


## Energy Efficiency Empowers Communities



2012 APA Washington Conference



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## City of Ellensburg - Finding the Sweet Spot for Combined Energy Planning Efforts

Andrea Lewis  
O'Brien & Company

## City of Ellensburg EECS & LDCU

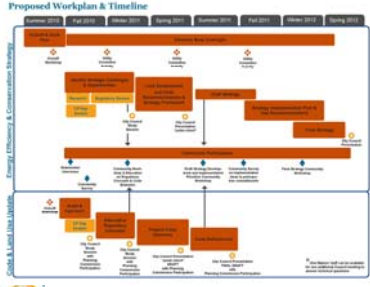
- Energy Efficiency & Conservation Strategy (EECS)
- Land Use Development Code Update (LDCU)
- Energy Efficiency and Conservation Block Grant Funding & One Consultant Team












## Aligned Approach

Proposed Workplan & Timeline










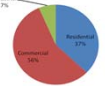
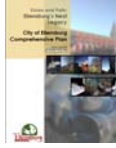
## Context: City Profile



- Mid sized city in Eastern Washington
- College town – Central Washington University
- Surrounded by 'the great outdoors'
- Over 300 days of sun a year!
- City owned utility with an existing focus on energy efficiency and renewables

## Context: Baseline Energy Snapshot

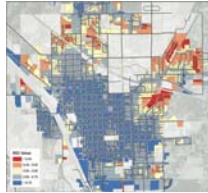
- Energy consumption
- Conservation Programs/Policies
- Renewable Energy

## Project Drivers

- o The time was right...
  - o Outdated, inconsistent land use code
  - o Opportunity to align with energy conservation measures in Comp Plan



## Project Drivers

- o The leadership was strong...
  - o Supportive Council
  - o Champions in Planning and Community Development
  - o Willingness to dedicate staff time
  - o Align with existing leadership efforts: energy efficiency programs, policies and innovative renewable energy efforts



## Project Drivers

- o Money spoke
  - o Tier 2 pricing loomed, despite existing efforts
  - o EECBG funding available

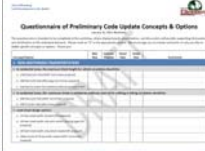
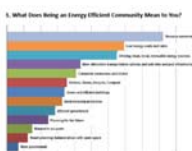


## What Worked? Project Synergies

EECS	LDCU
<b>Building Related Energy Efficiency</b>	
<ul style="list-style-type: none"> <li>EECS Focus Areas:               <ul style="list-style-type: none"> <li>Green Buildings &amp; Infrastructure</li> <li>Existing Buildings</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Zoning updates to allow unlimited density in appropriate districts</li> <li>Incentivize net zero energy construction → 150% density bonus</li> <li>Updates to code height limits to promote solar and wind production</li> </ul>
<b>Transportation Related Energy Efficiency</b>	
<ul style="list-style-type: none"> <li>EECS Focus Areas:               <ul style="list-style-type: none"> <li>Transportation</li> <li>Energy Efficient Development and Smart Growth</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Zoning changes that allow connectivity provisions</li> <li>Pedestrian friendly development patterns and design standards</li> </ul>
<b>Code Related Synergies</b>	
<ul style="list-style-type: none"> <li>Gap analysis to identify energy efficiency barriers in land use code</li> <li>Building code barriers identification</li> <li>Process will help with future efforts looking at building code</li> </ul>	<ul style="list-style-type: none"> <li>Codifying energy efficiency/smart growth helps justify other efforts (non-motorized committee, complete streets committee, etc.)</li> </ul>



## What Worked? Stakeholder Engagement



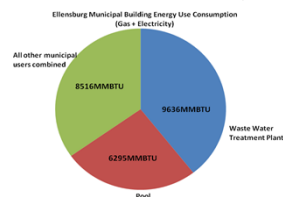
## Challenges: Case Studies

EECS	LDCU
<ul style="list-style-type: none"> <li>Finding case studies with great ideas that 'fit' Ellensburg</li> <li>Realistic expectations about what the case studies will provide</li> </ul>	<ul style="list-style-type: none"> <li>Using a real land plot in Ellensburg to create case studies for suburban zone connectivity</li> </ul>



