



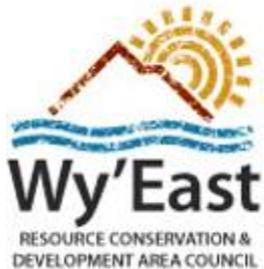
WY' EAST

**RESOURCE CONSERVATION &
DEVELOPMENT AREA COUNCIL**

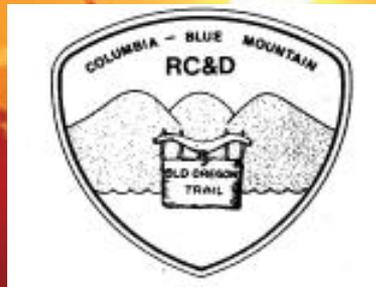
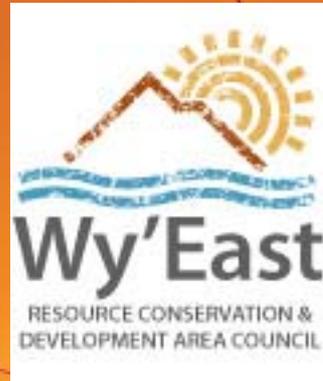
Bill Mintiens, Executive Director

What is a *Resource Conservation & Development Council*?

RC&D Councils develop partnerships with local citizens, agricultural producers, Indian Tribes, and State and Federal agencies to improve and enhance social, economic, and environmental conditions in their communities. RC&D projects create new markets and opportunities while addressing important resource concerns.



BPA's Agricultural Energy Efficiency Project RC&D statewide expansion in 2011



B O N N E V I L L E
POWER ADMINISTRATION



BPA's Agricultural Energy Efficiency Project

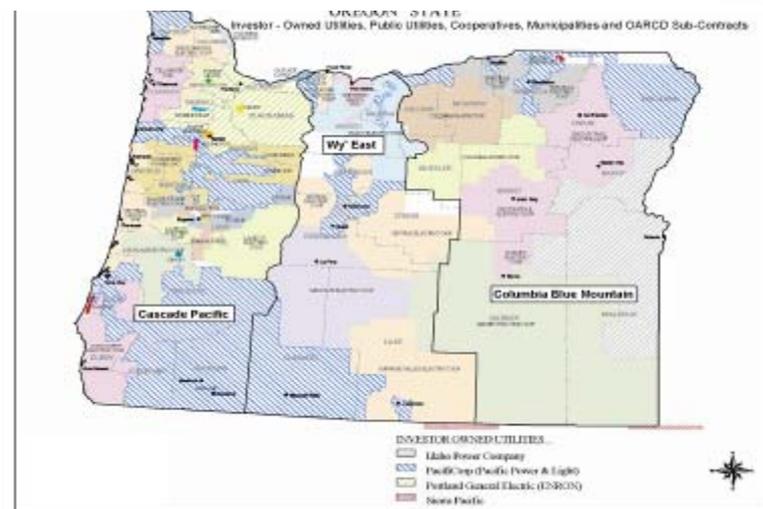
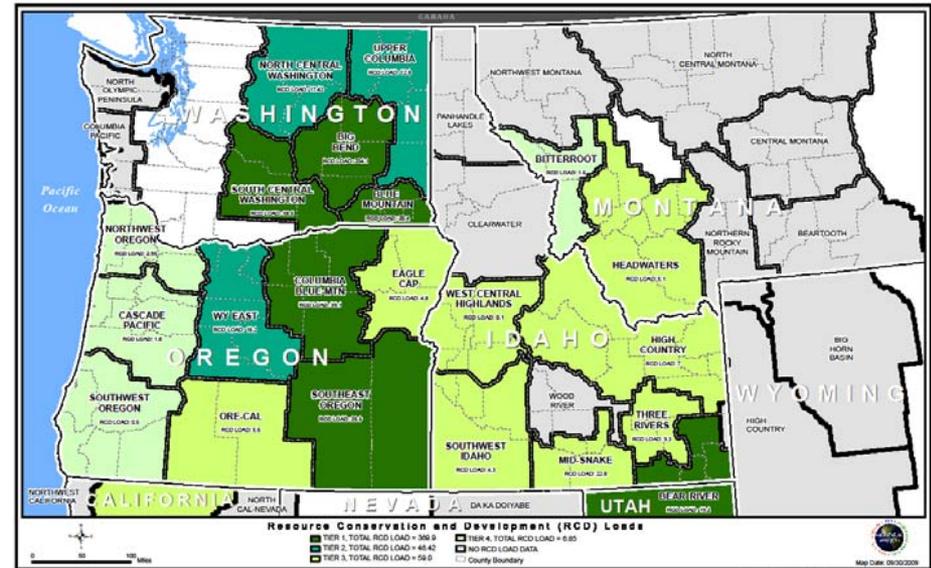
RC&D statewide expansion in 2011

