



PeaceHealth

*Dedicated to Exceptional Medicine and Compassionate Care*

# **PeaceHealth Systemwide Energy Management Plan**

# Energy Management is Industry Best Practice



**PeaceHealth Facilities Counterpart Team**



# Facility Counterpart Group Goals - March 2006

- Create System wide Strategic Energy management plan
  - Aim is to reduce energy consumption by at least 10%
- Aggregate selective service contracts to leverage volume pricing and value opportunities, i.e., natural gas, elevator maintenance, diagnostic imaging maintenance agreements
- Develop real estate management plans for all regions
- Develop strategies to implement environmentally sound facility solutions and best practices, i.e., mercury reduction, recycling programs (paper, cardboard, carpets, etc)
- Recommend system-wide standardize construction project approval process
  - Define project types and related approval processes for proceeding with design and construction
- Define a consistent approach to budget for construction projects
  - Standardize bidding and contracting philosophy
  - Standardize the process on contingency budgeting
- Continue focus on leveraging purchasing opportunities



# Why Have an Energy Strategy?

- Healthcare facilities are highly energy intensive
- Energy prices will continue to rise
- National initiatives support healthcare energy management
- Leading healthcare organizations are taking action
- Opportunity to work with the Alliance and Pacific Northwest electric utilities on a priority initiative

***“Energy management is the cheapest resource for electric utilities and the most controllable operating cost for healthcare.”***

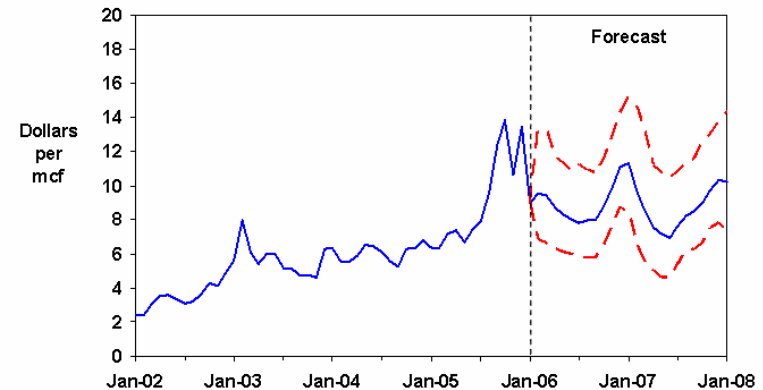
# Evolution of PeaceHealth's Energy Strategy

- Oct 2005 – Facilities Counterpart Group (FCG) engaged Alliance to develop system wide plan
- Jan 2006 – Completed energy benchmarking of all facilities
- July 2006 – Completed scoping studies in two facilities to identify low-cost opportunities
- Oct 2006 – Completed 3-year system wide energy management plan
- Nov 2006 – Presentation to PHET for endorsement

# What the FCG Uncovered

- Spent \$8.3 million on energy in 2005
- Energy costs will continue to rise
- Price volatility puts PeaceHealth at risk
- No system level strategy to actively manage energy costs

Figure 3. Natural Gas Henry Hub Spot Prices (Base Case and 95% Confidence Interval\*)



\*The confidence intervals show  $\pm 2$  standard errors based on the properties of the model.

