

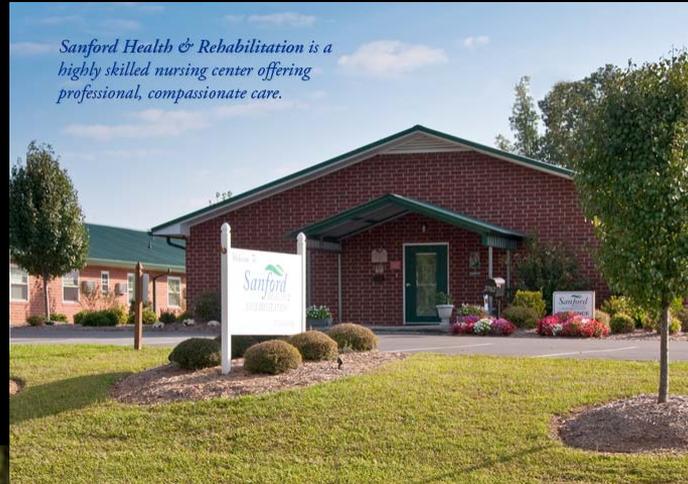
# Going Green:

## *Practical Approaches for Health Care*

Terry Albrecht, PE  
Waste Reduction Partners  
Land-of-Sky Regional Council



# Why are organizations going green?



# Why are Facilities Going Green?

- Improve operational efficiencies
- Reduce operating cost and maintenance
- Demonstrate leadership
- Respond to residents or staff interests
- Provides marketing edge
- Personal conviction - value based

# Other reasons for going green...

- Facilities performance improvements; e.g., lighting, reduced housekeeping, etc.
- Meaningful activity for resident involvement
- Morale improvements



*Lessen environmental impacts*

# Understanding your Environmental Impacts?

Carbon Footprint  
Energy Use and Costs  
Healthy Indoor Air Quality  
Water use – Drought Actions  
Medical Waste Management  
Recycling  
Green Cleaning Products  
High Perf LEED Buildings  
Stormwater Runoff  
Supporting Green Power  
Environmental Purchasing  
Staff Involvement  
Environmental Policy  
Transportation  
Renovations & New Construction Decisions

# External Environmental Driving Factors

- Waste management requirements & bans
  - Recently banned material from landfills
    - Plastic bottles, pallets, oil filters (Oct '09)
    - TV's and computer equipment (Jan '11)
- NC droughts - local water-use restrictions
- NC Renewable and Energy Efficiency Portfolio Standard – incentive
- Federal and state energy incentives

# Approaches

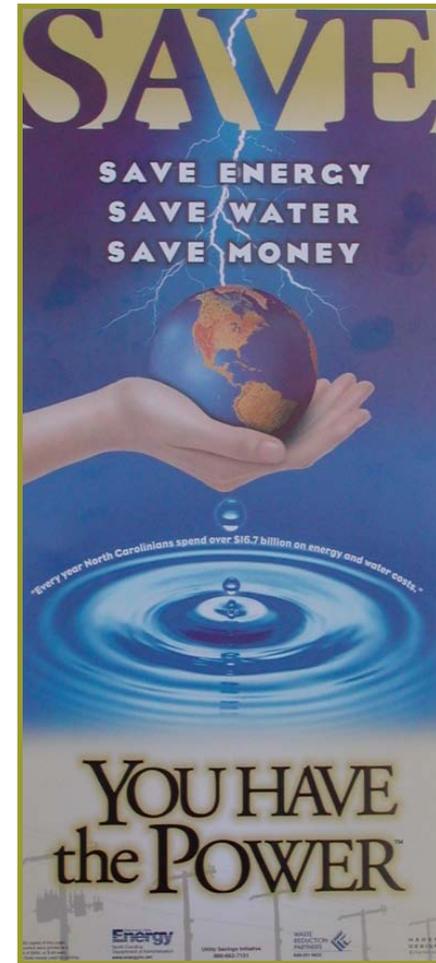
- Green Team formation
  - Top down leadership
  - Management team or resident driven
  - Assemble team members
  - Identify resources



# Starting Activities – Team Focus

Data Input: Utility bills & product purchases

- Educational awareness
- Recycling programs – step up
- Energy- & water-use audits
- Purchasing review and requirements
- Environmental policies



# Environmental Objectives - Policies

## Energy Use:

Maximize energy efficiency and use of renewables .