Expansion in Pacific Northwest in 2011

Implement electrical energy efficiency

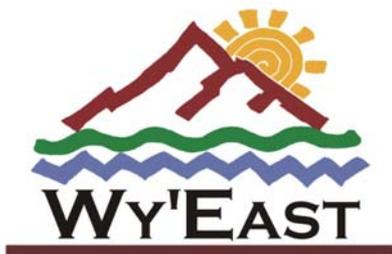
energy efficiency savings between 0.25-0.33 aMWs

Educate & Motivate Ag Sector

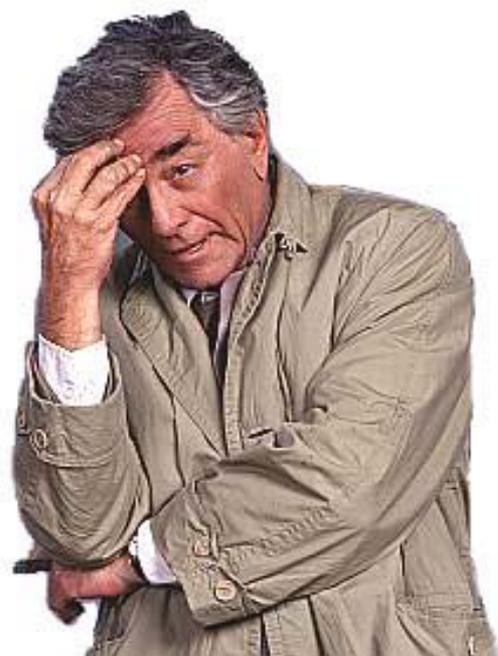




Why Energy Conservation?



Why would a co-op promote the conservation of electricity when they are in the business of selling electricity...?



save **WATER** save **ENERGY**

“Simple...conservation and energy efficiency are the least cost resource in the co-ops energy portfolio.”

Jeff Davis
Wasco Electric Coop



It's the "cheaper than" alternative

It's effective

It's local (keep \$ here)

It's clean (no emissions)

It's abundant (lots more to do)

Easier to serve loads

The Sunday Oregonian

SUNRISE EDITION ★★★ ++H

\$2.00

BREAKING NEWS AT OREGONLIVE.COM

WINNER OF SEVEN PULITZER PRIZES

SEPTEMBER 13, 2009

Embassy contractor has record of troubles

Afghanistan | Drunken parties bring attention to ArmorGroup, but U.S. officials knew of wider problems

By **GINGER THOMPSON**
and **MARK LANDLER**
NEW YORK TIMES NEWS SERVICE

WASHINGTON—When a security guard at the U.S. Embassy in Kabul was leaving

With a goal of doubling the region's energy saving in the next 20 years, Northwest businesses and homeowners are urged to find ...

The power in CONSERVATION

Energy efficiency is cheapest source of energy

New energy sources	Monthly investment cost on the average homeowner's utility bill
Energy efficiency*	\$32
Natural gas plant w/o carbon charge	66
Advanced coal w/o carbon charge	66
Geothermal	69
Columbia Basin wind	89