Short-Term Energy Outlook, February 2006

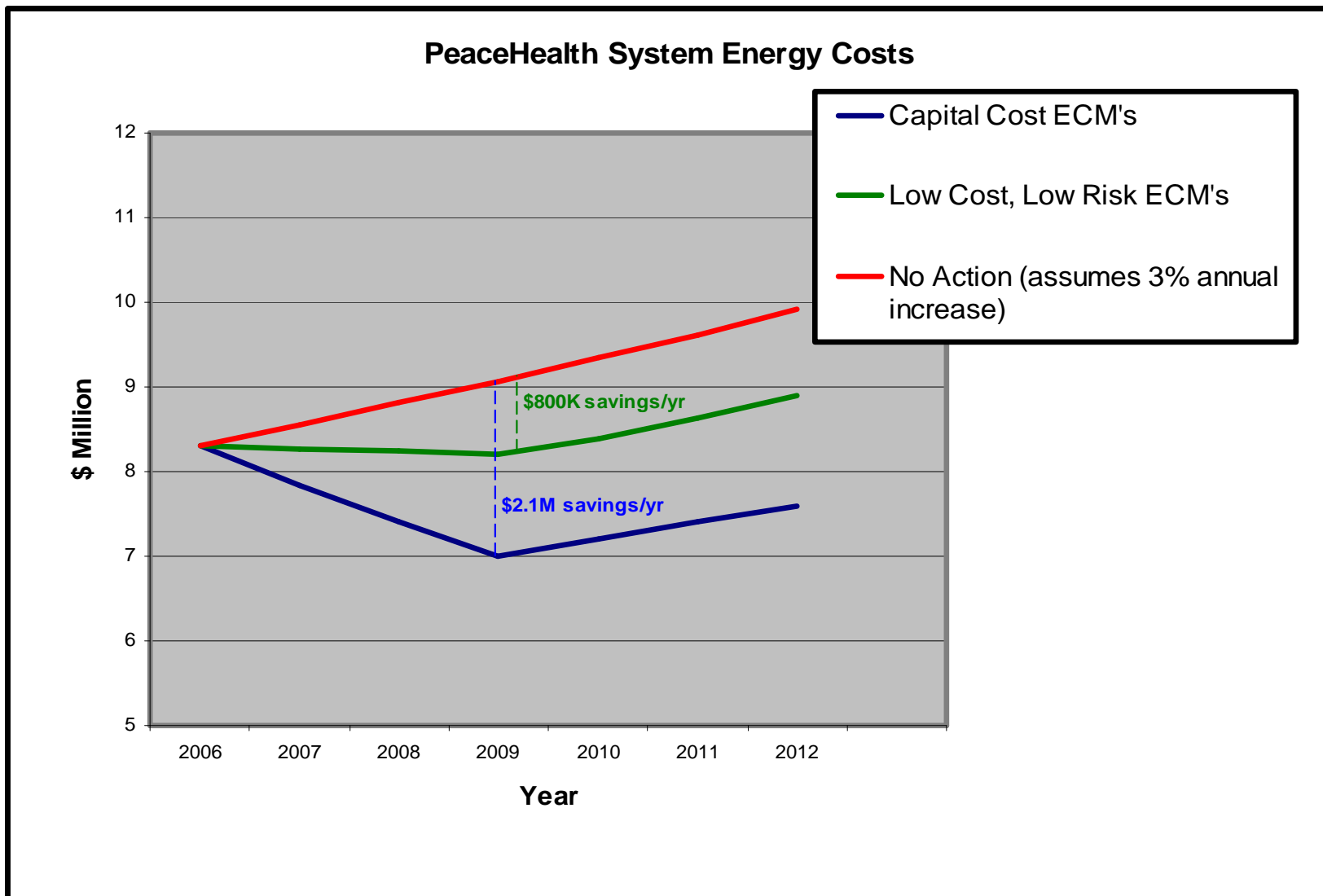


# FCG Discoveries Continue

- Identified preliminary low-cost energy efficiency projects
- Can do better to improve operating margin through energy cost control
- Can earn community recognition through national EPA and ASHE
- Provide a safer, healthier patient and workplace environment through better facilities



# Costs & Opportunities



# PeaceHealth FCG

## Strategic Energy Management Plan

### **Rationale for The Plan**

Energy, in cost and resource stewardship, is a significant economic and public policy issue. Hospital facilities are among the most energy intensive buildings in the United States, with Food Service being the most energy intensive area within the building.

### ***Rationale: Minimize risk associated with price volatility.***

Both nationally and regionally, energy prices have been increasing in real dollars and are projected to continue the trend of cost escalation and volatility. Natural gas price volatility contributed to cost increases of 30% and 33% at St. Joseph and St. John's hospitals, respectively, in Winter 2005.

# PeaceHealth FCG

## Strategic Energy Management Plan

***Rationale: Energy costs are the most controllable facility operating costs.***

PeaceHealth's energy costs in FY2005 were \$8.3M representing approximately 30% of the total facility operating budget.

Energy commodity prices are largely beyond institutional control, however hospitals can control the way they consume energy through energy management programs.