## Transportation and Travel:

Minimize impacts & encourage alternative transportation.

## Office Waste Reduction and Purchasing:

Practice resource efficiency, sound waste management and recycling in all office operations, purchases and services.

## Water Resources:

Protect water resources through water conservation and storm water management.

## Health & Comfort:

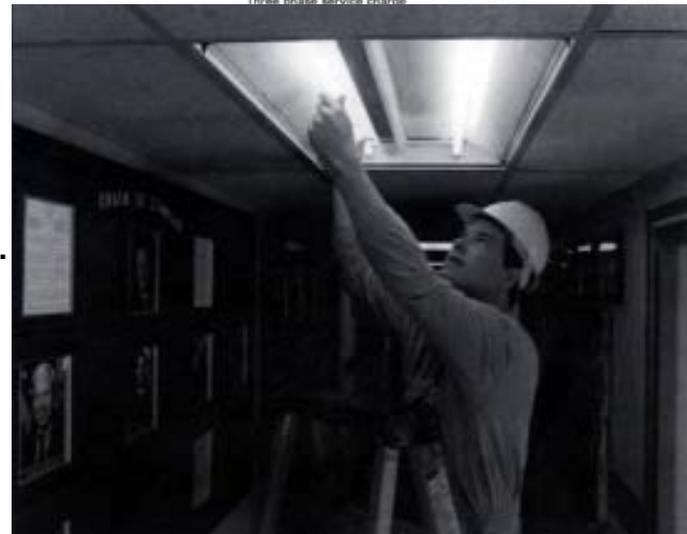
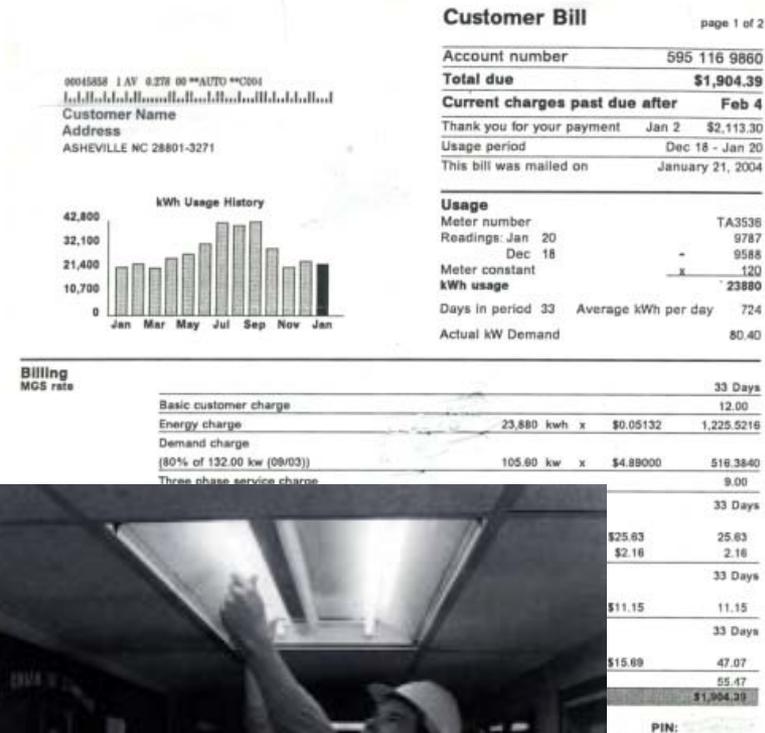
Ensure healthy indoor air quality and comfort for patient & staff.

## Renovations & New Construction:

Incorporate sustainability strategies in major renovations and new construction projects.

