Energy Efficiency and Conservation Block Grant (EECBG)
Better Buildings Neighborhood Program

FINAL REPORT

Contract Number  EECBG-ARRA-OEQ-3
Project Title     EnergyWorks KC
Name of Project Director  Marlene Nagel, Director of Community Development
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Executive Summary

Regional energy efficiency efforts led by the Mid-America Regional Council (MARC) achieved the goals established at the outset of the project. Significant achievements were accomplished in areas related to policy development, education and leadership development, demonstration projects and workforce development. In each area, projects were demonstrated to be economically feasible, technically viable and publicly acceptable.

In the policy arena, MARC facilitated the adoption and implementation of new energy efficiency codes in communities covering 73 percent of the region’s population. New codes will enable new residences to be, on average, 20 percent more efficient than conventional homes. Further, MARC laid a substantial amount of groundwork to support the future creation of a Property Assessed Clean Energy (PACE) district in the Kansas City area by developing a model ordinance, a program operations manual, and conducting substantial outreach to area communities.

To replicate successes in Kansas City, Mo., MARC funded six high impact demonstration projects. The revolving loan fund in the Unified Government of Kansas City, Kansas and Wyandotte County, for example, will build upon its initial set of loans to fund improvements in 39 homes, many of which are located in disadvantaged communities. Grants to other two other local government agencies and three non-profits will help build the region’s capacity and support for future energy efficiency investments.

MARC’s efforts notably sought to link workforce development with other energy efficiency investments. Strong partnerships with the three area community colleges, a major university, and two key non-profits proved instrumental in creating and delivering workforce development and job training that exceeded initial goals and expectations. Subgrant awards to six high-impact green workforce training and education projects resulted in 336 individuals trained, 148 individuals placed in employment, and 129 businesses assisted in workforce efforts, incumbent worker training and business development training. The number of individuals trained exceeded initial projections by forty percent, the number of placed individuals reached 106% of target and the number of businesses assisted hit 226% of target.

Public education efforts carried out by MARC extended and reinforced outreach efforts implemented by other project partners. Outreach through regional media outlets, social marketing, the new website, and direct mobile outreach connected MARC with tens of thousands of area residents and businesses.

Several conclusions resulted from collaborative, regional-scale initiatives carried out during the course of the effort. First, an integrative approach linking energy efficiency with other issues such as workforce development, water use efficiency and deconstruction showed impressive synergies, enhancing the overall project impact. It also created community interest in related efforts to reduce soft costs for solar deployment, while expanding the scope of conversations about regional strategies for sustainable development and urban design.

Second, a regional approach added substantial value to the overall effort. While much of the energy improvement investments took place within Kansas City, Mo., there was substantial interest in and support for project goals at the regional scale. A committee composed of regional stakeholders and communities created new points of leadership, stronger partnerships, greater support and understanding about project goals, and expanded regional impacts through investments in efforts in a broader metropolitan geography. The regional consortium of communities built upon previous efforts initiated under the formula Energy Efficiency Conservation Block Grant program. The Regional Energy Efficiency and Conservation Strategy (REECS) committee strengthened the ability of regional EWKC efforts to achieve its goals.

Finally, behavior change at the individual, business and community levels is fundamental to any set of environmental or sustainability initiatives. In EnergyWorks KC (EWKC), clear links between regional and local education efforts created changes in public awareness and understanding that support longer term market transformation for energy efficiency. Moreover, leadership development and neighborhood
capacity building carried out by the Green Impact Zone served to further educate community leaders about energy efficiency opportunities.
Final Technical Report

The Mid-America Regional Council (MARC) assumed responsibility in the EnergyWorks KC initiative to help transform the regional energy retrofit market. To accomplish this goal, MARC sought to spread the ideas, processes and practices developed and carried out in Kansas City, Mo. neighborhoods to communities throughout the metropolitan area.

Specifically, MARC was to address six different goals through EnergyWorks KC initiatives: (i) Foster the development of local, regional and state policy to facilitate the expansion of energy-efficiency improvements for buildings; (ii) Develop a regional energy-efficiency improvements education program to promote energy-efficiency improvements for buildings to the general public by making them aware of the benefits from retrofits, the financing and funding options, and the resources available to help them accomplish the energy efficiency improvements; (iii) Develop a system that provides residents of targeted neighborhoods and others in the metropolitan area who are seeking employment and/or careers, with a path to green jobs; (iv) Develop and implement a process for replicating the EnergyWorks KC model in other parts of the Kansas City metropolitan area, with a particular initial focus on Kansas City, Kan.; (v) support targeted neighborhoods and other communities by providing training and the transfer of techniques and strategies developed in the Green Impact Zone; and (vi) Work cooperatively with Kansas City, Mo., and Metropolitan Energy Center in support of MEC’s development and implementation of a “one-stop-shop” to facilitate access by building owners in the targeted neighborhoods, to energy efficiency evaluations, loans and improvements. Each of these goals was met during the course of the project.

Under the six pillars of the EnergyWorks KC program, MARC’s goals and objectives fulfilled three areas: (1) Driving Demand (2) Workforce Development (3) Financing and Incentives.

Driving Demand

One of MARC’s objectives was to develop a public education program to increase the awareness of the benefits of energy retrofits and resources. MARC’s marketing vendor, Vireo, developed a public outreach campaign that would take information about energy upgrades to the public and in places where face-to-face conversations could happen. Some of the outreach took place at trade shows and festivals, but the majority of these conversations were at hardware stores, where it was possible to engage citizens who were already interested in — and often, in the middle of — home improvements. In some cases, staff held 36 events, with mobile meetings at a single location three times — one meeting for each phase of the campaign: lighting/furnace efficiency, air sealing and water efficiency.

Social media played a significant role in regional outreach activities. MARC and Vireo used Facebook and Twitter to spread the word about where and when the mobile meetings would take place (usually stressing the giveaways visitors would receive). Social media outreach served to open a dialogue about the human face of energy efficiency — that it’s not just good for the environment, but saves money and increases comfort. In most cases, the audience was directed to the Beyond The Bulb website, encouraging individuals to take a survey, learn about and get an energy assessment, and make energy improvements to their home through do-it-yourself (DIY) efforts or an approved energy contractor.

Policy development efforts also played a significant role in driving demand for energy-efficiency improvements. Specifically, communities throughout the metropolitan area adopted the International Code Council’s (ICC) 2012 International Energy Conservation Code (IECC). The EnergyWorks KC staff at MARC coordinated a series of meetings over 18 months with local building officials, members of the Home Builders Association, and local design and construction professionals on the costs and benefits of the ICC energy efficiency codes. As a result of these MARC-led discussions, more than 1.4 million, or 73 percent of the 1.9 million people living in the metropolitan area, live in cities that have adopted the 2012 ICC energy code. A second benefit of the effort from the perspective of developers and builders is that
these communities now use the most current edition of ICC construction codes. Previously, there was no commonality across jurisdictions with respect to what editions of codes were being used.

**Workforce Development**

The EnergyWorks KC program was heavily invested in developing a strong workforce program that would train, certify and place residents in energy retrofit careers. At the start of the program, MARC developed a Green Jobs Taskforce that guided these efforts and enforced strong collaboration between the multiple partners involved. This process led to 336 individuals receiving training. Of those, at least 148 were placed in employment. A majority of the individuals served were unemployed or underemployed, disadvantaged individuals from the urban core.

In 2011, MARC convened the Green Workforce Initiatives Task Force to review existing programs that would support a green career pipeline, identify additional needs and resources for such a pipeline and develop a recommended path forward. At the conclusion of its work, the task force developed a set of recommendations for improvements to the system, including how the EnergyWorks KC grant funds could be invested and developed criteria for selection of grant recipients. The task force comprised members of workforce development organizations, area universities and community colleges, economic development agencies, nonprofit groups and private businesses. The Green Workforce Initiatives Task Force:

- Developed strategies and tactics to strengthen the green jobs pipeline in the Kansas City region, including creating a demand for green jobs, providing training and skill development, and connecting people to green jobs.
- Prioritized those strategies.
- Established criteria for awarding grant funds.
- Recommended a structure to evaluate funding requests and a process to award the grant funds.
- Continued to convene throughout the program to collaborate and discuss status of program activities and green job demand.

Through a grant selection process, MARC identified six organizations within the target area to provide workforce development training programs in support of energy efficiency, water conservation and deconstruction. The goal of these workforce development programs was to put residents of the Kansas City region who are underemployed and unemployed to work in the local community and neighborhoods making energy improvements to buildings.

MARC awarded six organizations with grants ranging from $49,000 to $235,000 to ensure participants received the necessary training and skills for energy retrofit careers to work on EnergyWorks KC projects and other green job opportunities throughout the region. Recipient organizations included:

- Metropolitan Energy Center.
- Kansas City Kansas Community College.
- Johnson County Community College.
- University of Central Missouri.
- Metropolitan Community College.
- Full Employment Council.

The most notable outcome of the workforce development program was the collaboration that resulted in a successful, newly developed deconstruction sector. Deconstruction, or the manual disassembly of a building, creates an alternative to conventional demolition practices. Not only is the embodied energy of the building materials within a structure conserved for reuse, deconstruction creates a resource
conservation strategy that perfectly complements related investments in building energy efficiency improvements.

Over the course of the program, Kansas City Kansas Community College’s Construction Green Up program helped develop a national training curriculum and partnered with Metropolitan Community College and Metropolitan Energy Center to adopt the curriculum metro-wide. Construction Green Up negotiated an agreement with Metropolitan Community College and Metropolitan Energy Center to adopt a national deconstruction and BMRR (building materials reuse and recycle) training standard. That standard was then endorsed by the Building Materials Reuse Association (BMRA), a national industry educational organization. Four individuals participated in the BMRA’s Train-the-Trainer program, ensuring that the Kansas City region retains capacity to deliver high-quality training based on a national standard as the industry develops, rather than continuing to rely on outside training consultants.

The Construction Green Up program worked toward developing the local deconstruction and building materials reuse industry by working with the individual contractors and organizations interested in deconstruction, and by hosting two industry social events to raise awareness and foster dialogue about the field. Contractors learned about the benefits of deconstruction and business opportunities that could help advance their business operations and work with cities on demolition projects.

Grant-funded efforts resulted in the creation of two new non-profit start-up organizations. Green Up, Incorporated, a nonprofit partner organization, is designed to advance economic opportunities for all through green collar workforce development and green entrepreneurship. ReClaim KC is focused on deconstruction and reclaimed lumber. Metropolitan Energy Center took several more steps in the development of a reclaimed lumber processing facility and focused activity on the following objectives:

- Workforce development, to continue to develop the workforce for Kansas City's emerging deconstruction and reclaimed lumber processing industries.
- Business development, to provide visibility and support for designers and craftsmen that utilizes reclaimed wood products in the Kansas City area.
- Market development, to stimulate and organize the market for reclamed lumber in Kansas City.

**Financing and Incentives**

The most significant work related to financing and incentives under the EWKC program was carried out by the Metropolitan Energy Center, Neighborhood Housing Services of Kansas City, Mo, and the city of Kansas City, Mo. However, each of the demonstration grants served as a financial incentive to advance and transform the market for energy efficiency. For instance, two specific grants below were used to encourage substantial additional investment in energy efficiency by homeowners and congregations.

With a $65,000 demonstration grant from the EnergyWorks KC program awarded by MARC, the Kansas Chapter of the Interfaith Power and Light (IPL) association showed nine congregations of multiple faiths how easy-to-do energy-efficiency upgrades can reduce energy consumption and cost by more than 19 percent. The IPL conducted training sessions for volunteers from all nine congregations. These volunteers, with direction from skilled tradesmen, then used their training to complete energy retrofits at all nine places of worship. Efforts carried out through these congregations created extraordinary opportunities for community education and engagement as well. IPL worked diligently to recruit willing congregations to carry out energy efficiency improvements. While IPL succeeded in working with nine congregations, they found that many congregations were unable to participate because of their inability to meet matching fund requirements, because the scope of their project constrained their ability to achieve 15% reductions in energy use, or because of other contextual reasons (e.g. facility issues or staffing).

With $275,000 of demonstration grant money from the EnergyWorks KC program awarded by MARC, the Kansas City, Kan., Board of Public Utilities (BPU) successfully operated the first on-bill revolving loan program for energy-efficiency improvements on the Kansas side of the metropolitan area. A total of
30 homeowners obtained loans and completed energy improvements that reduced energy consumption and costs by an average of 25 percent. As this is a revolving loan program, it will continue long past the end of the EnergyWorks KC grant.

A substantial body of work to develop a PACE, or Property Assessed Clean Energy, program was carried out as well. This work was developed as part of an effort to create a sustainable, institutional mechanism to finance energy-efficiency improvements for commercial properties. As part of this work, substantial legal and financial analysis was completed, including a proforma and a model ordinance for participating communities. Moreover, a well-developed program operations manual was completed, after consultation with representatives from more than one dozen local cities and counties, and interested economic development agencies and other organizations. See Attachment H.

A strong basis for creating the PACE program was developed. However, a variety of factors created uncertainty about the viability of such a program in the current market context. Significantly, a statewide PACE program that was not operational at the onset of EWKC created competition for the proposed MARC program. Moreover, uncertainty about market demand for energy improvements created risk and potential liabilities associated with potential MARC commitments to oversee such a program.

Accomplishments

The overall objective of the EnergyWorks KC grant, and of MARC’s portion of the grant, was to transform the supply and demand sides of the energy improvement market and spread the ideas, processes and practices developed and carried out in the rehabilitation work in Kansas City neighborhoods. More specifically, MARC worked towards four different objectives to accomplish this goal:

- **Policy development and replication**: MARC worked in partnership with the Metropolitan Energy Retrofit Coalition and the EECBG Regional Coalition to develop new policies, approaches and mechanisms to facilitate energy improvements and expand the energy improvement market in the Kansas City metro area. MARC facilitated a series of regional policy discussions culminating in the adoption of the 2012 IECC building codes by the largest city and county jurisdictions in the metro area. Additionally, MARC managed the replication fund to seed initiatives and build capacity in other parts of the metro area, including Kansas City, Kan.

- **Job training and development**: MARC worked with stakeholders to develop and execute a pipeline that trained, certified and placed residents of the targeted neighborhoods and others in need of employment in EnergyWorks KC jobs and energy efficiency careers.

- **Public education**: MARC worked with the Metropolitan Energy Retrofit Coalition and the EECBG Regional Coalition to develop and execute a public education program to increase the awareness of the benefits of energy retrofits and the resources, especially the newly developed Beyond The Bulb website and Energy Calculator, available for homeowners to complete improvements.

- **Training and support for neighborhood organizations**: One of MARC’s EnergyWorks KC elements was to provide outreach to targeted neighborhoods getting residents and property owners involved in the energy-retrofit program. MARC supported this effort by assisting in transferring lessons learned in the Green Impact Zone to neighborhood leaders and community organizations in other neighborhoods and communities. In addition, MARC’s Government Training Institute added a contextually-appropriate training module for neighborhood leaders focused on marketing and outreach.
Objective 1: Policy Development and Replication Projects

Task 1: Work in partnership with the Regional Coalition, the Metropolitan Energy Center, the City, and others, to develop new policies, approaches, and mechanisms to facilitate energy improvements and expand the energy improvement market in the Kansas City metro area.

Target: Convene the Regional Energy Efficiency Conservation Strategy (REECS) committee on a quarterly basis.

Actual: This advisory group was started under the Energy Efficiency and Conservation Block Grant Formula Grant to the City of Kansas City, Mo and expanded under EWKC to include broader representation of the energy-efficiency community. The committee met quarterly and provided input throughout the EnergyWorks KC grant.

Task 2: Advance the formation of a Clean Energy Development Board to be in place by May 2013 to administer a PACE program for one or more jurisdictions in Missouri. Develop support for the adoption of PACE-enabling legislation in 2013 for communities in Kansas. Complete a business plan to support PACE implementation.

Target: Form a Clean Energy Development Board and complete business plan to support PACE.

Actual: A detailed operating manual and financial plan for a PACE program were developed by June 2013. However, a Clean Energy Development Board to operate the PACE program was not put in place by the end of November 2013. The cities of Blue Springs, Lee’s Summit, Raytown, Liberty, Smithville, Kearney, North Kansas City and Clay County expressed a strong interest in PACE. Competition from a statewide PACE program, however, limited the ability of a metro-area program to adequately finance program administration costs.

Even though PACE programs are still new and have not yet survived the test of time, MARC believes that PACE is a very good tool for financing energy retrofits. MARC staff and interested cities are continuing to explore alternative strategies to refine, launch and administer a PACE program. Alternatives exist to work with regional and national financing entities and third-party administrators to oversee a local program in ways that create long-term institutional capacity with effective, accessible financing for energy efficiency.

Task 3: Convene a meeting of area utility providers to define a preliminary road map for getting energy usage data for the six corridor studies currently underway that are funded by the $4.25 million Creating Sustainable Places planning grant from the U.S. Department of Housing and Urban Development.

Target: Convene a meeting of area utility providers and define road map.

Actual: This was not accomplished. After multiple meetings and follow-up discussions, MARC was unable to obtain actual usage reports from Kansas City Power and Light by service area and major type of user (residential, non-residential and institutional).

Task 4: Manage sub-grants totaling $700,000 for six high-impact energy-improvement projects selected to demonstrate the many benefits of energy efficiency and energy upgrades.

a) Board of Public Utilities of Kansas City, Kan.

b) Westside Housing Organization

c) Kansas City, Mo., Parks and Recreation

d) Truman Heritage Habitat for Humanity

e) City of Roeland Park, Kan.
f) Kansas Interfaith Power and Light

Target: Manage six energy-efficiency improvement projects to demonstrate how residential and nonresidential property owners can successfully reduce energy costs and comfort.

Actual: A project solicitation was held to accept applications and to raise the visibility of the EWKC program. Six projects were selected. These projects were successfully executed, creating viable local models demonstrating the value of energy efficiency in a wide variety of building types, institutional contexts and jurisdictions.

Truman Heritage Habitat for Humanity converted an 80-year old school maintenance building into a ReStore to sell used and surplus building materials. EnergyWorks KC provided $75,000 to demonstrate a number of energy-efficient products and techniques in the building. As a result, energy consumption was reduced by 45 percent. Moreover, the ReStore facility supports do-it-yourselfers, who constitute a clear demographic with an interest in energy-efficiency improvements.

The Westside Housing Organization (WHO) remodeled a historic fire station using a $100,000 EnergyWorks KC grant to incorporate a number of energy-efficiency applications that can be displayed for public education and be easily replicated elsewhere in the neighborhood. EnergyWorks KC supported improvements for windows, lighting, insulation and energy efficient heating and cooling. NeighborWorks America, of which WHO is a charter member, also contributed funds to get the roof, and tuck pointing done and Bridging the Gap (BTG) contributed Eco kits, made available by a grant from the City to BTG under a separate contract, to reduce water consumption.

Interfaith Power and Light (IPA) used $45,000 to do energy-efficiency upgrades in nine places of worship for an average energy savings of 19%. The IPA trained volunteers in each congregation on how to make energy-efficiency improvements. Energy efficiency projects were conducted at the following churches:

- Kansas City Community Church (KCK), 5901 Leavenworth Road, Kansas City, Kansas
- Center of Grace United Methodist Church, 520 South Harrison Street, Olathe, Kansas 66061
- Grace Covenant Presbyterian Church, 11100 College Boulevard, Overland Park, Kansas 66210
- Victory Hills Church of the Nazarene (KCK), 6200 Parallel, Kansas City, Kansas
- Bonner Springs United Methodist Church, 425 W Morse, Bonner Springs, Kansas 66012
- St. Andrews Christian Church, 13980 W. 127th Street, Olathe KS
- Lutheran Church of the Resurrection (OP), 9100 Mission Road, Prairie Village, Kansas 66208
- New Hope Church of God and Christ (Olathe), 1400 W. Santa Fe, Olathe, Kansas 66061
- Countryside Christian Church (Mission), 6101 Nall, Mission, Kansas 66203

Roeland Park, Kan., used $75,000 to carry out a program, to improve the energy efficiency of historic homes, in which six workshops on energy efficiency were conducted in the community. Community volunteers assisted professionals as they completed significant energy efficiency upgrades in five historic homes in the community and two light retrofits on two historic homes. The energy consumption and costs went down an average of 56 percent in the six homes receiving substantial retrofits based on energy audits conducted by High Performance Homes.

The Kansas City, Mo., Parks and Recreation Department completed a major remodel of the Brush Creek Community Center, to incorporate energy efficiency equipment, lighting and upgrades to the building automation system. Based on the nature of improvements made and attendant calculations about energy efficiency improvements, the Community Center anticipates saving over $16,000 annually or over 35% of the existing utility costs of $42,500.00 annually.

The Board of Public Utilities (BPU), a municipally-owned utility in Kansas City, Kan., used $247,240.83 to restart a very successful residential and small-business revolving loan program that lost its funding in 2011. BPU made loans for 30 energy retrofits and expects to make future loans as existing loans are repaid. There was 25.29% Average overall percent energy savings for all completed projects.
Task 6: Initiate and complete a program evaluation of MARC’s effort to support the transformation of the energy-improvement market.

Target: One program evaluation of replication projects

Actual: Shockey Consulting completed a program evaluation in the summer of 2013. The report demonstrated the viability and impact of community demonstration and workforce development projects. See Attachment A.

Success Stories — Policy and Replication

Replication Projects

With a $75,000 demonstration grant from the EnergyWorks KC program awarded by MARC, the city of Roeland Park, Kan., and Historic Green, a national non-profit organization, showed how a community can teach its residents how easy energy improvements are to do and, at the same time, develop excitement around preserving a community’s historic homes. The city and Historic Green conducted three training sessions on Saturdays on how to do energy-efficiency improvements. The trained volunteers, guided by the Historic Green staff and local tradesmen, then completed fairly substantial retrofits on five historic homes and two light retrofits on two historic homes. All the homes were on two connecting blocks. Based on pre- and post-audits, the energy consumption and costs went down an average of 56 percent in the six homes receiving substantial retrofits.

The Truman Heritage Habitat for Humanity in Independence, Mo., was converting an abandoned school maintenance building into a ReStore that would generate revenue to build and remodel more homes in the community, and that would also allow contractors to deconstruct homes and buildings to reduce the amount of construction going to the landfill. Using a $75,000 demonstration grant from the EnergyWorks KC program awarded by MARC, Truman Habitat was able to incorporate a number of energy efficiency practices into the building so that energy consumption was reduced by 45 percent from what it would have been with more conventional, non-energy efficient construction. Along with the grant money from Energy Works KC, Truman Heritage Habitat also received a donation of siding from a steel siding manufacturer to reside the entire building. The old insulation was replaced with new R-19 insulation and Truman eliminated most of the windows in the building and replaced the rest with energy efficient Low-E windows. They also replaced all the doors and overhead doors, which were uninsulated and did not seal properly, with insulated steel doors. The building was heated with old inefficient shop heaters and there were several window ac units to condition the office areas which were eliminated and replaced with three 95% efficient gas furnace and air conditioners for the Restore area and one electric heat pump for the office area. Two new shop heaters were also placed in the warehouse area.

Regional Energy Efficiency Retrofit Collaboration

MARC convenes a Regional Energy Efficiency Retrofit committee (REECS) on a quarterly basis. The group was initially formed through the collaboration of ten of the fourteen communities that received formula EECBG grant allocations. Communities found that they could most easily meet grant requirements for consultation with adjacent communities through a MARC-facilitated process.

REECS was comprised of members from the public and private sectors. Aside from providing a key forum for networking and information exchange among area jurisdictions on energy efficiency-related issues, the committee provided leadership on a variety of issues, ranging from community education, code updates and professional development. For instance, after learning that mortgage lenders typically do not recognize the additional value that energy-efficient design and construction can bring to a home, this committee decided to sponsor a training session for local appraisers and builders. The training focused on how to calculate added value from energy improvements on home appraisals. With a nominal amount of EnergyWorks KC funding, the author of the new Green Description form prepared by the Appraisal
Institute conducted a day-long training on adding value for energy efficiency design and construction. A total of 33 builders, retrofit professional and appraisers attended this course. Appraisers were able to obtain seven hours of continuing education credits. This training and engagement of builders and appraisers is expected to change appraisal practices to give greater value to a home’s energy efficiency improvements.

**Objective 2: Job Training and Development - Projects**

**Task 1:** Work with stakeholders to maintain a pipeline that will train, certify and place residents of the targeted neighborhoods and others in need of employment in EWKC jobs and energy-efficiency careers.

**Target:** Develop Green Jobs Task Force meeting and convene quarterly meetings.

**Actual:** Formed Green Jobs Task Force and convened 12 meetings with regional partners and developed report on creating a green jobs pipeline for the Kansas City region. See Green Jobs Pipeline Report Attachment E.

In 2011, MARC convened the Green Workforce Initiatives Task Force to review existing programs that would support a green career pipeline, identify additional needs and resources for such a pipeline, and develop a recommended path forward. At the conclusion of its work, the task force developed a set of recommendations for improvements to the system, including how the EnergyWorks KC grant funds could be invested and developed criteria for selection of grant recipients. The task force comprised members of workforce development organizations, area universities and community colleges, economic development agencies, nonprofit groups and private businesses. The Green Workforce Initiatives Task Force:

- Developed strategies and tactics to strengthen the green jobs pipeline in the Kansas City region, including creating a demand for green jobs, providing training and skill development and connecting people to green jobs.
- Prioritized those strategies.
- Established criteria for awarding grant funds.
- Recommended a structure to evaluate funding requests and a process to award the grant funds.
- Continued to convene throughout the program to collaborate and discuss status of program activities and green job demand.

**Task 2:** Manage sub-grants totaling $927,490 for six high-impact green workforce training and education projects designed to train and educate for green workforce development.

**Target:** Train 240 individuals, place 140 individuals, assist 57 businesses and reach $625,128 worth of leveraged funds.

**Actual:** Trained 336 individuals (140% of target), placed 148 individuals (106% of target), assisted 129 businesses (226% of target) and reported $596,343.17 in leveraged investments.

**Full Employment Council**

The Full Employment Council (FEC) developed a Green KC Careers Training initiative to help place individuals trained in deconstruction, energy efficiency and water conservation.

FEC provided on-the-job (OTJ) training, internships and classroom training opportunities for individuals that lasted four to eight weeks. Employer informational sessions were conducted for employers in the construction industry to promote and educate them on the services available to employers who would offer OJT and internships. Job seekers trained with employers in positions such as carpenters, cement
masons, construction laborers, landscape architects, sewer maintenance workers, renewable energy managers and maintenance workers.

