Energy Efficiency and Conservation Block Grant Program

THE GARDEN CITY

MISSOULA

HUB OF FIVE VALLEYS

Missoula, Montana

Focus on Green Blocks

- Residential Energy Conservation Pilot Project
- Partnership with Local Utilities: Northwestern Energy and Mountain Water Co.
- Components: Green Blocks Core and Conservation Side Orders

GREEN BLOCKS

NorthWestern Energy

MOUNTAIN WATER COMPANY

Green Blocks Core

- Comprehensive home energy audit
- Installation of energy-saving measures identified by audits
- Insulation upgrades to homes that qualify
- Water-wise home audit

All free of charge

EECBG Goals

- Reduce Energy Consumption
- Reduce Greenhouse Gas Emissions
- Reduce Building Operation Costs
- Promote Green Jobs and Green Economy
- Lead by Example with Community Conservation Efforts

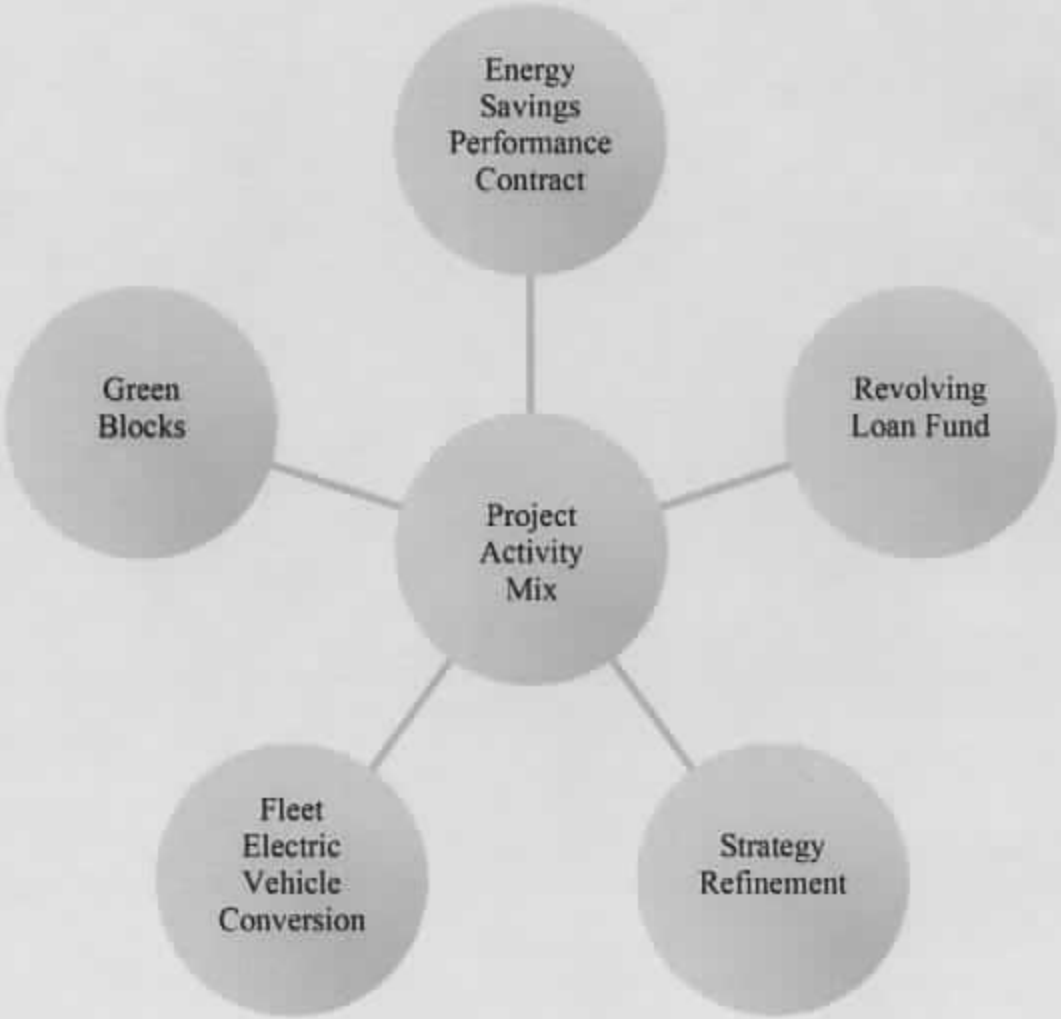
Overview

- Participants organize in two-block areas
- Block captains enlist 90% of homeowners in two-block areas
- Block captains act as City and neighbor point-of-contact
- Homes built pre-1990
- Must be within City limits

Conservation Side Orders

- Companion program to Green Blocks Core
- Organized into Side Orders menu
- Each "menu item" is partnership with local business or agency
- Serves as "one-stop sustainability shop"

Missoula's Overall EECBG Project Activity Mix



- A strategic mix of EECBG eligible activities were chosen that support the broad goals of the City and act as essential pieces to achieve objectives.
- The strategic mix purposefully integrates internal, residential, and business communities; and utilizes innovative financial mechanisms.

Green Blocks Principles

- Demonstrate home energy savings and bring significant energy-saving home improvements to residents in 300 Missoula homes free of charge
- Bring neighbors together and build community
- Encourage the green economy and create jobs

Conservation Side Orders Menu

- Clawson Windows local, energy efficient window replacement
- Sustainable Building Systems Solar Site Assessment
- Precycling/Recycling starter kit
- Missoula In Motion Transportation Options
- Native and Waterwise Landscape Consult
- 1000 New Gardens Urban Ag garden install
- First Interstate Bank Finance Assistance

Recruitment and Outreach

- City Website
- News Media
- Office of Neighborhoods – Community Forum
- Conservation Side Order Partners
- Participant Yard Signs
- Open Houses

Results – To this point

- 16 Two-block areas enrolled
- 174 household audits completed
- 135 homes qualified for free insulation
- Northwestern energy contracted with consultant to accurately calculate metrics
- Average investment in home $1500
- Spring audits begin in April 2011

Contact Information

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http://www.ci.missoula.mt.us/greenblocks

