

Implementing the EPA / DOC Green Suppliers Network at Steelcase



Mary Ellen Mika, LEED-AP, C.P.M.
Steelcase, Supply Chain Manager
2009 Climate Leaders Partners Meeting
December 3, 2009

mmika@steelcase.com

Key Drivers for Sustainability at Steelcase

- “Protect the Environment” – Steelcase core value
- > 90% of customer RFQ’s include sustainability inquiries



Green Suppliers Network

- Collaborative venture among industry, US EPA and US Dept of Commerce through regional Manufacturing Extension Partnerships (MEP).
- **GSN** works with large manufacturers to engage their suppliers in low-cost **Lean and Clean** assessments to increase productivity, reduce waste, and boost profitability.
- It expands the traditional definition of Lean to one that includes environmental wastes (**e.g., reducing energy, water, waste, and emissions**).

MEP has 59 Centers, 1,600 Field staff in 440 service locations; GSN assessors are provided from these locations

Provides *lean* and *clean* assessments to small- and medium-sized enterprises through combining MEP's lean expertise with EPA's clean (or "green") expertise

GSN program works with the automobile, aerospace, healthcare, office furniture, and utility industries, among others



Combining Lean and Clean

*What's the **advantage** of combining **lean** with **clean**?*

Traditional “Lean”

Eliminates:

- Defects
- Overproduction
- Waiting
- Non-utilized resources
- Transportation
- Inventory
- Motion
- Extra processing

“Clean” Strives For:

- Non-toxic substitutes
- Optimized raw material use
- Water use and wastewater reductions
- Air emission reductions
- Solid and hazardous waste reductions
- Transport packaging optimization
- Energy efficiency

“Lean and Clean” Technical Assessment

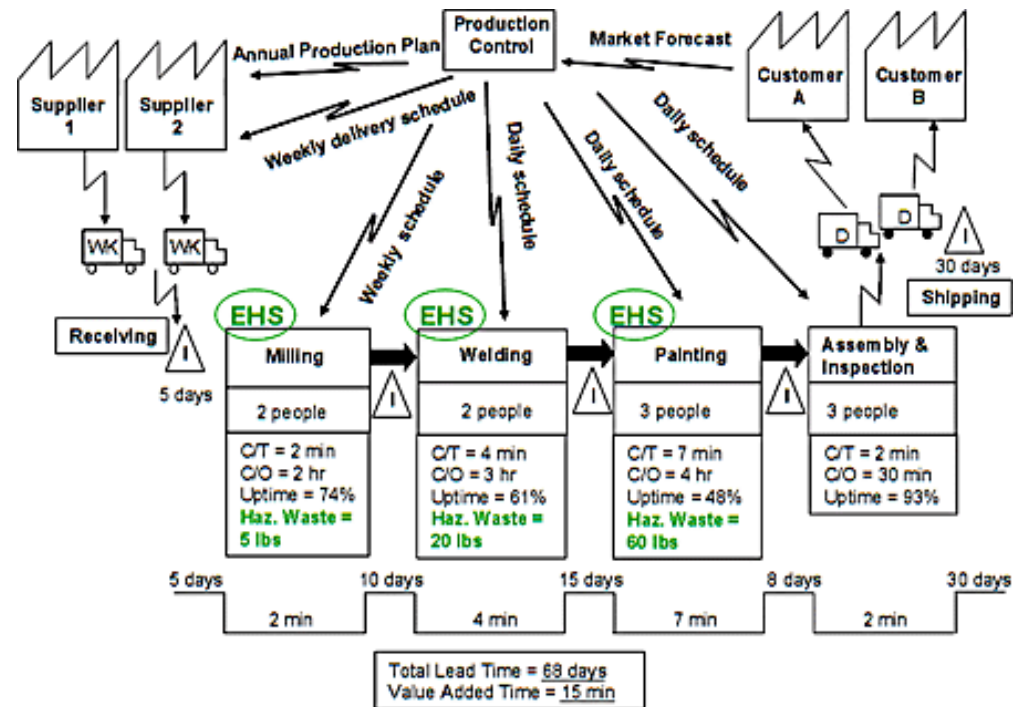
A **Lean Review** leading to increased productivity and reduced costs

A **Clean Review** resulting in water and energy conservation, reduced emissions, and additional cost savings

Assessment Recommendations to guide each facility toward improvements in overall facility efficiency, reduced waste, more efficient use of resources including energy and water, and cost savings for the facility.