## Challenges: EECS Energy Baseline

- Getting a true baseline vs. a single snapshot of existing conditions
  - Some data is better than no data
  - Recommendation for future data tracking



## Results: EECS Final Product

- Focus areas correlated to goals, with sample strategies

Implementation Categories	Sample Implementation Strategies
<b>Pedestrian &amp; Biking Infrastructure</b>	<ul style="list-style-type: none"> <li>Open up cut de sacs for pedestrian walkways</li> <li>Reclaim alley ways as pedestrian thoroughfare</li> <li>Apply to become a "youth friendly" community</li> <li>Make new streets connect to existing streets &amp; places.</li> <li>Add planting strip buffers between sidewalks &amp; travelways.</li> <li>Add bike routes to existing travelways.</li> </ul>
<b>Public Transit</b>	<ul style="list-style-type: none"> <li>Expand service areas at least to city limits.</li> <li>Educate the public that public transit is available to all.</li> <li>Increase route frequency.</li> <li>Add bus shelters/ benches at stops to make more visible and appealing</li> <li>Work with carsharing companies to add stations near student housing or the University to lessen the need to bring cars to school.</li> <li>Consider roundabouts to reduce fuel consumption, calm traffic, increase automobile capacity and traffic safety. Good design can address any potential conflicts with pedestrian safety.</li> <li>Install electric vehicle charging stations at city owned parking lots/ properties.</li> </ul>
<b>Fuel Consumption Reduction</b>	

## Results: EECS Tools

- Planning Tools for a Living Document  
Decision Matrix Template

### Implementation and Action Plan Template

## Outcomes: EECS

- Recognition
  - Governor's 2012 Smart Communities Award
  - Commerce focus on using as a model
- EECS as driver for other initiatives
  - Sunshot Solar Communities
- EECS inspired projects
  - LED street lighting pilot project
- EECS inspired policies
  - Comp Plan Amendment that adopts by reference the EECS as policy
  - New Economic Development goal that pulls directly from EECS

## Outcomes: LDCU

- Robust LDCU draft in review
- "Future proofed" code language
- Easy to understand – for both staff and public



## Thank You!

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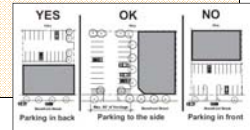


## Project Summary

EECS	LDCU
<b>"A planning tool, not a plan"</b> <ul style="list-style-type: none"> <li>• Vision, high level goals, and a set of focus areas important to Ellensburg's community</li> <li>• Snapshot of current energy conditions</li> <li>• Identification/prioritization of EE opportunities within focus areas</li> <li>• Case studies of successful initiatives</li> <li>• Implementation guidelines, decision-making criteria and tools for going forward</li> </ul>	<b>"Make smart, energy efficient development easier and more accessible"</b> <ul style="list-style-type: none"> <li>• User-friendly code</li> <li>• Remove barriers and incorporate incentives</li> <li>• Focus on frontages</li> <li>• Change base standards</li> <li>• Update zoning district provisions</li> <li>• Update subdivision standards</li> <li>• Integrate Energy Efficiency</li> </ul>

## Other Challenges for both projects

EECS	LDCU
<ul style="list-style-type: none"> <li>• Departmental differences of opinion about: <ul style="list-style-type: none"> <li>◦ Level of specificity in plan</li> <li>◦ Goal oriented versus targeted oriented</li> </ul> </li> <li>• Getting clarity on Tier 2 Issues</li> <li>• Push back on progressive consultant recommendations <ul style="list-style-type: none"> <li>◦ Climate and energy independence</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Recognition of small staff and capacity challenges <ul style="list-style-type: none"> <li>◦ Need for simplicity, lots of graphics</li> <li>◦ Very prescriptive code approach</li> </ul> </li> <li>• Slow down in legal review <ul style="list-style-type: none"> <li>◦ Momentum sink</li> </ul> </li> </ul>



