plastic wrap, and replace the lid securely by hammering it down.



Recycling Plastic Bags

Please do not place plastic bags in your household recycling bins! They are recyclable but only at grocery store drop-boxes. Check your local store for their drop-box and to verify acceptable materials. Please visit www.plasticbagrecycling.org for more information.

Please Recycle only plastic bags that are clean, dry and empty.

- Grocery bags
- Retail bags (*hard plastic and string handles removed*)
- Paper towel and toilet paper plastic wrap
- Plastic newspaper bags
- Plastic dry cleaning bags
- Ziploc bags (*clean, dry, empty bags only & cut the zip strip off*)
- All clean, clear bread bags labeled with a #2 or #4



Do NOT Recycle:

The following are considered contaminants and could jeopardize recycling programs:

- NO receipts, deli stickers, or cling wrap
- NO frozen food bags
- NO film that has been painted or has excessive glue
- NO other bags or films
- NO bio-based or compostable plastic bags

Stop Junk Mail for Good



Reduce your junk mail

in half almost instantly by unsubscribing from the National Direct Mailing Lists and from phonebook and catalog distribution lists via the below links. To eliminate the remainder, call directly any distributors of junk mail as you receive each piece, and ask to be removed from their mailing list and stop junk mail for good!

National Do Not Mail List

For free removal from all national lists, unsubscribe online at: www.directmail.com/junk_mail/

Or unsubscribe by mail:

Send a letter with your name(s) and address on it requesting removal from all mailing lists, & sign it. Enclose a \$1 processing fee, and send it to:

DMA

PO Box 643
Carnel, NY 10512

Opt Out of Phone Books

www.yellowpagesoptout.com

Stop Catalog Mailings

www.catalogchoice.org

Household Hazardous Waste

Residential HHW Drop-Off

Naperville Fire Station #4

Hours: 9am - 2pm every Saturday & Sunday (*except holidays*)
Call Naperville Public Works (M-F) 630-420-6095 for inquiries.
1971 Brookdale Road, Naperville, IL, 60563

Free Pick-up Service for Mill Creek SSA & Northern Kane County Residents Only

Residents of the Mill Creek SSA and of the most northerly townships of Hampshire, Rutland, Dundee, Burlington, Plato, and Elgin may schedule one free collection per year from your home. This service is supported by Kane County, the City of Elgin, and the Villages of Carpentersville, South Elgin, and West Dundee.

Call 1-800-449-7587 or go to www.WMAtYourDoor.com to schedule a pick-up.

Items Accepted

- Aerosol products
- Antifreeze
- Auto fluids
- Batteries – auto, sump & household sizes
- Blacktop sealer
- Cleaning products
- Fire extinguishers
- Fluorescent bulbs (*tubes and swirled*)
- Gasoline & oil/gas mixtures
- Hobby & photo chemicals
- Lawn chemicals
- Mercury (*thermostats, etc.*)
- Motor oil
- Oil-based paints, stains, & varnishes
- Pesticides, poisons, insecticides
- Pharmaceuticals/medications (*see right*)
- Pool chemicals (*Naperville only*)
- Propane tanks (*Naperville only, all sizes*)
- Solvents

Items NOT Accepted

- Latex paint (*see pg 5*)
- Ammunition, explosives or firework
- Biological or medical waste (*dispose as biohazard*)
- Syringes/needles (*see below*)
- Farm machinery oil
- Smoke detectors



Medication/ Pharmaceutical Drop-Offs

Unwanted and expired prescription or over-the-counter drugs can be dropped off at the following locations. Pills may be left in their original containers but please remove labels or destroy/black out any personal information on the label, before placing them in a clear resealable bag for delivery. Ask at your local CVS or Walgreen Pharmacies to learn about mail-in programs.

Elgin Police Department

151 Douglas Ave., Elgin, IL 60120
847-289-2700 **Hours:** 7 days, 24 hours

Geneva Police Department

(*Geneva Residents ONLY*)
20 Police Plaza, Geneva, IL 60134
630-232-4736 **Hours:** 7 days, 24 hours

Kane County Sheriffs Office

37W755 Il Route 38 # A,
St. Charles, IL 60175 • 630-232-6840
Hours: M-F 8am-5pm

Naperville Fire Station #4

Household Hazardous Waste Drop-off
See above left.