Those participants that expressed interest in KC Green Careers were provided job training, classroom training and placement through the KC Green Careers Program. The applicant pool consisted of those with no work experience, limited work experience, as well as customers that had extensive job experience, but needed additional job or classroom training. All job seekers received career counseling and completed assessments to determine their interest and aptitude for positions in the green industry. Jobseekers also received resume and interview assistance.

Classroom training for the KC Green Careers program included Occupational Safety and Health Administration (OSHA) Training for construction workers, sustainable material handling for construction and warehouse workers and North American Technician Excellence (NATE) certification for HVAC (heating, ventilation and air conditioning) workers.

FEC worked with several employers throughout the region to place individuals in employment and training opportunities. For example, building upon the grant’s interest in water-use efficiency, a local employer hired participants to complete a rain garden on the 2nd Street Trail at Holmes near the River Market area. The clients built the rain garden during their internship with the Downtown Council of Kansas City.

### Full Employment Council Metrics

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**Johnson County Community College**

Johnson County Community College’s [Center of Sustainability](#) and hospitality program partnered to develop a Sustainable Hospitality Internship Program that was developed to create a pipeline for green jobs into the Kansas City region’s hospitality industry. Johnson County Community College (JCCC) provided area restaurants with the labor and capital resources necessary to get them started on making their operations more sustainable by focusing on energy- and water-efficiency improvements. Restaurants are among the most energy-intensive commercial buildings per square foot in the United States, so JCCC expected plenty of improvement options.

By working on the operational management side of area restaurants, JCCC students received on-the-job training. Grant funds provided restaurants with compensation for employee time dedicated to the student’s internship duties, funding for capital investments in energy and water efficiency, and internship training.

JCCC increased awareness among Kansas City restaurants and hospitality management students about ways to implement energy and water efficiency and sustainability in restaurant operations. Restaurant partners who were not building owners were able to make energy- or water-efficiency improvements with equipment and process changes with the purchase and replacement of energy efficient appliances. These included:

- An induction cooktop to replace the use of single burner butane cook stoves, which is estimated to result in a 38 percent reduction in energy use, as well as reduce ambient heat load on the HVAC system and eliminate butane canister waste.
• An electric immersion circulator to cook in an insulated hot water bath instead of a natural gas oven. This is estimated to produce a 79 percent reduction in energy use, as well as a reduced ambient heat load on the HVAC system.

• Repair of an oven with a door that would not shut completely, leading to constant heat loss into the building, excess natural gas use to keep the oven at temperature, and placing extra load on the HVAC system.

Several of the restaurants who were partners in this program are still in the process of pursuing a Green Restaurant Association certification. There are currently no independent restaurants in the Kansas City Metro that have earned this certification. Once the first restaurant and others complete the certification, JCCC hospitality management students will be well-positioned to assist in supporting continued progress in this process upon completion of the sustainable hospitality internship program.

The restaurants that participated were: EBT, The Farmhouse, Room 39 - Mission Farms, The Rieger Hotel Grill and Exchange, Pot Pie, Michael Smith, Extra Virgin, Christopher Elbow Artisanal Chocolates and Glacé Artisanal Ice Cream.

Christopher Elbow Artisanal Chocolates was the only business JCCC partnered that owns its own building. Thus, it was the only business able to make structural energy-efficiency modifications to its building. The business installed an insulated barrier wall between the shipping and receiving area and the rest of the chocolate production space. It will decrease utility bills and carbon footprint. The barrier wall will prevent outside air from infiltrating the cooled production area and also decrease the amount of space that the HVAC equipment must heat and cool.

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Kansas City Kansas Community College

Kansas City Kansas Community Colleges (KCKCC) piloted a Construction Green-Up training program to prepare individuals for employment in deconstruction related jobs.

KCKCC’s Construction Green Up program was a six-week intensive training class designed to prepare unemployed and underemployed Kansas City metro area adults for a variety of careers related to deconstruction and building materials reuse. The trainees were recruited and supported through a network of community partners throughout the training, and connected to KCKCC’s network of industry contacts to help place successful trainees in employment. KCKCC recruited trainees in a variety of ways. They partnered with Kansas Workforce Partnership, advertised through flyers and radio and leveraged KCKCC’s broad network of workforce development partners. The program started with a tryout process which KCKCC described as indispensable. Because of the intense training schedule required to complete the industry credentials offered, it was important to gauge likely performance in the program before training began. Selecting applicants was a labor intensive process over two days but allowed KCKCC to quickly determine how trainees would perform in an intense team setting and allowed evaluation of trainee’s transportation capacity. The process yielded much more information about a trainee’s likely success that would not have been possible through application and testing alone. It also provided a forum for trainees to get to know community partners and prospective employers before they even began training nd it game program staff an opportunity to build new partnerships.
Over the course of the program, Construction Green Up helped develop a national training curriculum and partnered with Metropolitan Community College and Metropolitan Energy Center to adopt the curriculum metro-wide.

Finally, the Construction Green Up program worked toward developing the local deconstruction and building materials reuse industry by working with the individual contractors and organizations interested in deconstruction and by hosting two industry social events to raise awareness and foster dialogue about the field.

Construction Green Up added six additional environmental industry credentials at no additional cost by developing a partnership with OAI, a national workforce training organization whose environmental remediation program is administered locally through Metropolitan Energy Center.

The businesses served included Heartland Habitat for Humanity; Joe Vaught Realty; ReThink Energy; Dickens Demolition; and others. In each case, Green Up trainees, staff and contractors helped evaluate plan or execute a hands-on building materials reuse project, ranging from feasibility evaluation and clean out and preparation to selective deconstruction salvaging.

Construction Green Up negotiated an agreement with Metropolitan Community College and Metropolitan Energy Center to adopt a national deconstruction and BMRR (building materials reuse and recycle) training standard endorsed by the Building Materials Reuse Association, a national industry educational organization. Four individuals participated in the BMRA’s Train-the-Trainer program, ensuring that the Kansas City region retains capacity to deliver high-quality training based on a national standard as the industry develops, rather than continuing to rely on outside training consultants.

<table>
<thead>
<tr>
<th>Kansas City Kansas Community College Metrics</th>
<th>Target</th>
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</thead>
<tbody>
<tr>
<td>Trained Individuals</td>
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Metropolitan Community College

Metropolitan Community College trained individual contractors and laborers in abatement and deconstruction and offered small business development training to new and small deconstruction related businesses.

MCC focused on deconstruction and worked with KCKCC and MEC to create a pipeline of workers from deconstruction training to environmental remediation employment. MCC worked with the Building Materials Reuse Association (BMRA) to develop a curriculum for workers, contractors, trainers, certification and supporting materials. KCKCC delivered the pilot training for workers and local trainers. MEC referred workers to the training and was involved in contractor training discussions. MCC also delivered environmental remediation and OSHA training as well as an on-the-job training link to employment. With the desire to contribute to setting national standards for the emerging deconstruction industry, MCC contacted BMRA (the Building Materials Reuse Association) a non-profit educational and research organization whose mission is to facilitate building deconstruction and the reuse/recycling of recovered building materials for over 150 members. BMRA had a goal of creating a national certificate and training program for deconstruction. Through the EnergyWorks KC grant, MCC developed curriculum, a national certificate, and train-the-trainer materials to provide national standards and local trainers for Kansas City for a basic worker level training as well as a more advanced Project Management training for existing contractors. See Attachment F to view the train-the-trainer curriculum. A sample of the first session for the deconstruction worker training curriculum can be found in
Attachment G. The Kansas City area is designated as a BMRA regional affiliate through 2016 and has gained two local trainers.

The partnership with MCC/KCKCC/MEC identified the need for a new approach to deconstruction to address abandoned and decaying buildings. The new model will create a market for recycled lumber to add value to deconstruction projects so they may become competitive with demolition price points allowing cities to support deconstruction initiatives while cleaning up the neighborhoods.

In partnership with MCC, The UMKC Innovation Center provided construction business management training to 16 individuals, new and small businesses and provided counseling on Kansas City, Missouri’s Section 3 and MBE/WBE certification requirements.

In partnership with MCC, the Full Employment Council provided placement with employers in an on-the-job training program that compensated employers up to 80 percent of the first $5,000 of a new workers’ salary. Forty-one workers were placed in employment, nine of them in the on-the-job training program. This figure exceeded the original projection of placing 32 workers. Placements included union work, environmental remediation, deconstruction and laborer positions on several key projects:

- Kansas City, Mo., Crime Lab project.
- Bancroft School project.
- Placement in several companies, including but not limited to, Heartland Sheet, Kingston/SeaAlaska, ISI Environmental, Green Vets, New Horizons Environmental, Foutch Brothers and LMG Construction.

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**Metropolitan Energy Center**

The Metropolitan Energy Center (MEC) offered training and placement opportunities for contractors and individuals with a focus on commercial energy auditors, weatherization installation contractors and weatherization installation workers.

MEC trained 51 weatherization technicians in eight distinct Home Performance Training workshops under the EWKC Workforce Development Program. The weatherization training conducted under this grant and the improvements funded in MEC’s weatherization lab were designed to:

- Develop a model for fee-based, market-driven training.
- Develop a cadre of instructors with strong roots in the local industry.
- Position MEC to provide training on a regional basis to low-income weatherization assistance program providers and private energy auditors and weatherization firms.

In addition to learning building science, heating and cooling appliances, and weatherization techniques, the trainees participated in EPA Lead RRP (renovation, repair and painting ) training and certification. They also took part in the Healthy Homes for Weatherization Technicians course developed by Children's Mercy Hospital, a local training provider for the National Center for Healthy Homes. The Healthy Homes for Weatherization Technicians was provided pro bono to MEC’s Home Performance trainees on a periodic basis throughout the grant period.
In addition to learning building science, heating and cooling appliances, and weatherization techniques, the trainees also were invited to participate in Environmental Protection Agency (EPA) Lead RRP (Renovation, Repair, and Painting) training and certification. Thirty-one individuals also received Lead RRP certification funded by the EWKC Workforce Development grant. Scholarships were awarded to five individuals covering the cost of certifications or state licensing making these individuals eligible for jobs. These scholarships led directly to job placements or to promotions for underemployed individuals in residential energy auditing, lead abatement, asbestos abatement, hazardous material hauling and environmental inspection.

As a result of the EWKC program, a combustion training workstation has been developed to teach students to observe and diagnose a number of combustion safety and energy efficiency issues that are common in Kansas City area homes. A series of modules have been created to teach insulation of joists, window caulking and weather-stripping, attic hatch insulation and other weatherization techniques. MEC also provided partial scholarships for ten individuals to complete the coursework and certification exam for the American Association of Energy Engineers "Certified Energy Auditor" designation. Six of them completed the training. As a component of each workshop, trainees received hands-on experience by weatherizing houses that were being redeveloped by local community development corporations.

With a two-month extension, MEC took several more steps in the development of the Reclaimed Lumber Processing Facility during the month of October, focusing activity on the project objectives:

- **Workforce development**: To continue to develop the workforce for Kansas City's emerging deconstruction and reclaimed lumber processing industries.
- **Business development**: To provide visibility and support for designers and craftsmen that utilize reclaimed wood products in the Kansas City area through the initiative, Reclaim KC.
- **Market development**: To stimulate and organize the market for reclaimed lumber in Kansas City.

To achieve these project objectives, MEC partnered with a variety of local makers, designers and distributors to provide the Reclaim KC staff with over 40 hours of professionally led, hands-on training. MEC hosted two community events — a hands-on building workshop and an expo featuring makers and designers who use reclaimed materials in a variety of ways.

Reclaim KC worked with Ryan Bennett and Claire Willis of Deadleaf Designs, LLC to offer expert training in advanced tools and techniques used to restore and add value to reclaimed wood to ten trainees, including three reclamation specialists, the Reclaim KC Reclamation Team Lead and six individuals recruited from the community.

Trainees learned proper and safe operation of tools and equipment and learned basic shop skills. In addition to 10 hours of in-shop instruction, each trainee spent an additional 30 hours of hands-on skill application in the workshop, even helping to lead the Community DIY Furniture Building Event.

On October 26, Deadleaf Design staff, five community members and three Reclaim KC staff gathered at 815 Woodswether Road to build small projects from reclaimed antique softwood, donated by John Peterson, sourced from an 1892 warehouse in Leavenworth, Kan. During this event, Reclaim KC staff helped supervise tool stations on which they had been trained. Community members and trainees constructed furniture based on Deadleaf’s adaptable designs, and one participant even featured his work in the Reclaimed Expo.

In late October 2013, 100 community members, makers and designers attended a Reclaimed Social & Expo. DRAW Architecture + Urban Design, 360 Architecture, Cinder Block Brewery and others joined forces to help Reclaim KC celebrate local artists, furniture makers and designers who feature reclaimed wood materials in their project at the Faultless Event Space, which itself is refurbished in reclaimed materials.
MEC took two main approaches to marketing and outreach as market development tools for Reclaim KC. The first was to develop a logo and brand attractive to potential customers, related marketing materials and a web page to host multimedia documentation of the training, events and materials, and a Facebook page to leverage social media. The web address is: www.reclaimkc.org. The Facebook page is at reclaimkc.org.

The second was to produce a versatile photo/video marketing tool documenting and narrating the program activities. The video is hosted at: http://www.youtube.com/watch?v=7ZhA0C3hzeM&feature=youtu.be

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**University of Central Missouri**

The University of Central Missouri's (UCM) National Energy Retrofit Institute (NERI) is a national workforce development program and consortium formed to promote an energy-retrofit model for the residential energy-efficiency sector. UCM received funds from EnergyWorks KC to support two of their training programs, the Retrofit Broker program and Residential Energy Client Service Coordinator (RECSC) program.

The Retrofit Broker program was designed to serve underemployed local real estate professionals that had a desire to leverage their professional skills to help the local energy-efficiency sector grow. The Residential Energy Client Service Coordinator (RECSC) program was created to serve underemployed or unemployed citizens from the MARC service region. UCM procured energy efficiency kits used by graduates to encourage property owners to explore the benefits of energy efficiency and related savings. Many of the kits have been deployed and the remaining inventory will be used (until exhausted) as part of UCM’s sustainability plan beyond the duration of the contract.

UCM trained 45 local citizens in two primary certificate areas including the Retrofit Broker (30 participants) and Residential Energy Client Service Coordinator (15 participants). Of the 30 participants, 29 of them met or exceeded this criterion.

While UCM was not contracted to place a certain number of these graduates, UCM placed at least 14 of them, with more expected, as a part of UCM’s sustainability plan. Much of the momentum will be carried forward through UCM’s sustainability efforts.

Depending on how the term “employers” is defined (many of the real estate professionals who completed the Retrofit Broker class are also small business owners) that number may be as high as 30.

**Task 3:** Initiate and complete a program evaluation of the green workforce development projects to ensure that lessons learned are well documented as part of MARC’s effort to support the transformation of the energy improvement market and the workforce that will lead it.

**Target:** Produce one program evaluation report.

**Actual:** Shockey Consulting conducted stakeholder interviews and research and produced program evaluation in April 2013. See Attachment B.

<table>
<thead>
<tr>
<th>University of Central Missouri Metrics</th>
<th>Target</th>
<th>Actual</th>
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<tr>
<td>Trained Individuals</td>
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<tr>
<td>Individuals Placed</td>
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</tr>
<tr>
<td>Leveraged Funds</td>
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<td>$286,810.85</td>
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</table>
Target | Actual
--- | ---
Trained Individuals | 45 | 45
Individuals Placed | 14 | 14
Leveraged Funds | $39,068.00 | $39,068.00
Businesses Assisted | 4 | 4

**Success Stories — Workforce Development - Projects**

**Deconstruction Success**

The deconstruction program was the area in which the EnergyWorks KC workforce program steered the furthest from initial plans, and yet the results are among the most productive in terms of market transformation in a particular sector. The key strategy was open collaboration that emerged between organizations who had received MARC-EWKC funds for deconstruction. This collaboration resulted in a redesign of the proposed deconstruction training, leading to a much more productive and creative partnership between Kansas City institutions with better outcomes.

The EnergyWorks KC projects began with a pilot project between the city and the Ivanhoe Neighborhood Council. MARC played an integral part in bringing together partners and bringing resources to the table, including training conducted by The ReUse People, placement assistance by Full Employment Council and the Green Impact Zone.

Realizing the overfunding of deconstruction worker training under the EWKC Workforce Development Program, the three agencies funded for deconstruction programs (MCC, Kansas City, Kansas Community College and MEC) came together to work out a common strategy for advancing deconstruction with BMRA in the metropolitan area. The result was a coordinated strategy including curriculum development (implemented by MCC), deconstruction worker training (implemented by KCKCC in conjunction with MEC's Minority Worker Training Program) and deconstruction contractor training (implemented by MEC in coordination with KCKCC's Worker Training).

The products of this collaboration are:

- Kansas City piloted a national curriculum for Deconstruction Worker and Contractor Training for the Building Materials ReUse Association (BMRA).
- In return for investing in this curriculum development, the three participating institutions will be able to utilize the BMRA curriculum without cost in perpetuity.
- Nine contractors participated in the deconstruction contractor training and have begun to participate in deconstruction bid opportunities.
- Contractor-built relationships with deconstruction workers trained through KCKCC's program, resulting in a series of job placements.

**Weatherization and Energy Auditor Training Programs Success**

The most important training and education offered through the workforce development program was concentrated on weatherization and energy auditor training to ensure the Kansas City region would have a qualified and skilled workforce to meet the demands of the expanding energy-retrofit market. Below are a few examples of how individuals successfully completed programs and were able to secure employment.

- Curtis Rouser was an unemployed construction worker for almost two years. He went through the Home Performance Training in April 2012 at Metropolitan Energy Center and during the training was introduced to Luke Smith of Green Improvement Consulting. After Curtis completed the two-week training and received his certificate from MEC, he was hired by Green Improvement
Consulting and continues to work for the company as a weatherization technician. While he is not certified as an auditor, due to his exposure to energy auditing as part of the Home Performance Training, Curtis is also able to assist the building analysts in conducting home energy audits. He hopes to complete the testing and certification process to become a BPI certified Building Analyst at some point in the future.

- Due to the economic downturn of 2008, Dorian Seats and his mother were unable to keep the family remodeling business going. Dorian also attended the April 2012 Home Performance Training and received a Weatherization Technician certificate. A local insulation company, A+ Insulation was donating instructional time and materials for the training and during that time was able to observe Dorian in action. He was hired immediately upon completion of the training and remains employed at A+, where he is now a crew leader.

- At 21, Breauna McGee became our youngest energy auditor. Breauna graduated from Paseo High School and spent a year in college at the University of Central Missouri in Warrensburg with a dream of becoming an electrical engineer. Lonely and short on funds, she decided to move back to her family's house in the urban core, get a job and take classes at area community colleges. With grant funds, MEC paid for Breauna's Home Performance Training, and utilized scholarship funds to assist her in paying for BPI Energy Auditor written and field exams, which she passed with flying colors. Breauna has been interning with several energy auditors, helping them to conduct the audits and write the audit reports. She also was just accepted into the National Energy Retrofit Institute (NERI) program at University of Central Missouri, giving her an opportunity to learn the sales and marketing side of the Home Performance industry.

**Business Assistance Success - Projects**

Several of the workforce development programs resulted in business startups and offered a variety of assistance to companies expanding their operations through the energy-efficiency and/or deconstruction sectors.

- Faith Rivera is a single mother who had been working her way towards a certification as an electrician at the Kansas City Kansas Community College. Faith enrolled in the Home Performance Training at MEC, thinking that it could be a good complement to her electrician skills and would give her some options in terms of jobs as she started her own business. An unusually community-minded person, Faith recruited her electrical instructor and class to rewire MEC's Weatherization Lab (3808 Paseo). She helped build a rain swale and plant native flowers on MEC's Paseo campus and volunteered with Historic Green to weatherize homes in Prairie Village last year. Since taking the weatherization technician training, Faith has launched Rivera Contracting, LLC, conducting weatherization and home remodeling jobs in the metropolitan area.

- After many years as a stay-at-home mom and a number of unfulfilling office and warehouse jobs, Sandy Breedlove decided to grow her woodworking hobby into a small business. Despite tremendous attention to detail and fine woodworking skills, when she enrolled in the Home Performance Training Program, Sandy was still struggling to get her business (called "Handy Sandy's LLC") off the ground. The Weatherization Technician training helped Sandy to broaden her business focus to include weatherization and home remodeling jobs, in addition to fine woodworking. In addition, through the training program, Sandy built relationships with an informal network of women (including Faith Rivera, described above) that were trying to start careers in weatherization, energy efficiency and other construction-related fields. This network has continued past the training, as women provide each other with job leads and work together on projects. Faith and Sandy in particular have worked together on weatherization and home remodeling projects and both continue to build their own businesses.
Patrick Zaiss was an unemployed information technologies technician who had a very small company going. Patrick attended the August 2012 Home Performance training and received a Weatherization Technician Certificate. He passed the BPI written exam for Building Analyst and successfully completed the field exam and certification process. Patrick is currently conducting energy audits for his own company, AssistTech. He has been approved for the Home Performance with Energy Star contractor list and has completed close to one hundred audits.

Donna Sanders is a military veteran who served in the Iraq War. When she left the service, she used her veteran's benefits to obtain training in residential and commercial energy auditing, receiving certifications as a RESNET Home Rater, a BPI Building Analyst, an AEE Certified Energy Auditor, among many others. Then she opened 106 Greenway and began pursuing auditing and environmental abatement jobs. Donna has taken full advantage of the course offerings provided by the Metropolitan Energy Center under EnergyWorks KC, hiring new energy auditors that were trained through the program, participating in the PSD Software Training and sending staff through the AEE CEA certification. Donna has also given back in many ways, both to MEC and to the broader community. She provided leadership to launch a chapter of Efficiency First in Kansas City, provided sponsorships for community events and scholarship funds for new energy auditors. She also participated in many community projects, most recently working with GreenWorks KC to mentor urban core teens in a young women's leadership program. Donna also participated in the Deconstruction Contractors' Training, to learn the techniques of deconstruction and figure out a deconstruction business model that makes sense based upon her capabilities and values. Her company, 106 Greenway, has since participated with certified demolition companies in bids for deconstruction projects and Donna has become a key advisor in the development of MEC's Reclaimed Lumber Processing Facility and Reclaim KC initiative.

Christopher Elbow Artisanal Chocolates partnered with Johnson County Community College (JCCC) to make structural energy efficiency building modifications. They are constructing an insulated barrier wall between their shipping and receiving area and the rest of the chocolate production space. The production space must be kept at a cool, controlled temperature to prevent their products from melting. The barrier wall will prevent outside air from infiltrating the cooled production area and also decrease the amount of space that the HVAC equipment must condition. This improvement will decrease the amount of energy they use, their utility bills and their carbon footprint.

Daniel Felder of REDLEF LLC took the Construction Business Management Training offered by Metropolitan Community College (MCC). As of June 2013 he had purchased an existing company and hired four employees to work in Hardscape (landscaping with stone) and carpentry.

On-the-Job Training (OJT) Success

Through the workforce development initiative the Full Employment Council increased the number of individuals trained in deconstruction, energy efficiency and water conservation jobs by providing them on-the-job training, internship and classroom training opportunities.

John H. came to the Full Employment Council Career Center in November 2012 seeking job placement assistance; he had been unemployed since 2010. They discussed with John the available programs and services. Based on his work background, it was decided the Green KC Careers program would be a good fit. He interviewed with Diggs Construction, an employer who agreed to participate in the on-the-job training program and provide eight weeks of job training. John successfully completed the OJT in January 2013 and was offered full time employment with Diggs Construction, as the manager of renewable energy and energy efficiency at a pay rate of $25 per hour, where he still maintains employment.
Scott T., another program participant, came to the career center after being laid off in 2012. He had previous experience in the construction industry but had been unsuccessful in landing a job. Scott was placed on a six-week OJT with Foutch Brothers LLC as a construction laborer/deconstruction team lead. While on his OJT, transportation and clothing assistance was provided to help him maintain employment. After successful completion of his OJT, Scott was offered full time placement earning $20 per hour. He continued employment with Foutch Brothers until May of 2013 and later became employed with Hussman where he continues to work as a Carpenter Installer making well over $25.00 per hour.

Lakeisha L., a youth using the career center, had very little work experience and was looking to work in the construction industry. She came to the career center for assistance with job training and placement. Lakeisha interviewed with Mega Industries who provided her with an eight-week OJT as a construction laborer. While on the OJT, supportive services for transportation and work clothes in the amount of $300 was provided to help her maintain employment. In August 2013 Lakeisha successfully completed her OJT and was offered full time employment with Mega Industries as a Construction Laborer earning $15 per hour, where she continues to be employed.

Objective 3: Public Education - Projects

Task 1: Conduct educational campaigns about specific measures to take and incentives available to upgrade homes for energy efficiency through the use of news stories provided to public information officers in municipalities and counties across the region; news stories for small business publications; and brochures, posters and tip sheets providing energy efficiency strategies. The campaign may also include radio spots, public service announcements, a media kit and bill inserts. The campaign’s educational focus will change periodically, cycling through lighting, HVAC, air sealing and attic floor insulation and furnace efficiency.

Target:

- Host outreach events: 36 “mobile meetings” in grocery and/or hardware stores, festivals, trade shows, other events.
- Produce the following educational materials:
  - [www.beyondthebulb.org](http://www.beyondthebulb.org)
  - Four sample energy efficiency news stories for homeowners.
  - Four sample energy efficiency news stories for small business magazines.
  - Four themed brochures for each phase of outreach.
  - Poster with overview of EnergyWorks KC for outreach events.
  - One poster corresponding to each theme – four total.
  - Folding energy-efficiency tips card – legal to credit card size.
  - Four radio spots, one for each round of education.
  - Four video PSAs, one for each round of education.
  - Four media kits, one to announce each round of education.
  - Four bill inserts, one for each round of education.

Actual:

Host outreach events — Exceeded original target and hosted 47 “mobile meetings” over a seven-month period, reaching 2,093 people at festivals, trade shows, produce markets and hardware stores. See Attachment C for locations and breakdown by area. An “InTouch” survey was made available to mobile meeting participants via iPads, and was used as an incentive to receive giveaways. Photos from outreach events can be viewed at http://www.flickr.com/photos/marckc/.