## Goals

1. Maintain City leadership role in energy conservation and renewable energy production.
2. Ensure City codes and policies foster energy conservation and the production of renewable energy.
3. Create community-wide opportunities for energy conservation and renewable energy production.
4. Maximize the benefits of existing Tier 1 power pricing.

Summary


## RePower Bainbridge

### Shifting Gears: Energy Efficiency Empowers Communities



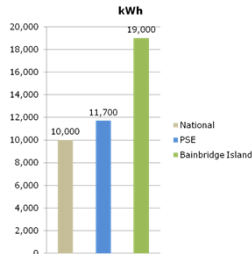
### What is RePower Bainbridge?

- A community energy efficiency & conservation program
- Launched March 2011, funded by \$5M grant from US DOE
- Dedicated to help residents save energy, reduce costs, and increase comfort
- Manage demand to reduce burden on utility infrastructure
- Create jobs in Kitsap County
- Coordinated effort with City of Bremerton



RePowerBainbridge.org

### Drivers: The Bainbridge Energy Challenge




Entity	kWh
National	10,000
PSE	11,700
Bainbridge Island	19,000

- Island exceed capacity on all three substations by 2MW: 10 hours/year.
- PSE provided 3 year timeline to reduce energy use: empowered community to take action & avoid additional infrastructure.
- Average residence uses 60% more electricity than average residence in PSE's territory.
- Half of the Island homes were built before 1980.

RePowerBainbridge.org


### Bainbridge Island Community



- 25,000 residents
- 6,800 SF homes
- High vacancy rates (second homes)
- Higher income levels compared to rest of Kitsap County
- Over 900 businesses (mostly small)
- Family oriented

RePowerBainbridge.org

### RePower Goals



- 4,000 Free Home Energy Checkups
- 1,000 EPS Assessments
- 2,000 Residential Energy Upgrades
- 150 Renewable Energy Systems
- 25 Commercial Energy Upgrades
- Loan Program Utilization (\$100,000)
- 65 Direct Jobs

RePowerBainbridge.org

### Delivery Model: How We Make it Happen




- In-home energy assessments
- Cash incentives and rebates
- Trade ally network of local contractors
- Financing: *Kitsap Credit Union & Puget Sound Cooperative CU*
- Marketing and outreach events

RePowerBainbridge.org



**Takin' it to the Street:  
The REAL Secret of Success &  
Empowering our Community**

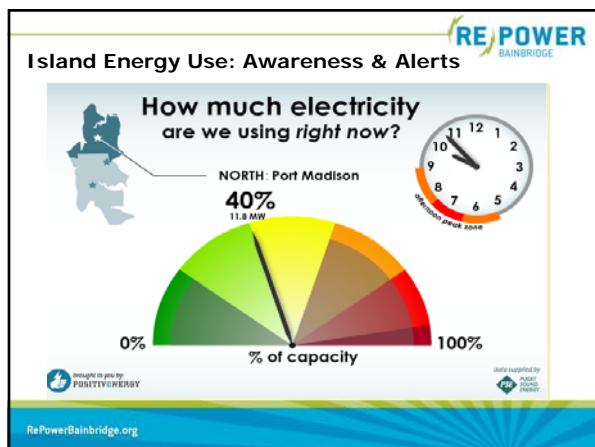



**RE POWER**  
BAINBRIDGE

**Spread the Word**

- Community-based social marketing
- Tap into cultural values
- Local businesses and nonprofit organizations

RePowerBainbridge.org



**RE POWER BAINBRIDGE**

### What's That You Say?



“Our improvements have increased my comfort and reduced energy costs 150 percent. Thank you, RePower, for giving me my home back.”