Energy management projects completed in PeaceHealth regions since 1996 are currently controlling energy costs by \$1,000,000 annually while also garnering \$1.2 million in rebate incentives from serving electric utilities. Attractive returns on those investments continue to accrue to the bottom line of PeaceHealth regions.

# Energy Management Accomplishment Recognitions

Facility programs in each of the regions have adopted a number of sound business practices to manage energy costs.

- **Energy benchmarking:** Four PeaceHealth facilities are performing in the top 25% of hospital peers and are eligible to receive national recognition by the U.S. Environmental Protection Agency's ENERGY STAR® program.
- **Building O&M Scoping:** Two assessments of operational efficiency opportunities were completed in Summer 2006 in the Oregon and Whatcom regions. The assessments showed energy saving opportunities of 10-30% through low cost operational improvements at each facility. If implemented, the return on investment to PeaceHealth exceeds 150%.
- **Engineering and maintenance staff training in operational efficiency:** Five PeaceHealth building engineers have earned a Building Operator Certification (BOC) credential in energy efficiency.

# Energy Management Accomplishment Recognitions

- **Employee awareness:** The Whatcom Region implements an employee awareness program to encourage participation in recycling and waste reduction programs that benefit the community and save the hospital money.
- **Design team capability in energy efficiency:** The Lower Columbia Region's major tower remodel is incorporating a number of new energy efficient lighting, ventilation, and HVAC technologies. The Oregon Region's RiverBend Project and the Whatcom Region's new construction design team are comprised of firms with national recognition in sustainable, green building design.
- **FCG leadership role:** The FCG is advancing effective energy management at the system level through information sharing among peers, policy and procedure improvements, and adoption of guiding principles.

# Why is Energy Management an industry Best Practice?

- A number of national and regional trends point to heightened awareness of the value of energy management for the healthcare industry.
- In July 2006, the **American Society for Healthcare Engineering (ASHE)** of the American Hospital Association (AHA) joined with the EPA to meet the ENERGY STAR Challenge of improving energy efficiency by 10%. ASHE is launching a two year campaign, E2C, to educate its members about the environmental and financial benefits of pursuing energy efficiency improvements in healthcare facilities. ASHE estimates that in the first year of the campaign, members will save more than \$65 million on energy costs while helping to protect our environment by reducing nearly three million pounds of greenhouse gas emissions.

# Why is Energy Management an industry Best Practice?

- 2005 marked the launch of the **Green Guide for Health Care™**, the healthcare sector's first quantifiable sustainable design toolkit integrating enhanced environmental and health principles and practices into the planning, design, construction, operations and maintenance of their facilities. This Guide provides the healthcare sector with a voluntary, self-certifying metric toolkit of best practices that designers, owners, and operators can use to guide and evaluate their progress towards high performance healing environments.



# Other Healthcare Organizations Tackling The Energy Conservation Measure

A number of leading healthcare organizations in the Northwest are adopting energy management initiatives and integrating energy management into business practice.

- **Providence Health and Services**, which operates some 20 facilities in the Northwest, adopted an energy management initiative in 2002 to reduce energy costs system wide an additional 10% over five years. In 2004, the system was named ENERGY STAR® Partner of the Year for the results achieved through this initiative.
- **Catholic Health Initiatives (CHI)**, which operates 55 hospitals nationally, adopted an energy efficiency initiative in 2004. Its Mercy Medical Center in Roseburg, OR embarked on a central plant improvement program which is saving the institution nearly \$72,000 annually for the next ten years.
- The new **Providence Newburg Medical Center**, scheduled for completion in Fall 2006, incorporated design strategies and energy efficiency measures that are expected to reduce energy costs by \$117,000 annually for the life of the building.

# The Sell: Business Proposition – Opportunities for PeaceHealth

PeaceHealth has the opportunity to obtain greater value from its energy management activities by adopting a strategic plan that establishes energy performance improvement goals and makes a financial commitment to invest in cost-effective projects that support the goal.