Produced the following educational materials:

- The Beyond The Bulb website, www.beyondthebulb.org, was launched Aug. 1, 2012, offering information about energy-efficiency improvements, energy contractors, do-it-yourself information, rebates to individuals, businesses and contractors. News releases were sent out to promote the launch of the Beyond The Bulb website and at least two articles in local publications resulted from this exposure. We’ve had 1,325 unique visitors and 1,972 visits since we launched the site in September 2012. 66 percent of the BTB visitors are return visitors.
- Four sample news stories about energy improvements of interest to homeowners and small-business owners were written and provided to MARC’s Regional Area Public Information Officers (RAPIO) group and other area energy stakeholders for their use in local publications and websites.
- An article on water was published in “Thinking Bigger Business” magazine, a local online and print small business publication in January 2012.
- MARC solicited, edited and submitted an article by Interfaith Power & Light for Kansas City’s Nov. EWKC e-news.
- An email was sent to MARC employees on Nov. 14, 2012 to inform those who are KCMO residents about the rebate and financing opportunities available to them through the EWKC program.
- A feature article on energy efficiency was published in the Air Quality Workplace Partnership e-news, sent to businesses who are members of MARC’s Air Quality program.
- Four themed 8.5x11 brochures for each phase of outreach.
- One 30x40-inch poster with overview of EnergyWorks KC for outreach events.
- One 30x40-inch poster corresponding to each theme – four total.
- One 8.5x11 brochure with an overview of MARC’s EWKC program.
- Bought air time to run two 30-second energy efficiency ads, originally produced for the Regional Energy Efficiency Conservation Strategy, promoting the www.beyondthebulb.org web address. The ads ran 97 times on KSHB TV between Aug. 5 and 23, 2013, during 41 Action News broadcasts (morning and evening), the Today Show and the Live Well Network.
- Four news releases, one to announce each round of education.
- Worked with the Green Impact Zone to produce a white paper, capturing the Zone’s methods for education and outreach, and distributed that information to pass along the lessons learned to educate, engage and involve Zone residents and neighborhood organizations in Green Impact Zone projects and programs.
The Beyond The Bulb Energy Calculator, based on the Department of Energy’s residential calculator API, was added to the Beyond The Bulb website on Nov. 4, 2013 to help residents get personalized energy savings information.

Bought ad space to promote the launch of the Beyond The Bulb Energy Calculator, including print ads in The Call, Dos Mundos, Kansas City Hispanic News and The Globe; 15-second radio spots / underwriting on KPRS and KCUR; and online ads with KCUR and Time Warner Cable. The ads ran from Nov. 11 to 22.

Task 2: Utilize social networking, e-blasts, and mobile marketing. Use MARC’s Twitter and Facebook pages plus its contact list to announce each round of regional education, mobile meeting locations and giveaways. - Projects

**Target:** To engage in ongoing social media outreach

**Actual:** Posted information about KCMO’s EWKC e-news on the Beyond The Bulb website, MARC’s Facebook page and in MARC’s environmental blog.

*17 Facebook posts; 19 Twitter posts*

Task 3: Poll audiences through the Beyond The Bulb website during each education period to determine changes in habits associated with energy usage, types of energy efficiency improvements made and factors that influenced decisions to make changes.

**Target:** Conduct four different polls during various education periods

**Actual:** Conducted ongoing “In-Touch” survey from the Beyond The Bulb website from Sept. 5, 2012 to May 15, 2013, using iPads to offer the survey at the mobile meetings. We used give-away merchandise as incentives for participation, asked eight questions and collected zip codes of participants. A total of 961 people responded to the survey. For questions and data collected by county, see Attachment C.

Success Stories—Public Education - Projects

**Beyond The Bulb**

A concept developed early in the contract period, “going beyond the bulb” was meant to encourage homeowners to go deeper into energy savings by doing more than simply changing to energy-efficient light bulbs. The Beyond The Bulb website ([www.beyondthebulb.org](http://www.beyondthebulb.org)) was created to make it easy for visitors to find information on how to make their homes energy efficient and save money on their utility bills. The website built upon lessons learned through a 2011 MARC energy survey (See attachment C), which noted that people in the region are:

- More energy conscious now than five years ago.
- Already practicing some energy-saving habits at home.
- Generally unaware of the energy saving programs available in their areas.
- Interested in learning about energy conservation.
- Interested in being solicited about energy conservation.
- Learning about energy practices through print media.

The Beyond The Bulb website launched Aug. 1, 2012, as a vehicle to encourage residential and business energy assessments, energy improvements and energy savings. Beyond The Bulb is divided into sections for homeowners, small-business owners and contractors, and provides easy access to energy contractors and assessments. There is a section on financing and incentives, testimonials from customers,
informational videos and more. There have been 1,325 unique visitors and 1,972 visits since the site was launched in September 2012. Sixty-six percent of the BTB visitors are return visitors.

On Nov. 4, 2013, the Beyond The Bulb Energy Calculator was added to the website to help residents who enter information about their home and energy use get personalized energy savings information. MARC will continue to host the website in 2014.

“Mobile Meeting” Public Outreach

The energy survey MARC conducted in 2011 emphasized that people were generally unaware of energy savings programs available in the area and interested in being solicited about energy conservation. With that in mind, MARC and marketing partner Vireo “took it to the streets” in all nine counties of the MARC region to conduct face-to-face conversations with homeowners about saving energy.

Using handouts and posters to generate interest, staff members greeted visitors in various locations – trade shows, festivals, farmers markets and hardware stores – and engaged them in conversation about their energy use. They carried with them iPads and give-away merchandise, offering participants free CFL light bulbs, air sealing kits, programmable thermostats and water efficiency kits in exchange for their participation in an online “InTouch” survey that gathered information about their energy use at home.

Most visitors were happy to comply and take the survey, which often triggered lively conversations about the dos-and-don’ts of energy conservation, and were even happier to go home with products that would save them money. A total of 961 people responded to the survey and provided input on eight simple questions about their energy use, including one about what inspires them to save energy. Most were in agreement about that — it was saving money.

While having face-to-face interactions with the public had been an objective from the beginning of the campaign, the addition of the mobile survey made it easier, allowing staff to offer a fun activity to passers-by as a way to get them interested in energy efficiency.

Objective 4: Training and Support for Neighborhood Organizations - Projects

Task 1: Work with Green Impact Zone staff to evaluate strategies they have utilized in the zone to educate, engage and involve Zone residents and neighborhood organizations in the Green Impact Zone projects and programs.

Target: Produce a white paper

Actual: A meeting was held in July with the Green Impact Zone staff and outreach team and MEC customer service representatives to identify the lessons learned about neighborhood education and engagement from the Green Impact Zone. The white paper was completed. See Attachment D.

Task 2: Using the Green Impact Zone program evaluation/white paper as the basis, the Green Impact Zone met with six EWKC target neighborhoods to share the strategies and lessons learned in the Zone so that these strategies to educate, engage and involve residents can be replicated in other target neighborhoods.

Target: Produce white paper on outreach strategies and conducted meeting with neighborhoods to share outreach strategies.

Actual: Convened stakeholders and representatives of other neighborhood organizations to share lessons learned as described in the white paper. EnergyWorks KC customer service representatives were engaged in the process. See Attachment D.
Task 3: Work with MARC’s Government Training Institute to enhance the current Community Leadership Program (CLP) 50-hour curriculum to include environmental advocacy as part of the facilitation, relationship building, problem solving and community building certificate modules. In addition to the core CLP curriculum, a stand-alone, 2-hour module will be developed to provide more detailed content on environmental advocacy targeting EWKC neighborhood leaders. Two full 50-hour CLP programs will be hosted in EWKC neighborhoods along with 5 standalone environmental advocacy courses in year two.

Target: Enhance GTI’s 50-hour Community Leadership Program (CLP) to include environmental advocacy and host two 50-hour courses in EWKC neighborhoods.

Develop a stand-alone 2-hour module to provide more detailed content on environmental advocacy and hold 5 stand-alone courses in year two of EnergyWorks KC.

Actual: MARC’s Community Leadership Program (CLP), with the support of EnergyWorks KC, was able to host 21 classroom sessions with 612 participants. The CLP is made up of five 10-hour certificate programs, Personal Strengths and Leadership Styles, Facilitation Skills, Relationship Building, Problem Solving, and Community Building. There were five, full CLP programs completed in 2012-2013, averaging 24 registrants per class. In the two-year time period there were 38 graduates that completed the full 50-hour certificate program. In addition, MARC sponsored an Energy Efficiency and Advocacy Training. There were five workshops offered, with 61 registrants. The programs were very well received by the participants and attendee testimonials are below. Additional information can be found at http://www.marc.org/Government/GTI/CLP/Overview.aspx.

Testimonials from the class:

Personal Strengths

- This class was timely; fair; conversations were enlightening, personable and invaluable.
- It was a good class where everyone participated. Very good illustrations and facts were presented.
- She was well informed, knew her subject matter well and was able to explain or relate all materials discussed. I look forward to being a part of Jari Holland Buck's next class.
- Great instruction. Each night I was kept focused and brought into the activities presented. I appreciate what I have been able to receive from the past five weeks. Thank you.

Facilitation

- The information given is enough to make you want to do more. I can't imagine adding to this program.
- Please continue the leadership classes so other people will get an opportunity to learn these techniques.
- Excellent instructor! She not only covered what was in our book, but she also answer question, made examples and made sure that
- I cannot think of anything else Jari Holland Buck could do to improve upon her presentation! Jari was very knowledgeable about every aspect of this leadership class!!! (subject matter). Thanks very much for a wonderful class!

Relationship Building

- What a great opportunity for neighborhood leaders.
• Solid concepts I can apply to my organizations (SGA, EngageKC, Home...)
• Excellent preparation & execution of course. Priceless information learned & can't wait to use it!
• I learned the skills that are vital in having and building a successful relationship.
• Ronelle is a very good teacher and has very good examples in showing the difference in people and pointing out our weakness.

Problem Solving
• I feel that Problem Solving is a much needed class for any person who deals with people. This training fits any type of situation.
• This was an excellent experience. It was well worth the investment of time.
• The program is good for all areas not just the community.
• Great program! Real life examples were good. The “What to do?” and “What not to do?” is for everyone.
• I can’t say enough about the importance of this to committee members.

Community Building
• In a class of its own. A challenge much needed to reach excellence.
• I have learned so much about myself and what it means to be a community leader. Thank you!
• This was an awesome experience for me. Airick Leonard West was a powerful and inspirational coach who was committed beyond anyone I have even known. I referred to this as a “boot camp” lovingly. Airick really made leaders of a group of people who were “clueless” in many ways.
• It was an honor for me to have been a part of this group. I will most definitely give back to the community. I actually felt like this program was more valuable than any college class in business or psychology or leadership or civics.

Task 4: Green Impact Zone will host their Zone Institute for Preparation and Prosperity (ZIPP) which includes the Social Economic and Environmental Training (SEE) curriculum composed of 25 hours over five days. Day 3 is devoted to environmental literacy.

Target: Green Impact Zone will host ZIPP program in August of 2012.
Actual: Under the Green Impact Zone educational umbrella, Green Impact Zone developed their Zone Institute for Preparation and Prosperity (ZIPP) in 2012. Under this initiative, the Zone then established an Essential Employability Skills program and hosted it three times in 2013 with 108 participants.

Complementing the ZIPP program, the Essential Employability Skills (EES) week-long training helps unemployed and underemployed people with job preparation skills. Those who successfully complete the program are entered into the zone’s jobs pipeline and referred to openings with area employers. While there is no guarantee of employment, participants learn skills necessary for seeking employment and becoming productive employees, including resume writing, interviewing, work ethic and proper attire. Since the Green Impact Zone began offering EES training in 2011, more than 100 residents have graduated from the program.

One unique aspect of this EES training session involves a partnership with the Metropolitan Energy Center (MEC) and other agencies to provide environmental remediation and abatement classes for interested students. After completing the five-week MEC course, students will finish with a week of EES training. These students will receive certificates of completion for both the MEC and EES training.
Challenges

One of the most significant challenges for the Mid-America Regional Council in implementing the EnergyWorks KC program was aligning the proposed regional strategies with the implementation of the grant at the city level. A majority of the first year of grant was spent designing and developing the program model which created significant time constraints for MARC to replicate activities which hadn’t yet been implemented.

Additionally, regional market transformation was clearly an aspirational goal. While significant accomplishments were achieved through all aspects of the grant, “market transformation” was impeded by both the loftiness of the vision as well as the inertia resulting from the great recession. Interest in lending was reduced by many area banks. Interest in borrowing was reduced because of many interacting economic factors. And public focus on issues such as energy efficiency was occasionally distracted by other public and private issues and concerns.

Workforce Challenges

MARC was able to move forward with developing workforce development programs, but faced challenges with placing trained individuals in occupations for which there was limited demand. The original goal was to train individuals for jobs created by the demand that would be driven by energy retrofit work from EnergyWorks KC. Due to delays in the ramp-up of the program, job training programs really had to work to drive demand and identify other areas for employment for those trained in certified workforce programs.

Some other specific challenges were identified by grantees that implemented workforce projects:

1. Striking a balance between the depth of training that is likely to prepare trainees for a broad range of employment opportunities, and a length of time that is accessible to unemployed individuals without pay is challenging. Kansas City Kansas Community College believes a training stipend would very likely improve program retention, allowing trainees to resolve certain barriers to employment, improve trainee accountability and generally improve the transition process into unsupported employment. In the future, training without stipends should be limited to six weeks. However, 10 weeks of training with a stipend and some period of paid transitional employment after training would likely yield significantly better outcomes.

2. Johnson County Community College found the day-to-day operations, especially in the restaurant industry, are the business owner’s utmost concern. Attempting to make anything that is not directly related to the business’s core mission into a higher priority is extremely difficult. Every restaurant JCCC worked with sincerely wanted to operate in a more efficient and sustainable way, but finding the time to implement the program was challenging. They also clearly understood the potential benefits, both tangible and intangible, that could result from this program. However, the opportunity cost of taking time away from their core mission always seemed to be too high for them to really focus on making the investments this program offered.

The initial problem that JCCC’s program encountered was liability and risk management concerns. In order for a higher education institution to facilitate paid internship opportunities for students, the institution needs to protect itself against potential legal issues related to on-the-job worker liability. JCCC discovered that they were not able to simply identify an interested and capable student and then match them with a restaurant that was interested in participating in the program. Restaurants were unwilling to put a very short-term worker (one semester) on payroll simply for the internship program purposes. JCCC was also unable to pay a student directly for the time they worked in the internship, as that would then make them liable for potential injury or litigation concerns. The resulting solution was to identify students who were already employees of interested restaurants and reimburse the restaurants for the time students spent on internship related activities.
3. Kansas City Kansas Community College’s Construction Green Up yielded several important lessons about what worked well and what might be improved in the future. KCKCC realized 100 percent placement was simply not a realistic goal. Unemployed and underemployed workers face barriers to employment that are sometimes beyond resolution during a short-term training program and oftentimes broader economic conditions affect placement rates; however, carefully selecting the applicants and staying well-connected to industry helped.

KCKCC also found recruiting relationships with local training providers is critical, but over-reliance on a single partner can cause challenges with both program attrition and placement. Construction Green Up developed an excellent relationship with local Job Corps centers, which provided nearly a third of the second training cohort. Though the partnership was well conceived, it led to a concentration of relatively young trainees, some of whom were not ready to enter the workforce upon graduation from the training program. Further, the concentration of younger trainees presented some classroom management challenges. Finally, the training completion rate among Job Corps-referred participants was much lower than expected.

KCKCC found the tryout process was indispensable. Because of the intense training schedule required to complete the number of industry credentials Construction Green Up offers in such a compressed timeframe, it was important to gauge likely performance in the program before trainees begin. Training cohorts should not be larger than 20. The demand for the training far exceeds the cohort capacity. Consequently, selecting applicants is a labor intensive process. Tryouts should last at least two days and incorporate significant amounts of hands-on group interactions. KCKCC found that this process allowed them to very quickly determine how trainees would perform in an intense team setting, and requiring a two day tryout also allowed them to evaluate trainees’ transportation capacity. The tryout process yielded much more information about a trainee’s likely success that would have been possible through application and testing only.

Policy and Replication Challenges

Significant successes were achieved in the realms of policy and replication. Two key challenges related to the launch of a PACE program were learned during the course of the program. First, a statewide program was developed concurrently with MARC activities, creating both political and economic pressures that challenged the launch of the MARC program. Second, in contrast with other city or county governments that oversee PACE programs nationally, MARC was unable to subsidize staff to launch the program. While discussions with local communities will continue beyond the grant, it will be necessary to generate enough interest to cover administrative costs to launch the program.

Education/ Training Challenges

Regional education and training efforts were generally successful. Some challenges were noted along the way in aligning marketing and promotion of energy efficiency at the regional scale with similar efforts carried out by other organizations in the region. From a logistical perspective, finding and funding staff to work at events that take place in the evenings and on the weekends poses a continual challenge.

Program Sustainability Plans

Policy Development (PACE)
There are two initiatives of MARC’s policy development work that are anticipated to continue after the EnergyWorks KC grant is over. First, broad regional adoption of energy efficiency building codes is projected to reduce energy use by 20% in new residences compared with conventional building practices. The Property Assessed Clean Energy (PACE) program being developed by MARC was looking promising until the two largest cities decided not to participate — the Unified Government of Wyandotte County and Kansas City, Kan., and the city of Kansas City, Mo. decided to join the Mid-Missouri Clean Energy Development Board. These decisions impacted the potential scale of a regional program. Consequently, MARC concluded that there is likely insufficient demand to sustain the administrative costs necessary to operate a PACE program. At this time, MARC is exploring another model for administering a PACE program using a third party program administrator.

**Replication Projects**

The BPU revolving loan program in Kansas City, Kan. will continue into the future. As participating residents pay back their loans, the funds will be used to make new loans to residents on the waiting list. The new ReStore at Truman Heritage Habitat for Humanity will provide the Independence community with an opportunity to reuse building construction materials and keep them out of the construction landfill. The revenue from the ReStore will allow Habitat for Humanity to repair or build additional homes each year for those with limited means who would like to own a home. Interfaith Power and Light will use the nine churches that trained congregation members and completed energy retrofits as examples to other churches of how they can reduce energy consumption and costs, thereby making more funds available for the mission of the church. Westside Housing has completed many housing projects on the west side of Kansas City, Mo. By being able to reduce energy consumption and energy costs, area residents will have the opportunity to increase the affordability and comfort of their homes. The Brush Creek Community Center provides many valuable services for a predominantly low-income urban area. As the community center is operated by the city of Kansas City, Mo. Parks and Recreation Department, it is asked every year to do more with less. By being able to operate more efficiently by reducing energy costs, the community center can continue to provide the same services to the community that it has in the past. The city of Roeland Park, Kan., has seen home owners that participated in the Historic Homes program complete additional energy retrofits. The city also received positive feedback about the program in a citizen survey. Due to the success of the program, the city council is presently considering conducting more Historic Home programs in the future.

**Education and Outreach**

MARC will continue to maintain the Beyond The Bulb website, keeping the financial incentives and news and events pages updated regularly. They will also update the energy-efficiency information as needed.

MARC also plans to keep the Energy Calculator updated as needed, and are hosting it on their in-house servers for easy access.

**Workforce Development**

Several organizations worked together to create a pipeline from training to deconstruction and environmental remediation employment. As a result, a number of activities and programs will continue
for the foreseeable future. MARC will continue to engage organizations through workforce development meetings and share information about the progress of each of the projects.

**University of Central Missouri (UCM)**
UCM and NERI consortium partners will be sustaining their workforce development efforts by providing ongoing consultation with graduates related to property-owner awareness and education, lead generation and general business operations and planning will continue. Because of the synergies between this effort and NERI operations and goals, continued program sustainability efforts are forecasted to continue for the foreseeable future and planning, consultation and support for community events will also be ongoing. UCM will serve graduates and local employers by connecting graduates’ skills with employment opportunities and energy efficiency kits will continue to be distributed.

**Metropolitan Community College**
The MCC/KCKCC/MEC partnership will continue to provide training with the Kansas City regional affiliate for BMRA, with a strong focus on working towards the creation of a downstream market for reused lumber.

**Kansas City Kansas Community College**
To sustain the work of the Construction Green Up program, KCKCC has taken two approaches: First, the Technical Education Center (TEC) has incorporated a building materials reuse course, along with other green construction technology offerings into its Training for Employment (T4E) program. Second, KCKCC has supported the creation of Green Up, Incorporated, a nonprofit partner organization designed to advance economic opportunity for all through green collar workforce development and green entrepreneurship.

**Metropolitan Energy Center**
During the grant period, MEC's name recognition and relationships have gradually grown beyond the Kansas City metropolitan area and, as a result, MEC is getting more trainees from outside of the metropolitan area in parts of Missouri, Kansas, Iowa and Nebraska with less developed residential energy efficiency industries. All of this prepares MEC to continue the weatherization training program on a market-driven basis.

MEC clearly spotted an underserved market in multi-family and small commercial structures in the Kansas City, Mo., metropolitan area. While grants and subsidies can assist in the development of this market, particularly in assisting disadvantaged businesses, it ought to be possible to continue a training program focused on this market with well-targeted fee-based continuing education programs for existing auditors.

Now in its pilot phase, MEC's reclaimed lumber processing facility is designed as an ongoing social enterprise. While it will require additional philanthropic support at the outset, the facility is projected to become self-sustaining within three years. The intent of the processing facility is to strengthen the economic viability of deconstruction by building a market for reclaimed lumber. Thus, if MEC is successful in launching the reclaimed lumber processing facility, not only should the facility become sustainable, but the practice of deconstruction should become more economically sustainable as well.
# Attachments

<table>
<thead>
<tr>
<th>Description</th>
<th>Attachment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Replication Projects Program Evaluation</td>
<td>Attachment A</td>
</tr>
<tr>
<td>Workforce Development Program Evaluation</td>
<td>Attachment B</td>
</tr>
<tr>
<td>Education- Vireo Communication Results</td>
<td>Attachment C</td>
</tr>
<tr>
<td>Green Impact Zone White Paper</td>
<td>Attachment D</td>
</tr>
<tr>
<td>Creating Green Jobs Pipeline Report</td>
<td>Attachment E</td>
</tr>
<tr>
<td>BMRA Train-the-Trainer Curriculum</td>
<td>Attachment F</td>
</tr>
<tr>
<td>BMRA Deconstruction Worker Curriculum</td>
<td>Attachment G</td>
</tr>
<tr>
<td>PACE Program Model</td>
<td>Attachment H</td>
</tr>
</tbody>
</table>
Mid-America Regional Council EnergyWorks KC

Demonstration Projects Program Evaluation

Final Report

The Mid-America Regional Council (MARC) is supporting six organizations in the Kansas City region to provide demonstration projects in energy efficiency, water conservation and deconstruction through the EnergyWorks KC program (EWKC).

EWKC is made possible through a $20 million grant received by the City of Kansas City, Mo. to transform the energy retrofit market for residential, commercial, industrial and institutional buildings throughout the metropolitan area. As part of the effort, MARC developed a green jobs pipeline to provide individuals with a career path for green job opportunities, from training to certification to employment. Participants received the necessary training and skills for energy retrofit careers, to work on EWKC projects and other green job opportunities.

Executive Summary

Since that time, in coordination with MARC, EWKC identified six organizations across the area to support as they make energy efficient retrofits to reduce energy costs. The six organizations are: the Board of Public Utilities of Kansas City, Kansas, Kansas, Interfaith Power and Light, the Kansas City Parks and Recreation Department, the City of Roeland Park, Truman Heritage Habitat for Humanity, and The Westside Housing Organization. The goal is that these projects will demonstrate how residential and nonresidential property owners can successfully reduce energy costs. The following chart outlines the organizations participating, the retrofit improvements, and their goals for the improvements.
<table>
<thead>
<tr>
<th>Project</th>
<th>Description</th>
<th>Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kansas City Board of Public Utilities Loan Fund</td>
<td>0% interest loans to residents &amp; small business owners for whole building energy efficiency improvements to be repaid through monthly utility bill.</td>
<td>39 loans to homes and small businesses; repayment of loans to help fund continuation of the project.</td>
</tr>
<tr>
<td>Kansas Interfaith Power &amp; Light</td>
<td>Energy retrofit of 15 area churches chosen by application. Retrofit includes energy audit; temperature control measures, lighting upgrades, and carry over would be used to address next highest priority on energy audit recommendations.</td>
<td>15% savings in energy costs at each church.</td>
</tr>
<tr>
<td>Kansas City Parks and Recreation</td>
<td>Energy retrofit of Brush Creek Community Center to include energy audit, lighting upgrades, and upgrade of current Building Automation System.</td>
<td>15% savings in energy costs at the Brush Creek Community Center</td>
</tr>
<tr>
<td>City of Roeland Park</td>
<td>Energy efficiency &amp; water conservation retrofit for five historic homes occupied by low income residents and families. Workshops to train volunteers to complete the work.</td>
<td>Homeowner satisfaction. Reduction in kWh and gallons of water used in the home. Workshop attendees using skills and knowledge to repair their own homes.</td>
</tr>
<tr>
<td>Truman Heritage Habitat for Humanity</td>
<td>Energy retrofit of ReStore building to include an energy audit, lighting upgrades, upgrades to the current HVAC system, insulation repairs and window replacement.</td>
<td>Improvement in energy audit following retrofit as compared to pre retrofit energy audit.</td>
</tr>
<tr>
<td>Westside Housing Organization</td>
<td>Retrofit of Westside Housing Organization office building to include an energy audit, water heater upgrade, lighting upgrade, and replacement of windows, new roof installment, and addition of a light reflecting membrane.</td>
<td>Reduction of energy consumption by at least 15% as measured against documented past year’s utility cost.</td>
</tr>
</tbody>
</table>

To evaluate the demonstration project programs, program observations and stakeholder interviews were conducted to evaluate recruitment efforts, outcomes and participant satisfaction.

**Observations:**
Given three projects were completed before initiation of this study, just three of the six were observed. They were:
- the City of Roeland Park,
- Kansas Interfaith Power and Light- Victory Church of the Nazarene, and
- Kansas City Parks and Recreation Department

*Brush Creek Community Center, Gym Fixture Replacement*
As part of the observations, pictures were taken to document the retrofit process and a stakeholder interview also was conducted with the program director. Detailed observation and stakeholder summaries can be found on pages 8-12 of this report.

**Stakeholder Interviews:**

For the three projects which were already completed upon the inception of the study, stakeholder interviews were conducted to gauge satisfaction with the process and the results. Stakeholder interviews were conducted for:
- Truman Heritage Habitat for Humanity,
- The Westside Housing Organization, and
- the Board of Public Utilities of Kansas City, Kansas

Detailed stakeholder interview summaries can be found on pages 13-19 of this report.