**Theresa Williams**  
The Island Community

RePowerBainbridge.org

**RE POWER BAINBRIDGE**

“Our electrical use goes down—some months by up to 15 percent—even as we enjoy a much warmer home this winter. Huzzah!”

“We’ve said goodbye to condensation on the inside of our windows and look forward to kissing high-energy bills goodbye, too.”




**JACO & BARBARA TEN HOVE**  
Sealed air leaks, insulated attic and installed a ductless heat pump



**DON & JUDY WILLET**  
Sealed air leaks, insulated ducts and crawlspace, and installed new furnace

CALL 877.741.4340 VISIT RePowerBainbridge.org JOIN us on Facebook

Together, we can strengthen our community and create a more energy-efficient Bremerton



CALL 877.741.4340  
VISIT RePowerBremerton.org  
JOIN us on Facebook

**RE POWER BREMERTON**

REPOWER HAS SOMETHING FOR EVERYONE!  
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**RE POWER BAINBRIDGE**

### Utility Partnerships

Value add to utility programs:

- o Marketing & Outreach
- o Leverage utility programs
- o Pilot environment
- o Utility/fuel neutral



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## Challenges

**RE POWER BAINBRIDGE**

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### Neighborhood & Organizational Energy Challenges





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Make the Connection



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Contractor Adoption of New Practices

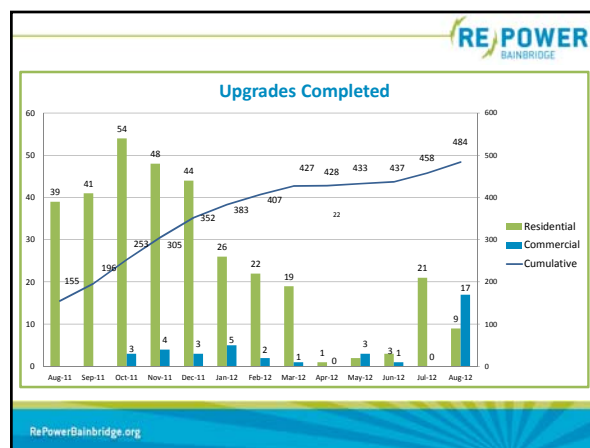
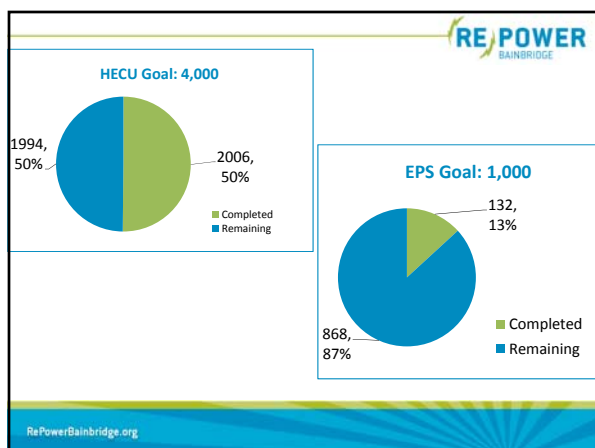
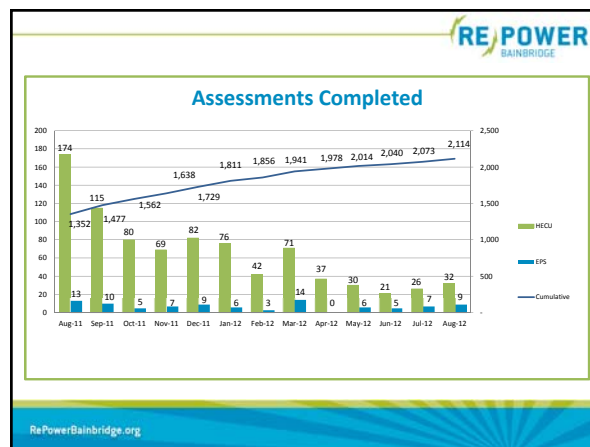
- o Resistance to adopting new specifications manual
- o Slow progress toward BPI certifications
- o Challenging incentive environment: much handholding to raise awareness
- o Contractor drop-out
- o Poor reporting