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

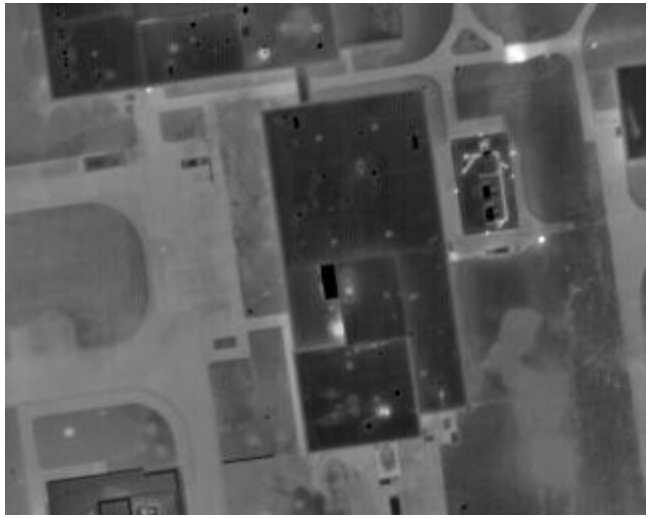
EECBG & SEP Northwest Regional Peer Exchange Meeting

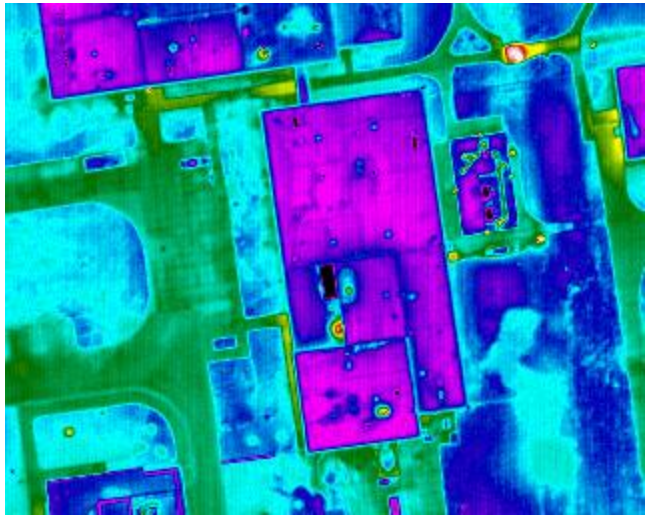
Poster Presentation

Presenter: ***Joni Kuzma, Grand Island, NE***

Topic: ***Aerial Thermal Imaging***

Data Format & Representation



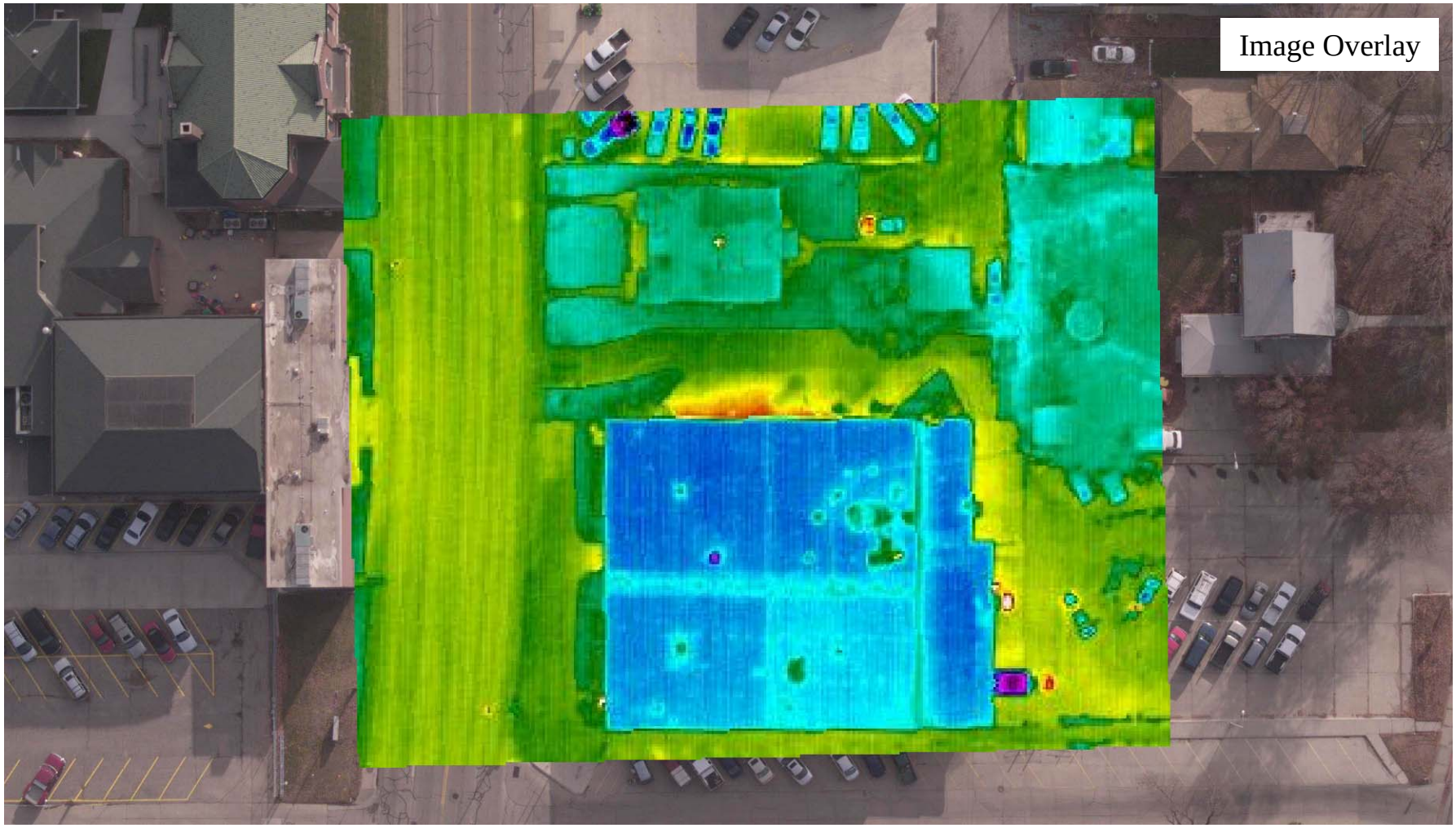