**Recruitment**

**Participants**

Recruitment efforts of residents interested in energy efficiency retrofits included flyers, newsletters, social media, and face-to-face communication. Programs that did not focus on individual homeowners or organizations were selected as a result of existing participation in energy efficient programs in the Kansas City, Mo area and/or the need for energy retrofits.

*Programs requiring recruitment included: Kansas Interfaith Power and Light, the City of Roeland Park, and the Board of Public Utilities of Kansas City, Kansas. Programs not requiring participant recruitment included: Kansas City Parks and Recreation Department, The Westside Housing Organization, and Truman Heritage Habitat for Humanity.*

**Outcomes**

**Goals**

The six demonstration project programs defined goals/desired outcomes for their individual program needs, funding, population served and energy audit recommendations. The following chart outlines each organizations goal for improvements and their outcomes.
<table>
<thead>
<tr>
<th>Project</th>
<th>Goal</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kansas City Board of Public Utilities Loan</td>
<td>39 loans to homes and small businesses, repayment of loan to help</td>
<td>BPU currently has a waiting list of 300 residents that have expressed an interest in weatherization and retrofitting; 39 of those will</td>
</tr>
<tr>
<td>Fund</td>
<td>fund continuation of the project.</td>
<td>participate in the EWKC loan. BPU is currently making additional funding opportunities for the remaining interested residents.</td>
</tr>
<tr>
<td>Kansas Interfaith Power &amp; Light</td>
<td>15% savings in energy cost at each of the 15 churches retrofitted.</td>
<td>The 15 churches were completed between October 2012 and March 2013. Energy savings will be evaluated, but a full assessment cannot be</td>
</tr>
<tr>
<td>Kansas City Parks and Recreation</td>
<td>15% savings in energy cost at the Brush Creek Community Center</td>
<td>Percentage of savings is currently unavailable as all retrofits have just been completed, but it is expected the goal savings of 15%</td>
</tr>
<tr>
<td>City of Roeland Park</td>
<td>Homeowner satisfaction Reduction in kWh and gallons of water used in</td>
<td>Current savings are between 31% - 48%.</td>
</tr>
<tr>
<td>Truman Heritage Habitat for Humanity</td>
<td>Improvement in energy audit following retrofit as compared to pre</td>
<td>Energy savings are not available at this time because there has not been any previous record of utility expenses.</td>
</tr>
<tr>
<td>Westside Housing Organization</td>
<td>Reduction in energy consumption by at least 15% as measured against past</td>
<td></td>
</tr>
<tr>
<td></td>
<td>year’s utility cost.</td>
<td>Current energy savings are confirmed between 22% - 39%.</td>
</tr>
</tbody>
</table>

Although the programs have achieved or believe they will achieve their goals, one indicated it would seek additional funding in the future. Truman Heritage Habitat for Humanity said it intended to seek additional funds from MARC or other entities for future energy retrofits and improvements.

A majority of program coordinators are satisfied with program results and the current grantee process. Potential changes within the programs are minimal and would strictly be for the organization’s internal use. Programs that have been able to evaluate savings are pleased with exceeding their goals. Those that are unable at this time to evaluate cost savings, anticipate their savings will meet or exceed their goals.

Program Satisfaction

Overall, program coordinators indicated they are satisfied with the demonstration program and its results. Many agencies indicated the grantee process and programs were excellent and they anticipate continuing energy
Incorporation of Home Energy Rating System (HERS)

“The HERS Index is the nationally recognized system for measuring a home’s energy performance. Based on the results, an energy-rated home will receive a HERS Index Score. The HERS Index Score can be described as a sort of mile-per-gallon (MPG) sticker for houses, giving prospective buyers and homeowners an insight as to how the home ranks in terms of energy efficiency. In addition to a HERS Index Score, a home energy rating also provides the homeowner with a detailed report regarding energy problems in the house.”

Program coordinators at the City of Roeland Park indicated, inclusion of the HERS Index Score would rate the amount of energy consumed. The HERS Index Score follows a ranking scale from 0 - 150, the higher the number the more energy consumed. Benefits for those homes with lower HERS Index Scores will see energy cost savings and increased property values.

Source: http://www.resnet.us/energy-rating

At this time, it is recommended that the HERS system be incorporated into residential energy assessments.

Initial Energy Audit

Although initial energy audits were conducted for the majority of the demonstration projects, the City of Roeland Park indicated not all residential units’ participating in the program received energy audits. Conversely, the Truman Heritage Habitat for Humanity building was the subject of an energy audit and recommendations. However, because it does not have previous utility information or previous audits, evaluating savings will be difficult.

It is recommend that energy audits be required for every residence or building receiving funding for energy efficiency. Requiring the energy audit will not only provide appropriate recommendations, but provide base standards for future savings comparisons.
Emphasis on HVAC System Maintenance

HVAC, lighting, windows, and insulation were consistently part of the recommended improvements. Of these, the HVAC system rapidly drains budgets allotted for improvements, requiring other areas to be postponed or additional funding to be acquired. Coordinators encourage an emphasis on education of HVAC system maintenance to head off large future costs.

At this time, it is recommended that HVAC system maintenance education campaigns be developed for residences and commercial buildings throughout the Kansas City metro and additional educational awareness programs to be added to all MARC energy efficiency programs.
Appendices:

Observation Interview Summary

i. The City of Roeland Park ........................................ Page 8

ii. Kansas Interfaith Power and Light - Participant ........ Page 9

iii. Kansas Interfaith Power and Light - Agency ............ Page 10

iv. Kansas City Parks and Recreation Department ........ Page 12

Stakeholder Interview Summary ................................ Page 13-19

I. Truman Heritage Habitat for Humanity .................... Page 13

II. The Westside Housing Organization ....................... Page 15

III. The City of Roeland Park .................................... Page 16

IV. The Board of Public Utilities of Kansas City, Kansas  Page 18
**Recruitment**

<table>
<thead>
<tr>
<th>What was the method(s) of recruitment?</th>
<th>Flyers, website, Facebook</th>
</tr>
</thead>
<tbody>
<tr>
<td>How was the method of recruitment posted delivered or sent out?</td>
<td></td>
</tr>
</tbody>
</table>

**Participation**

<table>
<thead>
<tr>
<th>What was the goal for number of participants? Was it met or exceeded?</th>
<th>Due to the space restraints not more than eight people have been able to participate</th>
</tr>
</thead>
<tbody>
<tr>
<td>What was the make up of participants? Residents? Contractors?</td>
<td>There were six participants in this workshop, five were homeowners, three from KCMO and one who is a neighbor of the home where the workshop was being held is an employee of JE Dunn.</td>
</tr>
</tbody>
</table>

**Learning/Engagement**

<table>
<thead>
<tr>
<th>What are the participants learning to do?</th>
<th>Weatherize and insulate wooden double pained windows &amp; doors.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do the participants seem engaged?</td>
<td>Yes, all of the six participants were asking questions, making comments and engaged during the workshop.</td>
</tr>
<tr>
<td>Did the instructors seem knowledgeable about the subject matter presented?</td>
<td>Yes, the instructor was an energy auditor and instructor with MEC who had lots of exercise restoring old homes, he offered practical advice for products available, suppliers, and options for smaller budget projects.</td>
</tr>
</tbody>
</table>

**Observations**

The workshop was hands on held in an 102 year old home that Historic Green is currently rehabbing. On this weekend Friday Saturday & Sunday they will be holding a volunteer session to complete the work on the home. They have approximately 30-50 volunteers signed up to assist on each day.

The size of the home greatly reduced the number of people that could participate in the workshop but enhanced the hands on nature with it being an actual window in an actual home that was dreafy and needed to be weatherized.

Spoke with Rhondda Francis of South Morland neighborhood currently rehabbing her 1896 home she has attended 2 of these workshops and appreciates the live interaction, "You can't ask a video questions, the workshop provides practical hands on instruction with a locals whom I can ask what materials are being used, where can I get those materials locally, information on who I can call if I have more questions."
## Recruitment

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
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<tbody>
<tr>
<td>What did you think of the recruitment process?</td>
<td>The church heard about the program through a newsletter sent via email. While going through the application process the program staff was very helpful in providing guidance. Process and application wasn't difficult at all.</td>
</tr>
<tr>
<td>How would you improve the recruitment process and materials provided to you?</td>
<td>I would not change anything</td>
</tr>
<tr>
<td>Why did you choose to participate?</td>
<td>The age of the church combined with the fact that we are a small church and could not afford to do these upgrades on our own.</td>
</tr>
<tr>
<td>What concerns were there about the project?</td>
<td>Mainly, if we would see a return on our investment, the energy audit and explanation were great.</td>
</tr>
<tr>
<td>If you started again, what would you change around recruiting?</td>
<td>I'm pretty happy with the process and wouldn't change anything.</td>
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</table>

## Participation

<table>
<thead>
<tr>
<th>Question</th>
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<tbody>
<tr>
<td>Were you able to get each place of worship to provide 5-10 volunteers as originally planned? If not why?</td>
<td>Yes, we actually got more than was required and finished early</td>
</tr>
<tr>
<td>How well did the volunteers and professionals work together?</td>
<td>Really well, a lot of our volunteers are electricians by trade so they kinda knew what needed to be done.</td>
</tr>
<tr>
<td>How would you rate the training for the volunteers?</td>
<td>Our volunteers didn't require much training as many of them are electricians carpenters by trade.</td>
</tr>
<tr>
<td>Was the energy audit easy to understand?</td>
<td>Yes. A simplified version would help lay person understand better.</td>
</tr>
<tr>
<td>What savings did the energy audit project would occur?</td>
<td>At least 15% savings on energy cost overall</td>
</tr>
<tr>
<td>What savings have you seen thus far?</td>
<td>Still being evaluated</td>
</tr>
<tr>
<td>How much disruption of business was there when work was occurring?</td>
<td>After managing a few scheduling conflicts the work actually worked well with our schedule. We have not seen much disruption at all.</td>
</tr>
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</table>

## Learning/Engagement

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<tr>
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<tbody>
<tr>
<td>What would you do different if did it again?</td>
<td>Managing scheduling conflicts better, it took awhile for us to make a date to get the work done.</td>
</tr>
<tr>
<td>Do you know if the project has motivated any members of the congregation who are contemplating doing an energy retrofit of their home or business?</td>
<td>Not yet known, Rabbi Rieber will be coming to talk about the changes that we've made we'll know more after that demonstration</td>
</tr>
<tr>
<td>Would you recommend that another place of worship do an energy retrofit?</td>
<td>Yes.</td>
</tr>
</tbody>
</table>

## Observations

Specifics of this project included retrofitting lighting fixture to more efficient models in the daily use areas of the church to increase efficiency and brighten the areas, exchanging older thermostats to programmable types to save on consumption in non peak hours. The contractor also check the boiler/chiller controls to make sure they were working efficiently.
## Recruitment

<table>
<thead>
<tr>
<th>Question</th>
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<tbody>
<tr>
<td>What was the method(s) of recruitment?</td>
<td>Newsletters and postcards followed by phone call and personal visit to interested churches</td>
</tr>
<tr>
<td>How was the method of recruitment posted delivered or sent out?</td>
<td>Email, post mail and phone</td>
</tr>
<tr>
<td>What reasons did places of worship give for participating?</td>
<td>Great opportunity to get work done at a savings, need work done but they are small churches with little money to invest.</td>
</tr>
<tr>
<td>What reasons did places of worship give for not participating?</td>
<td>Didn't have the money to invest, couldn't raise the money, didn't feel comfortable having KS Interfaith being the contractor and didn't feel comfortable giving the money to KS Interfaith up front.</td>
</tr>
<tr>
<td>What mid-term recruitment have you done, if any?</td>
<td>Still on-going</td>
</tr>
<tr>
<td>If you started again, what would you change around recruiting?</td>
<td>I would start with the diocese instead of directly going to the churches initially.</td>
</tr>
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</table>

## Participation

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<tr>
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<tbody>
<tr>
<td>The goal is to retrofit 15 places of worship. How many are complete?</td>
<td>Churches participating are: Kansas City Community Church, Victory Church, Countryside Christian, St. Andrew Christian, Grace Presbyterian, Banner Springs Methodist and Center of Grace</td>
</tr>
<tr>
<td>How many have work underway? How many are participating, but still in the planning stage? How many are deciding whether to participate?</td>
<td>3 have been completed (Kansas City Community Church, Grace Presbyterian, Center of Grace) 2 are underway 3 are currently have energy audits scheduled 2 are still deciding</td>
</tr>
<tr>
<td>Were you able to get each place of worship to provide 5-10 volunteers as originally planned? If not why?</td>
<td>Yes, that has been no problem</td>
</tr>
<tr>
<td>How well did the volunteers work with the professionals?</td>
<td>So far so good, haven't heard any complaints</td>
</tr>
<tr>
<td>Would you do anything different in working with the volunteers?</td>
<td>I’d like to get them more training in maintenance vs. repair</td>
</tr>
<tr>
<td>Would you do anything different in working with the place of worship?</td>
<td>I would place more emphasis on checking HVAC systems up front. Often we can’t get to lighting and thermostat changes because we run out of money repairing HVAC/boiler systems that have been neglected.</td>
</tr>
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</table>

## Learning/Engagement

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<tr>
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<tbody>
<tr>
<td>Did the scopes of work vary more than you envisioned? If so, please elaborate. How would you change the structure or work plan because of this?</td>
<td>Yes on a case by case basis, as stated some of the churches had HVAC or boiler/chiller issues that took up the majority of the funding to fix, as we were concentrating on getting them the 15% savings on energy cost. In a lot of cases that left us little time and money to actually address lighting and temperature control issues.</td>
</tr>
<tr>
<td>Question</td>
<td>Response</td>
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</tr>
<tr>
<td>What process is included for the energy audit? What did you learn from the process and recommendations? Is there anything you would do different with the energy audit process? The audit document?</td>
<td>Audit report was broken down based on priority and cost. The highest priority being saving the church the 15% on energy cost. Wanted to give each church the options of what they would like to get done but in some cases the issues that needed to be addressed were pressing. *Same audit being emailed</td>
</tr>
<tr>
<td>How is the work proceeding on loading the energy consumption database?</td>
<td>Getting &amp; keeping the data base updated is a continuum, the hardest part is getting the churches to understand what data they need to be giving us AND getting it from them.</td>
</tr>
<tr>
<td>What efforts have there been to publicize the benefits of the demonstration project?</td>
<td>There was an article published in 913 the KC Star magazine, the program website features the work, the Interfaith Power &amp; Light annual report, We are working on getting the Diocese to feature the work in an article</td>
</tr>
<tr>
<td>Are you doing any other energy efficient/environmental projects? Do you plan to do any others?</td>
<td>Following completion of this project the KIPL is planning to ask the contractor to become a board member to continue working to increase efficiency in area churches.</td>
</tr>
</tbody>
</table>

**Observations**

Rabbi Rieber had a great report with the contractor and church members. Is planning to speak at the church following the project to demonstrate the improvements and encourage other to follow suit at home.
**Recruitment**

| Why was Brush Creek Community Center selected for the energy retrofit? | Brush Creek Community Center wasn't energy efficient and had many opportunities for improvements. |
| How was it selected? | The current grant work within the Green Impact Zone and the community centers location in the Green Impact Zone made for a great opportunity. |

**Participation**

| Who is conducting the energy audit? | Davison & Associates - Paul Biersmith P.E. |
| Who is managing the building upgrades? | Bob Lawler, architect for Kansas City, Missouri |

**Learning/Engagement**

| How did you become interested in this project what are you hoping to achieve? | Interest came from being asked to assist on the project and selecting a community center in KCMO that was most qualified for energy improvements. |
| How old is the building? What were the issues with the automation system? | The building was build in 1996, The automation system was out of date and required updating to work efficiently with the pools and community centers needs. |
| What does the audit recommend? What are the projected energy savings? | Recommendations included energy improvements for: lighting fixtures in the gym, parking lot and fluorescent light fixtures throughout the building, automation system, and HVAC. |
| What savings have you seen thus far? | Savings are not available at this time. Completion of all improvements will be mid-summer of 2013. |
| What were the lessons learned? | None at this time. |
| What would you do different if did it again? | At the time there is nothing that would be done differently. |
| Do you anticipate doing energy retrofits on other city buildings? | Parks and Recreation for KCMO are always looking for funding opportunities for other areas and Brush Creek Community Center. All projects will be ongoing and take time. |

**Observations**
### Recruitment

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
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<tbody>
<tr>
<td>Why was the ReStore building selected for the energy retrofit?</td>
<td>Building was already purchased by Truman Heritage Habitat for Humanity. Roger Kroh contacted Habitat about possibility of using grant money to assist in rehabilitation of building. The building was an old warehouse. The timing of our project and the EWKC grant just happened to work out.</td>
</tr>
<tr>
<td>How was it selected?</td>
<td>See above</td>
</tr>
</tbody>
</table>

### Participation

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
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<tbody>
<tr>
<td>Who is conducting the energy audit?</td>
<td>RA Richmond Electrica started, but went out of business. Audit was completed by Hathmore Technologies.</td>
</tr>
<tr>
<td>Who is managing the building upgrades?</td>
<td>Michael at Hathmore Technologies and Truman Heritage is overseeing many of the upgrades also.</td>
</tr>
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</table>

### Learning/Engagement

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
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<tbody>
<tr>
<td>How did you become interested in this project what were you hoping to achieve?</td>
<td>The interest was already there as work was starting on the building. Truman Heritage had previously worked with MARC on a solid waste grant and the connection allowed for information about the EWKC grant to be passed on.</td>
</tr>
<tr>
<td>How old is the building? What were the issues with the lighting, HVAC system and windows?</td>
<td>Approximately 35 years old. The HVAC system was not running efficiently, windows and doors were old leaky. There were issues with the lack of insulation and siding for the entire building.</td>
</tr>
<tr>
<td>What did the audit recommend? What were the projected energy savings?</td>
<td>The audit recommendations were to replace the windows, doors, siding and insulation. Removal of 10 windows completely, but not replaced. Replaced 4 windows, overhead doors and insulation. Lighting replacements were done with additional funds, not from the grant.</td>
</tr>
<tr>
<td>What savings have you seen thus far?</td>
<td>Savings are not currently available as the building previous use and records are not comparable to current use.</td>
</tr>
<tr>
<td>What were the lessons learned?</td>
<td>Asking for more money in the future. There isn't anything in particular Truman Heritage would do differently in coordination with MARC. Clerical items such as documenting reports and time efficiencies on their end, but that would be for their personal purposes for preparedness. (MARC would request reports with a short turn around, Truman Heritage feels if they had reports ready sooner they would of had less last minute development of reports.)</td>
</tr>
<tr>
<td>What would you do differnet if did it again?</td>
<td>There isn't anything in particular Truman Heritage would do differently. The overall experience was positive and they are happy with the process and results.</td>
</tr>
<tr>
<td>Do you anticipate doing energy retrofits on other Habitat for Humanity buildings?</td>
<td>There is a school building near existing building. Currently looking to rehabilitate the school into a community center and Habitat for Humanity office building.</td>
</tr>
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<tr>
<td>Observations</td>
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</table>

14/19
**Project: Westside Housing Organization**

**Date: March 11, 2013**  
**Time: 9:30 a.m.**

### Recruitment

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
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<tbody>
<tr>
<td>Why was Westside Housing Organization selected for the energy retrofit?</td>
<td>The Westside Housing office building is very old and has not been update. MEC KC has been forced with two options for energy consumption issues. Energy companies can either reduce usage now or build a new plant to keep up with the high volumes of energy consumption. Missouri also is a state with large amounts of rebates for energy.</td>
</tr>
<tr>
<td>How was it selected?</td>
<td>MEC KC approached Westside Housing about retrofitting the office building due to its age, also Westside Housing has been doing significant work in retrofitting their residential buildings.</td>
</tr>
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</table>

### Participation

<table>
<thead>
<tr>
<th>Question</th>
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<tbody>
<tr>
<td>Who is conducting the energy audit?</td>
<td>Dennis Wyke - he was very through when conducting the audit and helpful in explaining the recommendations.</td>
</tr>
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</table>

### Learning/Engagement

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
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</thead>
<tbody>
<tr>
<td>How did you become interested in this project what are you hoping to achieve?</td>
<td>Westside Housing has been interested in retrofitting a number of its residential buildings for some time now. They realize it’s a service they need to offer to their residents and many funding programs have allowed for upgrades and improvements that show their clients they care and coming through on their word of being able to help them.</td>
</tr>
<tr>
<td>How old is the building? What were the issues with the building?</td>
<td>The building is 123 years old, it was built in 1890. Nothing had been updated on the building, the windows were very leaky, cracked discolored etc. The entire building was in need of repairs especially energy related.</td>
</tr>
<tr>
<td>What does the audit recommend? What are the projected energy savings?</td>
<td>The energy audit recommended improvements to the windows, lighting, hot water heater and the roof and tuck pointing. The roof and tuck pointing are the only improvements EWKC dollars did not go towards. Projected savings were 28%.</td>
</tr>
<tr>
<td>What savings have you seen thus far?</td>
<td>Savings are still being evaluated as the windows were a major retrofit and they were just completed this month. So far energy savings have been confirmed between 22%-39%.</td>
</tr>
<tr>
<td>What would you do different if did it again?</td>
<td>Nothing at this point. We are very happy with the process and the amount of savings we are seeing from the improvements.</td>
</tr>
<tr>
<td>Do you anticipate doing energy retrofits on other buildings?</td>
<td>Yes. Westside Housing is currently in collaboration with many different partnerships i.e. MEC KC, Ripple Glass and Bridging the Gap. Many of the improvements will focus around current residential buildings, but improving their overall greenability inside and out.</td>
</tr>
</tbody>
</table>

### Observations

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15/19
**Project: City of Roeland Park**

**Date: March 22, 2013**

**Time: 8:00 a.m.**

### Recruitment

| How were the homes selected? | Flyers and announcements were distributed to all homes. Jennifer Gunby also went to each door speaking with residents about the program and benefits. Many residents weren't interested and/or felt it wasn't possible for the improvements to be "free." 10 homes were interested in the program, 2 dropped out. Of the remaining 8 homes 5 were eligible for the retrofits. |

### Participation

| Who conducted the workshops | The workshops were hosted by Historic Green, City of Roeland Park and BNIM. The energy audits and workshops were conducted by High Performance Homes |
| Who is managing the building upgrades? | High Performance Homes and the project team coordinated management. |

### Learning/Engagement

| How did the participants become involved in this project? | The City of Roeland Park sought interested residents to participate in the program. |
| How old were most of the homes that were retrofitted? What were the major issues? | Most of the homes were around 1950 |
| Where was an energy audit done, if not how were recommendations made? | The energy audit was done afterwards to all the homes and to most homes required the following to be replaced: furnace, air conditioner and windows. The largest savings have been found in the HVAC and water. |
| What savings have you seen thus far? | 31% - 48% Savings were seen in utility bills with a decrease from $500-600 to $100 |
| What were the lessons learned? | Build the energy audit into the initial steps of the process to have a comparative analysis after completion. Only one home of the five had an initial energy audit completed. |
| What would you do differently if you did it again? | Incorporation of the Home Energy Rating System (HERS). This not only audits the home for existing improvements, but also sets a market value of improvements for prospective buyers and homeowners. |
| Do you anticipate to do anymore energy efficient retrofits in the Roeland Park area? | Yes. We would like to apply for more funding to continue to help other residents out, but also would like into furthering work to community spaces also. |
**Observations**

Retrofitting/Improvements for workshops entailed weatherization and insulation. This was the focus for the workshops as it was easier to demonstrate to volunteers for replication at home and to friends and family. HVAC and water improvements were also made to homes, but work was completed through contractors. Additional assistance from Grunfos pumps with hot water recirculation for instant hot water accessibility. U.S. Green Council also helped with additional logistics for each project. Homeowners were very active in workshops and many other residents have a higher interest after the initial project homes were completed.
## Recruitment

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<tr>
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<tbody>
<tr>
<td>What was the method(s) of recruitment? Please attach any flier, postcards, etc.</td>
<td>Recruitment was already done before the EWKC grant was available. BPU has been working on green housing efficiencies programs previously and seeked funding to continue green retrofits.</td>
</tr>
<tr>
<td>How was the method of recruitment posted delivered or sent out?</td>
<td>n/a</td>
</tr>
<tr>
<td>What reasons did people give for participating?</td>
<td>Approximately 300 residences were already signed up through BPU to participate in weatherization retrofits from a group of 800 interested residents. Couldn't afford to invest in weatherization or retrofitting to reduce energy usage.</td>
</tr>
<tr>
<td>What reasons did people give for not participating?</td>
<td>Some residents were interested in making the investment, some didn't want contractors in their home.</td>
</tr>
<tr>
<td>If you started again, what would you change around recruiting?</td>
<td>There isn't anything we would change.</td>
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## Participation

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<tbody>
<tr>
<td>The goal was approximately 39 participants. Was it met or exceeded?</td>
<td>This has been exceeded in respect to residences interested in weatherization and retrofitting, but BPU has limited EWKC funds to 39 individuals of the 300. BPU is currently working down the list contacting individuals to see if they are still interested.</td>
</tr>
<tr>
<td>What was the make up of participants? Residents? Small Businesses?</td>
<td>All residential. The interest was very low on the commercial side and many decided not to participate.</td>
</tr>
</tbody>
</table>

## Criteria/Implementation

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
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<tbody>
<tr>
<td>What type of energy efficient projects and other projects are being funded with the loans?</td>
<td>Weatherization: Caulking and air filling. If there was enough money left over after weatherization completed some individuals received HVAC improvements. Very few residences will be able to spend money on windows, but a few who's homes were well insulated, which allowed for window improvements.</td>
</tr>
<tr>
<td>What's the average loan amount for commercial? residential?</td>
<td>Residential homes are allotted $7,000 - $10,000 some residences were already quoted and planned on a certain amount due to their energy audit which allowed for the upward to $10,000, but most are receiving $7,000.</td>
</tr>
<tr>
<td>What percentage of the loans are being paid back from the projects completed 2 years ago</td>
<td>Funding from MARC has just been received, so BPU borrowers have not started paying back at this point.</td>
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<td>Question</td>
<td>Response</td>
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</tr>
<tr>
<td>What were the lessons learned?</td>
<td>Communication to the customers is key and most important. At first the focus was lower utility bills, but with rate increases customers wont see a decrease. We are not aware to explain exactly what the customer will be receiving from improvements. BPU now focuses on decrease in &quot;usage&quot; rather than dollars spent.</td>
</tr>
<tr>
<td>What would you do different if you did it again?</td>
<td>The approach BPU has used is great along with the amount of partnerships that are being made. As a small utility we don't advise to others doing it on their own, make partnerships to carry the load and assistance with more staff.</td>
</tr>
<tr>
<td>How is the work proceeding on loading the energy consumption data base?</td>
<td>The usage isn't currently being tracked as well as it should be, but that is something BPU is considering changing. BPU has pulled a few individual records here and there to monitor usage rate comparisons and all records show significant savings.</td>
</tr>
<tr>
<td>What efforts have there been to publicize the benefits of the demonstration project?</td>
<td>BPU is currently not publicizing any green weatherization/retrofit projects as their previous recruitment was very successful. When they did publicize they had newsletters, informational dvds - a very grassroots approach.</td>
</tr>
<tr>
<td>Are you doing any other energy efficient/environmental projects? Do you plan to do any others?</td>
<td>Yes. Currently BPU is working on developing a weatherization program/service for low income/no income residents. Since applying for a loan requires a specific income amount, many people are missed that could benefit from retrofitting their homes. This individuals would be able to apply for improvements and receive later savings on their utilities.</td>
</tr>
</tbody>
</table>

**Observations**

BPU has made many partnerships that are allowing the EWKC funding and other funding they have received make well received improvements for residents. Currently BPU is partnering with MEC to help get residents through the entire retrofitting process after they have been approved for the loan. MEC assists in beginning to end phases of setting up the energy audit, understanding the recommendations, contacting and contracting construction vendors, etc. BPU is very happy with the effectiveness of their partnership with MEC and plans to continue making similar ones with future projects.
The Mid-America Regional Council (MARC) is supporting six organizations in the Kansas City region to provide workforce development training programs in energy efficiency, water conservation and deconstruction through the EnergyWorks KC program (EWKC).

