Top 10 Ways EPA Uses the Principles of Sustainability to Accomplish Its Mission

Margaret M. Guerriero
Director, Land and Chemicals Division
EPA Region 5
Chicago
• EPA’s mission is to protect air, water and land

• National Academy of Sciences Report “Sustainability and the U.S. EPA”

• http://sites.nationalacademies.org/PGA/sustainability/EPA/
Working Toward a Sustainable Future:

1. Sustainable products and purchasing
2. Green infrastructure
3. Energy efficiency
4. Sustainable Materials Management
#10: EPA is advancing the development of sustainable products and supporting greener purchasing activities
Design for the Environment

• Design for the Environment label means safer and effective products
• 2,500 products are labeled
• www.epa.gov/dfe
Presidential Green Chemistry Challenge

- Award Winners Have Reduced:
  - 826 million pounds of hazardous chemicals and solvents each year
  - 21 billion gallons of water each year
  - 7.8 billion pounds of CO₂ equivalents released to air eliminated each year

- [http://www2.epa.gov/green-chemistry](http://www2.epa.gov/green-chemistry)
Sustainable Materials Management

Comprehensive Procurement Guidelines

• Promotes the use of materials recovered from the waste stream
• Buying recycled-content products ensures that the materials will be used again in new products
• Federal agencies required to purchase CPG products
• [http://www.epa.gov/epawaste/conserve/tools/cpg](http://www.epa.gov/epawaste/conserve/tools/cpg)
#9: EPA is taking a holistic approach to protecting valuable water resources
Great Lakes Restoration Initiative

• Over $1.4 billion invested in more than 2,000 projects
• In one project alone, over 130,000 pounds of hazardous waste were removed from the watershed
• http://greatlakesrestoration.us/

"We’re committed to creating a new standard of care that will leave the Great Lakes better for the next generation."
Innovative Stormwater Best Management Practices

• BMPs made with compost retain moisture, prevent weeds, and control erosion
• High quality market for composted organic waste
WaterSense

WaterSense has helped consumers:
• Save over 480 billion gallons of water
• $8.9 billion in water and electric bills
• 24 million metric tons of CO$_2$
• [http://www.epa.gov/watersense/](http://www.epa.gov/watersense/)
#8: EPA is implementing the President’s Climate Action Plan

- President’s Action Plan reinforces the federal commitment to:
  - Cutting harmful pollution,
  - Protecting our country from the impacts of climate change, and
  - Leading an international effort to address a changing climate

- EPA is responsible for multiple actions under the Plan
Fuel Economy Standards
#7: EPA is using many tools to promote energy conservation and drive sustainability
Energy Star Results

- Prevented 1.8 million metric tons of GHG
- Saved more than $230 billion on utility bills
• Coordinates federal agency assistance to manufacturers in communities

• Provides customized assessments to prevent pollution, increase energy efficiency and improve the bottom line

• www.e3.gov
Economy, Energy and Environment Project Results from ISTC

- Energy Conservation
  - 2,677,101 kWh of electricity
  - 58,719 therms of natural gas

- Water Conservation
  - 998,400 gallons

- P2 GHG and Cost Calculators Used to calculate:
  - 2,623 MTCO2e emission reductions
  - $384,194 cost savings

- Four jobs retained, two new positions created
#6: EPA is implementing a variety of programs to reduce landfill methane emissions
Reducing Food Waste
Anaerobic Digestion
#5: EPA is incorporating sustainability into disaster response

- Promote recycling and recovery options for disaster debris generated by natural and man-made disasters
  - [http://go.usa.gov/kQ7h](http://go.usa.gov/kQ7h)
#4: EPA is taking a sustainable approach to contaminated site clean-ups and redevelopment

- Consider all environmental effects of remediating a site
- Incorporate options to minimize the environmental footprints of cleanup actions

www.epa.gov/superfund/greenremediation
Improved Materials Management
RE-Powering America’s Land

- Encourages renewable energy development on current and formerly contaminated lands, landfills, and mine sites
- Returns properties to productive use, creating jobs and strengthening the social fabric of communities
#3: EPA is supporting sustainable communities

http://www.sustainablecommunities.gov/index.html
Supporting Communities in Redevelopment
http://go.usa.gov/kQ85
EPA is Advancing Green Infrastructure
#2: EPA emphasizes preventing pollution at the source
Region 5 Pollution Prevention Partners are Achieving Results

- **16,537,055** gallons of water conserved
- **$13,717,217** of business, institutional and government costs reduced
- **21,213,187** pounds of hazardous materials reduced
- **55,915** metric tons of carbon dioxide equivalent (MTCO2e) reduced
Remarkable Results from ISTC

ISTC implemented Illinois Conservation of Resources and Energy (ICORE) Program:

- 72,480,000 gallons of water conserved
- $9,483,000 in cost savings for businesses and governments
- 162,000 lbs of hazardous materials reduced
- 9,512,000 lbs of solid waste reduced
- 72,590 metric tons of carbon dioxide equivalent (MTCO2e) reduced
#1: EPA is moving from waste management to sustainable materials management

- Continue to emphasize recycling and reuse
- Incorporate more life-cycle analysis into decision-making
How is MSW Managed?

- Recovery: 34.7%
- Combustion: 11.7%
- Land Disposal: 53.6%

EPA 2011 Facts and Figures
Materials We Are Recycling And Discarding

Total MSW Recovery (by material), 2011
87 Million Tons

- Paper & paperboard 52.8%
- Yard trimmings 22.2%
- Metals 8.6%
- Other 5.3%
- Glass 3.7%
- Food waste 1.6%
- Wood 2.7%
- Plastics 3.1%

Total MSW Discards (by material), 2011
164 Million Tons (after recycling)

- Food waste 21.3%
- Paper & paperboard 14.8%
- Wood 8.4%
- Other 4.4%
- Yard trimmings 8.8%
- Plastics 17.8%
- Glass 5.1%
- Metals 8.8%
- Rubber, leather & textiles 10.6%
Incorporating a Life Cycle Approach
One lifecycle assessment – laundry detergent
Here’s what they found:

Energy analysis of laundry detergent

Switching from cardboard shipping boxes (left) to seal-tight plastic bags (right) uses up to 20% less space and 80% less materials.
EPA’s Sustainable Materials Management Efforts

- Seed innovation and create best practices

- Facilitate information sharing

- Promote voluntary initiatives and recognize successful partners
ReBuilding Exchange

• Market for reclaimed building materials
  – Diverts materials from disposal
  – Trains people for deconstruction
Byproduct Synergy

• Transforms one facility’s waste into feedstock for another facility
Reuse of Asphalt Shingles

- Demonstration projects
- Best practice guidelines
- Stakeholder forums
Electronics Challenge

www.epa.gov/smm