16-bit GeoTiff

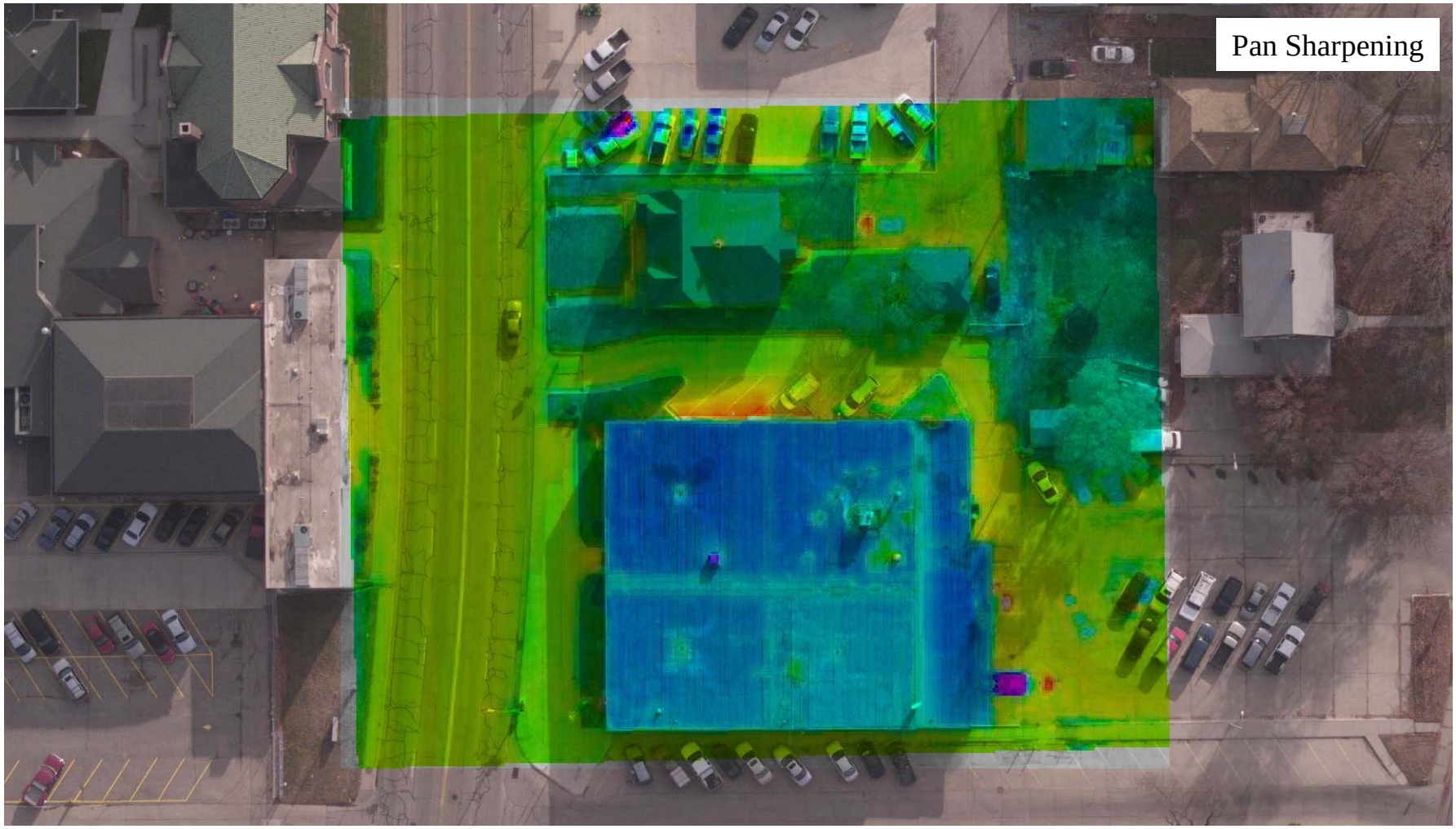
Pixel value represents temperature

Apply color ramp in ArcGIS
- or -
Classify by temperature range

Data Fusion

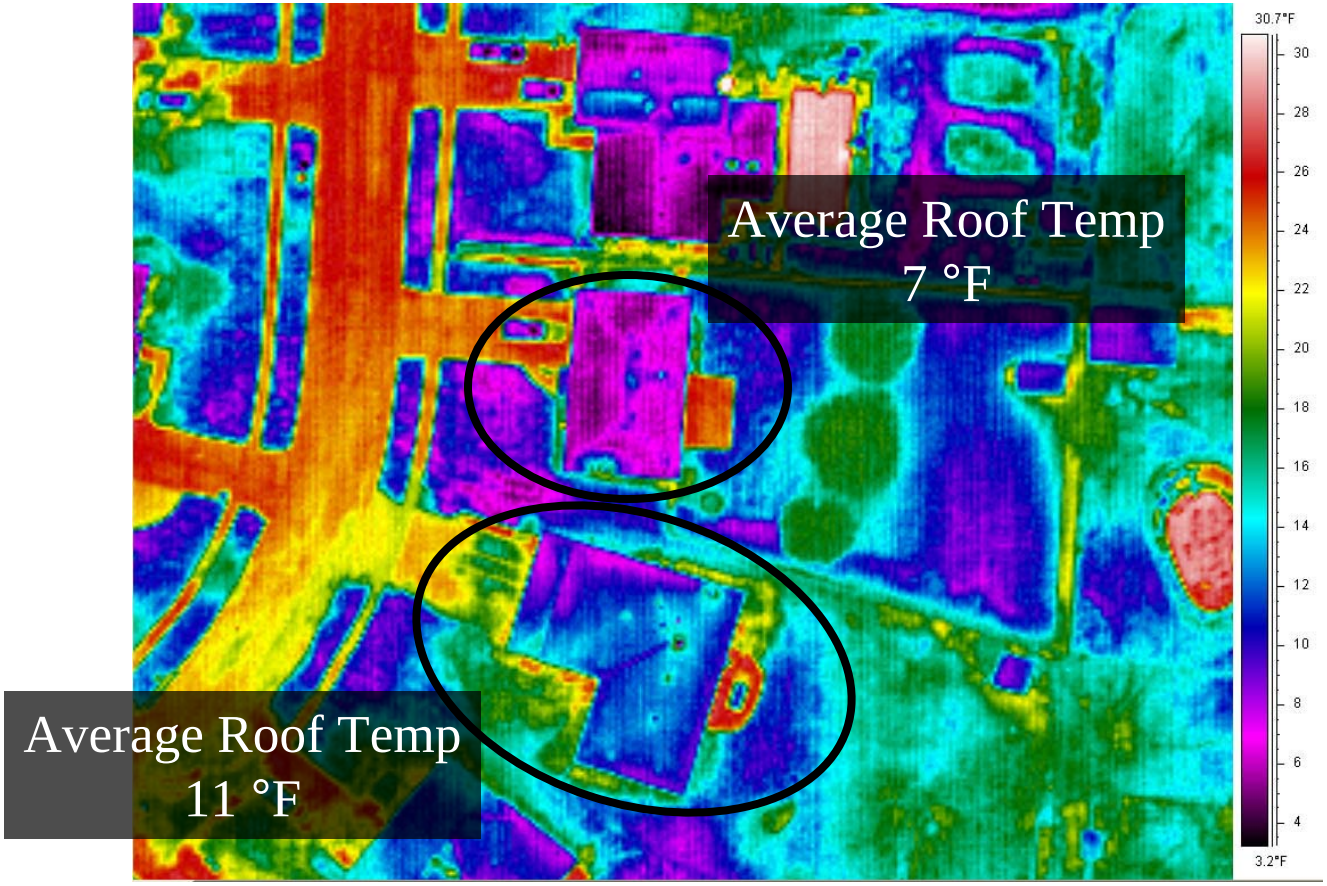


Data Fusion



Building Heat Loss

Green Energy Projects



Northwest Arctic Borough is using EECBG funding to ...