EnergyWorks KC is made possible through a $20 million grant received by the City of Kansas City to transform the energy retrofit market for residential, commercial, industrial and institutional buildings throughout the metropolitan area. As part of the effort, MARC developed a green jobs pipeline to provide individuals with a career path for green job opportunities, from training to certification to employment. Participants received the necessary training and skills for energy retrofit careers, to work on EnergyWorks KC projects and other green job opportunities.

Executive Summary
In 2013, the Green Workforce Initiatives Task Force:

- Developed strategies and tactics to strengthen the green jobs pipeline in the Kansas City region, including creating a demand for green jobs, providing training and skill development, and connecting people to green jobs.
- Prioritized those strategies;
- Established criteria for awarding grant funds; and
- Recommended a structure to evaluate funding request and a process to award the grant funds.

Since that time, EWKC identified a target area of seven neighborhood areas across the City of Kansas City, Mo to emphasis the use of green jobs resources and opportunities. The target area includes: Central Industrial District, Eastwood Hills, Green Impact Zone, Ruskin, Washington Wheatley, Westside and Winnwood-Sunnybrook. In coordination with MARC, the EWKC then identified six organizations within the target area to provide workforce development training programs in support of energy efficiency, water conservation and deconstruction. The goal is that these workforce development programs will; put residents of the Kansas City region who are underemployed and unemployed to work in the local community and neighborhoods. The following chart outlines the organizations participating, the training they are providing, and their goals for that training.
<table>
<thead>
<tr>
<th>Program</th>
<th>Population Served</th>
<th>Description</th>
<th>Goal/Desired Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metropolitan Energy Center</td>
<td>1. Unemployed or underemployed individuals seeking work in energy-related fields</td>
<td>Metropolitan Energy Center will train or augment training for workers in: <strong>Energy Conservation:</strong> Commercial Energy Auditors, Weatherization Installation Contractors and Weatherization Installation Workers  <strong>Deconstruction and Environmental Remediation:</strong> Deconstruction Workers, Recycling and Reclamation Workers, Hazardous Materials Removal workers, Asbestos Abatement Workers, Lead Abatement Workers, Environmental Compliance Inspectors</td>
<td>86 individuals will receive training in energy-related fields and of those seeking work, 70% will be placed in jobs related to their training. 30 businesses will be assisted through the initiative.</td>
</tr>
<tr>
<td>Kansas City Kansas Community College</td>
<td>unskilled and low-income individuals</td>
<td>Construction Green-Up will equip individuals with the knowledge and skills necessary to achieve a career in a variety of construction jobs. The project's focus is on deconstruction training which is defined as the selective dismantlement or removal of materials from buildings before, or instead of demolition.</td>
<td>22 individuals will receive training in deconstruction-related fields and 15 businesses will be assisted through the initiative.</td>
</tr>
<tr>
<td>University of Central Missouri - Retrofit Brokers</td>
<td>underemployed real estate professionals</td>
<td>The Retrofit Broker training will focus on underemployed real estate professionals that will provide direct property owner awareness. One-on-one energy and water efficiency and conservation workshops will also be conducted by graduates. Group workshops will be conducted by graduates as well as NERI staff and partners.</td>
<td>University of Central Missouri will train approximately 30 Retrofit Brokers. Retrofit Brokers will be equipped with the materials and supplies they need to conduct 400 property owner individual workshops.</td>
</tr>
<tr>
<td>Program</td>
<td>Population Served</td>
<td>Description</td>
<td>Goal/Desired Outcome</td>
</tr>
<tr>
<td>---------</td>
<td>-------------------</td>
<td>-------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>University of Central Missouri - Residential Energy Client Service Coordinators</td>
<td>unemployed</td>
<td>RECSC training will target unemployed individuals who can provide customer service for property owners wanting to explore energy efficiency.</td>
<td>University of Central Missouri will train approximately 15 Residential Energy Client Service Coordinators</td>
</tr>
<tr>
<td>Metropolitan Community College</td>
<td>individual contractors/laborers</td>
<td>On-the-Job Training program to place up to 32 residents trained in abatement and deconstruction into jobs with contractors for the City of Kansas City, Missouri</td>
<td>Metropolitan Community College will deliver training to 35 participants and UMKC Innovation Center will deliver the FastTrac® NewVenture and Construction Business Management to a total of 12 new and existing businesses.</td>
</tr>
</tbody>
</table>

To evaluate the Workforce Development Programs, group stakeholder interviews and an online survey were conducted. The intent of these activities was to examine:

- Recruitment & Outcomes
  - Methods of recruitment
  - Number of participants recruited
  - Number of participants completing training
  - Number of participants employed as a result of participation in the training program
- Participant Satisfaction
  - Participants confidence on the job as a result of skills learned during training
  - Participants satisfaction with the training program
  - Fulfillment of promised training

Six group stakeholder interviews were conducted in February and March of 2013 with select current and past participants of the Workforce Development Programs. In early April, a broad section of stakeholders was surveyed using an internet based survey program asking questions similar to those posed in the interviews. A total of 33 individuals participated in the group stakeholder interviews and 29 people responded to the survey. A detailed interview list for each workforce development group can be found on page 8-9 of this report. Stakeholder interview questions and the online survey questions can be found on page 10-12 of the report. And complete feedback can be found in the group stakeholder summaries on pages 13-27 and also in the online survey summary found on page 28-35.
Recruitment

Participants
Trainees indicated the most effective form of recruitment was flyers, word of mouth, and the workforce development program coordinator/advisor. The online survey reinforced this finding with the following results as 21 percent of the respondents learned of the program from the workforce development program coordinator and 21 percent discovered it through, flyers.

Training Agency
Workforce development program coordinators indicated the following methods of recruitment were used: flyers to community organizations, events and direct partnerships; word of mouth, face to face, Job Corps, social media, radio ads, and website.

Overall the most effective methods of recruitment were flyer distribution to direct partnerships and community organizations, workforce development program coordinator/advisor, face to face interaction and word of mouth. The radio ads produced the largest amount of applicants, but in the end the most qualified for the program were from the previously mentioned forms of recruitment.

Outcomes

Goals
The six Workforce Development Programs defined goals/desired outcomes for their individual program needs, funding, population served and training opportunity. The following are each agency’s goals.

- Metropolitan Energy Center – Train 86 individuals in energy-related fields.
- Kansas City Kansas Community College – Train 22 individuals in deconstruction-related fields.
- University of Central Missouri- Retrofit Brokers – Train 30 Retrofit Brokers.
- Metropolitan Community College- Train 35 individuals in abatement and deconstruction.
- Full Employment Council – Train 45 individuals in “green” occupational skill or on-the-job training.

Results
All program coordinators indicated satisfaction with program results that achieved their desired goals. Program results can be seen in the bullets below. Although, the programs achieved their goals one indicated potential for increased funding in the future. Kansas City Kansas Community College mentioned they would seek additional funds from MARC or other entities to provide participants with stipends or on-the-job training.

Results of the Workforce Development Training programs are as follows:
- Metropolitan Energy Center – 75 remediation workers trained, additional deconstruction training surpasses desired 86 individuals trained.
• Kansas City Kansas Community College (KCKCC) – The initial enrollment was 33. Of that, 29 individuals completed at least one component of the program, and 21 completed all components. According to KCKCC those who dropped out of the program were due to time commitment.
• University of Central Missouri - Retrofit Brokers – 30 individuals trained as Retrofit Brokers.
• University of Central Missouri - Residential Energy Client Service Coordinators – Program put on hold for job/employment prospect growth with employers.
• Metropolitan Community College- Exact number is pending, but training is consistent with goal.
• Full Employment Council –48 trained individuals in “green” occupational skill or on-the-job training.

Program coordinators have indicated all training programs have met their participation goals. A majority of participants who provided feedback in the stakeholder interviews and online survey indicated either that they were currently employed and used the training to advance their career or that they were unemployed, but have since found employment due to the training program. Twenty-seven individuals responded to the online survey question, “How much time after you finished training did it take for you to find a job?” Seven indicated they are still seeking employment; the remainder advanced in their current employment or found a job up within six months after completing the program. Detailed results for this question can be found on page 29.

Participant Satisfaction

Overall, participants said they are satisfied with the training program and its results. Many stakeholders indicated the program and instructors were excellent, and they would recommend the program to others in the future. Those who participated in group stakeholder interviews and the online survey provided many suggestions for future program improvements. While the feedback received from the program agencies, the stakeholder group interviews, and the online survey varied, there were consistent themes. Results show that improvements are needed in the following areas:

• Business Administration Training
• Networking
• Supply and Demand
• Program length

Business Administration Training

Participants enrolled in training with an emphasis in entrepreneurship at Metropolitan Energy Center (MEC) and Metropolitan Community College (MCC) said that the training was beneficial and they felt confident in their ability to assess energy efficiency. Once the training was completed, and participants established their own businesses they found they didn’t have the skills or knowledge to operate. Many stressed the importance of incorporating a business administration training component.
At this time, it is recommended that a business administration training component be added to the small business training program. This component should focus on all administrative tasks for maintaining a business (e.g. QuickBooks, scheduling, financing, communication, etc.).

Networking

Stakeholder interview participants and survey respondents both indicated that networking was an important component for job growth. However, the interviewees and survey respondents differed in their view of whether there were satisfactory opportunities for that network.

The majority of stakeholders interviewed felt the program lacked networking and relationship building. Stakeholders indicated the program prepared individuals with classroom training and language, but those who were not involved in hands-on training or on-the-job training did not connect with professionals and other individuals who could assist in advancing the participants career path. On the other hand, 86 percent, or 25 respondents, who completed the online survey said the program assisted in networking with those in their field of work.

It is recommended to add a component to the training program to ensure participants are receiving the necessary networking skills and guidance needed to advance their career paths. Suggestions, include, but are not limited to:

- Adding networking events,
- Providing a list of professionals in each field of study
  - Additional information for those actively hiring
- Establish connections with larger companies who can fund mentoring programs

Supply and Demand

Participants expressed concern that many people were being trained; however there are not ample job opportunities. Stakeholders indicated there has been difficulty finding work, along with some individuals have had to travel significant distances for work.

At this time, it is recommended the EWKC program and MARC evaluates the market before establishing the need for workforce development programs. Those involved in the industry are key indicators of what the current supply and demand will allow for future workforce development programs. It is suggested to coordinate with market analysts, contractors and laborers.

Program Length

Stakeholders and program managers discussed the importance of the program length and material covered. Although the program training is currently successful it was indicated they felt it could be more beneficial for participants to have the opportunity to include on-the-job training, requiring a longer program. A provider and employer both said in the instance of an on-the job training program, an
extended program establishes responsibility and accountability in participants while also learning the training materials and the company.

It is recommended programs have assistance in seeking additional funding, to allow for program extension or addition of on-the-job training. For those programs previously offering on-the-job training it is suggested the length of the program to be extended to 90 days to establish knowledge in training and company processes.
Appendices:

Group Stakeholder Interview Attendees  Page 9
Group Stakeholder Interview Questions  Page 11
Online Survey Questions  Page 12
Group Stakeholder Summary  Page 14
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  ii. Johnson County Community College  Page 16
  iii. Kansas City Community College  Page 19
  iv. Metropolitan Community College  Page 21
  v. Metropolitan Energy Center  Page 24
  vi. University of Central Missouri  Page 27
Online Survey Summary  Page 29
Mid-America Regional Council EnergyWorks KC

Workforce Development Programs – Group Stakeholders

Interview attendance

- **Metropolitan Energy Center**
  - Barry Dicker, Decent Energy  
  - Curtis Rouser,  
  - Don Reck, Bridging the Gap  
  - Joshua Best, Historic Green  
  - Kathryn Persley, Persley Construction  
  - Patrick Zaiss, Assis Tech  
  - Paul Rieck, Instructor/Mechanical Edge

- **Metropolitan Community College**
  - Clevell Roper, New Horizon  
  - Daniel Felder, Redlef, LLC  
  - Gloria Fisher, Westside Housing Organization  
  - Harold P. Manlove, Way Out Homes  
  - Kathryn Persley, Persley Construction  
  - Leo McQueeny, Westside Housing Organization  
  - Saleem Saboor, All Bright Homes  
  - Theodore Williams, Craft Solutions

- **Full Employment Council**
  - Anna Rosenberger, Foutch Brothers, LLC  
  - John Hall, Diggs Construction

- **University of Central Missouri**
  - Regina Drone, Keller Williams Eastland Partners  
  - Robin Marks, Keller Williams Legacy Partners

- **Kansas City Kansas Community College (Current Participants)**
  - Andre Erving  
  - Ashton Shelby  
  - Bobby Spencer  
  - Charlie Hudson  
  - Jaleesa Carter  
  - KCarl Pointer  
  - Marcus Denman  
  - Michael Ruffin
- Johnson County Community College
  - Rocco Romeo, The Farmhouse
  - Yvette Hirang, Brookridge Golf and Fitness
Mid-America Regional Council EnergyWorks KC
Group Stakeholder Interview Questions

**Current Participants**
How did you find out about the training program?
What training are you currently receiving?
Would you recommend this training to others?
Is the program working with you to find employment?
Do you feel you will be able to find employment with the skills you are learning?
Did you have an awareness of green jobs before you entered the program?
For the training you have received so far, what suggestions do you have to improve the program?

**Past Participants**
How did you find out about the training program?
What training did you receive?
Have you acquired employment using the skills you gained in the training program?
How much time after you finished training did it take to find a job?
Did the program help you find employment?
Would you recommend this training to others?
How much of what you learned in training have you applied on the job?
Did you have an awareness of green jobs before you entered the program?
What suggestions do you have to improve the training program?
Mid-America Regional Council EnergyWorks KC

Online Survey Questions

1. In which workforce development program did you participate?
   a. Metropolitan Energy Center
   b. Kansas City Kansas Community College
   c. University of Central Missouri – Retrofit Brokers
   d. University of Central Missouri – Residential Energy Client Service Coordinators
   e. Metropolitan Community College
   f. Full Employment Council

2. How did you find out about the program? (Check all that apply)
   a. Workforce development program coordinator
   b. Flyer
   c. Curriculum advisor
   d. Employer
   e. Program website
   f. Other – please explain

3. What training did you receive? (Check all that apply)
   a. Energy Conservation
   b. Deconstruction and Environmental Remediation
   c. FastTrac NewVenture and Construction Business Management
   d. Building Performance Institute Certification
   e. Other, please list

4. Have you acquired employment using the skills you gained in the training program?
   a. If yes, please explain employment and skills used.

5. How much time after you finished training did it take to find a job?

6. Were you already employed and took the training program to enhance education?

7. Would you recommend this training to others?
   a. Please explain why or why not.

8. Did the program assist in finding employment?
   a. If yes, what assistance did you receive?
9. Did the program assist in networking with those in your field of work?
   a. If yes, please explain how it has helped you.
   b. If no, please explain how the program networking could be improved.

10. Have you applied what you learned in training to your job?
    a. If yes, explain what training you have applied.

11. Did you have an awareness of green jobs before you entered the program?
    a. If yes, please explain

12. What suggestions do you have to improve the training program?

13. What other general comments do you have regarding the training program you participated in?
Mid-America Regional Council EnergyWorks KC

Group Stakeholder Interview - Summary

Full Employment Council

Date: April 5, 2013
Program: Full Employment Council

Attendees:

- Anna Rosenberger, Foutch Brothers, LLC. (Representative for past participants)
- John Hall, Diggs Construction

1) How did you find out about the training program?
Flyers through the FEC

2) What training did you receive?
Construction
- Internship
- On-the-job-training

3) Have you acquired employment using the skills you gained in the training program?
- Those participants who have remained in the training program through FEC have found employment either on their own or through Foutch Brothers, LLC.
- The FEC is an added resource that has been great for participants for moving forward and using their skills. The skills and knowledge the participants are gaining from the training program allow them to advance farther in the company over time and teaches accountability and responsibility.

4) Would you recommend this training to others?
- Yes. The program has been very positive.
- Yes. The program has allowed Diggs Construction to offer more opportunities with youth build, vet green jobs, section three employment and internships.

5) Did you have an awareness of green jobs before you entered the program?
• One individual had worked for the U.S. Department of Housing and Urban Development with the Kansas City, Missouri Housing Authority; he was previously aware of green jobs and specific opportunities.

• All other participants were not as aware about green jobs and materials.

6) **What suggestions do you have to improve the training program?**

• Would love to see a program that would go longer than seven weeks. Ninety days would be more sufficient, allowing individuals to get into a routine and learn the company.

• There states do programs up to six months, learn industry and the company

• Many employers are not aware, but there are bond and tax credits available for having green job training and other industry training programs. This information needs to be more available so they can make use of credits, information can be found at WOTC – Work Opportunity Tax Credits and
  - $2,400 per trainee
  - $9,700 per veteran
Mid-America Regional Council EnergyWorks KC

Group Stakeholder Interview - Summary

Johnson County Community College

Date: February 11, 2013
Program: Johnson County Community College

Attendees:

- Yvette Hirang, Brookridge Golf and Fitness
- Rocco Romeo, The Farmhouse

1) How did you find out about the training program?
   - Yvette was very active in the culinary industry at Johnson County Community College (JCCC) as the president of the Junior Chefs Club, 2010-2011. She is currently working on her three-year culinary apprenticeship and spoke to her advisor about collaboration efforts with sustainability for the food industry.

   - Johnson County Community College approached Rocco, due to his previous experience in the restaurant industry and working for a local farmer at the farmers' market.

2) What training did you receive?
   - Yvette received training over the course of a four-month internship with a focus on culinary food service and food production practices. She worked hand in hand with the EBT Restaurant to take steps towards Green Restaurant Certification by the Green Restaurant Associations (GRA). The GRA is a non-profit organization that provides certification for restaurants to become more environmentally responsible. Certification is awarded to restaurants that apply and meet seven environmental categories: water efficiency, waste reduction and recycling, sustainable furnishings and building materials, sustainable food, energy, disposables, and chemical and pollution reduction. Although the certification was not completed at the end of her internship, Yvette has continued to help EBT Restaurant continue steps towards certification on her own time and prepare the necessary next steps for two new “green” interns from JCCC.

   - Rocco participated in an internship program for sustainable restaurants at The Farmhouse.

3) Have you acquired employment using the skills you gained in the training program?
Yvette was not seeking employment at the end of her internship with EBT as she was already employed with Brookridge Golf and Fitness in Overland Park, KS. She does plan to use the skills and education she has obtained from the internship program and the green certification.

Rocco acquired employment at a restaurant where he looks forward to implementing sustainable food practices and others he learned during his internship.

4) **Did the program help you find employment?**
   - Yvette was already placed in the culinary apprenticeship, but she did indicate Ryan Wing with JCCC was very helpful in placing her with the internship at EBT.
   - Rocco became employed with a different restaurant upon finishing his internship with The Farmhouse.

5) **Would you recommend this training to others?**
   - Yes. The program was great; Yvette wished it had been longer so that she would be able to finish the green certification at EBT. She is very willing to extend any help needed in the program and to continue it for future students.

6) **How much of what you learned in training have you applied on the job?**
   - Yvette said she was very pleased with the amount she learned during the course of the internship program and applies much of the knowledge at her current place of employment.
   - Rocco is currently in the early stages of new employment and unable to fully use skills learned from the internship program that were implemented at The Farmhouse. Discussions with new employer have already taken place for hopes of implementing a recycling program and possible composting. Skills that were learned and implemented while at The Farmhouse include a recycling program and a food waste program. The food waste program was partnered with a pig farmer, which the restaurant establishment coordinated feeding the pigs their food waste and in turn those pigs were their source of pork. This enabled The Farmhouse to have control over what their meat source was in taking.

7) **Did you have an awareness of green jobs before you entered the program?**
   - There had been an overview in other courses, but was not knowledgeable of the potential for green job awareness in the food industry.
   - The participant had some previous knowledge from working in the food industry with a local farmer in the farmers’ market. He was not a farmer himself, but was knowledgeable of farming and harvesting processes. Even though the participant was aware of green jobs to an extent, the internship provided more knowledge and awareness to the amount of food waste that is produced by the food industry; 30 percent of what goes to the landfill is food. The importance of recycling all possible materials was also emphasized during the course of the program.

8) **What suggestions do you have to improve the training program?**
During the internship the participant assisted The Farmhouse in acquiring technology and materials to improve energy efficiency and composting, but had budgetary restraints. He suggested a “pre-bill” budget option be included in the program training. This addition would allow future training participants to understand the importance of attaining a proposed budget before implementing any green restaurant solutions. The participant has suggested this to the provider, and it is now part of the program.
Mid-America Regional Council EnergyWorks KC

Group Stakeholder Interview - Summary

Kansas City Kansas Community College

Date: February 14, 2013
Program: Kansas City Kansas Community College

Attendees:

- Andre Eving
- Ashton Shelby
- Bobby Spencer
- Charlie Hudson
- Jalessa Carter
- KCarl Pointer
- Marcus Denman
- Michael Ruffin
- Robert Burgett
- Tyler Ortega
- Tyree Sanders
- Zachery Hunt

1) How did you find out about the training program?

- Job Corps
- Counselors/Advisors
- Deconstruction class was cancelled so, placed in this class.

2) What training did you receive?

- Forklift Operation certification
- Occupational Safety and Health Administration certification (OSHA30)
- Deconstruction and Salvageable Material Training,
- Lead Renovator
- Repair and Painting certification

3) Is the program working with you to find employment?

- Job Corps is helping the youth within the training program, but older participants indicated they might need assistance after the program is completed.
4) **Would you recommend this training to others?**
- Yes. Although they were only half way through their training, the participants were very positive about it. Skills and knowledge are put to use in their daily lives and community; they know they will make use of it when the training completes and they find employment.

- Participants felt the training program would allow them to move forward in employment and achieve higher level positions.

5) **Did you have an awareness of green jobs before you entered the program?**
- A few participants had a green/environmental background, but others were unaware of green jobs or training until the program was offered. Many commented they have worked in the environment of health hazards, but were very unaware of the dangers. The training has changed their view and opened a new level of awareness of the industry.

6) **For the training you have received so far, what suggestions do you have to improve the program?**
- Participants expressed concern that the length of the course might be credible with potential employers. Concerns centered on whether the amount of training they received in an eight-week period would be enough to gain employment initially and to later advance in their careers. "Are individuals really qualified with the length of the program?"

- A deconstruction program should be offered with hands-on element.
  - Hands-on training or on-the-job training should be offered for all programs. This might also allow for a stipend for those not receiving assistance such as Job Corps.

- There needs to be a more stringent screening process to evaluate participants and their level of interest in the program.
  - The training program started with a higher enrollment, but people were unable to coordinate with the schedule or lost interest. Participants are concerned that the dropout rate might affect the next possible program and funding. "Will they really want to fund and provide an opportunity again, when the first numbers went from 20 to 12? Will they continue the program?"
Mid-America Regional Council EnergyWorks KC

Group Stakeholder Interview - Summary

Metropolitan Community College

Date: February 15, 2013
Program: Metropolitan Community College – Penn Valley

Attendees:

- Clevell Roper, New Horizon
- Daniel Felder, Redlef, LLC
- Gloria Fisher, Westside Housing Organization
- Harold P. Manlove, Way Out Homes
- Kathryn Persley, Persley Construction
- Leo McQueeny, Westside Housing Organization
- Saleem Saboor, All Bright Homes
- Theodore Williams, Craft Solutions

1) How did you find out about the training program?
   Many participants indicated flyers, advisors or program managers were the source of information for upcoming training programs.

2) What training did you receive?
   - Weatherization and Building Performance Institute (BPI) Training
   - Deconstruction
   - Lead paint
   - Asbestos
   - OSHA
   - OSHA30 – Two Saturdays (This certification lasts longer than OSHA10)

3) Did the program help you find employment?
   - Although participants indicated the training program was very informational and helped to further their education and knowledge, they felt it lacked networking opportunities during and after the program. Many said for those who don't already have employment and a network, it would be very difficult to find employment.
• There is also concern of creating a high supply of trained individuals when there is less of a demand in employment. This assumption was not shared by all as some participants feel there is plenty of demand, but individuals just need to have the proper training and connections.

4) **Would you recommend this training to others?**

Yes. All of the participants agreed the training was worth it and would recommend to others, but they had concerns of what to do after the training (See below in “how to improve the training program”).

5) **How much of what you learned in training have you applied on the job?**

• One individual is working with the extended training he has received with the weatherization and BPI training. He previously had a heating and cooling degree from Vatterott; this has helped him increase his potential.

• Another participant was currently employed, but has used the training to further his knowledge in construction. This has proven to be very beneficial to his employer.

• Many agreed that even if they had yet to find employment, they feel the training was useful to their everyday lives in their own homes, along with spreading the information to those in their community.