# Energy Cost -Saving Measures

- **Review and track your utility bills**
  - Usage - Kw, kWh, Therms, not just costs
- **Employ temperature set-back on HVAC**
  - Use programmable thermostats
  - Express goals in service agreements
- **Upgrade lighting**
  - Consider fluorescents, CFL, and LED
- **Behavioral**
  - e.g., sleep mode on monitors, copiers, etc.
- **Support renewable energy**
  - Buy NC Green Power blocks, solar
  - [www.ncsc.ncsu.edu](http://www.ncsc.ncsu.edu)



# Example Energy-\$aving Projects

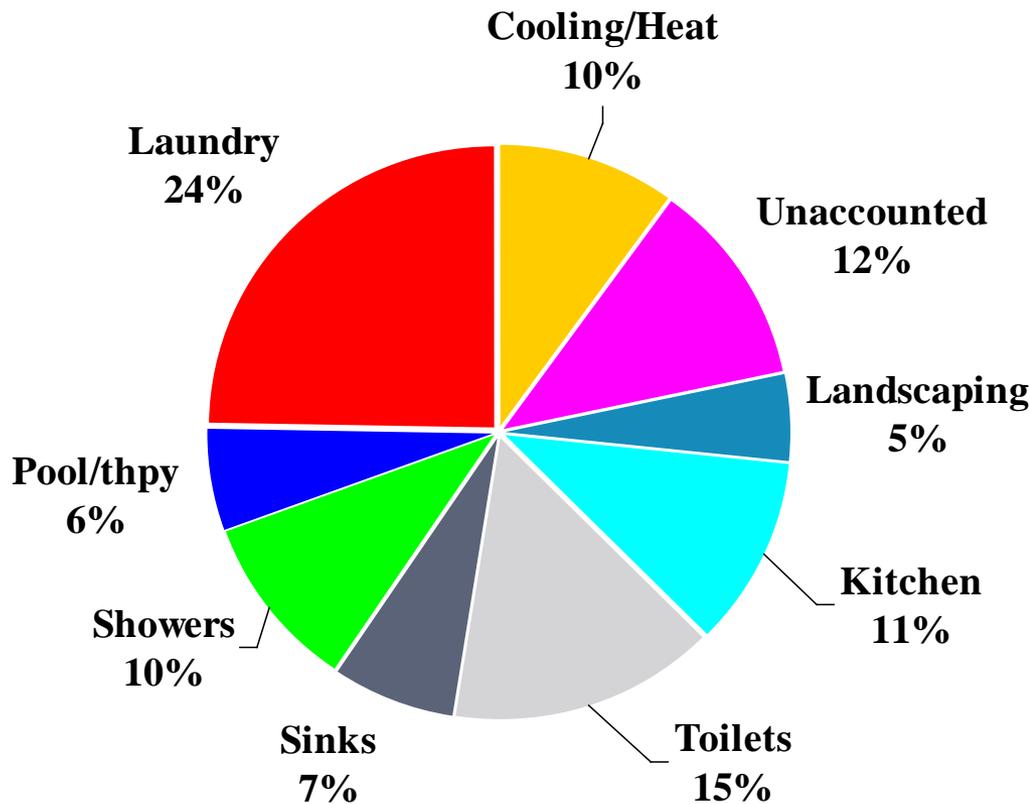
Area	Measure	Energy Savings	Payback Typical
Lighting	Upgrade old 4' fluorescents	30-35%	3 years
HVAC	Programmable thermostats	10 -30%	< 1 year
Envelope	Weatherstripping doors/windows	1-5 %	< 3 months
Appliance	Choose Energy Star refrigerator	35%	1.3 years

# What about Renewable Energy?

- Solar hot water - best applications
  - Pool heating
  - Food prep – preheat
  - Laundry – preheat
- Photovoltaics (PV)
- Leverage tax incentives



# Water Use – Health and Rehabilitation



## Costs of Water & Sewer

\$6.76 per 1000 gallons (NC avg)