By **TED SICKINGER**
and **SCOTT LEARN**
THE OREGONIAN

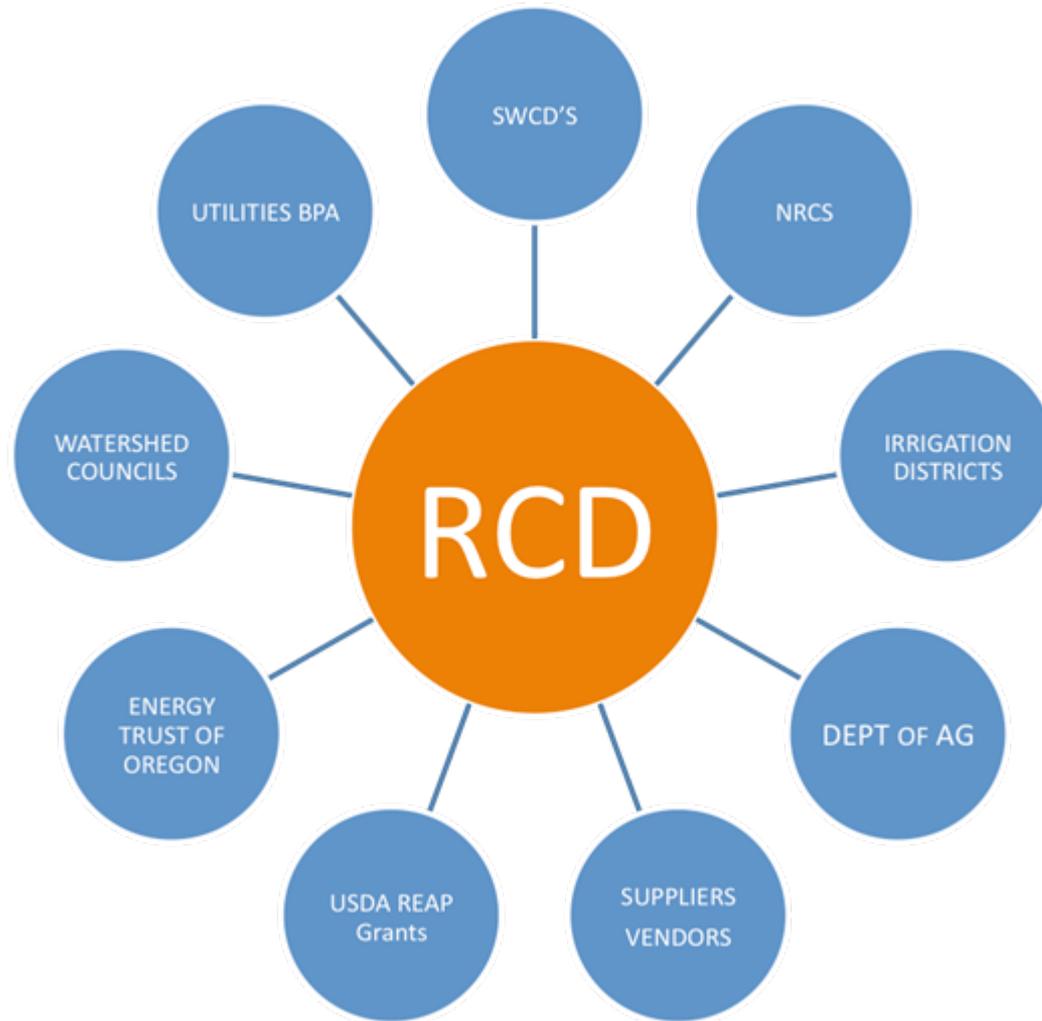
The big white house near Reed College was screaming for an energy upgrade: almost 100 years old, scanty insulation, nearly triple the drafts of a modern home.

Last month, it got one — with the help of two energy audits, federal



State-Wide Ag Energy Program





RC&D's act as "Extensions of the Utilities"