6) **Did you have an awareness of green jobs before you entered the program?**

Yes. Many of them already had jobs in which they were doing deconstruction and took the training to better themselves. Additionally, the certifications will enhance their career paths.

7) **What suggestions do you have to improve the training program?**

• Establish networks between larger companies and small businesses/minorities in the industry.

• Environmental technician certification didn’t allow for the individual to receive a license as three years of job experience is required before licensing.
  - People need assistance in getting the licensing.
  - Insurance is difficult for individuals to obtain.

• Training was Monday – Friday, eight hours a day for eight weeks. Participants expressed concern with the sacrifice and commitment individuals are making for furthering their education, but having a lack of employment connection in the end. Participants also felt the training program needed a hands on or entrepreneurial component, which would allow individuals to receive site training while possibly providing for themselves.
  - Contract positions would be ideal, that could lead into a permanent position

• Contractor associations need to be used for creating a mechanism for counseling/mentorship programs during and after the training programs.
  - Not job specific necessarily, but an understanding of where they can go after training.
• Larger organizations that have money and/or grant money need to take a step further and be incorporated with the training programs as the trainers.
  o Establish hands on training rather than just teaching language.

• Create a business component into the training also. (e.g. QuickBooks, business administration, etc.)
Mid-America Regional Council EnergyWorks KC

Group Stakeholder Interview - Summary

Metropolitan Energy Center

Date: February 19, 2013  
Program: Metropolitan Energy Center

Attendees:
- Barry Dicker, Decent Energy  
- Curtis Rouser,  
- Don Reck, Bridging the Gap  
- Joshua Best, Historic Green  
- Kathryn Persley, Persley Construction  
- Patrick Zaiss, AssisTech  
- Paul Rieck, Instructor/Mechanical Edge

1) What training did you receive?
- Software programs  
- Weatherization and Building Performance Institute certification

2) Would you recommend this training to others?
- Participants felt the training was valuable. The FastTrac New Venture program was excellent in providing a hands-on program that allowed people to understand what to look for when auditing.

- Those programs that provided on-site training included older homes in the area, which provided insight on different issues from one home to the next. Reviewing older homes also provided insight into variations in carpentry and remodeling.

- The programs allowed for networking and relationship building for those who already have relationships built. Those who are unemployed before training still lack connections and career relationships at the end of the program. Participants suggest MARC and EWKC work to establish small work sessions to get these individuals into relationship building situations.

- No. The surveyor/compass program was not helpful. The vernacular was not great and had to retake the course to better understand. A few participants indicated the computer programs were difficult to navigate and understand, prompts were overlooked and MEC employees had difficulty using the program. Communication and instruction on program materials required going through a chain of people to get an answer. There was no one instructor who could give a direct answer.
3) Did the program help you find employment?
Participants already had employment and were seeking additional credentials to advance their careers.

4) Did you have an awareness of green jobs before you entered the program?
- One individual had a job and needed to further his education and to enhance his career in weatherization. The program training gave confidence and knowledge to talk to home owners and be able to help them understand what energy efficient recommendations were needed. The program made a difference.
- One woman was transitioning from the corporate world. She met someone via the FastTrac New Venture program who informed her of educational opportunities through MEC. She enjoyed the training as it allowed for a change in type and pace of work. The training brought her interest in green energy, energy conservation, architecture and mechanical systems all together. Training has allowed her to develop a business she enjoys and enables her to continue on this path as long as she desires rather than have to retire.
- Another participant had the interest already as they were a carpenter; this person was contacted by EnergyWorks KC and encouraged to participate in the program. He decided this was something that he could learn from and further educate himself. Currently is working his way up to an analyst and feels more knowledgeable from training and was appreciative of the hands on training.

5) What suggestions do you have to improve the training program?
- A mentoring program needs to be implemented for buying tools, gathering equipment and help in making the right connections.
- Development of a low-interest loan program that could help people get on their feet and gain momentum after the training program.

6) General Comments
- The training sessions were effective. But individuals participating in the entrepreneurial portion of the program have struggled with administrative operations.
- There shouldn't be more training for people with the same education as there are plenty of people who are trying to find work and make things work. They are finding work, but some have to travel farther.
  - There needs to be further training business/professional training.
  - 80-90% of those who went through the training will be out of work soon. Those who will be able to survive will be those who had a business model and establishment before the training was in place.
  - A business model/business development needs to be implemented into the training and not just a focus on green energy training.
Participants expressed an extreme concern for how the programs were developed; what processes were used when considering how the grant would be used; and how to reach out to those who it would potentially benefit. The follow are comments of participants regarding this issue.

- Public awareness (billboards, press releases, etc.) was created to promote the program. This activity wasn’t visible until much later in the program. This type of PR needed to be at the beginning and the program would have been more successful.

- The industry (contractors, laborers) was not included when the grants were being written and programs developed.

- A demand market analysis should have been involved in the program development.

- The program needed to be designed with input from those who will be putting the applications into action.

- All stakeholders need to be considered when the programs are designed. Supply and demand can create a major issue with the program and should be considered for the future.

Discussion of how the program was developed led participants in to concerns of what the key strategies and expected outcomes of the training programs were and what they feel was really meant. Many feel the targeted outcome was stated and developed, but failed in execution. Participants again feel the training programs were successful and beneficial, but not for everyone as a whole and individuals who have the means and resources can make it work. The following are responses from participants regarding the overall intent of the EnergyWorks KC program.

- “If the intent was to create jobs it has failed. If it was to just train individuals, then it succeeded.”

- The program favors established companies. Grassroots companies struggle when they don't receive payment for 80-90 days.
  - “The City doesn’t understand why small businesses are higher priced. It’s because those who are smaller are waiting to get paid. We have to compensate for the loss at times.”

- If the point of the grant was to address multiple houses and provide self-sufficiency to renters, then they have failed.

- Quality assurance was not focused on; there was disconnect and audits were not monitored.
  - There was a disconnect in communication and guidance between instructors and participants.
Mid-America Regional Council EnergyWorks KC

Group Stakeholder Interview - Summary

University of Central Missouri

Date: March 22, 2013
Program: University of Central Missouri

Attendees:
- Robin Marks, Keller Williams Legacy Partners
- Regina Drone, Keller Williams Eastland Partners

1) How did you find out about the training program?
- A friend who had participated in the program recommended it.
- A colleague informed other real estate agents of the course and its benefits.

2) What training did you receive?
- Residential Energy Retrofitting

3) Have you acquired employment using the skills you gained in the training program?
The participant was currently employed with Keller Williams and participated in the training program to continue education for career advancement.

4) Would you recommend this training to others?
- Yes. The program was a great experience and provided a springboard for furthering her career. The instructors and participants were very involved, which led to proactive attitudes outside of the classroom during and after the training program. Many of the participants stay in contact with each other and network on a regular basis.
- Yes, the program was excellent, and the instructors were very knowledgeable. The program was very interactive, and the instructors allowed us to have discussions about the materials that we were learning about and how it could be better applied to the industry. There were instances where some of the information was revised to better serve future trainees.

5) How much of what you learned in training have you applied on the job?
- Skills and knowledge from training have been applied since the training program started. The participant felt they have been able to look at properties from the start with a client and inform them...
of ways to upgrade and improve their home for resale or after purchasing and still see energy savings, rather than waiting until an energy audit is conducted. Feedback from clients has been very positive, as the participants skills and training are producing savings in the end.

- The skills and knowledge from the training has not fully been applied at this point, but participants believe it will be beneficial for the future.

6) **Did you have an awareness of green jobs before you entered the program?**
No, the only awareness was a previous workshop the participant was involved with for electrical retrofitting through the Electrical Union Hall.

7) **What suggestions do you have to improve the training program?**
- The program overall was great, very informative and proactive; the only suggestion would be to add networking and dialogue with mortgage brokers. The brokers are a very valuable part to the real estate process; throughout the training the participants weren't able to speak to or learn from them. Creating a dialogue between brokers and agents on a level of energy savings would improve the training program.
- Providing continuing education credit for the training would be helpful for those who participate and also create an incentive for those who have not participated.
Mid-America Regional Council EnergyWorks KC

Online Survey - Summary

Date: April 12, 2013
Program: Workforce Development Online Survey

- 29 respondents. (Please note that comments were transcribed directly from the survey instrument.)

1. In which workforce development program did you participate?
   a. Metropolitan Energy Center 45%, 13 responses
   b. Kansas City Kansas Community College 17%, 5 responses
   c. University of Central Missouri – Retrofit Brokers 38%, 11 responses
   d. University of Central Missouri – Residential Energy Client Service Coordinators 0%
   e. Metropolitan Community College 0%
   f. Full Employment Council 3%, 1 response

2. How did you find out about the program? (Check all that apply)
   a. Workforce development program coordinator 21%, 6 responses
   b. Flyer 21%, 6 responses
   c. Curriculum advisor 14%, 4 responses
   d. Employer 7%, 2 responses
   e. Program website 3%, 1 response
   f. Other – please explain 45%, 13 responses
      I. Continuing education course
      II. KC Realtor Association
      III. Scott Boyce (2)
      IV. Referral (4)
      V. Internet
      VI. Green Impact Zone
      VII. Email
      VIII. MARC

3. What training did you receive? (Check all that apply)
   a. Energy Conservation 52%, 15 responses
   b. Deconstruction and Environmental Redmediation 38%, 11 responses
   c. FastTrac NewVenture and Construction Business Management 3%, 1 response
   d. Building Performance Institute Certification 21%, 6 responses
   e. Other, please list 28%, 8 responses
      i. Retrofit Brokers (4)
      ii. Surveyor and Treat
iii. Commercial/Multi-Family audit training (2)
iv. Healthy Homes Training/HUD Green Training

4. Have you acquired employment using the skills you gained in the training program?
   a. If yes, please explain employment and skills used.
      i. No. 59%, 17 responses
      ii. Yes. 41%, 12 responses
         1. I took the warehouse/deconstruction programs so have been fortunate to take advantage of both certification classes. The first job is part-time work doing demo/clean-up and the second job is full-time work at Bushnell.
         2. Have begun working very part time on a commission only basis, explaining possible retrofit and setting appointments for energy audits with new home-owners. I wouldn’t really call it a job though. It’s not like I could quit my other jobs and just go full time right off the bat. Or that I would ever quit my other job, for that matter.
         3. Completed Energy Audits
         4. I am using the information in my handyman service. I am keeping old building material that can be repurposed for others to use.
         5. No new employment. I’m already an energy auditor using the software
         6. Started a new company, Greenery Services LLC
         7. Program Manager for Housewarmings Program at Bridging The Gap
         8. Gained additional skills and knowledge to use in my business
         10. Working for a small remodeling company
         11. More grants and more grant opportunities
         12. I was not looking to acquire employment but to enhance my knowledge and skill set so that I could improve service to the community (Green Impact Zone) and real estate clients. My skill set has been increased and I am implementing an initiative within the zone that could benefit neighborhoods as a result of this training.

5. How much time after you finished training did it take to find a job?
   a. Helped me advance in existing job 44%, 12 responses
   b. Job opportunity was available as soon as training was completed 11%, 3 responses
   c. Within one month after training 7%, 2 responses
   d. Two to six months after training 7%, 2 responses
   e. More than six months after training 4%, 1 response
   f. Still seeking employment 26%, 7 responses

6. Were you already employed and took the training program to enhance education?
   a. No. 21%, 6 responses
   b. Yes. 79%, 23 responses
7. **Would you recommend this training to others?**
   
a. Please explain why or why not.
   
i. **No. 10%, 3 responses**

   i. **Yes. 90%, 26 responses**

   1. Most definitely because not only for advance knowledge hands on training the certification certificate really turn heads on that resume.
   2. interesting, but this field seems to be saturated, or needs additional ways to open it up
   3. This is very beneficial to not only the real estate agent but helps us foster the importance of energy conservation with our clients and others. In addition, I also do contracts for a major company and it allows me the ability to fully understand the need and develop service level agreements for our suppliers to meet.
   4. Energy awareness and conservation, though slow coming, is becoming more and more, a necessity. Those of us, like other innovators, have to wait for the masses to “catch up”. Necessity is the mother of invention. The need is there. The way to fill the need it there. It's a matter of educating and providing a way to do the things most homeowners are aware they would LIKE TO DO, anyway.
   5. This is valuable information to past, present and future homeowners.
   6. Self-employer
   7. Great opportunity to educate clients and the real estate industry ways to conserve energy!
   8. Scott Boyce has a gift of teaching and speaking.
   9. I think the program was great. It has helped me become more helpful in my field. So many people are unaware of ways to reduce energy cost, and how to lower their monthly energy bills.
   10. It gave me more knowledge on energy assessment and what resources are available as well as the benefits.
   11. I think that trying to reuse old materials from houses and old buildings instead of taking it to the landfill is a good idea, should of been done a long time ago.
   12. Great trainers and facility
   13. The program is beneficial to anyone interested in saving energy.
   14. I learned a lot about repurposing and I just finished the class a few weeks ago and I am looking to start a co-op with other members of our class.
   15. The "training" was a joke. It was a two phase program with a week in one month and a follow up session the following month. It was unorganized and didn't provide any assistance in real field application. We as contractors were asked to provide OUR experience and ideas from the field and the class discussed such. We also provide OUR field equipment. I hope tax dollars were NOT spent with MEC for this.
   16. In the construction and building design industry this knowledge and guidance is needed to make better buildings.
   17. Very good program, broad exposure to concepts and skills needed to excel
   18. It change my job to a career opportunity
   19. **Learning allows you the opportunity to change behavior**
8. Did the program assist in finding employment?
   a. If yes, what assistance did you receive?
      i. No. 68%, 19 responses
      ii. Yes. 32%, 9 responses
         1. The resume was on point
         2. Two companies which are really just partners were offered as potential employers.
         3. We were introduced to energy retrofit providers
         4. Gay Lee was very helpful and kind. She helped me set up a few interviews with future employer.
         5. Enhanced present skills
         6. Enhanced my existing job skills, leading to an offer from another employer.
         7. Interviews
         8. Helped the organization keep people employed.

9. Did the program assist in networking with those in your field of work?
   a. If yes, please explain how it has helped you.
   b. If no, please explain how the program networking could be improved.
      i. No. 21%, 6 responses
      ii. Yes. 86%, 25 responses
         1. Forklift demo and warehouse knowledge
         2. Contract development of service level agreements
         3. Several individuals and businesses in the consortium were introduced to us.
         4. Common interests
         5. Possibly will be. No currently engaging with anyone in the field.
         6. Enjoyed the classroom time with other real estate agents from around the city. Compared how they will apply what we learned.
         7. Met new agents in the KC area.
         8. Maintaining contacts with classmates
         9. Yes. I have shared information with other realtors by way of a class and other communications such as radio.
        10. Building a network with the local electrical union to expand knowledge, education and possible employment opportunities for our local union.
        11. Exposure and networking with people in the field and learning from them.
        12. Yes. There were other things in the program that helped.
        13. Somewhat during the course
        14. Contractor meetings – open house events
        15. I am looking to start a co-op with members of the class.
        16. It is always good to share experiences with others in the same field.
17. Introduced me to others in the field as well as resources.
18. Besides the relationship building with peers, the instructors have become a resource in my work.
19. Numerous events and seminars that I have attended
20. I have had opportunities to network before and following events
21. It hasn’t helped
22. Job interviews with the company I’m working with today.

10. Have you applied what you learned in training to your job?
   a. If yes, explain what training you have applied.
      i. **No. 28%, 8 responses**
      ii. **Yes. 72%, 21 responses**

1. Everything
2. utilize my knowledge to better establish a final finished service that a vendor is providing for the company
3. It’s a slow start, but I have explained the process and had both of my homebuyers decide to start the process of retrofitting with an energy audit.
4. Spoke with prospective buyer clients for the incentive of the program
5. Helping home owners or new buyers be more award of improvements or habits to save energy and in doing so, save money!
6. Everyone I meet I share my new found knowledge!
7. The knowledge has definitely helped me in my real estate career. I have some appointments set up.
8. Daily I have disclosed what I have found out about energy efforts as well as the dangers of trapping bad air in your home to my customers and clients.
9. I am able to assess a home as far as energy performance and make recommendations to clients/individuals on how to proceed to make their home more energy efficient.
10. People skills and not throwing everything away.
11. Enhanced understanding Operation of equipment Enhanced understanding during QA sessions
12. Repurposing and salvaging building materials for others to reuse
13. Helped understand the use of Surveyor.
14. Learned energy auditing and that is the field of work I am performing.
15. On a daily basis in recruiting homeowners to participate in the program.
16. I have integrated the air sealing and insulation in my work as a house renovator.
17. Principals of building science that enhanced my understanding and capability
18. Yes I applied all the skills I learn to the job I have today with n NEW HERIZONS LLC
19. Basic construction skills
20. Westside received the national award for Green Designation
21. My skill set has been increased and I am implementing an initiative within the zone that could benefit neighborhoods as a result of this training.
11. Did you have an awareness of green jobs before you entered the program?
   a. If yes, please explain
      i. No. 45%, 13 responses
      ii. Yes. 55%, 16 responses
         1. Just enhanced the different ways and the networking did wonders
         2. I was aware of the industry and some of the programs
            Not in depth as I learned in this class. I was aware of LEEDS, etc but didn't
            realize the areas in which SME's are developed
         3. I attended UMKC Brown Field Management course and Brown Field
         4. Entrepreneur course 12 years earlier.
         5. In a related field as a home inspector
         6. I have been in the construction industry for nearly thirty years and going green
            is the future.
         7. I have always known about green jobs, I enjoy learning about solar power,
            recycling, repurposing, and keeping the earth green
         8. I've been an Energy Auditor since 2010.
         9. As commercial contractor, was familiar with LEED and green building
            techniques.
         10. Have been involved in the environmental movement since the early 70's so am
            very aware of the potential for green jobs.
        11. I currently work in the field as a licensed RESNet and BPI auditor.
        12. I am an architect so I knew there was a growing need for these jobs.
        13. Sought out training to become more able to apply a "green" approach to my
            work.
        14. I was aware and seeking a green job career
        15. I have been on environmental tasks force for Government and other
            organizations
        16. My work within the Green Impact Zone provided a base of knowledge about
            green jobs

12. What suggestions do you have to improve the training program?
   a. At this moment nothing my experience and fellow classmates was close worked together even
      while taking the class itself. The money helped so much so keep up the good work and finally
      word of mouth is the best sales so my mouth will be spreading on the good word. Thanks so
      much talk to you later.
   b. The companies that were presented did not effectively present any additional training for us.
      There were no run through of how to use the online program, which is complicated. One of the
      companies has their phone disconnected. The other does not jive with Mac computers, which
      you then cannot take an IPAD to the client interview to download information and get a bid on
      the audits. Also - to jump start our careers - there should be a discount on the audits. The paying
      for the audits seems to be a major hurdle for people. The companies we were introduced to
      seem too complicated to work with.
   c. It would have enhanced the program if there were many more mortgage brokers who were
      willing to participate by providing energy efficient Mortgages and who would come in and talk
      to the class about this type of mortgage. It would also be beneficial to have continuing
      education in this scope of education.
   d. More in-the-field training, actually on site.
e. Simplify it. Too many roles in the process presented.

f. Enjoyed it all... Very educational.

g. Wish there were some "Green builders" that came to class to speak with us. Especially for new construction.

h. Continuing education, a way to keep what we have learned fresh.

i. Need more interaction with the key components of the retrofit exchange and ecobroker as well as fellow students.

j. The training program is very helpful and practical. It's well organize and easy & friendly learning environment. I'm very grateful.

k. Lead the horse to the water, job placement to get more than the 1% work force going in this special field.

l. More direct info specifically on testing all through the training. The weatherization section should be on the end to add time for testing related question.

m. More one on one study as well as more computer program training.

n. Given the time limits this was a good mix of class room and hands on training.

o. Have a company experience with real training and education host the sessions. Have a curriculum to follow, and even have reference material available. Bring ideas to the table as opposed to harvesting everything from the class. It was a phenomenal waste of time.

p. MEC needs to have one or two people that can help you fully instead of 12 different people having a small part of the process and not knowing what the others are doing.

q. Need assistance with rent, bills and food. Should be able to keep tools used during training can't do jobs without tools.

r. Networking among grant recipients to improve use of resources and people.

13. What other general comments do you have regarding the training program you participated in?

a. The experience is good to know but still have to put in the time. twice as hard because of at times high expectations. It do not matter the end result is outstanding (smiles).

b. I think this is a great industry, but when I put my foot in the water, seems like the consumers are wary. There has been a lot of confusion and those who have been interested in retrofitting may have already had an audit, without a real resolution. It was more of an audit, and then we will blow in insulation and get a rebate. I like the idea of a whole house audit - but am not going into someone's house to experiment with how the program works. This should all be included. Seems like the companies involved were happy to get trained workers and didn't want to do any additional training or marketing assistance.

c. very interesting, well thought out and extremely informative

d. The program was very decisive and presented in an easy to understand way. The instructors were very knowledgeable on the topic of instruction. If they were asked a question they didn't know the answer to, they would always find out. The materials used were concise and easy to follow. The instructors engaged us with our peers through thought provoking interaction over the material. We were encouraged to begin to apply what we learned right away.

e. Classroom instruction was excellent.

f. Just simplify the whole process. My suggestion: (1.) We broker initial contact with clients, (2.) Client connected to the system, (3.) The panel member to follow up. (4.) Get the job done. (5.) Everyone get pay.

g. Would like to see more classes at KCRAR so more agents would have the opportunity to learn more about retrofit.

h. Understand this is the wave of the future and happy to be a part of it! My clients currently are in southern Johnson County. Working on implementing what I learned into to my business. When I
do have clients that want to buy older homes, the energy equation always comes into play. Want to be able to direct them to an automatic energy audit.

i. I really enjoyed the program. The teachers were great. I am glad I got an opportunity to receive training though the grant that was available. As a result I can trace at least one client back to the program. I not sure I would have gotten her if I didn't have the retrofit training. I have also gotten the opportunity to present the presentation several people who may become clients at a later date. It has given me an opportunity to be very relevant; as a result I have had people contact me to do additional advertisement of my business such as radio, classes and newsletters.

j. Thought the teachers and class participation were above expectations.

k. Excellent program.

l. Where ever the work is going on in this field, may be out of town or in, make part of the grant money locate people there to dive in and get this special field going. You need more than 1% to know about this, as a union carpenter for 21 years work is not good out there and this is a chance for a new - old concept to kick off when the world really needs to be going green and put people to work.

m. Very good training. Grants should cover testing fees

n. LOVED IT!

o. Training was adequate for me as I have a business and commercial construction background. Probably inadequate for someone brand new to the field and looking for a new career.

p. KUDOS to the training facilitator for lining up great instructors as well as providing opportunity for hands on application.

q. AUDIT these programs offered by MEC. Have someone actually sit in from time to time to see what is going on with FEDERAL DOLLARS spent. It is outrageous this program was funded with tax money.

r. Quite well designed and implemented. The training program at MEC is well run and the training coordinator (Gay Lee) is very open to feedback and as a resource to get a good answer to any questions.

s. Good program but no job

t. Keep up the good works helping our community

u. IT was a great training, very informative and helpful
Mobile Meeting Summary
Beyond The Bulb: Energy Efficiency Improvements
in the Greater Kansas City Area
September 2012 – March 2013

Overview

A series of 47 mobile meetings were held across the MARC region at farmers markets, hardware and home improvement stores, and other community events from September 2012 through March 2013 on behalf of EnergyWorks KC's Beyond The Bulb. The meetings focused on the energy-efficiency improvements that home and small business owners are likely to need per the following schedule:

- September – October 2012: Lighting and HVAC/furnace improvements
- November – December 2012: Air duct sealing and insulation
- January – February 2013: Water efficiency

The purpose of the mobile meetings included:

- Providing educational materials at the meetings that describe the key types of energy-efficiency improvements.
- Providing free, low-cost materials to consumers to help them make quick energy saving improvements to their homes or businesses.
- Inspire home and business owners to change the way in which they consume energy at home or work.
- Being a resource for EnergyWorks KC (EWKC) programs and other complementary energy savings programs and resources available for energy efficiency improvements in the region, including those accessible through the City of Independence, Kansas City BPU, and others.
- Pushing the EWKC goals and message to the region.
- Evaluating the effectiveness of both the Beyond the Bulb communications strategy and the gather information about the kinds of energy-efficiency improvements home and business owners are making.
A total of 2,054 people participated in the 47 mobile meetings over a 7-month period, for an overall average of 293 people per month.