Oswego Fox Metro Office

682 Rt 31, Oswego, IL 60543
630-301-6820 **Hours:** M-F 8am-5pm

St. Charles Police Department

211 N Riverside Ave., St Charles, IL 60174
630-377-4435 **Hours:** M-F 6am-11pm;
Sat 7am-5pm; Sun closed

Small Business Quantity Hazardous Waste

Licensed Hazardous Waste Companies that can serve small businesses:

Clean Harbors

800-645-8265
www.cleanharbors.com

Heritage Environmental

800-487-7455
www.heritage-enviro.com

Veolia Environmental

312-552-2800
www.veoliaes.com/en.html

Safety-Kleen

847-468-6600
www.safety-kleen.com

Safe Disposal of Sharps/ Needles/ Syringes

*Please never place loose needles or syringes in the trash.
Follow these instructions for safe disposal.*

- Place needles, point-first, into a thick plastic bottle, like a detergent bottle.
- Store sharps in closed container with the lid on.
- Clearly label container “**DO NOT RECYCLE**” with a bold marker.
- When the container is over half full, tape lid on with duct tape and place it in the trash.



Other Resources and Mail-In Programs:

North American Syringe Exchange Network, 253-272-4857, www.nasen.org

Stericycle Mailback Program, Lake Forest, IL, 800-355-8773, www.stericycle.com

Waste Management MedWaste System, 866-699-6466, www.thinkgreenfromhome.com

Used Motor Oil Recycling

Drop-Off Locations

Auto Zone

1283 N Lake St., Aurora • 630-966-8940
209 Randall Rd., South Elgin • 847-429-1095

Rock'N Roll Automotive

601 Route 68, Carpentersville • 847-425-0014

Spring Hill Ford

800 Dundee Ave, East Dundee • 847-551-1027

Super-Lube

1279 N. Lake St., Aurora • 630-844-5099

Valvoline Instant Oil Change

2076 W Main St, Batavia • 630-406-7956
175 S Randal Rd, Elgin • 847-697-1485

For Large Quantities (100+ gallons) contact:

Future Environmental • 708-479-6900
R&S Oil Services • 708-534-9300
Super-Lube • 630-844-5099



Collection Events

Open to all residents of Kane County

Village of Hampshire

Street Department Building,
100 Klick Street, Hampshire, IL 60140

Questions: 847-683-2181 x0, M-F 8am-4pm

Collection Event Dates for 2013:

4/6, 5/4, 6/1, 7/6, 8/10, 9/7, 10/5

Event Hours: 9am-11:30am

Accepts: used motor oil only

Village of Montgomery Collection Events

10 Civic Center Ave., Montgomery, IL 60506
630-896-8080 x1114

Collection Event Dates: every 3rd Saturday

Event Hours: 9am-12noon

Accepts: all auto fluids, metal, batteries, electronics, large and small appliances, books, magazines, CDs and DVDs

Curbside Collection

City of St. Charles Only (Batavia is no longer providing this service)

Residents of St. Charles can recycle their used motor oil by placing it at the curb on pick-up day. The used oil should be contained in sealed plastic containers (like milk jugs or laundry detergent bottles) not to exceed one gallon. Place the containers on the ground next to your recycling bin. Please call 630-587-8282, to let them know you'll have oil to pick up. Please NO gasoline, oil/gas mixtures or antifreeze (*see pg 6 for disposal of those items*).

Mill Creek SSA & Hampshire, Rutland, Dundee, Burlington, Plato, and Elgin Townships

Residents may schedule one free household hazardous waste collection per year from your home. See page 6.

Household Battery Recycling

The best way to reduce waste is to invest in a battery charger and rechargeable batteries. Rechargeable batteries make better use of resources, because you can use them multiple times before recycling them! And they are recyclable at most hardware stores. The following towns and villages have **Curbside Battery Collection**: Aurora, Batavia, Elburn, Elgin, Geneva, Hampshire, Maple Park, North Aurora, St. Charles, and Sugar Grove. If you do not have curbside collection, you can deliver them to the drop-offs listed below.

