



Minnesota Pollution
Control Agency

Healthy Sustainable School Project

MAEE Workshop

June 17, 2009

The Project

Demonstrates how to establish
high performance, healthy,
sustainable school practices in
three different school settings.

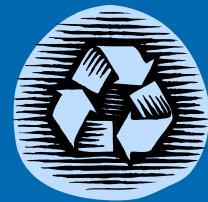
Benefits of healthy sustainable schools →

- Enhanced student health and performance
- Higher performing school buildings
- Reduced environmental impacts
- Increased attendance
- Reduced operating and maintenance costs
- Increased staff satisfaction

Guide Contents

Over 14 topics re: facilities & operations:

- 1) Building & Operations
- 2) Reduce, Reuse, Recycle
- 3) Health & Wellness
- 4) Toxicity Reduction



A. Buildings and Mechanical Systems Audit

RETAP (Retired Engineer Technical
Assistance Program)

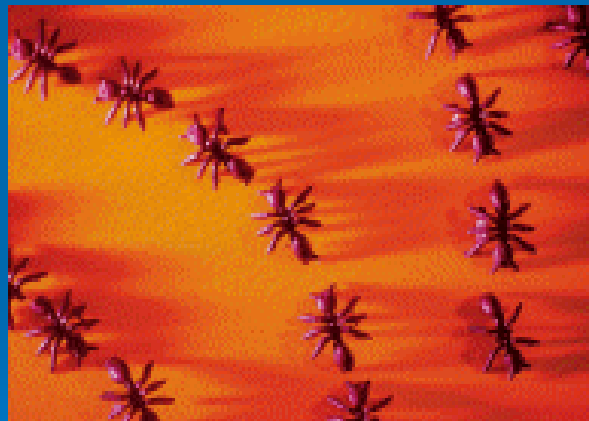
Conduct a comprehensive assessment of
the buildings to determine current systems
and operations of the buildings and
equipment.

Outcomes

- Controls added to vary start time of large motors & lower peak demand charge;
- “Vending Misers” added
- Reducing time hallway & gym lights are on
- Turned down water heater and thermostats

B. IPM – Best Management Practices

- Identify the benefits and best practices for integrated pest management
- Apply best practices for both indoor and outdoor environments incl. landscaping.



Outcomes

- Reviewing contracts/need for routine pest control
- Plant native garden of sweet grass and sage in lieu of turf
- Trying to reduce 2,4-D application & perceptions about “acceptable turf”

C. Less toxic cleaners and disinfectants

Select least toxic &
most effective
cleaning agents,
maintenance supplies
& surface
disinfectants.



Outcomes

Reduced exposure to hazardous components of cleaning products & reduced exposure to asthma triggers

- *"SUPROX" a Hillyard "green" cleaner replaced five other more toxic, cleaning products;
- Using steam cleaning with non-toxic cleansers.
- Water-based floor finish less noxious & finished in 48 hours vs. 14 days

D. Reduce kitchen waste and improve nutrition

- Review kitchen procedures and policies
- Sourcing local and or organic options
- Composting or food for pigs



Outcomes

Saving money on waste disposal; more nutritious food promotes healthier and more alert students and staff.

- “Locally grown” given purchase preference
- Working with “Natural Ovens Bakery” to follow nutrition model from Appleton, WI
- Found nutritious Native American recipes for commodity foods; creating own “food wheel”

E. and F. Remove hazardous chemicals from labs, art and tech classrooms and remove mercury.

Hazardous Waste Audit
& mercury “sniff”
throughout school

- “Clancy” Visit
- Hazardous Waste specialist review & report



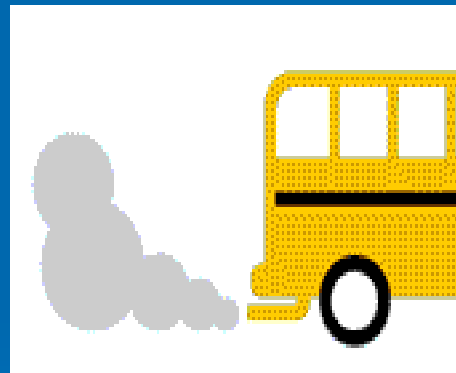
Outcomes

Safer environment for everyone, raised awareness of risks, and hazardous waste properly disposed.