Lean and “Green” Value Stream Mapping

- Map the current state of a value stream from a green perspective
- Understand environmental inputs and outputs of each process
- Identify opportunities for environmental improvement
- Leverage the Lean Management System to execute the projects



Key Program Facts

- No EPA personnel show up at the supplier's door
 - Each GSN team is made up of Manufacturing Extension Partnership lean and state pollution prevention experts
- All information is confidential
 - EPA will not see supplier-specific data
 - OEM (Original Equipment Manufacturer or referring customer) will not see supplier-specific data
- Decision to implement recommendations stays with supplier
- OEM gets aggregated data about supply chain performance

Green Suppliers Network - Metrics

Economic Metrics:

- Environmental savings identified
- Lean savings identified

Environmental Metrics:

- Air emissions reduced (lbs)
- Solid waste reduced (lbs)
- Material intensity per unit of production
- Hazardous waste reduced (lbs)
- Hazardous materials reduced
- Water pollution reduced (lbs)
- Water used/conserved (gal)
- Water intensity per unit of production

Waste reductions are measured in a variety of ways.

Typically, each leads to cost reductions.

Cost Savings Identified

Cost to participate in the “lean & clean” program in the US as of mid-2009: up to \$7,500 per supplier

Total Savings from 60 Suppliers participating:

Total Potential Savings	\$35,126,750/yr
Lean Opportunities	\$23,682,524/yr
Clean Opportunities	\$10,945,033/yr
Other Opportunities	\$499,193/yr
One-Time Lean Opportunities	\$19,829,477

This results in an average ROI of > 75 to 1 with a cost savings estimate of over \$500,000 for each supplier assessed.

Examples of Steelcase suppliers contacted to participate in the “Green Suppliers Network”

Metal Standard Corporation- Holland, MI; Provides steel chair frames to Steelcase.

DuBois Chemicals- Cincinnati, Ohio; Provides pretreatment system chemicals/services and lubricants to Steelcase.



Lighting

- ❑ purchased fixtures that increase lighting quality & reduce energy use

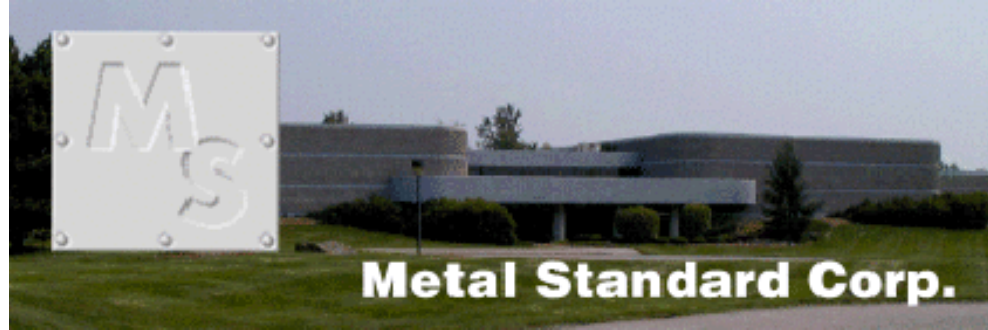
Motors [on smoke collector systems, hydraulic presses, & benders]

- ❑ software, timers and sensors installed to reduce electricity use by removing the high voltage spikes caused by starting an inductive motor, minimizing its voltage and current use while it is idling and shutting off the equipment in the absence of an in use input
- ❑ we estimate a 40% reduction in operation time and an increase of the life expectancy of the motors

Compressed air

- ❑ reducing air usage by installing a 400 gallon air storage tank in order to stabilize our air pressure plant-wide.
- ❑ next step: regulate, reduce and audit the usage per machine.

Recycling Projects

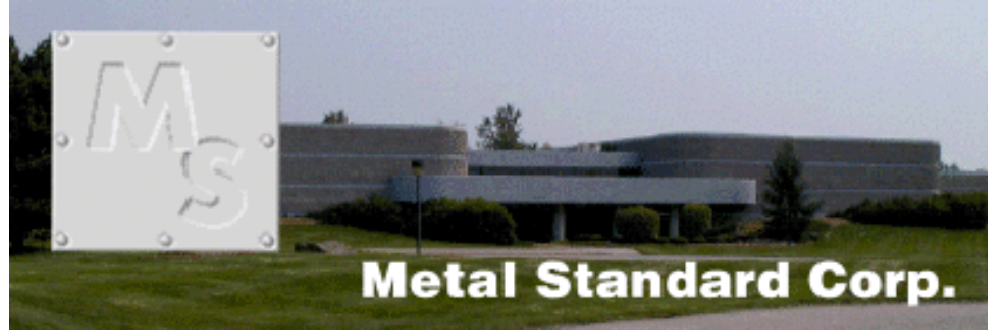


- ❑ **Steel** ~ Recycling steel has been on-going

- ❑ **Wood** ~ Recently added wood and banding recycling. Collection points established throughout the plant and the order given not to place items in the trash. Employees who use it for heating their homes or camping take the wood. The banding is recycled through the metal scrap program already in place. Result ~ 40% reduction in trash volume to the landfill.