<table>
<thead>
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<th>TOPIC</th>
<th>DATE</th>
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<th>VENUE</th>
<th>PARTICIPANTS</th>
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<td>Lighting &amp; HVAC/Furnace Efficiency</td>
<td>Sat., Sept. 8</td>
<td>Jackson</td>
<td>KC Organics and Natural Food Market, Minor Park, Kansas City, Mo.</td>
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<td></td>
<td>Sat., Sept. 8</td>
<td>Jackson</td>
<td>Westlake Ace Hardware, 444 SW Ward Blvd., Lee’s Summit, Mo.</td>
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<td>Fri., Sept. 14</td>
<td>Clay</td>
<td>Westlake Ace Hardware, 157 Crown Hill Rd., Excelsior Springs, Mo.</td>
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<td>Sat., Sept. 22</td>
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<td>Fri., Oct. 5</td>
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<td>Badseed Farmer's Market</td>
<td>1909 McGee St., Kansas City, Mo.</td>
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<td>Gladfest Fall Festival</td>
<td>Gladstone, Mo.</td>
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<td>Sat., Oct. 6</td>
<td>Platte</td>
<td>Parktoberfest, Parkville</td>
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<td>Sprint Center</td>
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<td>Tues., Nov. 13</td>
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<td>Buck O'Neil 100th Birthday Celebration, Gem Theater</td>
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<td>Sustainable Success Stories, Kauffman Foundation</td>
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<td>Sat., Dec. 1</td>
<td>Clay</td>
<td>Westlake Ace Hardware</td>
<td>5945 NE Antioch Rd., Gladstone, Mo.</td>
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<tr>
<td>Fri., Dec. 7</td>
<td>Jackson</td>
<td>Badseed Farmers Market</td>
<td>1909</td>
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<tr>
<td>Date</td>
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<td>Event Description</td>
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<td>Sat., Dec. 8</td>
<td>Jackson</td>
<td>KC Organics Farmer’s Market, Notre Dame de Sion High School, 10631 Wornall, Kansas City, Mo.</td>
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<td>Sat., Dec. 15</td>
<td>Jackson</td>
<td>Toys for Tots, Gregg/Klice Community Center, 1600 John “Buck” O’Neil Way, Kansas City, Mo.</td>
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<td>Water Efficiency</td>
<td>Sat., Jan. 12</td>
<td>Platte</td>
<td>Jeff’s True Value Hardware, 2300 Kentucky Ave., Platte City, Mo.</td>
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<td>Sat., Jan. 12</td>
<td>Leavenworth</td>
<td>Westlake Ace Hardware, 3400 S. 4th St., Leavenworth, Ks.</td>
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<td>Sat., Jan. 12</td>
<td>Wyandotte</td>
<td>Strasser True Value Hardware, 910 Southwest Blvd., Kansas City, Ks.</td>
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<td>Sat., Jan. 26</td>
<td>Ray</td>
<td>Larry’s True Value 210 S Thornton Richmond, Mo.</td>
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<td>Tues., Jan. 27</td>
<td>Jackson</td>
<td>KC Chamber’s Energy Environment Sustainability</td>
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Page 5 of 12
<table>
<thead>
<tr>
<th>Date</th>
<th>City</th>
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<th>Location</th>
<th>Attendance</th>
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<tbody>
<tr>
<td>Fri., Feb. 1</td>
<td>Jackson</td>
<td>Jackson Badseed Farmers Market</td>
<td>30 W Pershing, Kansas City, Mo.</td>
<td>26</td>
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<td>Fri., Feb. 8</td>
<td>Jackson</td>
<td>KC Remodeling Show</td>
<td>Jackson Badseed Farmers Market, 1909 McGee St., Kansas City, Mo.</td>
<td>150</td>
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<td>Sat. Feb. 9</td>
<td>Jackson</td>
<td>KC Remodeling Show</td>
<td>KC Remodeling Show, American Royal Center, 1800 Genessee St., Kansas City, Mo.</td>
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<tr>
<td>Fri. Mar. 1</td>
<td>Johnson</td>
<td>Johnson County Home Show</td>
<td>Johnson County Home Show, Overland Park Convention Center, 6000 College Blvd., Overland Park, Ks.</td>
<td>103</td>
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<tr>
<td>Sat. Mar. 2</td>
<td>Johnson</td>
<td>Johnson County Home Show</td>
<td>Johnson County Home Show, Overland Park Convention Center, 6000 College Blvd., Overland Park, Ks.</td>
<td>250</td>
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<tr>
<td>Sat., Mar. 9</td>
<td>Jackson</td>
<td>Greater Kansas City International Auto Show</td>
<td>Greater Kansas City International Auto Show, Bartle Hall Convention Center, Kansas City, 301 West 13th St., Kansas City, Mo.</td>
<td>23</td>
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<tr>
<td>Sun., Mar. 10</td>
<td>Jackson</td>
<td>Greater Kansas City International Auto Show</td>
<td>Greater Kansas City International Auto Show, Bartle Hall Convention Center, Kansas City, 301 West 13th St., Kansas City, Mo.</td>
<td>31</td>
</tr>
</tbody>
</table>
**Exhibits and Handouts**

The exhibits and handouts provided at the meetings included:

- **Poster/Display Boards**
  - Beyond The Bulb Overview
  - Lighting
    - Overview
    - Lighting efficiency tip for homeowners
    - Lighting efficiency tip for business owners
  - HVAC/furnace efficiency
    - Overview
    - HVAC/furnace efficiency tip for homeowners
    - HVAC/furnace efficiency tip for business owners
  - Air/duct sealing and insulation
    - Overview
    - Air and duct sealing and insulation efficiency tip for homeowners
    - Air and duct sealing and insulation efficiency tip for business owners
  - Water efficiency
    - Overview
    - Water efficiency tip for homeowners
    - Water efficiency tip for business owners

- **Brochures**
  - Lighting brochures per meeting
  - HVAC/furnace efficiency brochures per meeting
  - Air and duct sealing and insulation
  - Water efficiency

- **Give-a-ways**
  - 4-pack of compact fluorescent light bulbs (15 packs per meeting)
  - Programmable thermostat (2 per meeting)
  - Caulking Kit (15 kits per meeting)
Survey Results

An on-line survey was made available to mobile meeting participants and the Greater Kansas City area via www.beyondthebulb.org. The survey was open from September 5, 2012 to May 15, 2013. A total of 961 responded to the survey and provided responses to the eight questions listed below. Summary tables that describe the total survey results in general and by county are attached to this report.

- **Which of the following actions have you taken to save energy and save money on your lighting? (select up to 3 actions).**
  - Switched from incandescent lights to CFLs, LEDs, or halogens
  - Added timers or motion sensors to my lights
  - Changed my T12 tubular fluorescent lights to T8s or T5s
  - Turned off lights when leaving a room
  - Used more natural light than artificial light
  - Had an energy assessment

- **Which of the following actions have you taken to save energy and save money on your heating and cooling system? (select up to 3 actions).**
  - Replaced my furnace or boiler with a high-efficiency model
  - Set the thermostat warmer in summer; cooler in winter
  - Cleaned or replaced my furnace and air conditioner filters
  - Installed a programmable thermostat
  - Calibrated my thermostat
  - Had an energy assessment

- **Which of the following additional actions have you taken to save energy and save money on your heating and cooling system? (select up to 3 actions).**
  - Weather stripped and caulked leaky doors and windows
  - Checked the insulation on my attic floor or other areas
  - Caulked and sealed leaky ducts and basement cracks
  - Checked my home or business for air leaks
  - Added insulation to my attic floor or other areas
  - Had an energy assessment

- **Which of the following actions have you taken to conserve water? (select up to three actions)**
  - Installed low-flow showerheads
  - Planted a rain garden or installed a rain barrel
  - Checked and fixed leaky toilets and faucets
  - Added a toilet bank or dam
  - Installed faucet aerators
  - Started taking shorter showers

- **What has inspired you to invest in energy-saving habits, products or improvements? (select up to 3 inspirations)**
  - Promotions on billboards, TV, radio, or online
  - Tax incentives or rebates
  - Results of an energy assessment of my home or business
  - Free energy-efficiency improvement supplies
  - Opportunities to save money on my utility bills
  - ENERGY STAR-qualified products

- **How would you describe yourself (select 1 description)**
  - Homeowner
If you’d like to receive more information about how you could save energy and money on your lighting, heating and cooling system, or water usage, type your email address in the space below.

What is your zip code?

Staff Notes

Participants’ comments noted from staff at the meetings included:

- Preference for use of the term “high-efficiency showerheads” rather than “low-flow showerheads” due to the potential negative connotation of the phrase “low-flow”.
  - The survey uses the term “low-flow”. We might want to change to “high-efficiency”.
- CFL bulbs turn on slowly – You could finish your task before they come on. How do you get access to the faster responding version (next level of energy-efficient upgrade)?
- CFLs don’t last.
- There is too much mercury in CFLs and they don’t produce enough light – Prefer 6500 (sunlight equivalent) energy-efficient bulbs.
- Inspirations: Conscious about the environment - Top reason for making changes. Saving money, etc is a secondary benefit. Energy saving action is I got rid of my car and take transit or zip car.
- We have changed our appliances to energy-efficient models (freezer, refrigerator, washer/dryer).
- Replaced all windows in our 1971 house. We have saved so much money on our heating and cooling!
- I'm walking more to save energy.
- My landlord makes his homes more energy-efficient to make them more attractive to potential renters.
- We installed a heat pump, solar fan and just installed a new energy-efficient patio door.
- Reason for making a change is "saving the environment". Environment and saving money are equal.
- We have replaced all of our windows with energy-efficient windows.
- Have installed high-efficiency patio doors.
- We're trying to go solar!
- Have replaced all of our windows with energy-efficient ones.
- Have installed new siding glass door on our home, double-pane windows, and a high-efficiency toilet. Was inspired by the sales guy at the hardware store. My toilet was broken.
• My home is new and already built to be energy-efficient.
• Tinted the windows and added solar screens.
• Just built a brand new, energy-efficient house - No need for caulk, etc.
• We no longer use gas to heat our home. We have converted it entirely to electricity - Bills have dropped 50%.
• Put film over our windows and use dark shades.
• Put in new windows.
• Have weather stripped my garage doors and put plastic over my windows.
• Replaced my windows - double-pane. Have energy-star appliances, including freezer, range, etc. Have energy-efficient front door and washer/dryer.
• Took action because it's the right thing to do. Have already changed out all my switches, windows, insulation, roof, etc.
• Have new windows throughout the house.
• We use wood to heat our home.
• My house was built in 1942 and we just had a programmable thermostat installed!
• Using fans to better circulate the air in my home.
• Have changed the float ball in my toilet.
• My apartment complex makes the needed energy efficiency improvements (caulking, weather stripping, etc.) for me.
• We don't have a furnace. We have a heat pump.
• We're using a wood burning stove.
• We have replaced all of our windows and are inspired to save energy to help the environment.
• Inspired to save energy to conserve natural resources and be a responsible citizen.
• I'm making changes for comfort and to save money.
• We use energy very conservative with our energy use and will install new windows this spring.
• We’ve sealed our windows with plastic.
• We’ve replaced our sliding glass doors.
• What inspires us to save energy is doing the right thing for the environment
• New roof and sent the old roof to get recycled. I do not like cfl light bulbs because they are hazardous materials. I save energy for natural resource conservation.
• We are heating our home via fireplace and have installed copper tubing to help the heated air travel through our home.
• We are trying to install solar panels on our home.
• We have added new windows.
• Heating entirely with wood
• Purchased an infrared heater and haven't needed to turn the furnace on yet this year!
• Personal philosophy: live as light on the land as we can
• Saving 25% on light bill by changing all of light bulbs to LED. Also using bath water to provide water for flower garden.
• Naturalizing my lawn so I don't need to water the grass - Using wild strawberries, violets, native clematis (sp?), and Virginia creeper instead of grass.
• We had someone come out and program our irrigation system to make it more efficient.
• Inspiration: it's the right thing to do
• Blocked off chimney with cardboard to save money/energy. Also turned off vents.
• Inspiration: resources are finite - save the earth
• Except on one of the questions we are doing more than 3 things - so I prioritized the activities I thought would make the most impact. Also, on the last question, I think one of the choices should be "because I/we care about doing what's best for our environment" -- or something along those lines.
• Use the t8 bulbs as a visual aid for selling to customers. Helps explain why they should do it.
• Contact me (Ivan Minnis, Jr.) for an energy assessment at iminnisjr@yahoo.com.
• KCPL cuts our rates in half because we have a second heat pump installed for the upstairs
• Inspiration: Don't want to take more than I need to on earth. Also supplementing heating needs with a wood stove. Trying to move to solar.
• 1500mAh is 1,500 milliamp-hours, its basically a measurement of how long the battery might last. larger number is more life. i wouldn't worry about putting 6v from these panels into your phone, as the nominal voltage for a USB cord is around 5v anyway. the phone will be the smarts of your charger, it should turn the charge off when they're done. as for the amperage, the solar lights' panels are probably puny and can't be more than 300mAh each. this will not cook your phone.
• Old fridge not energy star, new fridge is but has much shorter life span. The old fridge is still going. How is this saving when have to replace more often? Fills up landfills do to shorter life span.
• Check out How Smart Program in Hays, Kansas - Do retrofits, less utility provider competition.
• Business: Rooftop system that's automated control, shut down unused parts of building, demonstrate high-efficiency lighting use to customers.
• Collingwoodp@conedsolutions.com - interested in energy assessment for schools - any educational programs available? We met at KC Chamber event on 1/29/2013.
• Business inspirations: Save money and demonstrate energy-efficiency products to clients.
• Are EWKC and the partnering utilities pursuing additional funding for a grant extension?
• Inspiration: It's the right thing to do. We donate to the arbor foundation, compost, buy local, and plant trees.
• I was inspired by a grade school teacher in 1971 and I have been energy conscious ever since
• Waiting for solar incentives. Do-it-yourself solar is where the future is because today solar investments are $20,000 and hard for the middle class to afford.
• Re-using our gray water to flush toilet and water the plants.
• Really enjoying my tankless water heater!
• Replaced windows and installed a 95.6% high efficiency furnace
• Got new siding and it included a vapor barrier. Installed new roof and got a reflective barrier to save on heating/cooling costs.
• Changed from metal roof to shingled and it cut our energy bill waaaay down!
• 64109 is not my zip code - it's 64116
• I am inspired to invest in energy saving habits to help the environment
• We have replaced windows
• Just want to do right thing.
• We have a dual-flush toilet.
• Using more natural light via our sun room.
• Using a tank-less water and have really noticed a savings!
• We're geo-thermal and use water from our pond to water the lawn.
• Can tankless water heaters be used with gas and/or electricity?
• Replaced doors and windows and installed dual flush toilets
• We have a farm house and save energy by closing the upstairs.
• Inspiration: use less/save natural resources
• Heating our home with radiant flooring and a wood stove. Inside temperature never varies more than one degree.
• We purchased an on-demand water heater and our bill dropped $125/month!
• Inspiration: Right thing for the planet.
Results for survey: Beyond the Bulb

This survey is currently closed. Open date: 09-05-2012. Close date: 05-15-2013.
Number of surveys taken: 961. (excludes tests)

By Device

<table>
<thead>
<tr>
<th>Device</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile device</td>
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<td>PC</td>
<td>53</td>
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<td>906</td>
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</table>
Results for survey: Beyond the Bulb

This survey is currently **closed**. Open date: **09-05-2012**, Close date: **05-15-2013**. Number of surveys taken: **961**. (excludes tests)

---

**By Date**

| 09/06 | 09/07 | 09/08 | 09/09 | 09/10 | 09/11 | 09/12 | 09/13 | 09/14 | 09/15 | 09/16 | 09/17 | 09/18 | 09/19 | 09/20 | 09/21 | 09/22 | 09/23 | 09/24 | 09/25 | 09/26 | 09/27 | 09/28 | 09/29 | 09/30 | 10/01 | 10/02 | 10/03 | 10/04 | 10/05 | 10/06 |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 2     | 1     | 59    | 1     | 1     | 15    | 1     | 2     | 1     | 2     | 1     | 68    | 43    | 2     | 1     | 31    | 99    |
Results for survey: Beyond the Bulb

This survey is currently closed. Open date: 09-05-2012, Close date: 05-15-2013.
Number of surveys taken: 961. (excludes tests)

By Date

|---|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
Results for survey: Beyond the Bulb

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<td>12/08</td>
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<td>12/13</td>
<td>1</td>
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Results for survey: Beyond the Bulb

This survey is currently closed. Open date: 09-05-2012. Close date: 05-15-2013.
Number of surveys taken: 961. (excludes tests)

By Date

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<thead>
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Results for survey: Beyond the Bulb

This survey is currently closed. Open date: 09-05-2012. Close date: 05-15-2013.
Number of surveys taken: 961 (excludes tests)

1. Actions taken to save on lighting

<table>
<thead>
<tr>
<th>Action</th>
<th>Number</th>
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</thead>
<tbody>
<tr>
<td>Switched from incandescent lights to CFLs, LEDs or halogens</td>
<td>804</td>
</tr>
<tr>
<td>Added timers or motion sensors to my lights</td>
<td>166</td>
</tr>
<tr>
<td>Changed my T12 tubular fluorescent lights to T8s or T5s</td>
<td>67</td>
</tr>
<tr>
<td>Turned off lights when leaving a room</td>
<td>786</td>
</tr>
<tr>
<td>Used more natural light than artificial light</td>
<td>490</td>
</tr>
<tr>
<td>Had an energy assessment</td>
<td>52</td>
</tr>
</tbody>
</table>
Results for survey: Beyond the Bulb

This survey is currently **closed**. Open date: **09-05-2012**, Close date: **05-15-2013**.
Number of surveys taken: **961**. (excludes tests)

### 2. Actions taken to save on heating and cooling

<table>
<thead>
<tr>
<th>Action</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Replaced my furnace or boiler with a high-efficiency model</td>
<td>334</td>
</tr>
<tr>
<td>Set the thermostat warmer in summer; cooler in winter</td>
<td>613</td>
</tr>
<tr>
<td>Cleaned or replaced my furnace and air conditioner filters</td>
<td>685</td>
</tr>
<tr>
<td>Installed a programmable thermostat</td>
<td>567</td>
</tr>
<tr>
<td>Calibrated my thermostat</td>
<td>35</td>
</tr>
<tr>
<td>Had an energy assessment</td>
<td>39</td>
</tr>
</tbody>
</table>
Results for survey: Beyond the Bulb

This survey is currently closed. Open date: 09-05-2012. Close date: 05-15-2013.
Number of surveys taken: 961. (excludes tests)

3. Actions taken to save on heating and cooling

- Weather stripped and caulked leaky doors and windows: 445
- Checked the insulation on my attic floor or other areas: 389
- Caulked and sealed leaky ducts and basement cracks: 351
- Checked my home or business for air leaks: 317
- Added insulation to my attic floor or other areas: 218
- Had an energy assessment: 34
Results for survey: Beyond the Bulb

This survey is currently closed. Open date: 09-05-2012. Close date: 05-15-2013.
Number of surveys taken: 961. (excludes tests)

4. Actions taken to conserve water

<table>
<thead>
<tr>
<th>Action</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installed low-flow showerheads</td>
<td>457</td>
</tr>
<tr>
<td>Planted a rain garden or installed a rain barrel</td>
<td>175</td>
</tr>
<tr>
<td>Checked and fixed leaky toilets and faucets</td>
<td>621</td>
</tr>
<tr>
<td>Added a toilet tank bank or dam</td>
<td>75</td>
</tr>
<tr>
<td>Installed faucet aerators</td>
<td>208</td>
</tr>
<tr>
<td>Started taking shorter showers</td>
<td>376</td>
</tr>
</tbody>
</table>
Results for survey: Beyond the Bulb

This survey is currently closed. Open date: 09-05-2012, Close date: 05-15-2013.
Number of surveys taken: 961. (excludes tests)

5. Here’s what our survey participants say are their inspirations for investing in energy-efficiency improvements for their homes or businesses.

<table>
<thead>
<tr>
<th>Promotion</th>
<th>115</th>
<th>246</th>
<th>76</th>
<th>227</th>
<th>794</th>
<th>353</th>
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<tbody>
<tr>
<td></td>
<td>Promotions on billboards, TV, radio or online</td>
<td>Tax incentives or rebates</td>
<td>Results of an energy assessment of my home or business</td>
<td>Free energy-efficiency improvement supplies</td>
<td>Opportunities to save money on my utility bills</td>
<td>ENERGY STAR — qualified products</td>
</tr>
</tbody>
</table>
Results for survey: Beyond the Bulb

This survey is currently closed. Open date: 09-05-2012. Close date: 05-15-2013.
Number of surveys taken: 961. (excludes tests)

6. Describe yourself

- Homeowner: 775
- Renter: 159
- Business owner: 14
- Other: 10
EWKC’s
Beyond the Bulb

InTouch Live! Results by County
09-05-2012 through 05-15-2013

Number of Surveys Taken: 961
### Device Type

<table>
<thead>
<tr>
<th>Community</th>
<th>Tablet</th>
<th>PC</th>
<th>Mobile device</th>
</tr>
</thead>
<tbody>
<tr>
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<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Ray</td>
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<tr>
<td>Platte</td>
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<tr>
<td>Johnson</td>
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</tr>
<tr>
<td>Jackson</td>
<td>17</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Clay</td>
<td>137</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Cass</td>
<td>76</td>
<td>3</td>
<td>0</td>
</tr>
</tbody>
</table>

![Bar chart showing the distribution of responses by community and device type.](chart.png)
Which of the following actions have you taken to save energy and money on your lighting?

- Has an energy assessment
- Used more natural light than artificial light
- Turned off lights when leaving a room
- Changed my T12 tubular fluorescent lights to T8s or T5s
- Added timers or motion sensors to my lights
- Switched from incandescent lights to CFLs, LEDs, or halogens
Which of the following actions have you taken to save energy and money on your heating and cooling system?

- Had an energy assessment
- Calibrated my thermostat
- Installed a programmable thermostat
- Cleaned or replaced my furnace and air conditioner filters
- Set the thermostat warmer in summer, cooler in winter
- Replaced my furnace or boiler with a high-efficiency model
Which of the following additional actions have you taken to save energy and money on your heating and cooling system?

- Had an energy assessment
- Added insulation to my attic floor or other areas
- Checked my home and business for air leaks
- Caulked and sealed leaky ducts and basement cracks
- Checked the insulation on my attic floor or other areas
- Weather stripped and caulked leaky doors and windows

<table>
<thead>
<tr>
<th>Community</th>
<th>Had an energy assessment</th>
<th>Added insulation to attic floor or other areas</th>
<th>Checked home and business for air leaks</th>
<th>Caulked and sealed leaky ducts and basement cracks</th>
<th>Checked attic floor or other areas</th>
<th>Weather stripped and caulked leaky doors and windows</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other</td>
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<td></td>
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<tr>
<td>Wyandotte</td>
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<tr>
<td>Ray</td>
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<tr>
<td>Platter</td>
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<tr>
<td>Miami</td>
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<tr>
<td>Leavenworth</td>
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<tr>
<td>Johnson</td>
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<td>Jackson</td>
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<tr>
<td>Cass</td>
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</tbody>
</table>
Which of the following actions have you taken to conserve water?

- Started taking shorter showers
- Installed faucet aerators
- Added a toilet tank bank or dam
- Checked and fixed leaky toilets and faucets
- Planted a rain garden or installed a rain barrel
- Installed low floor showerheads

### Number of Responses by Community

**Cass**: 0, 11, 17, 44, 0, 26, 25, 12, 50, 100, 150, 200

**Clay**: 0, 11, 25, 40, 22, 25, 0, 11, 23, 28, 68, 49

**Jackson**: 10, 20, 23, 60, 48, 60, 81, 119, 150, 110, 177

**Johnson**: 10, 37, 69, 81, 119, 177, 110, 119

**Leavenworth**: 11, 23, 30, 25, 15, 11, 10, 4, 24, 60, 60

**Miami**: 1, 2, 10, 30, 29, 32, 10, 2, 1, 0

**Platte**: 7, 10, 30, 52, 10, 17, 23, 2, 1, 0, 0

**Ray**: 3, 2, 4, 1, 5, 4, 2, 1, 1, 0

**Wyandotte**: 1, 4, 17, 23, 10, 17, 41, 11, 28, 59, 37

**Other**: 12, 26, 44, 69, 12, 41, 119, 30, 5, 29, 10
What has inspired you to invest in energy-saving habits, products or improvements?

- ENERGY STAR — qualified products
- Opportunities to save money on my utility bills
- Free energy-efficiency improvement supplies
- Results of an energy assessment of my home or business
- Tax incentives or rebates
- Promotions on billboards, TV, radios or online
How would you describe yourself?

Community

- Cass
- Clay
- Jackson
- Johnson
- Leavenworth
- Miami
- Platte
- Ray
- Wyandotte
- Other

Number of Responses

- Home owner
- Renter
- Business Owner
- Other
MARC EnergyWorks KC Public Education: Beyond The Bulb website: www.beyondthebulb.org
MARC EnergyWorks KC Public Education: Beyond The Bulb energy calculator: www.beyondthebulb.org/calculator
For a complete list of questions and survey results, see “Communications results - Vireo.pdf.”
MARC EnergyWorks KC Public Education: Mobile Meeting Outreach Events

Sept. 14, 2012 - Westlake Ace Hardware
Excelsior Springs, Missouri

Sept. 14, 2012 - Westlake Ace Hardware
Independence, Missouri

Sept. 22, 2012 - Westlake Ace Hardware
Belton, Missouri

Sept. 22, 2012 - Westlake Ace Hardware
Pleasant Hill, Missouri

Oct. 5, 2012 - Badseed Market
Kansas City, Missouri

Oct. 6, 2012 - Gladfest
Gladstone, Missouri
Nov. 13, 2012 - Buck O’Neill Day, Gem Theater
Kansas City, Missouri

Dec. 1, 2012 - Westlake Ace Hardware
Olathe, Kansas

Feb. 1, 2013 - Badseed Market
Kansas City, Mo.

Mar. 2, 2013 - Johnson County Remodeling Show
Overland Park, Kan.

Mar. 10, 2013 - Kansas City Auto Show
Kansas City, Mo.

Feb. 8, 2013 - Kansas City Home Remodeling Show
Kansas City, Mo.
MARC EnergyWorks KC Public Education Round 1 outreach giveaways: programmable thermostat or compact fluorescent light bulbs

30 programmable thermostats
900 CFL bulbs given away in 225 four-packs

MARC EnergyWorks KC Public Education Round 2 and 3 outreach giveaways: weatherstripping kits and water conservation kits

We will give away 225 weather stripping kits in November and December

We will give away 225 water efficiency kits in January and February 2013
MARC EnergyWorks KC Public Education: Facebook posts
MARC EnergyWorks KC Public Education: Twitter posts

**12 Nov**
MARCCKMetro @MARCKCMetro
NEWS RELEASE: Beyond the Bulb launches new energy calculator. ow.ly/glVER How much could you save?

**31 Mar**
MARCCKMetro @MARCKCMetro
Headed to the @kcautoshow this weekend? Visit the @EnergyWorksKC Beyond The Bulb's booth in Electric Ave for a FREE water conservation kit!

**31 Jan**
MARCCKMetro @MARCKCMetro
Saving water saves energy & money! Take EWK Cs survey & get a free water saving kit at Gadsden Mall Fri 4-7 or Remodeling Show Fri/Sat 10a-9p

**10 Jan**
MARCCKMetro @MARCKCMetro
NEWS RELEASE: Is money leaking down your drain? ow.ly/g7Cdr

**20 Dec**
MARCCKMetro @MARCKCMetro
Attn real estate agents! Take this training to become a @NERInstitute certified Residential Energy Retrofit Broker ow.ly/pv3vZ

**17 Dec**
MARCCKMetro @MARCKCMetro
Learn how to make your home more energy efficient through these brief videos! ow.ly/b7JH6

**10 Oct 12**
MARCCKMetro @MARCKCMetro
Do you think you pay too much on your energy bills? Enter to win a home energy makeover! ow.ly/pfrll

**16 Oct 12**
MARCCKMetro @MARCKCMetro
Brrrr... Time to winter-proof your home. Find out how at BPUS FREE workshop on Oct. 30, 4-7 p.m. Sign up by Oct. 24. bit.ly/2khAtO

**13 Oct 13**
MARCCKMetro @MARCKCMetro
KC MO residents. Financing and incentives are available for energy improvements! beyondthebulb.org/residential/

**10 Oct 12**
MARCCKMetro @MARCKCMetro
What energy-efficiency improvements have you made? and what inspired you to make them? Tell us today at beyondthebulbsurvey.org

**5 Oct 12**
MARCCKMetro @MARCKCMetro
Catch up on your energy-savings reading! The new issue of the EnergyWorks KC Enews is here: bit.ly/sq08Hx twpcc.com/sha1ib

**4 Oct 12**
MARCCKMetro @MARCKCMetro
It your home "sucking power"? Find out with a Kill A Watt meter from Johnson Co. or Clattle Public Library. joclibrary.org/powersucks

**6 Sep 12**
MARCCKMetro @MARCKCMetro
Beyond The Bulb asks: "How much is your utility bill?" Save Energy, Save Money. Start Now. Visit the website! bit.ly/Tsy58v

**6 Jan 11**
MARCCKMetro @MARCKCMetro
Learn about rebates and financial incentives to weatherize your home tomorrow at the Westside Energy Fair bit.ly/XC3vtx

**20 Apr 12**
MARCCKMetro @MARCKCMetro
Introduction

This report takes a comprehensive look at the Green Impact Zone's strong outreach and engagement program across its eight major strategies.