Hot Water = 2 times water costs

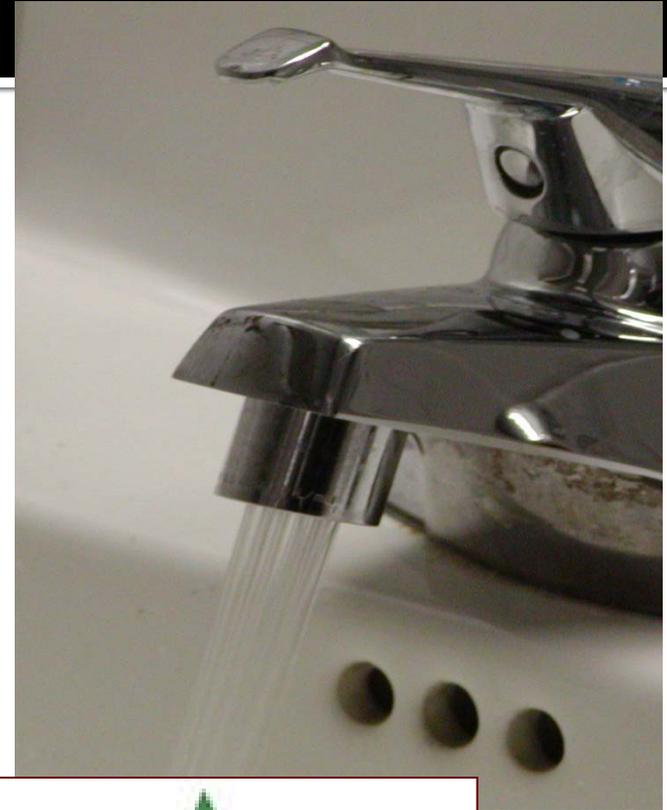
## Water – Use Benchmarks

95 gallon/day per resident (post 1995 renovations)

160 gallons/day per resident (pre-1995 renovation)

# Water Efficiency

- Upgrade pre-1995 toilets
  - Consider high-efficiency toilets (HET, HEU) - look for WaterSense label ( 5 yr. payback)
- Install lavatory faucet aerators ( 3 –month payback)  
0.5 gallons per minute (gpm)
- Use low-flow showerhead – 1.5 gpm (< 1 year)
- Low flow – pre-rinse sprayers
- Eliminate once-thru water cooling of ice machines, autoclaves