- ❑ **Cardboard and paper** ~ Collection points established in plant & offices.

- ❑ **Lubricants** ~ Lubricants in gearboxes and hydraulic systems no longer replaced on a time basis. Samples taken based on hours of operation and sent in for analysis. Recommendations to change oil are seldom given. When oil is changed, it is pumped into a reclaim barrel and recycled with a service provider who picks up and reclaims oil from used oil filters and used spill containment pads as well.



Water

lawn irrigation system has received new controllers that allow greater control between the dry and rainy season

HVAC

All four of the office heating and air conditioning units were upgraded to new high efficient units



- We wanted a price per pound
- We also asked DuBois to join the US EPA's Green Suppliers Network
- Based on our commitment to a lean and clean philosophy, DuBois asked for a demonstration opportunity on our pretreatment lines to show us savings greater than through just a material price per pound reduction
- Their demonstration on a small line at Steelcase was a huge success – major waste and cost reductions resulted

We are saving \$1 million / year with DuBois ...and we spend only one-third as much on their products.

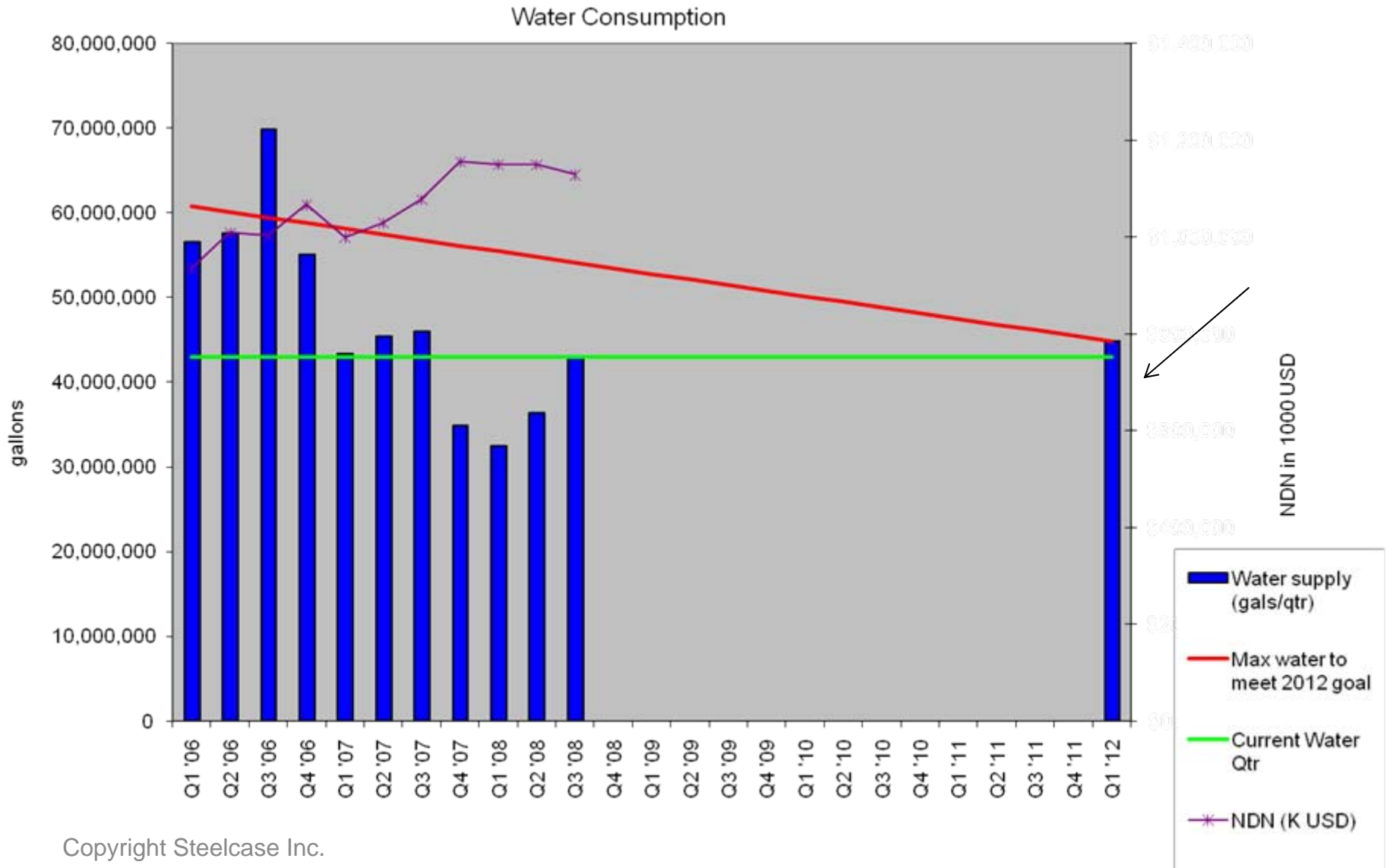
We are significantly reducing our environmental footprint through our supplier's efforts.