To recycle AA, AAA, C, D, and 9V batteries: first tape over the tops of all 9V batteries as they are a potential fire hazard, then place used batteries in a clear resealable plastic bag. Place bagged batteries on ground next to recycling bin or with lidded carts place bag on top of recycling cart. Do not include auto batteries. Battery drop-off locations are open 24/7 unless otherwise indicated.

Elgin Township Highway Garage

725 S. McLean Blvd, South Elgin • 847-741-2045

Big Timber Fire Station/ Fire Station #2

650 Big Timber Road • 847-931-6186

Pingree Grove Fire Station

39W169 Plank Road • 847-741-3151

South Elgin Fire District Annex

Hopps and Stevens Roads

Batteries Plus

(rechargeable batteries only)

Aurora and Elgin • 800-677-8278

M-F 8-7pm; Sat 9-6pm; Sun 11-5pm



Kane County 2013 Special Events

Recycling Extravaganza

When: Saturday, May 11th, 2013 / 8am – 2pm

Where: 540 S Randall Road, St. Charles, IL 60174

Why: In celebration of Earth Day, and spring cleaning!

Free of charge: all except for latex paint (small fee per can)

What: Electronics, scrap metal; Books; Clean used clothes and textiles, paired shoes, stuffed animals; Bikes, bike parts, Carpet and some carpet padding; 4' Fluorescent Lamps; latex paint (small fee applies); and confidential documents. See full list and details at www.countyofkane.org/pages/recycling



Document Shredding Events



Two Free Events:

May 11th, 2013 • 8am-2pm

Oct. 12th, 2013 • 8am-12noon

For residents of Kane County (*no businesses please*)
540 S Randall Road, St. Charles, IL 60174 • 630-208-3841

YES: This shredding service is for documents containing confidential information such as bank account numbers and details, social security numbers, dates of birth, and other sensitive information.

NO: Information like name, address, and phone numbers are not considered confidential as they can be found in phone directories or in common records. Junk mail does not need to be shredded. Please put those items in your household recycling bin for collection at the curb.

Also, call your bank to see if they have any shredding events for their customers; they sometimes do.

Back Yard Composting

Why Compost?

It's earth-friendly: Food scraps and yard waste make up 20-30% of the waste stream. Making compost keeps these materials out of landfills, where they take up precious space and release methane, a greenhouse gas 21 times more potent than carbon dioxide emissions in the atmosphere.

It benefits your yard: Compost improves soil structure and texture, increases the soil's ability to hold both water and air, improves soil fertility, and stimulates healthy root development in plants.

It's easy: You can start with just leaves and grass, then work your way towards composting your food scraps.

It saves money: Adding compost to your garden can reduce or eliminate the need to buy chemical fertilizers or compost. If you pay for yard waste collection bags or stickers, composting will cut your costs.

Source: US EPA (epa.gov/waste/conserves/tools/greenscapes/pubs/compost-guide.pdf)

Kane County provides Back Yard Compost Bins

at a low cost for residents, available at:

University of Illinois Extension Office

535 S. Randall Road, St. Charles, IL 60174 • 630-584-6166

Cost: \$60.00 cash or check please, payable to Kane County Treasurer



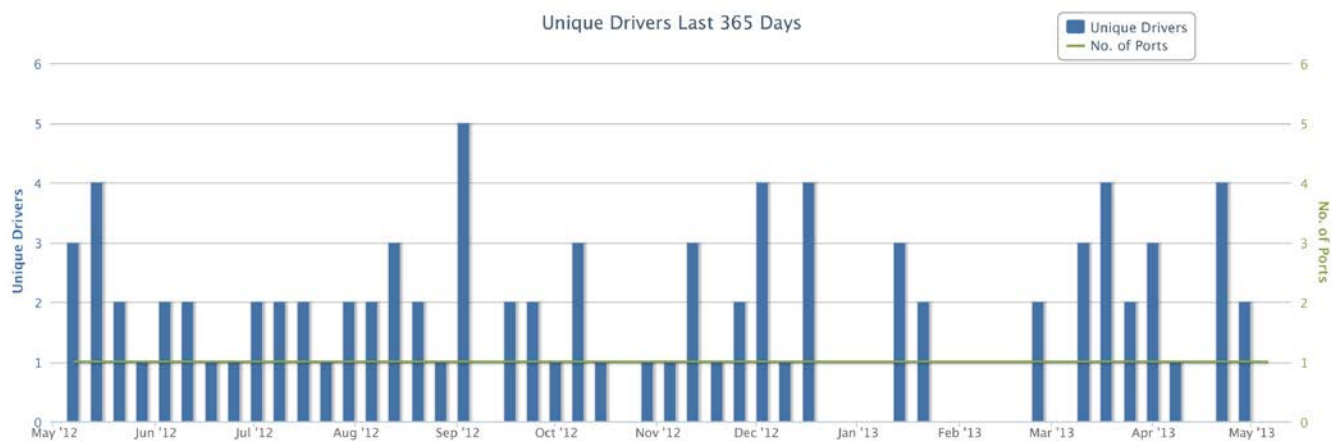
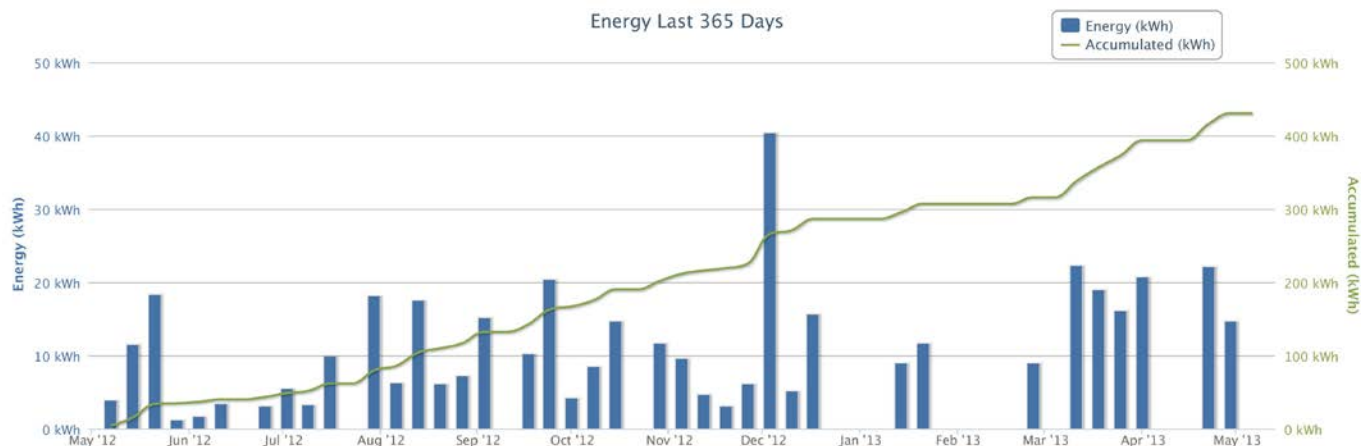
This publication has been produced by the Kane County Division of Environmental Resources.

All information in this publication is believed to be accurate and up-to-date. Any omissions are unintentional. Additions, updates, or corrections should be referred to the Kane County Recycling Office at

(630) 208-3841
recycle@countyofkane.org

Kane County Electric Vehicle Charging Station 3rd Street Courthouse Usage Data

5/7/2013



Electricity Costs

Electricity used to date	430 kWh
Electricity Charge	\$ 0.1076 per kWh (2012)
Total Electricity Cost	\$ 46.26 5/7/2012 – 5/6/2013