**Scientific
Irrigation
Scheduling
(SIS).**

**Variable
Speed
Drives
(VFD).**

**Hardware
Rebates**

- Sprinkler
- Nozzles
- Gaskets

**Custom
Projects**

**Pump
efficiency
modifications**

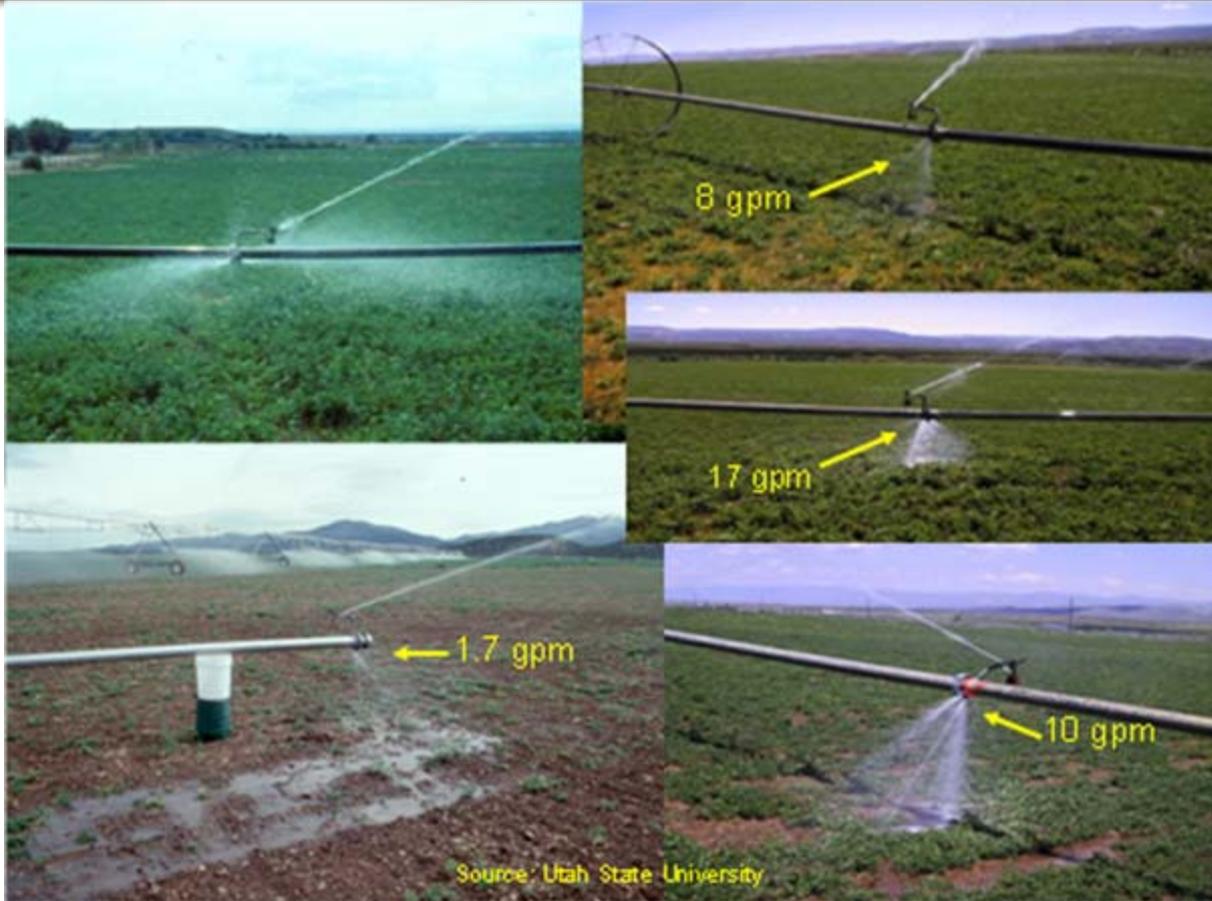
◦ Pipe Repair

•Irrigation Conservation Programs

- Scientific Irrigation Scheduling (SIS).
- Variable Speed Drives (VFD).
- Hardware Rebates
 - Sprinkler
 - Nozzles
 - Gaskets
 - Pipe Repair
- Custom Projects (pump efficiency modifications, etc.)
- Pump Testing (For Qualified Systems)



All Leaks Add Up...



save **WATER** save **ENERGY**

Start With The Basics

1. Sprinkler Hardware Upgrades

- Sprinklers, Nozzles, Gaskets, etc...

2. Pump test Screening Tool



Example of Sprinkler Hardware Rebate

Item	Cost	Rebate	kWh/Season
Nozzle	\$0.75	\$1.50*	37 kWh
Gasket	\$3 to \$5	\$2.75*	22 kWh

Changing out 100 Nozzles could save you \$200 per year in electric cost

*BPA supplied Utility



How Do I get Started ?

It's Easy...