# Environmental Services

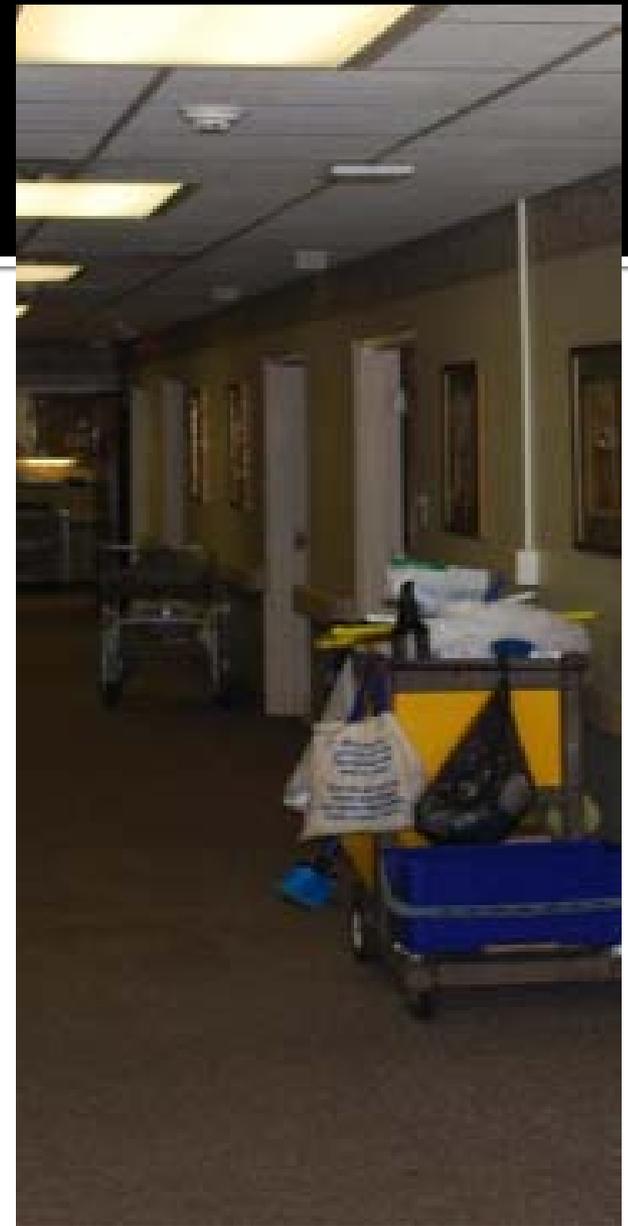
## Housekeeping

- Cleaning and disinfecting chemicals
  - Review and reduce # of products
  - Bulk dispensing with recyclable containers
  - Biodegradable

### Sanford Health and Rehabilitation

#### Example

- Reduce cleaning chem: 5 to 2
- 5x reduction in weight
- Reduced shipments
- 2.5 times life of soap dispenser



# Office Waste Reduction

- Sound waste management and minimization
  - Medical wastes
- Enhance recycling programs
  - Paper & shredded doc recycling
  - Plastics, metal
  - E-waste
- Reduce disposables
- Buy recycled
  - Look for recycled contents
- Smarter, cheaper, faster practices; e.g., EMR
- Buy Energy Star office equipment
- Buy Water Sense plumbing fixtures



# Recycling Programs

- Expanding paper
- Plastic containers
- E-electronics, batteries
- Grease
- Others
- Composting project



# Transportation and Travel

- Optimize scheduling – resident transport
- Buy, lease or rent highest MPG and cleanest vehicles
  - ULEV – Ultra-low emission vehicles
  - SULEV, Super-ultra-low emission vehicles
  - Alternative Fuel Vehicles – CNG, ethanol, & biodiesel
  - Hybrids

[www.fueleconomy.gov](http://www.fueleconomy.gov)
- Encourage staff carpooling programs
  - Support public transportation systems
  - Encourage biking or walking to work
  - Plan for showering facilities, bike racks, etc.



# Procurement & Policies

- Office products
- Energy Star rated equipment
- WaterSense rated devices
- Green Seal labeled housekeeping products
- Food services



# Food Services

- Vendor sourcing review
- Local emphasis on procurement
- Composting



# Site and Grounds Ideas

- Stormwater, watering & irrigation
  - Rain gardens, cisterns, pond reuse
- Landscaping and plant
  - Native species, drought tolerant



# Renovations and New Construction

- Integrated high-performance design considerations for sustainability
- LEED Building, Energy Star
  - Addressing all aspects of design, construction and operations.
  - 0% to +5% cost per sf
- Work with LEED accredited architects & green builders/contractors
- “Greenhouse” – design concepts
- [www.usgbc.org](http://www.usgbc.org)



Cary Skin Center

# Performance Improvements

## Health & Comfort of the Indoor Environment

- Best HVAC controls for proper humidity, filtration and fresh air needs
- Use/require low-toxic, low-odor janitorial products
  - Use concentrated product dispensing system
  - Green Seal certified products
- Use/require low-VOC paints, carpets, etc.