Kane County Facilities Energy Cost Reduction Measures

Savings Summary

5/8/2013

ENGINEERS ESTIMATES

Building	Energy Cost Reduction Measure	Annual Savings			Cost	Payback	Complete	
		Therms	KwH	Dollars	Dollars	Years - simple/ with incentive		
KCGC - A	Lighting Upgrades		127,998	\$ 9,769	\$ 43,343	4.44/3.42	X	
	LED exit signs	(62)	2,544	\$ 146	\$ 450	3.1/0.8	X	
	Occupancy Sensors	(158)	5,345	\$ 283	\$ 2,100	7.4/5.6	X	
	Energy Management System	8,153	77,246	\$ 13,277	\$ 22,000	1.7/1.2	X	
	Upgrade cooling equipment	-	58,293	\$ 4,605	\$ 20,400	4.4/4.2	X	
	SUBTOTAL (estimates) - POTENTIAL		7,933	271,426	\$ 28,080	\$ 88,293		
SUBTOTAL (estimates) - INSTALLED		7,933	271,426	\$ 28,080	\$ 88,293			
KCGC -B& I	Linear Fluorescent Lighting Retrofit	(708)	25,039	\$ 1,355	\$ 6,169	4.6/2.5	X	
	Incandescent Lamp Replacement	(16)	572	\$ 31	\$ 66	2.1/1.8	X	
	Occupancy Sensors	(505)	17,841	\$ 965	\$ 2,700	2.8/0.8	X	
	Exterior Lighting Retrofit	-	1,177	\$ 93	\$ 720	7.7/6.7	X	
	Cool Roof	5,500	8,000	\$ 5,472	\$ 127,750	23.3	X	
	Photocells on Exterior Lights	-	187	\$ 15	\$ 340	22.7/21.7		
	Energy Management System	3,620	16,021	\$ 4,451	\$ 90,000	20.2/19.9		
	Plug Load Reductions	(250)	8,852	\$ 479	\$ -	0/0		
	Exit Sign Retrofit/Replacement	(8)	291	\$ 16	\$ 780	49.6/41.2		
	SUBTOTAL (estimates) - POTENTIAL		8,357	52,369	\$ 11,491	\$ 222,290		
SUBTOTAL (estimates) - INSTALLED		4,271	52,629	\$ 7,916	\$ 137,405			
KCGC - C	Linear Fluorescent Lighting Retrofit	(1,098)	38,812	\$ 2,100	\$ 11,029	5.3/3.0		
	Incandescent Lamp Replacement	(11)	403	\$ 22	\$ 9	0.4/0.3	X	
	Exit Sign Retrofit/ Replacement	(74)	2,617	\$ 142	\$ 540	3.8/1.0	X	
	Occupancy Sensors	(420)	14,838	\$ 803	\$ 3,700	4.6/1.0	X	
	Exterior Lighting Retrofit	-	8,038	\$ 635	\$ 3,420	5.4/4.4	X	
	Install Photocell on Exterior Lighting	-	1,812	\$ 143	\$ 1,360	9.5/8.5	X	
	Bi-level Stairwell Lighting	(97)	3,422	\$ 270	\$ 1,520	5.6/4.9	X	
	Energy Management System	3,733	17,653	\$ 4,679	\$ 81,230	17.4/17.1	X	
	Vending Machine Control	(40)	1,440	\$ 86	\$ 260	3.0/1.5	X	
	Plug Loads	(250)	8,852	\$ 479	\$ -	0/0		
	SUBTOTAL (estimates) - POTENTIAL		1,743	97,887	\$ 9,359	\$ 103,068		
	SUBTOTAL (estimates) - INSTALLED		1,993	89,035	\$ 8,880	\$ 103,068		
	3rd St. Courthouse	Linear Fluorescent Lighting Retrofit	(1,721)	61,872	\$ 4,183	\$ 26,309	6.3/4.3	X
Incandescent Lamp Replacement		(373)	13,410	\$ 907	\$ 355	0.4/0.3	X	
Exit Sign Retrofit/ Replacement		(9)	332	\$ 22	\$ 910	40.6/33.7	X	
Occupancy Sensors		(381)	13,683	\$ 925	\$ 4,940	5.3/1.2	X	
Attic Insulation		7,250	1,975	\$ 7,732	\$ 32,929	4.3/4.2	X	
Cool Roof		4,000	20,000	\$ 5,840	\$ 317,300	54	X	
Exterior Lighting Retrofit		-	14,207	\$ 1,350	\$ 7,050	5.2/4.4		
Install Photocell on Exterior Lighting		-	1,774	\$ 151	\$ 1,020	6.8/5.2		
Outside Air Control		1,761	4,984	\$ 2,206	\$ 20,400	9.2/9.1		
Rotunda Exhaust Fan Control		-	1,150	\$ 110	\$ 70	0.6/0.6		
Plug Loads		(90)	3,246	\$ 220	\$ -	0/0		
SUBTOTAL (estimates) - POTENTIAL		10,437	136,633	\$ 23,646	\$ 411,283			
SUBTOTAL (estimates) - INSTALLED		8,766	111,272	\$ 19,609	\$ 382,743			