Sprinkler Hardware-

1. Purchase the Items (Nozzles, Gaskets, Pipe Repair, etc...)
2. Install Items
3. Fill out simple rebate, include Invoice turn into Utility
4. Rebate Check will be mailed back to you within 3 to 4 weeks

***Must have an Irrigation Account w/ Utility*



How Do I get Started....

It's Easy...

Basic Pump/System Evaluation

- 5 Year past electrical history
- Crop & Field Information
- Soil Maps – Web Soil Survey
- Pumping Plant/Irrigation System Information

Calculate a very general “Efficiency of the system.”

Poor....Average....Good



Pump Plant & System Analysis (Pump Test Rebate Program)

Step Rebate Program for Further Evaluation

- Screening Process (Pump Test Screening Tool)
- 20 HP or Greater
- Been in Operation for previous (2) years
- Performed by Qualified Pump Test Contractor

***There will be some cost share from the Land Owner when a Detailed Pump Test is performed. This Pump Test Rebate program available for Central Electric Coop Members only.*



Pump Plant & System Analysis

Potential Outcome

Pump Modifications to increase Efficiency

- Trim Impeller
- Change out Pump/Motor
- Reduce Friction Loss w/ Piping
- Add VFD (Variable Frequency Drive)



VFD (Variable Frequency Drive)

20% Variation in Flow Rates

or

10% Variation in Pressure Requirements

Rebate of \$80/hp from BPA/Utility for qualified projects

**Turbine Pumps Only – BPA



“Big Bertha”

Lower Bridge/Terrebonne Oregon

Variable Frequency Drive
Simple Payback 1.3 Years

Save \$11k/year Electric Cost



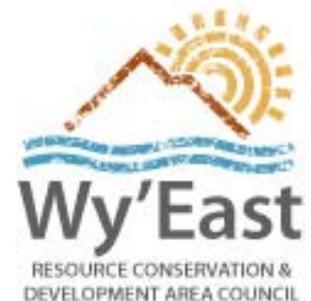
VFD - \$43,000
Savings (\$11,000)
Rebate (\$28,000)

“Big Bertha”

VFD = 225,000

kWh/year

save **WATER** save **ENERGY**



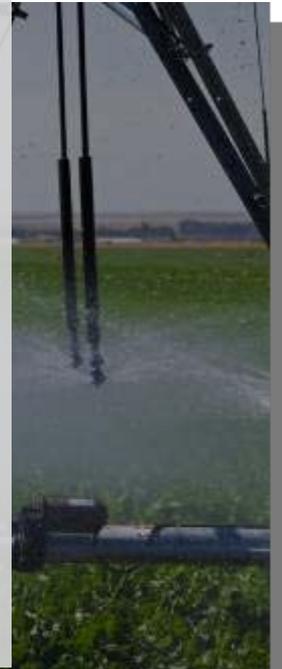
Project: North Albany Farm

- **Reroute power grid**
- **Install center pivot irrigation on 71-acre area**

Savings:

- **Water: 42.36 acre-ft/yr**
- **Electricity: 48,469 kWh/yr**
- **Diesel: 534 gal/yr**
- **Operating cost: \$16,247/yr**