The FCG recommends the following:

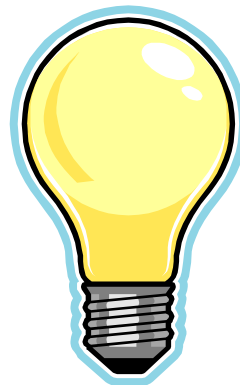
1. **Conduct energy cost control assessments on PeaceHealth facilities system wide.** These assessments would identify all cost effective energy efficiency projects, the cost to implement, and the return on investment to PeaceHealth. The cost to implement the assessment is estimated to be \$300,000.
2. **Establish an energy consumption reduction goal of 10% system wide.** The FCG believes a goal of 10% energy consumption reduction system wide over a three-year period is achievable.

## The Sell: Business Proposition – Opportunities for PeaceHealth

3. **Establish a consistent financial decision guideline and investment hurdle rate for energy management projects.** Energy savings will be accomplished through low cost operational and maintenance improvements, life cycle cost sensitive procurement policies, and cost effective investments in facility upgrades.
  - For energy management projects requiring capital investment, the FCG recommends using a non-discounted 15% savings to investment hurdle rate or equivalent discounted internal rate of return. PeaceHealth customarily uses a 15% rate for low risk projects and something higher for riskier investments such as physician clinics. Energy management projects are inherently low risk investments.

## The Sell: Business Proposition – Opportunities for PeaceHealth

4. **Make a financial commitment to fund cost-effective energy management projects system wide.** The reduction in energy costs to the PeaceHealth System from achievement of the energy performance goal in Year 1 is estimated to be \$300,000. At the system's net operating income of 3.5%, this is equivalent to new annual gross revenues of \$9M. Each region will be responsible for developing an implementation plan, budget and timeline to achieve the energy performance goal.
5. **Recognize top performers and most improved facilities annually.** The FCT recommends annual recognition of achievements towards the energy reduction goal through ENERGY STAR®.



# ENERGY MANAGEMENT GOALS

1. **Goal:** Obtain Executive Involvement and Approval
  - **Objective:** Approval of this plan at the PeaceHealth Executive Team (PHET) and approval of hospital specific implementation plans by individual hospital executive teams.
  
2. **Goal:** Establish the FCT as the “Energy Champion” for the PeaceHealth system
  - **Objective:** Identify key stakeholders in each region with responsibility and accountability to achieve the goals of the Plan.
  
3. **Goal:** Establish Financial Decision Methodology
  - **Objective:** Use life cycle cost financial analysis methods for investment decision criteria for energy-related investments.

# ENERGY MANAGEMENT GOALS

4. **Goal:** Establish Procurement Standards
  - **Objective:** Recommend refinements to procurement standards with key stakeholders.
  - **Objective:** Develop purchasing policies consistent with life cycle cost analysis criteria.
  - **Objective:** Use group purchasing advantages for natural gas commodity purchases when advantageous.
  
5. **Goal:** Collaborate on Implementation of Facility Construction & Upgrades
  - **Objective:** Utilize facility staff peers and utility resources to assess equipment retrofit opportunities.
  - **Objective:** Maximize construction knowledge and share "best practices" between regions.