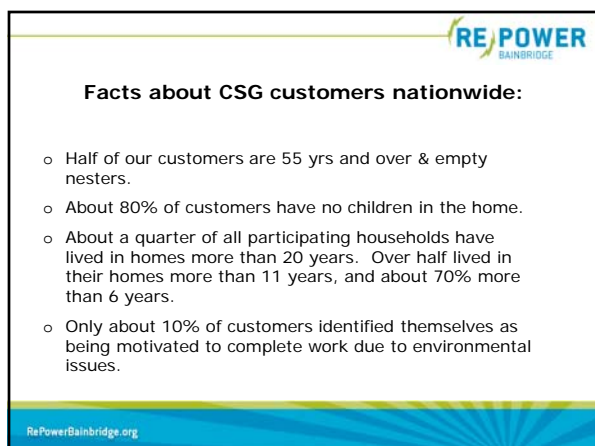
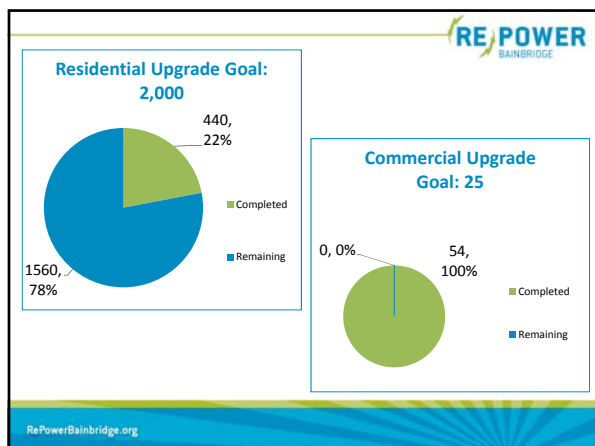
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Results to Date

RE POWER BAINBRIDGE









## Questions?

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## Community Power Works for Home

**Innovation + Investment = Impact**

## Community Power Works

- Seattle's home energy upgrade program
- Funded by Dept of Energy's Better Buildings Grant
- Goal of 2,000 upgrades, 15% energy savings
- 6 sectors
  - Single family
  - Small business
  - Large commercial
  - Multifamily
  - Municipal
  - Hospitals

**STEP 1**  
**ASSESS**

Sign up for a \$95 energy assessment (\$400 value). Work with an energy expert to identify upgrade opportunities and incentives.

**STEP 2**  
**CHOOSE**

Connect with approved CPW contractors to do the job. Learn about built-in financing options.



**STEP 3**  
**UPGRADE**

Receive a free quality assurance inspection. Apply rebates & incentives to the bottom line and enjoy your comfortable home!

## Innovation + Investment



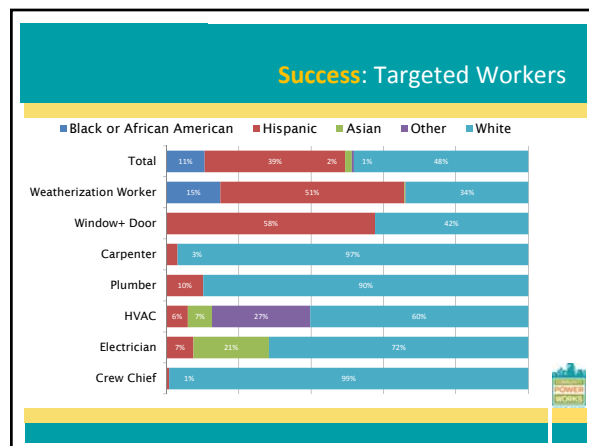
- Retrofit homes & buildings
- Reduce carbon emissions
- Create jobs