How is this helping us meet our footprint reduction goals?

Savings Realized per Pretreatment Line:

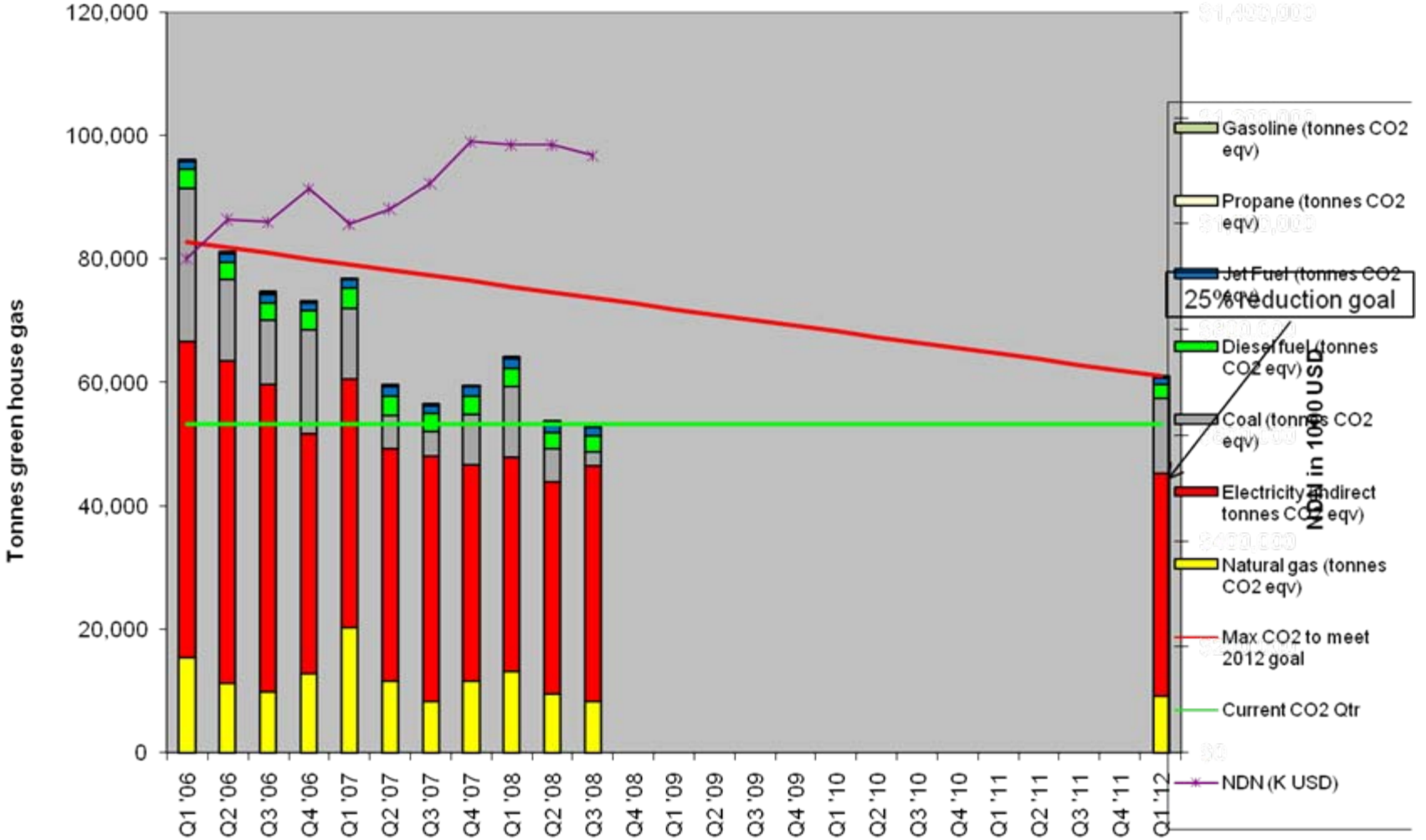
Water	<i>80%</i>
Energy	<i>60%</i>
Waste	<i>90%</i>
Chemicals	<i>25%</i>
Labor	<i>>50%</i>

Steelcase Global



Steelcase Global

Green House Gas Emissions



What's next after a "Lean & Green" assessment?

How can we enhance the energy efficiency of our supply chains, reduce our collective carbon footprint, and cut costs at the same time?

**E3: Economy,
Energy, and
Environment**





Thank you.