Purchase TED Energy Meters, which are capable of monitoring energy usage in real-time, install them in 260 demonstration households and 10 community buildings. **By leveraging other funding sources, the Borough plans to extend this project to all 2060 households by the end of 2011.**

Monitor energy consumption data for a three- and six-month period, **helping households achieve an estimated average of 10-20% reduction in energy consumption**.

Educate Borough residents on energy conservation through direct outreach and the establishment of energy conservation internships.

Impact on Northwest Arctic Borough

Increased Energy Awareness

The potential of

3,675 megawatt-hours of energy initially conserved

2,763 metric tons of CO2e emissions prevented.

Behavior Change and Community Engagement

- Energy Fair hosted locally at project kick-off
- Youth, kids, and elders involved in activities
- Locally recruited and trained crews
- Recipients are provided information three times – energy fair, day-long home visit, follow-up survey/check-up

GOALS

Lower residential energy burden in rural communities through:

-Behavior change
-Low-cost home upgrades
Create jobs for rural Alaskans

Additional Goals

Demonstrate that **behavior change and simple efficiency improvements** can make an important difference in lowering residential energy costs

Provide a model **component for energy plans** – important to incorporate Energy Wise strategies in holistic energy plans

Utilize one time funding to make a **long-term economic impact** in communities

Feedback from Residents

Reported reduction in electric bills by $20-30/month, with many residents reporting bills dropping by half or more.

Residents reporting that they were warmer the night after the visit, less wind and snow blowing through cracks in windows and doors.

Practices changed with education

Energy Block Grants Work!

CAMPAIGN TO SAVE EECBG

The Energy Awareness project has 3 parts..

1. To install Energy Smart meters in every household
2. To create a intern program for high-school students to monitor their household for energy efficiency.
3. To develop and support Energy related classes at Highschool level and College.

Benefits of having a Smart meter

1. Viewing what the Household cost is:

   Per day, week and month in Dollars..

   This allows for a better budget.

2. Alarm shows and sounds when PCE limit

   is reached @ 500Kwh & rate goes up.

Final Evaluation

University of Alaska's Institute for Social and Economic Research (ISER) measuring project impact.

Evaluation to be prepared by July, 2012, using 12 month before and 12 month after electric bill data.