- Mercury spills found/removed in all 3 schools (3.5 lbs. in 1 beaker)
- Educational audit & report helped augment house- & recordkeeping
- Many surprises in art, tech & lab areas

G. Reduce diesel bus emissions

“No Idling”
enforcement,
diesel retrofit
application and
biodiesel fuel
consideration.



Outcomes

Reduced emissions of sulfur and nitrogen oxides, unburned hydrocarbons, and particulate matter; improved AQ inside & outside; reduced global warming potential.

- 3 retrofit kits donated by Donaldson Co.
- Bus drivers given copy of law
- Staff could open windows & reduced noise pleased neighbors
- 2% bio-diesel 2004-06

H. Reduce paper use

Assess how paper can be reduced, reused or recycled in offices & classrooms

A Waste Reduction Specialist made an interactive presentation to staff and students



Outcomes

Resources saved & emissions from paper manufacture, transport, and waste disposal are reduced.

- Printers reset and copy machines set to default to 2-sided copying;
- Recycled-content tissue purchased at cost savings
- Expanded use of e-newsletters, etc.

J. and K. Arrange for food and paper waste composting and expand or start recycling

Identify areas of the school that generate waste appropriate for composting

Review waste hauler contracts

Enforce recycling of three or more materials



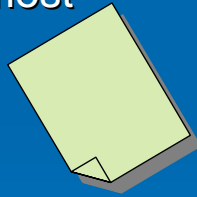
Outcomes

Recovers resources & can reduce hauler expense; may involve students & lessons in program setup and collection

- 2 buildings went from no recycling to collecting 3.75 tons in 1st 4 months
- Revised hauling contracts to pay by waste reduced vs. generated
- Containers donated by Pepsi & city
- Signs designed & donated by alumnus

Findings from pilot schools

- Reduced energy costs of \$16,326 (2 sites)
- Less toxic cleaners in 4 of the sites.
- Energy controls most common recommendation
- Double-side printing/copying set up
- Changing to efficient T-8 lamps or LED
- More than 87 T. recycled per year (2 sites)
- More than 6.87 lbs. mercury removed (4 sites)
- High interest in vermi-composting & food to pigs



Keys to Success

- Superintendent and community buy-in
- An effective coordinator/facilitator
- An all-inclusive team
- Track changes – baseline to future
- Institutionalize the changes
- Communicate & celebrate milestones!



Guide & Assessment Tool for Change

Why use this tool?

- Begin small & grow the effort
- You already have health & safety teams!?!
- Most are low or no-cost changes
- More to gain than lose

Top 3 Cost Savers (Linda's)

- **Build “Green” to start with** (energy savings and more; average \$100,000/yr)
- **Remove all hazardous materials** (insurance and liability costs reduced)
- **Re-negotiate waste and recycling contracts** (partner with city/county solid waste staff)

What's driving Healthy, Sustainable Schools?

- Federal drivers – “Wellness Policy”; Vending Ban; Energy Star; HealthySEAT
- State drivers – expanding environmental, health, safety and building mandates
- Private drivers – Health care and insurance entities (obesity, diabetes & asthma)
- Others – Non-profit advocates like “Green Flag” and “Healthy Schools Network”

Teacher Resources

- SEEK www.seek@state.mn.us
- Learning Resource Center & Library
www.pca.state.mn.us/about/library.html
- Reduce, reuse & recycle information
www.reduce.org
- *Healthy Sustainable Schools Guide & Assessment Tool for Change*
www.healthyschools.state.mn.us

A Conserving Classroom Calendar

A teaching tool and calendar with reduce, reuse, recycle tips, information, and resources based upon the school year.

2009-10 now being printed

To obtain a free copy or pdf of this:

garynoren@gmail.com

PCA School Sector offerings
[www.pca.state.mn.us/assistance/schools/
index.html](http://www.pca.state.mn.us/assistance/schools/index.html)

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