60% Total Energy Savings

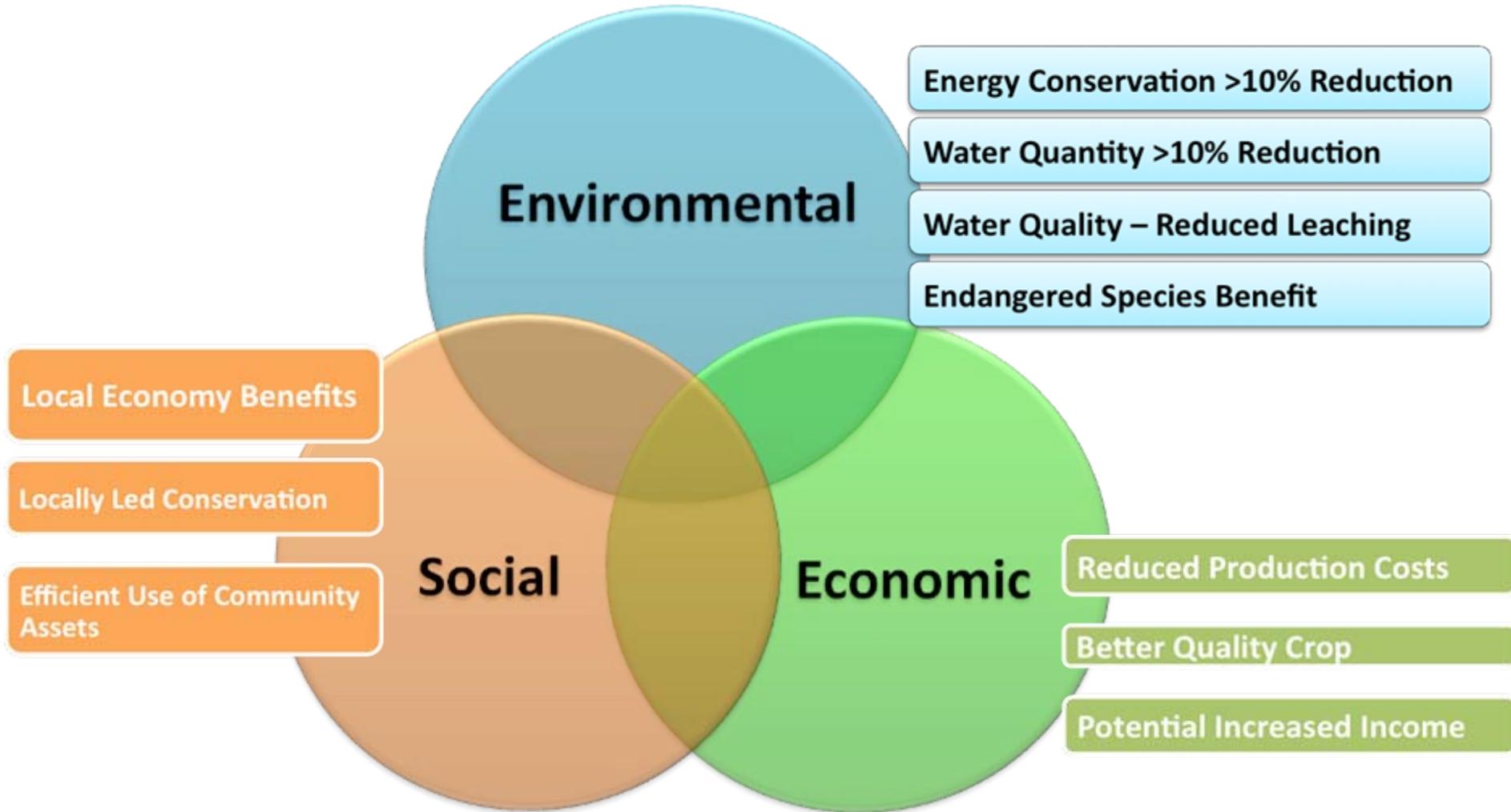


Project: North Albany Farm



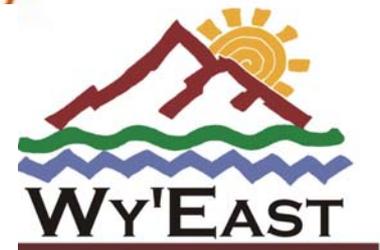
• NRCS EQIP	=	\$25,205
• Oregon BETC	=	19,634
• USDA REAP	=	18,699
• ETO (Utility rep)	=	<u>10,452</u>
		\$73,990
• Client cost share	=	<u>26,010</u>
TOTAL	=	
\$100,000		

Ag Energy Outcomes - Achieving The Triple Bottom Line



How we will succeed

- Maintain strong relationships w/utilities
- Ask a utility rep to become a Council member
- Develop relationships w/SWCD's & NRCS
- Become Trusted Local Resource for Ag EE
- Get to know the “Who's-Who” of Irrigation
- Outreach & Workshops



Marketing the Program

- RC&D sponsored workshops
 - Energy Efficiency Workshops
- SWCD co-sponsored events
 - Farm Fairs
 - Town Hall Meetings
- Utility co-sponsored outreach
 - Introduction Letter
 - Brochure/Flyer
 - Rebate Forms





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