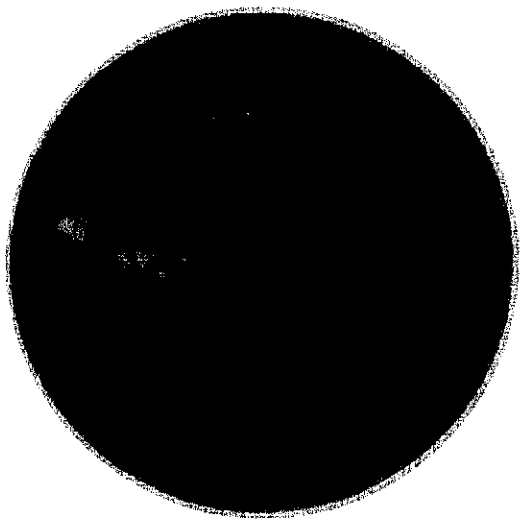
Next steps

Expand the program using RuralCaps Energy Wise

Rural Alaska Community Action Program, Inc.'s

Energy Wise

Program



Rural Alaska Community Action Program, Inc.
Ellen Kazary, Community Development Manager
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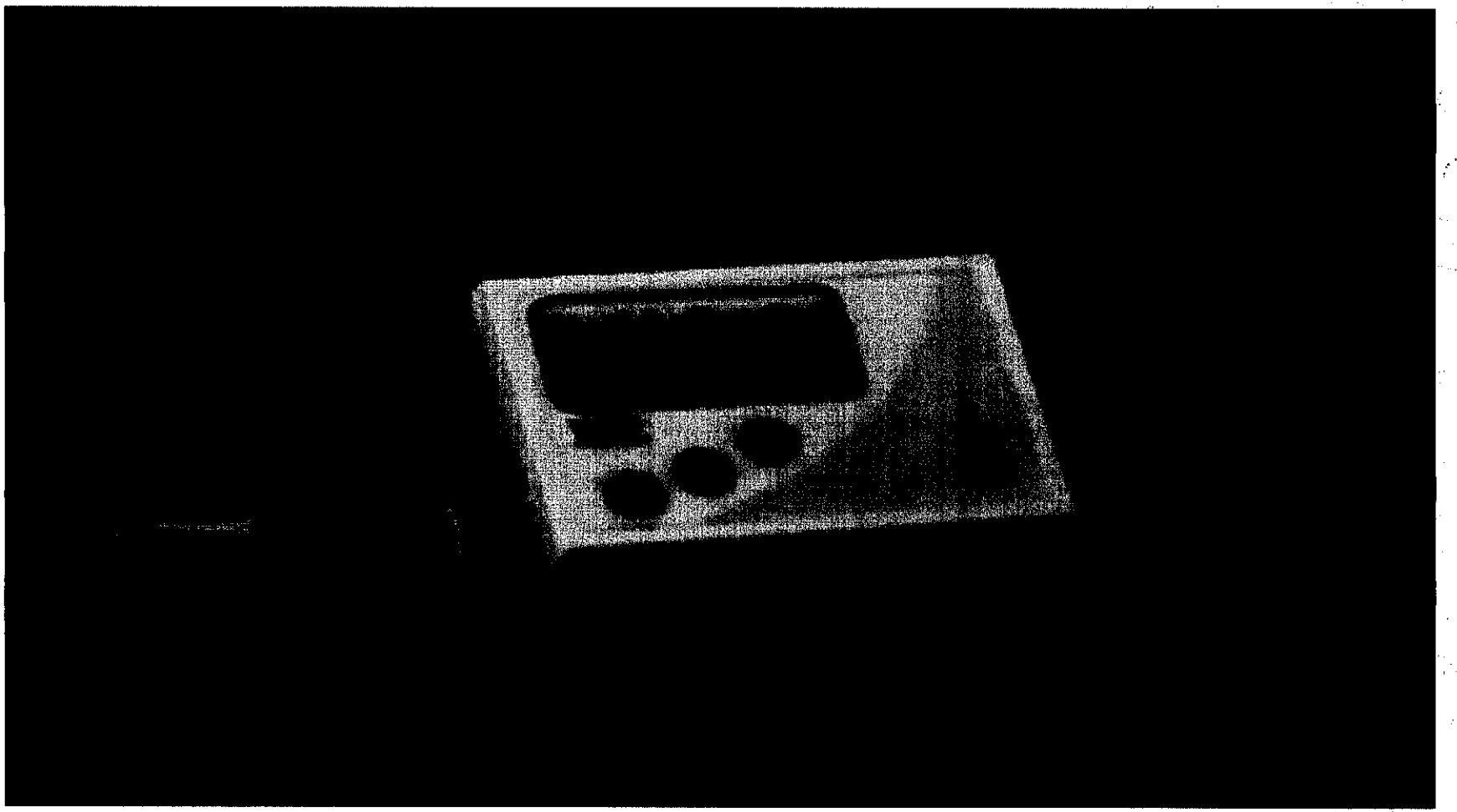
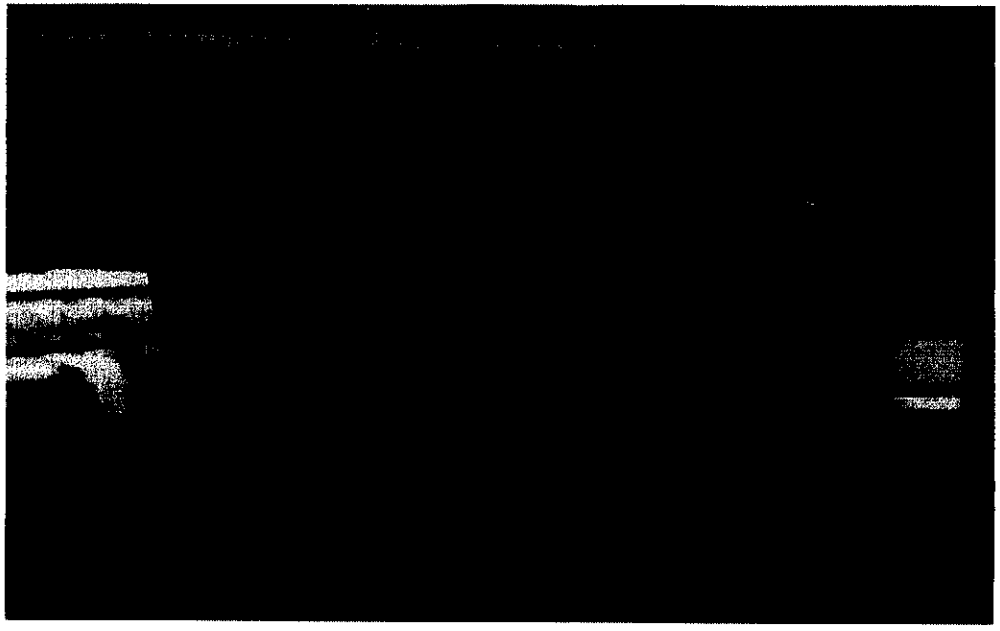
ekazary@ruralcap.com

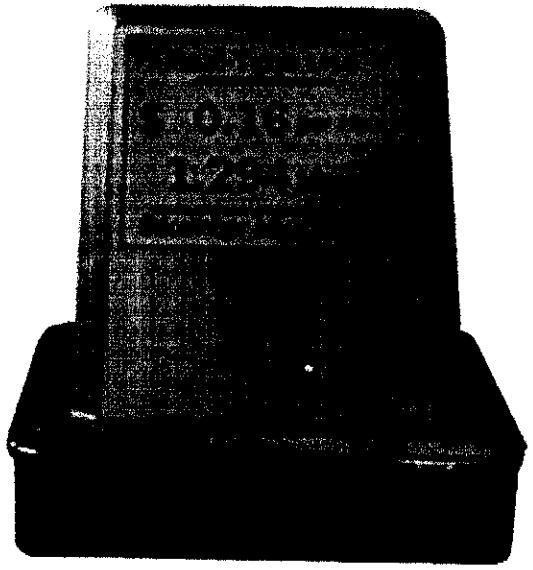
TED 1001 Energy Monitor



The NWAB Energy Awareness Project



TED 5000 Energy monitor



ECOmaha

Overview

Through its partnership with the Department of Energy and the vast array of energy efficiency programs taking place in the City, the Office of Sustainable Development came up with the concept for ECOmaha. The term "ECO-Omaha" is a blend of the acronym ECO and Omaha. The "ECO" stands for "Environment," "Community," and "Opportunity;" while Omaha is the nation's 42nd largest city and the largest city in Nebraska. Learn more at www.cityofomaha.org/ecomaha

Mission

The mission of ECOmaha is to promote integrated decision-making and strategic actions by City government and the community-at-large that foster environmental quality, build community capacity, and advance economic opportunities for residents, businesses, and government. ECOmaha is coordinated by the City of Omaha's Office of Sustainable Development, under the direction of the City's Planning Department.

Green Team

Quick Facts

Establish a Municipal Green Team spanning the City and County

Budget $20,000

Work to develop a Municipal Green Challenge

Meeting held every other month

Work to build institutional awareness of sustainability and energy efficiency measures

Overview

The Office of Sustainable Development is holding bimonthly meetings combining City and County departments into a single Municipal Green Team. The focus of the Green Team will be to establish a Green Challenge that will affect energy efficiency and sustainable measures internally across the municipality. While the City works to promote energy efficiency in our buildings and neighborhoods, the public sector must "walk the talk" internally as well.

Milestones

December 2010—The first Municipal Green Team meeting

January 2011– Municipal survey completed to begin establishing a baseline of employee awareness as it relates to sustainable issues

February 2011 — Second Municipal Green Team meeting; Municipal survey completed and examined

Status

Currently, the Green Team is in the process of voting on a Municipal Green Challenge that will help promote energy efficiency internally across the organization.