# ENERGY MANAGEMENT GOALS

## 6. **Goal:** Enhance Facility Operating Performance

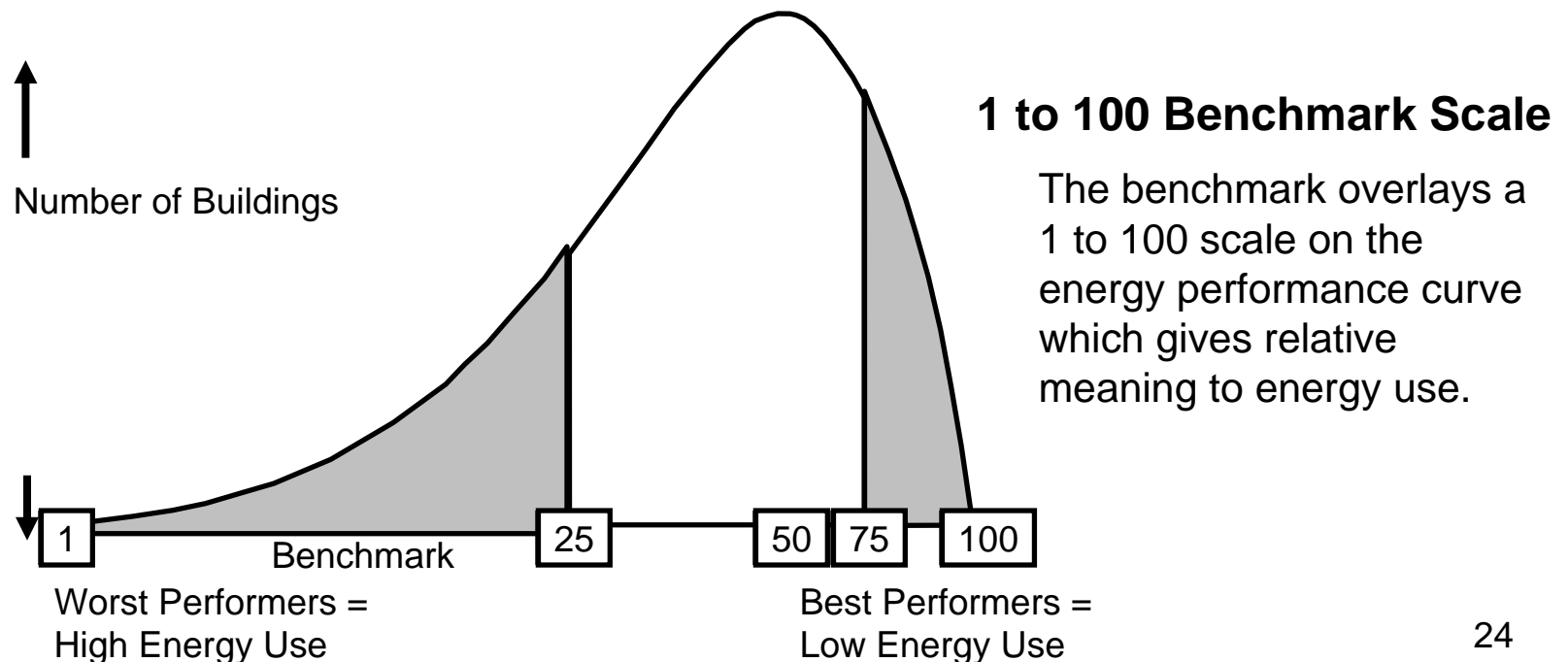
- **Objective:** Benchmark all PeaceHealth hospitals and medical office buildings for energy performance
- **Objective:** Establish peer exchange opportunities between facilities managers in each region through the FCG.
- **Objective:** Conduct facility energy assessments.
- **Objective:** Examine O&M practices and incorporate changes to optimize building system performance.
- **Objective:** Review service contracts to ensure enhanced level of energy performance.
- **Objective:** Involve building occupants in achieving energy goals.

## 7. **Goal:** Conduct Monitoring and Tracking

- **Objective:** Conduct energy tracking and reporting
- **Objective:** Maintain ENERGY STAR® Portfolio Manager benchmarking
- **Objective:** Communicate success to the hospital and external community

# ENERGY STAR® Benchmarking Overview

There are a number of tools available to accomplish the task of on-going monitoring and tracking of energy performance. PeaceHealth regions have adopted ENERGY STAR® Portfolio Manager for use in their benchmarking activity. It is a nationally recognized benchmark for energy performance in hospitals and is available at no charge. The figure below illustrates how the rating system provides an objective, standardized metric for measuring the efficiency of a building or building portfolio on a scale of 1 to 100. The distribution of performance is a modified bell curve.



# ENERGY STAR® Benchmarking Overview

In Fall 2005, each PeaceHealth region benchmarked their facilities and assessed energy baselines. Effective energy management begins by understanding the facility's baseline of energy performance. The results are shown below.

Facility	ENERGY STAR Score	Eligible for ENERGY STAR Label	2005 Energy Use Baseline
<b>Lower Columbia</b>			
<i>Main Campus</i>	78	Yes	209 kBtu/sf
<i>MOB – 99 Bldg.</i>	77	Yes	62 kBtu/sf
<i>MOB - Broadway</i>	43	No	190 kBtu/sf
<b>Whatcom Region</b>			
<i>Main Campus</i>	66	No	235 kBtu/sf
<i>South Campus</i>	85	Yes	177 kBtu/sf