- City-managed
- Affordable financing
- Innovative rebate structure
- Community High-Road Agreement

## Impact

- 45,000** tons greenhouse gas emissions eliminated
- \$195,000** annual dollar savings
- 30%** average energy savings per home
- \$5** million private dollars invested
- 730** people employed
- 95%** local businesses

### Success: Customer Investment

- Average cost of upgrade  
= \$14,500
- Average CPW rebate  
= \$2,600 (18%)
- Average utility rebate  
= \$700 (5%)
- Customers with CPW loans  
= 25%

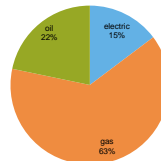


### Success:

#### Marketing to Oil Heated Homes

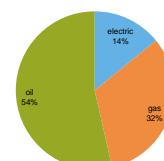
##### Before:

Number of Homes by Heating Type



##### After:

Number of Homes by Heating Type



### Success: Non-participants

- Homeowners with a specific project in mind, i.e. insulation or new furnace
- 30% completed energy efficiency projects outside of program
- Dropout Reasons:
  - Only interested in the assessment
  - Couldn't afford to upgrade
  - Complicated and confusing (since changed)
  - Assessment, loan or contractor issues

• Based on interviews of CPW applicants who "dropped out".



### Success: Customer Service

#### Customer feedback - October 2011:

- No control of the process.
- Lacked basic information.
- Did not understand the program.
- Unrealistic contractor timelines.



- Today: 94% of homeowners would recommend CPW to others



### Challenge: Driving Demand

- Income between \$50-150K
- Children in households: 33%
- Age of home: most before 1959
- Age of customer: 35-44 and 55-64

#### Who want to...

- Save energy
- Lower heating bills
- Increase comfort
- Reduce carbon footprint
- Save energy in larger home improvement project
- Increase home value



### Challenge: Marketing

It's (not) easy.



what if saving (home) energy was as easy as wearing flip-flops in summer?

[communitypowerworks.org](http://communitypowerworks.org)



### Challenge: Marketing

*We Value Comfort for the whole family*



Community Power Works  
Home Energy Upgrades

Limited time rebates up to \$3,700!  
Program ends soon. Sign up now!

Our Experts. Your Choices.  
Sign Up & Live Your Values.

CommunityPowerWorks.org  
206.449.1170

CITY OF SEATTLE  
COMMUNITY  
POWER  
WORKS

City of Seattle's Home Energy Upgrade Program

### Challenge: Marketing

**Is your furnace burning cash?**

SAVE **BIG** ON A HOME ENERGY UPGRADE.  
Instant rebates. Fall specials. Flexible financing available.

COMMUNITY  
POWER  
WORKS

CommunityPowerWorks.org | 206.449.1170 | City of Seattle's Energy Upgrade Program

### Challenge: Marketing

**Throwing money out your windows?**

SAVE **BIG** ON A HOME ENERGY UPGRADE.  
» Your code for instant rebates: CWNFS

Fall specials. Flexible financing available.

COMMUNITY  
POWER  
WORKS

CommunityPowerWorks.org | 206.449.1170 | City of Seattle's Energy Upgrade Program

### Challenge: Marketing

**Cash falling through the cracks?**

SAVE **BIG** ON A HOME ENERGY UPGRADE.  
» Your code for instant rebates: CCKFS

Fall specials. Flexible financing available.

COMMUNITY  
POWER  
WORKS

CommunityPowerWorks.org | 206.449.1170 | City of Seattle's Energy Upgrade Program

### Results: By the numbers

- over **3,100** total signups
- 26** contractors, and growing
- almost **2,200** audits
- 30%** average energy savings per home
- 535** completed upgrades
- over **250** upgrades in progress
- 45,000** tons of greenhouse gas emissions