EECBG Program Oversight

Quick Facts

Overall project management for the EECBG program.

Budget $385,890

The Office of Sustainable Development is responsible for oversight of each project.

Overview

The Office of Sustainable Development is responsible for the day to day oversight of the Energy Efficiency and Conservation Block Grant program. The City's first Sustainability Coordinator, Kristi Wamstad-Evans, was hired to lead the charge in making Omaha a more sustainable city. Eventually a staff, consisting of 3 additional Sustainability Planners were hired to help Kristi with both the Direct Formula and Competitive grants that the City applied for and obtained or won.

Milestones

September 2009—The City of Omaha hired Kristi Wamstad-Evans as the first Sustainability Coordinator

November 2009– City submitted the EECS to the DOE

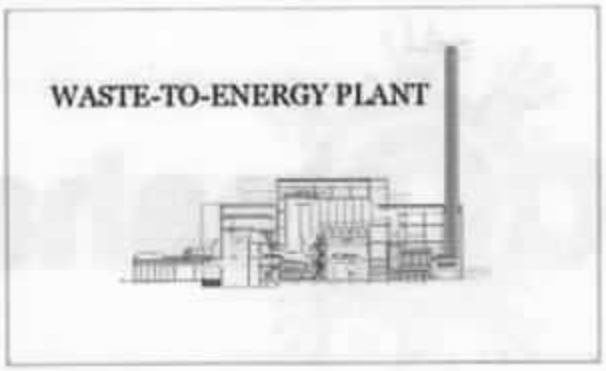
February 2010—City submitted revised EECS to DOE and it was accepted

April 2010 — DOE approves all projects

Status

All projects are moving forward at this time.

Waste to Energy Market Study



Overview

Quick Facts

WTE market study will be performed to examine options for the City of Omaha

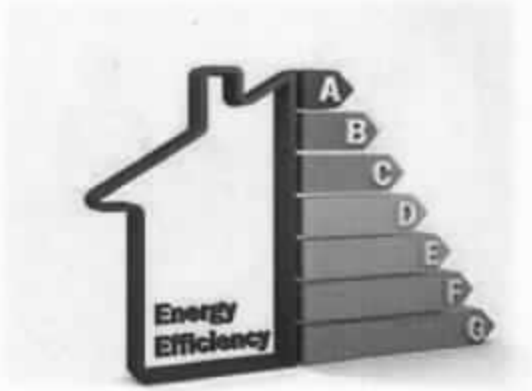
Budget $50,000

The waste-to-energy (WTE) market study will identify the type of WTE systems that would be best suited for the quantity and content of the combined Municipal Solid Waste (MSW), yard waste and municipal raw sewage generated by the City of Omaha.

Milestones

February 2011—A request for proposal is being written to select a contractor who can complete the study for the City of Omaha.

Building Program Retrofits



Quick Facts

Project aims to reduce energy consumption of public buildings throughout Omaha.

Budget $2.1M

Partner with Siemens (ESCO) to effectively and efficiently complete project.

The outcome of the project will be to save the taxpayers money over the long run by reducing the amount spent on using energy.

Overview

The City of Omaha will reduce energy consumption in its public building stock in an effort to save taxpayer dollars as energy costs rise. In order to expedite the completion of the project, the City has partnered with an Energy Services Company (ESCO) who will help examine, advise, propose, and implement different energy efficiency projects through a select inventory of public buildings in Omaha.

Milestones

November 2010—Siemens was selected as an Energy Service Provider for the City of Omaha

December 2010– Contract was entered as a Resolution for the City Council to approve

January 2011 — City Council approved contract with Siemens

February 2011—Siemens held a kickoff meeting at City Hall

Using the information collected from Activity 6, Siemens has prioritized some immediate needs for the municipal inventory

Status

Recommendations will be made to the City of Omaha showing a cost benefit analysis of facilities that need to have retrofits sometime in the Summer/Fall of 2011

Building Program Audits & Assessments

Quick Facts

100 City facilities were assessed and audited

Budget $320,000

Database created to host assessment and audit information

Project to be completed August of 2011

Overview

The City of Omaha partnered with Kiewit Building Group and the University of Nebraska to build a database that would store audits, assessments and historical as well as current energy records for public facilities. The database will be used to help identify future retrofit needs for the City's building stock in an effort to reduce municipal energy consumption.

Milestones

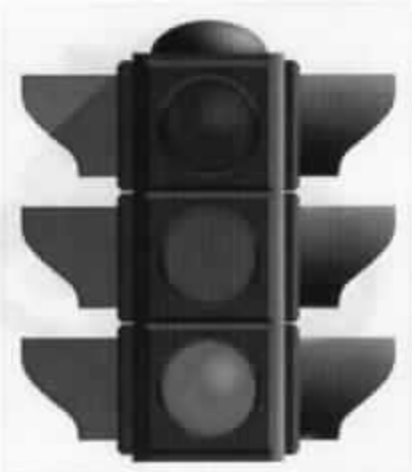
January 2010—Resolution passed City Council for the Approval of UNL and Kiewit Building Group

September 2010—by late September the entire project was completed. Monthly monitoring of the energy savings is ongoing

Status

Currently we are working with a new intern who is scrubbing the data that was collected the first year

Traffic Signal Retrofit



Quick Facts

Replace incandescent traffic lights throughout Omaha with LED's.

Budget $500,000

1,664 LED lights have already been installed

Project scheduled to be finished by August of 2011

Overview

The Omaha Traffic Signal Retrofit project will replace 12" incandescent signal lamps with 12" Light Emitting Diode (LED) lamps in intersections throughout Omaha. A signal lamp is a single unit that may be paired with other signal lamps to form a traffic signal. The most common type of traffic signal is the Three-Colored Ball, a vertical device with a red lamp on top, yellow in the middle, and green at the bottom. Other types of traffic signals may include the Five Section Head, Arrows, and Crosswalk (White Walking Figure/Orange Hand). This project will replace approximately half of the signal lamps currently eligible for replacement within the city. The outcome will be to reduce overall energy consumption for the City of Omaha.

Milestones

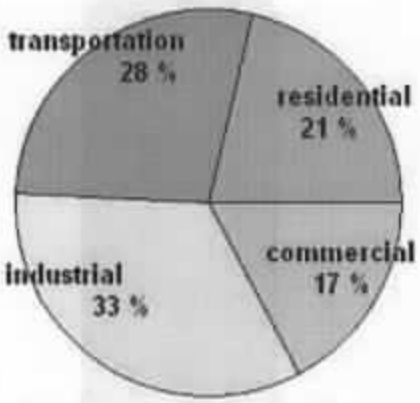
September 2010—City Council approves resolution with contractor to purchase new LEDs from; Public Works orders and begins receiving LEDs to install.