# ENERGY STAR® Benchmarking Overview

<b>Oregon Region</b>			
<i>Medical Center</i>	56	No	214 kBtu/sf
<i>Barger Clinic</i>	40	No	61 kBtu/sf
<i>Clinic South</i>	10	No	69 kBtu/sf
<i>Coburg Clinic</i>	9	No	67 kBtu/sf
<i>IWP Building</i>	4	No	81 kBtu/sf
<i>PeaceHealth Medical Group</i>	25	No	115 kBtu/sf
<i>PHMG Annex</i>	8	No	67 kBtu/sf
<i>Physicians &amp; Surgeons – North</i>	2	No	121 kBtu/sf
<i>Physicians &amp; Surgeons – South</i>	11	No	115 kBtu/sf
<i>Support Services Building</i>	1	No	140 kBtu/sf
<i>Cottage Grove</i>	84	Yes	155 kBtu/sf
<i>Florence</i>	pending	pending	pending
<b>Alaska Region</b>			
<i>Ketchikan General Hospital</i>	52	No	181 kBtu/sf
<i>Wilson Building</i>	74	No	68 kBtu/sf

# ENERGY STAR® Benchmarking Overview

- Energy baselines for the three largest hospitals are in close range to each other with kBtu/sf consumption of 209 to 235. Baselines for the MOBAs, with a few notable exceptions, are also within close range with consumption of 61-69 kBtu/sf. Four PeaceHealth facilities are performing in the top 25 percent of hospital peers (at or above 75 score) and are eligible to receive national recognition by the U.S. Environmental Protection Agency's ENERGY STAR® program. Several others are within close range of achieving a 75 score.

# Financial Summary

Financial Summary						
<i>PeaceHealth Energy Assessments</i>						
Region	Facility	Measure Description	Implementation Cost	Energy Cost Savings	Simple Payback	O&M Budget
<b>SE Alaska</b>						\$20,000
	Main Hospital	1. Direct Digital Controls	\$227,500	\$61,611	3.7	
	Main Hospital	2. Lighting Retrofit	\$86,500	\$17,100	3.5	
	Wilson MOB					
<b>Whatcom</b>						\$70,000
	Main Hospital	1a. Implement Variable Air Volume Control	\$1,324,858	\$101,403	13.1	
	Main Hospital	1b. Implement Variable Air Volume Control	\$542,200	\$101,403	5.3	
	Main Hospital	2. Systematic Lighting Upgrade & Tune-up	\$59,723	\$9,608	6.2	
	Main Hospital	Isolate & Reduce High Load Cooling Area	\$93,000	\$5,840	15.9	
<b>Lower Columbia</b>						\$70,000
	Main Hospital	1. Extend Direct Digital Controls (DDC)	\$300,000	\$86,183	3.5	
	Main Hospital	2. High Efficiency Heating Plant	\$417,000	\$57,395	7.3	

# Financial Summary

Region	Facility	Measure Description	Implementation Cost	Energy Cost Savings	Simple Payback	O&M Budget
<b>Oregon</b>						<b>\$70,000</b>
	Riverbend Annex	1. Booster Cooling for Pharmacy	\$12,000	\$1,638	7.3	
	Riverbend Annex	2. Remove Chemo Hood from Pharmacy	\$4,000	\$821	4.9	
	Support Services MOB	3. Dedicated HVAC System for 2nd Floor IT Help Desk Area.	\$23,000	\$35,940	0.6	
	Cottage Grove Hospital	4. Dedicated ACU for Medical Lab	\$6,000	\$1,168	5.1	
	Barger Clinic	5. Dedicated Split System Heat Pump for IT room	\$4,200	\$639	6.6	
	Riverbend Annex	6. Install VFDs on Supply Fans for Warehouse Air Handlers	\$10,800	\$5,378	2.0	
<b>Siuslaw</b>						<b>\$20,000</b>
	Hospital, MOB	1. Lighting Retrofit	\$47,000	\$4,650	10.1	
	Home Hospice	2. HVAC System Upgrade	\$31,250	\$2,900	10.8	
<b>Totals, all measures</b>			<b>\$3,189,031</b>	<b>\$493,677</b>	<b>6.5</b>	<b>\$250,000</b>
				Escalation 2%	NPV=	\$74,302
				Discount 10%	IRR=	11%



**Questions?**