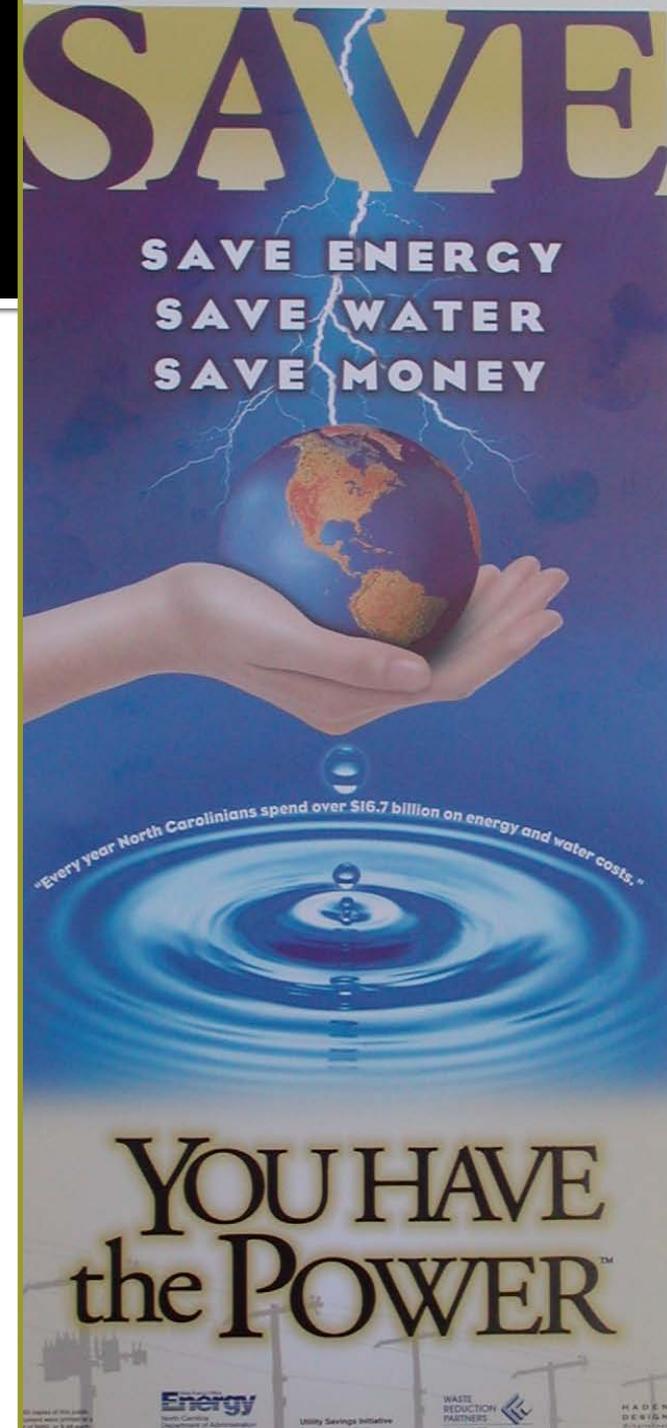


# Resources – Save Time, Get Educated

Health Care Focus	<a href="http://www.practicegreenhealth.org/">www.practicegreenhealth.org/</a> Practice Green Health	A-Z tools, resources, some fee based
	<a href="http://www.gghc.org">www.gghc.org</a> Green Guide for Health Care	BMPs, checklists, certifications
Best Environmental Resource Sites	<a href="http://www.p2pays.org">www.p2pays.org</a> NC Division of Pollution Prevention	Waste reduction resources, recycling directories
	<a href="http://www.wastereductionpartners.org">www.wastereductionpartners.org</a> Waste Reduction Partners	Facility resources, energy water, solid waste
New Facility Design	<a href="http://www.wbdg.org/design/nursing_home.php">www.wbdg.org/design/nursing_home.php</a> Whole Building Design Guide	Nursing home design
	<a href="http://www.usgbc.org">www.usgbc.org</a> US Green Building Council	LEED certifications
	<a href="http://www.ncsc.ncsu.edu">www.ncsc.ncsu.edu</a> NC Solar Center	Renewables, design resources, AFV
Financial Incentives	<a href="http://www.dsireusa.org">www.dsireusa.org</a> Database of State Incentives	Compiled list of energy and green building incentives

# Getting Started: Greening Your Organization

- Engage staff - select a lead
- Solicit ideas
- Develop a policy
- Identify the opportunities
  - Engage current vendors & service providers
  - Seek technical assistance
- Implementation
  - (no-cost, low-cost, capital projects)



# Waste Reduction Partners

Dedicated Professionals Sharing Expertise



## Services:

Energy Auditing, Solid Waste Reduction, Water Efficiency, and Pollution Prevention Technical Assistance

## Approach:

Innovative, Efficient, Cost -Saving Strategies

## Staff:

Team of Retired Volunteers and Staff Engineers, Scientists, and Architects

## Clients:

Business, Industry, Institutions

## Service Area:

NC - Statewide

Confidential - Non-regulatory - No-cost services

# Contact WRP

Waste Reduction Partners  
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WASTE  
REDUCTION  
PARTNERS



*dedicated professionals sharing expertise*

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