February 2011—Over 1600 LEDs have been installed citywide by our Public Works Department.

Status

Project is moving forward, in fact we are investigating how to purchase more lights to install

Comprehensive Energy Management Plan



Quick Facts

Develop a Energy profile and Emissions inventory for the City of Omaha

Budget $355,779

Energy Profile and Emissions Report are in draft format

40% of project completed

Overview

The City of Omaha contracted with the Brendle Group, a professional energy management firm, to develop a Comprehensive Energy Management Plan (CEMP). This plan will outline both municipal and community wide energy profiles as well as a Greenhouse Gas Inventory. A public survey will also be conducted to capture what the citizens of Omaha think about energy efficiency. The object is to establish a baseline for which the City can begin to reduce its consumption patterns for the citizens in the future which also equates to saving tax payer dollars over the long run.

Milestones

August 2010—CEMP Kickoff Meeting in Omaha.

September 2010—Technical Memorandum to Environment Omaha submitted; started GHG and Ozone Inventory data collection; outline Omaha Energy Profile

December 2010—Drafts completed for Omaha' s Energy Profile and Emissions report sent for review

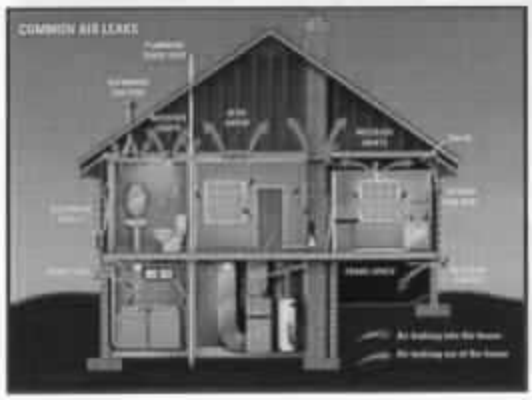
January 2011—Meeting with CEMP Core Team in Omaha; worked on phone survey for the community; began scheduling Focus Group meetings for March.

Status

Project estimated to be 40% complete

March 2011—Will begin the focus group meetings

Orchard Hill Energy Efficiency Project



Quick Facts

Partnership between the Weatherization Trust and the City of Omaha

Budget $250,000

Orchard Hill is a neighborhood with very high poverty and energy consumption rates

Project began in August of 2010

Overview

The City of Omaha partnered with the Weatherization Trust to help retrofit homes in the Orchard Hill neighborhood. Orchard Hill is a neighborhood that has been plagued with poverty and very high energy consumption patterns. The process includes obtaining and approving applications, auditing and then retrofitting homes. Weatherization trust has been retrofitting homes for over 30 years in conjunction with the Weatherization Assistance Program. The goal is to weatherize 100 homes in a single year.

Milestones

August 2010—Weatherization Trust began accepting applications and reviewing them.

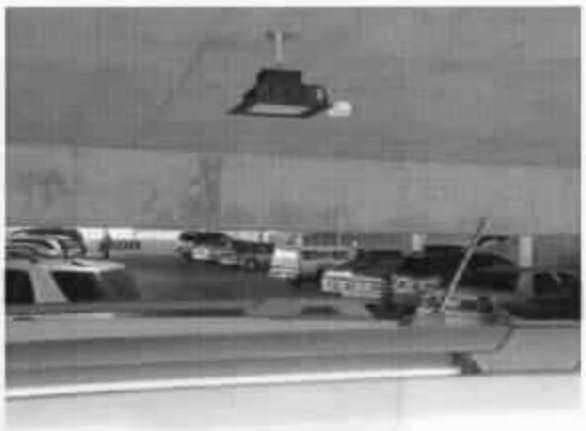
Nov 2010—112 Approved applications and 71 audits had been completed with over 77,000 square feet of floor space being audited.

January 2011—118 Applications approved, 82 audits complete and 7 retrofits complete. Over 92,000 square feet of floor space audited and almost 7000 square feet of retrofits complete.

Status

Project is expected to be completed in August of 2011.

Parking Garage Retrofit



Quick Facts

Replace Metal Halide bulbs with LED's in two public parking facilities.

Budget $285,000

Project cost $266,500

434 bulbs and fixtures were replaced

Project completed in September of 2010

Overview

The City of Omaha worked with the Omaha Public Building Commission to replace 434 metal halide bulbs in two public parking facilities. The LED's were estimated to use about a third less energy while lasting an estimate of 5 times longer. Therefore, not only would there be a reduction in energy savings, but also reduced costs in overall maintenance—saving the taxpayers money.

Milestones

June 2010—A contractor was selected and passed the City Council approval process

July 2010– Contractor began removing the Metal Halide bulbs/fixtures, putting together the LED fixtures and then installing them

September 2010—by late September the entire project was completed

Status

Installation completed; ongoing verification and measurement of energy savings

Energy Efficiency Conservation Strategy

Quick Facts

Establish plan and goals for Omaha's EECBG allocation.

Budget 43K

Project completed in April of 2010.

Overview

On September 8th 2009, the City of Omaha hired its first Sustainability Coordinator to develop the EECS. Kristi Wamstad-Evans, the new coordinator, worked with managers across multiple departments to develop outlines and agendas for each of the EECBG projects.

Milestones

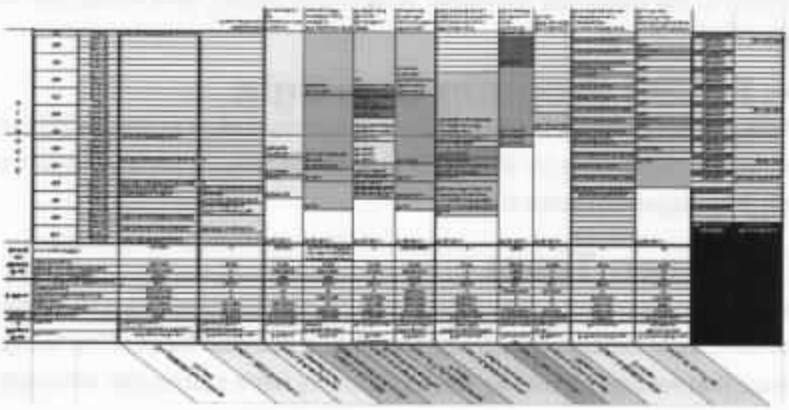
July 2009—DOE awards Omaha an initial $250K of over $4.3M to develop EECS

September 2009—Job created for new Sustainability Coordinator

November 2009—City of Omaha submits the EECS to the Department of Energy (DOE) for review

February 2010—Comments were received from the DOE and revisions were then submitted

April 2010 — DOE approves EECS and all project begin moving forward



EECBG Project in Brief

Activity 1 — Energy Efficiency and Conservation Strategy

The EECS describes the overall EECBG program, states objectives and all activities to be accomplished for the City of Omaha.