Kane County Facilities Energy Cost Reduction Measures

Savings Summary

5/8/2013

ENGINEERS ESTIMATES

Building	Energy Cost Reduction Measure	Annual Savings			Cost	Payback	Complete
		Therms	KwH	Dollars	Dollars	Years - simple/ with incentive	
Judicial Center							
	Linear Fluorescent Lighting Retrofit	(1,757)	67,257	\$ 3,576	\$ 21,003	6.3/5.3	X
	Linear Fluorescent-LED Demonstration Retrofit	(2)	75	\$ 4			X
	Incandescent Lamp Replacement	(202)	7,744	\$ 464	\$ 585	1.3/1.1	X
	Exit Sign Replacement	(74)	2,829	\$ 169	\$ 600	3.9/1.0	X
	Occupancy Sensors	(1,050)	40,169	\$ 2,406	\$ 19,430	8.4/2.2	X
	Exterior Lighting Retrofit	-	53,808	\$ 4,574	\$ 10,620	4.3/3.3	X
	Photocell Control on Exterior Lighting	-	7,490	\$ 637	\$ 680	2.0/1.0	X
	Daylight Harvesting	(648)	24,823	\$ 1,487	\$ 13,320	9.0/9.0	X
	Bi-Level Stairwell Lighting Fixtures	(278)	10,650	\$ 638	\$ 3,040	4.2/3.6	X
	Vending Machine Controls	(153)	5,860	\$ 351	\$ 960	2.7/1.3	X
	Replace Energy Management System	3,143	13,236	\$ 4,142	\$ 400,000	96.6/96.3	X
	Outside Air Control	31,700	95,000	\$ 38,000	\$ 25,000	0.7/0.7	X
	Halogen Light Replacement	(65)	2,499	\$ 153	\$ 7,200	47.1/43.5	
	Plug Loads	(690)	26,421	\$ 1,583	\$ -	0/0	
	SUBTOTAL (estimates) - POTENTIAL	29,924	357,861	58,184	502,438		
	SUBTOTAL (estimates) - INSTALLED	30,679	328,941	56,448	495,238		
Juvenile Justice Center							
	Linear Fluorescent Lighting Retrofit	(5256)	186751	\$ 11,031	\$ 35,241	3.6/1.7	X
	Incandescent Lamp Replacement	(84)	2995	\$ 177	\$ 310	1.6/1.5	X
	Fluorescent Night Light Replacement	(140)	4968	\$ 293			X
	Occupancy Sensors	(301)	10701	\$ 632	\$ 9,365	11.6/2.2	X
	Exterior Lighting Retrofit	0	28636	\$ 2,463	\$ 12,960	5.4/4.5	X
	High Bay Lighting Replacement	(156)	5541	\$ 327	\$ 2,700	8.5/5.6	X
	Bi-Level Stairwell Lighting Fixtures	(113)	4021	\$ 238	\$ 2,850	12.0/10.4	X
	Vending Machine Controls	(107)	4111	\$ 246	\$ 620	2.5/1.2	X
	Exit Sign Retrofit/ Replacement	(33)	1169	\$ 69	\$ 3,120	45.2/37.5	
	Night Shutdown of HVAC	10500	37750	\$ 13,300	\$ 21,600	1.6/1.4	
	Outside Air Control	10100	46800	\$ 10,690	\$ 24,000	2.2/1.9	
	Plug Loads	(94)	4100	\$ 260	\$ -	0/0	
	SUBTOTAL (estimates) - POTENTIAL	14316	337,543	\$ 39,726	\$ 112,766		
	SUBTOTAL (estimates) - INSTALLED	(6157)	247724	\$ 15,407	\$ 64,046		
1240 Highland Avenue							
	Lighting Retrofit		45879	\$ 2,739	\$ 39,877		X
	Occupancy Sensors		6914	\$ 413			X
	SUBTOTAL (estimates) - INSTALLED	0	52,792	\$ 3,152	\$ 39,877		
1330 Highland Avenue							
	Cool Roof		5000	\$ 299	\$ 102,500		X
	Upgrade Cooling Equipment		8000	\$ 478	\$ 31,160		X
	SUBTOTAL (estimates) - INSTALLED	0	13,000	\$ 776	\$ 133,660		
TOTAL		67203	1,285,558	\$ 166,323			