Activity 2 — Parking Garage Lighting Retrofit

Working in conjunction with the Omaha Public Building Commission, the Office of Sustainable Development helped replace 434 metal halide lights with energy efficient LED's.

Activity 3 — Orchard Hill Energy Efficiency Project

Working in conjunction with the Omaha Public Building Commission, the Office of Sustainable Development helped replace 434 metal halide lights with energy efficient LED's in two different public facilities.

Activity 4 — Comprehensive Energy Management Plan

The Comprehensive Energy Management Plan (CEMP) is being developed to provide the City of Omaha with an Emission Inventory, overall Energy Profile, and an in depth examination of the current zoning and building codes. An implementation framework will be developed as part of the program to aid the City with improving in each of the aforementioned areas.

Activity 5 — Traffic Signal Retrofit

The City of Omaha will replace incandescent signals throughout its jurisdiction with LED's to help conserve energy consumption and reduce the overall costs for the citizens.

Activity 6 — Building Program Audits & Assessments

The City of Omaha partnered with Kiewit Building Group and the University of Nebraska to conduct audits and developed a database that is able to store audit information and energy records for public facilities. The database will be used to help identify projects for Activity 7.

Activity 7 — City Building Retrofits

The retrofit project will be used to increase energy efficiency in public facilities. The City has contracted with an Energy Service Company (Siemens) to provide the most beneficial energy savings for buildings that were selected within Activity 6.

Activity 8 — Waste to Energy Market Study

The waste-to-energy (WTE) market study will identify the type of WTE systems that would be best suited for the quantity and content of the combined Municipal Solid Waste (MSW), yard waste and municipal raw sewage generated by the City of Omaha.

Activity 9 — EECBG Program Oversight

The Program Oversight project provides the day to day management of all of the EECBG projects. The Office of Sustainable Development is responsible for managing each of the projects for the City of Omaha and uses basecamp as its project management software.

Activity 10 — Green Team

The Office of Sustainable Development has put together a Municipal Green Team that includes members of Douglas County and the City of Omaha. The Green Team has a two year focus of implementing an annual Green Team Challenge that focuses on making the Municipality more sustainable internally.

Program Brief

EECBG: Energy Efficiency and Conservation Block Grant

In July 2009, the City of Omaha was awarded $4,331,500 by the Department of Energy (DOE) to develop and implement energy efficiency projects funded by the Energy Efficiency and Conservation Block Grant (EECBG), a program supported by the American Recovery and Reinvestment Act (ARRA).

reEnergize Program: Building Energy Smart Communities

In November 2009, the Cities of Omaha and Lincoln joined forces to submit a grant application for the Department of Energy's EECBG Competitive Program, first known as Retro-fit Ramp-up and subsequently renamed the BetterBuildings Program. In April 2010, the DOE notified Omaha/Lincoln that they were one of 25 applications selected to receive an award.

reEnergize

Home Energy Score

In December 2010, the Omaha/Lincoln area was selected to participate in a Department of Energy pilot to test a new residential energy labeling tool, called the Home Energy Score (HES). For more information please visit:
http://www1.eere.energy.gov/buildings/homeenergyscore/

CSO! Clean Combined Sewer Overflow Program

The CSO Program is expected to provide the opportunity for additional community benefits such as incorporating Green Solutions and providing other benefits developed in the community criteria. This project is managed by the Public Works Department.
Please view http://omahacso.com/commbenefits.html

City of

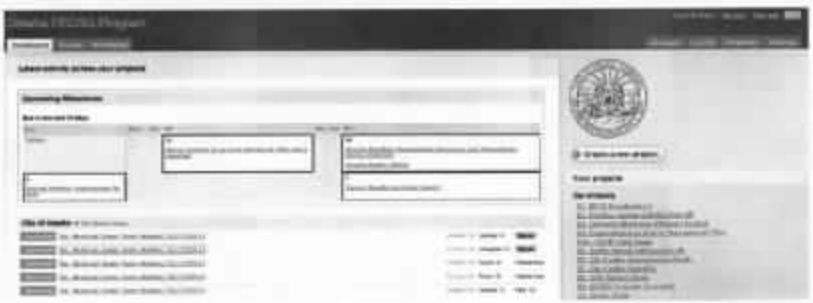
Omaha, NE

The City of Omaha, the most populated city in Nebraska, is located in the central eastern region of the state, across the Missouri River from Iowa. Omaha has a core population of 454,731, with a greater metro area population of 837,000 inhabitants. Omaha is home to a number of Fortune 500 companies, including Mutual of Omaha, Union Pacific, and Berkshire-Hathaway.

In 2009, the City of Omaha hired its first Sustainability Coordinator, Kristi Wamstad-Evans. Within a year, the initiative grew to become the ECOmaha: Office of Sustainable Development, with a staff of four and responsibility for managing over $14 million in projects and programs. The City, through a public-private partnership, recently completed a new Environment Element to their Comprehensive Plan. The Environment Element focuses on enhancing community in the following five key areas: Natural Environment, Urban Form and Transportation, Building Construction, Resource Conservation, and Community Health. (For more information, go to: www.environmentomaha.com)

Program Coordination

Office of Sustainable Development

Philosophy—*The whole is greater than the sum of its parts*

The Office of Sustainable Development collaboratively works with City and County departments, Department of Energy, private industry and the citizens to promote a path forward for future generations to ensure equal access to a wide array of resources. Currently the Office of Sustainable Development has either finished or is working on 11 projects funded through the Energy Efficiency and Conservation Block Grant (EECBG) program. The Office of Sustainable Development is located in City Hall at 1819 Farnam Street Omaha, NE 68183. The current staff consists of: Krista Wamstad-Evans, Eric Williams, Chris Stratman, and Ryan McClure. Basecamp is used as the primary project management software to coordinate all of the Eco efforts that the Office of Sustainable Development takes part in. Other community partnerships that we work with are the Green Omaha Coalition, Healthy Homes Partnership, and LiveWell Omaha. For more information about ECOmaha please visit: http://cityofomaha.org/ecomaha/