The neighborhood leaders who drafted the vision, mission and strategies of the Green Impact Zone realized from the start that you can't enter an impoverished and disinvested area with a single strategy or goal. A home cannot be weatherized effectively if it has a hole in the roof or a crumbling foundation. The outreach and engagement strategies the Green Impact Zone staff use foster relationship building to help transform the area and require a more complete understanding of the area to gain awareness, trust and support from the residents.
This report emphasizes the need for a strong neighborhood outreach program that uses a wide array of tactics to inform, educate and move residents and local businesses to action. Examples of methods used to connect with residents and businesses include “boots on the ground,” and helping residents and businesses learn about and make effective use of available resources. Moreover, this report includes examples of the zone’s strategic focus on eight key areas, including energy efficiency, that comprise the zone’s holistic approach to outreach and engagement.

**Lessons Learned**

The key findings from the Green Impact Zone’s innovative use of outreach and engagement programming are as follows:

**Dedicated human resources move community initiatives forward**

A full-time staff with a wide experience base is essential for a place-based initiative to have the depth and acceptance in the community required for success. While residents helped craft the vision for the zone and are building their capacity to take on leadership roles, they can’t do it all by themselves as volunteers. A full-time staff armed with the experience, education and passion to transform communities is integral in tracking, managing and moving neighborhood initiatives forward. Staff has the ability to manage cross-sector partnerships, mitigate community challenges and provide technical assistance to community partners.

**Support from a larger, recognized institution grounds a community initiative**

The Green Impact Zone’s placement within the Mid-America Regional Council provided the proper transparent, reputable, apolitical support and structure needed to springboard the initiative. MARC also provides administrative support such as payroll, grant administration and human resources. MARC, as the zone’s parent organization, also provides connections to a cadre of partners who have been invaluable in constructing a program focused on community transformation.

**Cultural relevance creates trust**

It is important for outreach and engagement strategies to be culturally relevant. Neglected neighborhoods don’t get that way overnight and issues aren’t fixed overnight. The Green Impact Zone tapped local knowledge to better understand the unique personalities of each neighborhood. Staff quickly realized they would need to work with each community differently. A cookie-cutter approach would be the wrong strategy. Without a clear understanding of the area’s history, gaps can widen into gulf, even for those with the best intentions.

Zone staff believes fundamentally in the intelligence, wisdom and insights of zone residents. While community leaders and their advocates are eager to implement “green” ideas of energy efficiency and environmental solutions, neighborhood leaders have encouraged zone staff to begin with improvements to residents’ overall quality of life and then gradually introduce “green” ideas, which are new to many zone residents.

Understanding a community’s history is a common-sense approach when attempting grassroots-level community reform. Therefore, outreach and engagement strategies must be sensitive to community
dynamics that are multi-layered, historical, complex and interactive. Cultural competency strengthens outreach and engagement, enabling an organization to focus on conveying the right messages with the appropriate attitude, knowledge, awareness and skill.

**Understanding the differences between placed-based outreach and engagement programs improves communication in underserved communities**

The Green Impact Zone’s outreach is community focused and supported by neighborhood leadership. The zone invested in resources such as a Robo-call and a texting/email system to inform residents of programs. It also used “edutainment” activities to bolster support for issues.

In addition to these marketing methods, the zone also uses two-way communication to inform, educate, build trust and develop consensus through door-to-door engagement where members of the door-to-door team actually meet and interact with residents to explain programs and assist with applications. This approach helps build trust among residents, and also mirrors and replicates, on one or more levels, the approach implemented by many community development corporations in Kansas City area since 1970.

**Have fun with it!**

Being committed to helping others improve their lives can be stressful. Finding ways to de-stress as a staff is essential as staff faces community challenges every day. Celebrating and sharing even the smallest victories is important.
Green Impact Zone Overview

In 2009, Kansas City, Mo., as well as the rest of the nation, was contending with scores of issues that helped set the stage for an innovative initiative called The Green Impact Zone of Missouri. Foreclosures were at an all-time high. Employment was at an all-time low. The auto industry was on the brink of collapse. Risky investments in sub-prime lending led to the demise of iconic financial powerhouses such as Lehman Brothers. In the midst of two wars and national industry bailouts, the country was wrestling with the fact that our resources were finite. In response, the U.S. government began implementing policies to shift the nation’s thinking to becoming better stewards of the environment by allocating resources to programs and initiatives focused on environmental and energy conservation through the American Recovery and Reinvestment Act.

The urban core of Kansas City, Mo., like many large cities across the nation, has areas that have seen decades of disinvestment. As a result, urban neighborhoods endure high rates of poverty, unemployment and crime, as well as high concentrations of vacant and abandoned properties. In Kansas City, neighborhoods east of Troost Avenue (historically, a cultural and economic dividing line) were hit particularly hard by the decline. A variety of interventions had been used to address these social and economic issues without success. As the global economy tanked in 2009, there was growing pressure to find short-term and long-term solutions to concurrently build individual and community capacity.

In September 2009, Congressman Emanuel Cleaver II announced the creation of the Green Impact Zone with support from the city of Kansas City. The zone was framed as a national model for targeted investments, seeking to demonstrate how 150 square blocks of the urban core might be transformed through sustainable reinvestment. The zone is bounded by Troost on the west, 39th Street on the north, Prospect/Swope Parkway on the east and 51st Street on the south.

Table 1 below reflects the significant challenges, and even greater potential of the zone.

<table>
<thead>
<tr>
<th>Challenges</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>37.3 percent poverty rate.</td>
<td>Five strong neighborhood associations.</td>
</tr>
<tr>
<td>50 percent unemployment in some neighborhoods.</td>
<td>Five Community Development Corporations (CDCs).</td>
</tr>
<tr>
<td>55 percent of population has high school education or less.</td>
<td>In the area between the Zone and the Country</td>
</tr>
<tr>
<td>41 percent of the housing stock built before 1940.</td>
<td>Club Plaza homes range in value between $500,000</td>
</tr>
<tr>
<td>$22,712 median income.</td>
<td>–$1 million dollars.</td>
</tr>
<tr>
<td>53 percent renters.</td>
<td>Active civic leaders and organizations.</td>
</tr>
<tr>
<td>One grocery store; limited access to fresh fruits and vegetables.</td>
<td></td>
</tr>
<tr>
<td>More than 1,000 vacant lots and many abandoned homes and commercial buildings.</td>
<td></td>
</tr>
</tbody>
</table>

Table 1
Congressman Cleaver saw this as an opportunity to concentrate and coordinate financial and community resources in this area. He called on the city of Kansas City, Mo., to fund the core operation of a staff whose primary focus would be to work side by side with the neighborhoods in a manner that contributes to community transformation, while also building the capacity of neighborhoods. Since 2009, the city council has provided $3.8 million to support the core operation, including neighborhood capacity building grants.

The Congressman then turned to the Mid-America Regional Council (MARC), the region's metropolitan planning organization and a trusted, neutral public agent, to administer the city funding and anticipated grants, and to provide oversight for the initiative.

MARC conducted a series of focus groups with the five neighborhoods that make up the Green Impact Zone. The focus groups allowed neighborhood residents to determine the overall goal of the Green Impact Zone initiative, and the strategies that would lead to achievement of the goal. These strategies would lay the foundation for the Green Impact Zone work plan. Neighborhood residents determined in the focus groups that strategies in eight areas were critical to transformation: housing, employment and training, energy efficiency and water conservation, weatherization, urban agriculture, youth, public safety and community services, and infrastructure. The focus groups felt that these strategies would accomplish the zone's mission and vision: To develop a community that is socially, economically and environmentally better tomorrow than it is today; a place where people want to live, work and play.

Strong neighborhood outreach and engagement programs underlie all of the work of the Green Impact Zone. Outreach efforts sought to not only engage every resident and business in the activities of the zone, but help every resident understand and access the wide range of available resources.

In the 3.5 years since its inception, the Green Impact Zone has been the catalyst for the awarding of more than $178 million in federal grants and private funds, some of which reach outside the zone boundaries to the broader Kansas City region. Grant funds are supporting infrastructure improvements, an energy-efficient Smart Grid program, energy-efficiency improvements, employment and training, housing improvements and more.
Communication Strategies

The Green Impact Zone defines and implements outreach and engagement as two separate elements.

- Outreach is a mechanism for delivering value-added material to neighborhood residents. Outreach paves the way for engagement.
- Engagement is the means to collaboratively address community concerns using focused, ongoing, two-way conversations to develop understanding. Engagement encourages open dialogue and an exchange of information.

Appreciating the difference between the two approaches helps determine the extent to which an organization can expend its resources and the cultural relevance of its messaging. Outreach and engagement are universal values built into the Green Impact Zone’s programs, culture, strategies and practices. Table 2 illustrates the distinct differences between the two concepts.

**Table 2**

<table>
<thead>
<tr>
<th>Outreach: One-way communication</th>
<th>Engagement: Two-way dialogue</th>
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</thead>
<tbody>
<tr>
<td>Delivers one-way communication.</td>
<td>Includes ongoing relationship building.</td>
</tr>
<tr>
<td>Increases awareness and informs residents.</td>
<td>Increases awareness and educates residents.</td>
</tr>
<tr>
<td>Involves community residents and stakeholders.</td>
<td>Works with the community to mutually identify solutions.</td>
</tr>
<tr>
<td>Meets people where they are.</td>
<td>Assesses success of strategies.</td>
</tr>
<tr>
<td>Provides the foundation for engagement.</td>
<td>Encourages feedback and open communication with residents.</td>
</tr>
<tr>
<td></td>
<td>Involves listening to people and building trust.</td>
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</table>

Outreach is necessary to help organizations and businesses promote their values, accomplish their mission and develop increased resources and responses to address a range of compelling community concerns. The Green Impact Zone’s capacity-building strategy is rooted in outreach and engagement that begins with the process of information sharing and education of residents and community leaders. This diagram at right, created by the Green Impact Zone, displays a six-step change process that results in...
capacity building leading to sustainability. Though outreach and engagement strengthens each stage, information, education and understanding are necessary to change or modify a person’s behavior.

“Edutainment,” (education + entertainment) a marketing technique used throughout business circles, has been an effective outreach tool to inform and engage Green Impact Zone residents. People at all income levels like to be entertained. Consequently, the zone uses “edutainment” events in combination with WIIFM (what’s in it for me) strategies such as giveaways to attract people to an event and increase their receptivity to the educational message.

The Green Impact Zone’s outreach and engagement is not limited to residents, but extends to policy makers, government officials, civic leaders and philanthropists to help them understand the range of challenges lower-income people face in their daily lives. One of the tools the zone uses to enlighten these groups about people in poverty is the Missouri Association for Community Action’s Poverty Simulation. The simulation is a role-playing kit that enables participants to view poverty from different angles to broaden social, cultural and economic competency. It is imperative for community-based organizations like the Green Impact Zone to find meaningful ways, like the poverty simulation, to bridge the gap between policy ideas and neighborhood challenges.

**Green Impact Zone grassroots outreach and engagement methods**

The Green Impact Zone uses the following outreach and engagement methods in whole or in part. They can be used by other community-based organizations provided they are tailored to a particular organization’s style or a community’s needs. They are not inclusive of every outreach and engagement method employed by the zone. However, they are the most replicable.

**Educational and informational outreach** (outreach)

Educational and informational outreach is an entry-level interaction where informational material is communicated to neighborhood residents or the public at large. Some examples of these types of meetings are EnergyWorks KC (EWKC) program updates for neighborhood associations, weatherization meetings for local neighborhood associations, landlord meetings to discuss weatherization, radio promotion and event tabling. As an outreach tool, meetings allow residents to ask questions, make comments and share concerns. Such meetings may enable two-way communication depending on time, subject matter and other factors. Engagement typically occurs after meetings when residents ask in-depth questions.

This strategy also includes typical communication methods to disseminate information, such as Robo-calls (an automated phone call that uses a computerized auto-dialer and a computer-delivered, pre-recorded message), newsletters, reports, email blasts, radio promotions and event tabling.
“Edutainment” events (outreach and engagement)

“Edutainment” outreach and engagement events are large events with 100 or more attendees that combine education and entertainment in a manner designed to promote social change. For example, the Brush Creek Community Partners (BCCP), in partnership with the Green Impact Zone, hosted a “Meet Me at the Bridge” event that blended Kansas City history with a reference to the historic racial divide the community is trying to bridge. The purpose of this event was outreach that promoted each of the eight strategies and provided opportunities for partners to cross market. Information was provided in an entertaining fashion with the goal of building interest and creating opportunities for future engagement.

The “Energize Your Home, Impact the Zone” community event is another example of an “edutainment” event where several participating organizations provided information about weatherization, home ownership, energy efficiency, jobs and job training, youth programs, conservation, health and nutrition, public safety and much more. The event included 54 information booths, including neighborhood associations, nonprofit agencies, city departments, social service agencies, youth programs and environmental awareness groups. Entertainment was provided by local performers and Tom Joyner, host of the nationally syndicated Tom Joyner Morning Show. The event drew more than 500 participants, including 76 volunteers.

Door-to-door teams (outreach and engagement)

Teams were periodically formed to include the Green Impact Zone’s community ombudsmen along with a hired street team comprised of five to six people with strong communication and people skills. These teams distributed information on no more than three of the Zone’s eight strategies by leaving information at the door or talking with the resident about potential actions on the strategies being promoted. For example, door-to-door outreach focused on the weatherization program and generated 3,098 Low-Income Weatherization Assistance Program (LIWAP) applications.

Door-to-door outreach can be as simple as leaving fliers, applications or information at the doors in a particular area. It can become an engagement strategy in areas where the team actually meets and interacts with the residents to explain the programs and assist with applications.

Social media (outreach and engagement)

Social media tools can be used for outreach and engagement. Tools such as Facebook, Twitter and YouTube can be used to update followers with event information, share tips, pose questions, share program benefits such as EWKC’s
no-cost energy assessments for zone residents and, in the case of Twitter, provide real-time updates on the progress of events or happenings at the zone offices, in other zone venues and elsewhere.

**Organizational and individual relationship management** (engagement)

Leveraging trusted, existing relationships among individuals and/or organizations to facilitate action is a proven and successful strategy for the Green Impact Zone’s outreach. Field ombudsmen are Green Impact Zone staff assigned to neighborhoods, organizations and focus areas for the sole purpose of developing relationships that will result in capacity building for the zone, and transformation for the individual and/or community. Block captains, block leaders or other community collaborations find synergies across programs, address needs or cross-market events, projects and programs.

Human capital is the greatest resource for a community or organization. The ability to work with people, facilitate meetings, build consensus, negotiate group dynamics and hold one-on-one discussions are all critical to successfully implementing this strategy.

**Learning communities and workgroup management** (engagement)

Learning communities in the Green Impact Zone evolved into the Zone Institute of Preparation and Prosperity (ZIPP) as a solution for residents who are seeking to improve their lives through skills development, job acquisition and retention, with an emphasis on green jobs and environmental literacy.

ZIPP uses comprehensive Social, Economic and Environmental (S.E.E.) training modules that include self-management, career readiness, civic engagement, community involvement and environmental literacy. The S.E.E. training principles reflect the vision of the Green Impact Zone, which articulates the goal for distressed urban communities to become socially, environmentally and economically stronger. Each training module encapsulates one or more of the Green Impact Zone’s S.E.E. training principles, such as:

1. Increased work readiness (self-management, workplace communication, etc.) for unemployed and underemployed residents of the Green Impact Zone and other area neighborhoods.
2. Development of local talent who have strong workplace readiness skills, baseline knowledge of environmental concepts and who can immediately contribute to the company’s bottom line.

**Partner workgroups** (engagement)

Partner workgroups are meetings attended by specific Green Impact Zone staff and other community, civic and for-profit leaders to address specific subject areas. These workgroups cover a variety of topics including social equity, workforce development, health and wellness, housing or other pertinent issues impacting communities. These workgroups explore ways to improve or change procedures, processes or ways of thinking to help communities realize positive and sustainable change.
Outreach goal

Outreach and engagement activities are opportunities to reach specific, measureable goals and results. Goals can be defined as the number of people who attend an event, sign-up for a program or volunteer their time in a given period. An outreach goal can quantify how people value what you offer.

An organization develops a wide range of relationships with participants, funders, volunteers, referral sources, government entities, small businesses and neighborhood associations. The list is endless. Outreach and engagement are important efforts that community-based organizations use to promote their values, accomplish their mission, and develop increased resources.

Goals are as unique as an organization. A goal can be determined by the capacity to do the work or ability to leverage resources to support an effort. An organization’s goals should strike a balance between an ideal of what could be accomplished and what is possible. It is key to remember that goals are important, but not more important than an organization’s mission.

Outreach and engagement materials

Promotional materials can be as modest as a flier or a notice in a church bulletin, or as flashy as a billboard, a flash-mob or a television commercial. Regardless of an organization’s size, the goal is to have people respond. Therefore, fliers, email blasts or Robo-calls should be oriented to a specific target audience and cause them to equate the organization with adding value to their lives. The development of impactful promotional materials can, literally and figuratively, open residents’ doors. The materials an organization distributes reinforces who they are to the community. In developing outreach material, techniques can be mixed and matched to find the ones that are the most useful. This is a fertile stage for generating new ideas without sacrificing message.

Living in an era where people and organizations have access — at least online access — to an organization every minute of every day, it is tempting to use limited resources to increase your social media footprint. While all community-based organizations should have a Facebook and Twitter presence, it’s important to remember that there is nothing as meaningful as personal contact. Even in our instantaneous society, people still serve people and do the work that makes the difference.
Case Studies

The following case studies illustrate the Green Impact Zone’s best practices for outreach and engagement strategies. These approaches can be used by themselves or in combination. Each case study depicts a different scenario and one of the zone’s eight strategic focus areas.

CASE STUDY 1: Weatherization — The “Little Thunder” Story

The Green Impact Zone was responsible for facilitating outreach to residents regarding the benefits of the Low-Income Weatherization Assistance Program (LIWAP). Outreach included educating residents about the program and its benefits, distributing applications and assisting homeowners in working through miscommunication with weatherization contractors. In some instances, outreach helped redirect homeowners to other community resources such as EnergyWorks KC or Neighborhood Housing Services (NHS) if they did not meet income or eligibility guidelines.

Four months after the grant was announced, the first weatherization client was approved, work was scheduled to begin, and a news crew was dispatched to film the commencement of the work. The homeowner and weatherization contractor miscommunicated regarding the scope of work and the preparation the homeowner needed to complete before the contractor would begin. In frustration, the homeowner put a halt to the work and refused to move forward with the weatherization process.

The zone staff was asked to get the weatherization work back on track by assisting the weatherization contractor and homeowner in resolving their miscommunication within 24 hours. The ombudsman assigned to the neighborhood where the homeowner lived had a year-long history of interacting with the neighborhood association’s block captains, volunteers and paid staff. The ombudsman knew the personalities and organizational roles of those involved, and therefore knew who to call on to get things done. The ombudsman was able to use his relationship with the homeowner and association staff person to get the situation resolved quickly. In less than 10 minutes after receiving the request for assistance, the staff person called to the homeowner and explained what needed to happen and what was at risk if she chose not to move forward in the weatherization process. The homeowner turned to the Green Impact Zone staff and asked that the zone ombudsman assigned to her neighborhood be a part of the face-to-face meeting with the contractor.

The homeowner, zone ombudsman and contractor met at the home and reviewed the paperwork, resolved the miscommunication and in less than 24 hours the work was back on track. The weatherization process yielded her a new furnace that she calls “Little Thunder.” The homeowner was so pleased with her warm home that when she recounts her experience (which can be seen in a testimonial at www.youtube.com/watch?v=HI5jNAnN0mc&feature=relmfu), she does not even reference the frustration she experienced. The Green Impact Zone’s use of organizational and individual relationship management led to the desired results in this case study.

**Energy impacts:**

- The homeowner is saving energy, receiving lower heating bills and enjoying a more comfortable home.
CASE STUDY 2: Housing

Housing development within the Green Impact Zone focuses on green design and sustainability practices that will create, as stated in its mission, “safe, attractive and sustainable neighborhoods.” These practices should be embedded in every aspect of housing initiatives from the planning and predevelopment phases to construction.

Enacting an overarching sustainability plan throughout the Green Impact Zone is critical in guaranteeing that these efforts are followed and the desired outcomes are achieved and sustained. With this outcome in mind, the team developed a matrix comparing two of the nation’s prestigious building standards for green development — LEED for Neighborhood Development and Enterprise Green Communities standards — and presented the matrix to community leaders to determine which plan suited their community needs and best aligned with the city’s regulatory practices.

It was established that the Enterprise Green Communities program was the best fit for outlining a design and regulatory framework for future development within the zone’s housing initiative areas. The standards focus on affordable, green design alternatives that include:

- Construction materials and management.
- Land-use planning and smart site location that uses passive solar heating and cooling.
- Surface stormwater management.
- Energy-efficiency guidelines and recommendations.

Outreach strategies implemented:

Educational and informational outreach approach

- Robo-calls — via recorded telephone messages, zone residents were:
  - Invited to attend meetings and provide input on the proposed green standards.
  - Informed that a door-to-door team would be conducting an information drop.
- Neighborhood Meeting Updates — neighborhood leaders and zone ombudsman communicated outcomes from the green standards meetings and next steps in the process.
- Information drop door-to-door — information was hand delivered to neighborhoods.

Engagement strategies implemented:

Organization and/or Individual Relationship Management Approach

- Housing meetings were facilitated to allow residents an opportunity to discuss and evaluate the construction materials/management, water conservation and energy-efficiency options being considered for neighborhood housing development projects

Energy Impacts:

- Unified housing development strategies focused on energy conservation measures including insulation, heating and cooling efficiency, efficient appliances and smart land-use applications.
CASE STUDY 3: Urban Agriculture

In order to engage residents around urban agriculture, staff created an informational meeting on the topic of container gardening. Through research and previous partnerships, zone staff located a local resource, Kansas City Community Gardens. These engagements were especially important for those who were new to the concept of growing food, weren't ready for a large-scale garden, didn't have space for a garden or were uninformed about the benefits of urban agriculture. As is often the case with outreach, multiple tools were used. While the informational session was the first tool used to engage residents around the idea of community gardening, the following outreach and engagement strategies were implemented:

**Outreach strategies implemented:**

Educational and Informational Outreach Approach

- Robo-calls — via recorded telephone messages, zone residents were:
  - Invited to participate in urban gardening activities in area community gardens.
- Email blasts:
  - Invited community partners to participate and spread the word about the container gardening class.
- Newsletter
- Neighborhood meeting updates.
  - Informed residents about the upcoming container gardening class, handed out fliers and provided addresses and contacts to area community gardens.
- Information dropped door-to-door.

**Engagement strategies implemented:**

Organization and or Individual Relationship Management Approach

- Leveraging partnerships to facilitate training.
- Field ombudsmen made personal requests to urban gardeners asking for assistance to identify residents interested in gardening and urban farming.
- Personal phone calls to confirm and remind attendees of training.

Urban agriculture creates multiple benefits and positive community impacts.

**Energy impacts:**

- Conservation of fossil fuels — The reduction in transportation-related pollution correlates with the reduction of fossil fuel usage.
- Stormwater management — Many urban agriculture practitioners use water catchment systems. These include rain barrels and other methods of diverting rain water into storage. This reduces the amount of rain water entering the storm sewer system, but it also reduces the reliance on the municipal water supply during periods of light or no rain. This conserves water that would have been used to irrigate the gardens.
Environmental impacts:

- Urban agriculture provides many benefits to communities where it is encouraged and supported. The primary benefit comes from the food that is produced, which is often organic, or at the least minimally treated with pesticides, thereby reducing the toxic load of the community's natural environment.

- Reclamation of vacant lots and brownfields — Many neighborhoods are able to repurpose blighted and vacant lots in their communities using urban agriculture. This gives these lots new utility for the community and removes dangerous or unattractive space. Also, for lots that had been polluted by prior use (car-repair facilities, dry cleaners, etc.) organizations such as the EPA have funding available for brownfield remediation, a process that removes the toxins from the soil and makes the ground usable for urban agriculture. This process cleans away dangerous chemicals and helps repurpose the land.

- Reduction in pollution — Since urban agriculture produces food close to where the end-consumer lives, there is a reduction in pollution related to transporting food as well as the transporting of consumer to grocery stores, which in Kansas City tends to be miles from many urban core communities.

Other benefits of urban agriculture:

- Public safety — One of the most overlooked defenses communities have against crime is natural surveillance, a term referring to people who are outside for recreation, relaxation, exercise, etc., and as a result are observing their communities. Urban agriculture serves this purpose by placing people outside in a purposeful and positive way. Their presence will deter criminals who would prefer their activity not be seen by members of the community, especially those members who are actively involved in the transformation or improvement of their communities.

- Food grown in urban communities also provides great health benefits, as it is produced locally, addresses issues associated with food deserts, and provides nutritious foods to often disadvantaged communities or those with limited access to fresh fruits and vegetables. Many diseases and physical ailments can be addressed simply by eating better, and urban agriculture increases the options people have to acquire fresh fruits and vegetables.

CASE STUDY 4: Energy-Efficient Appliance Research

In 2010, KCP&L placed new, hyper-efficient appliances — including refrigerators, washers and dryers — in a limited number of homes in the Green Impact Zone as part of a project with the Electric Power Research Institute (EPRI) to measure how manufacturers’ claims compared to actual electricity usage.

Day-to-day operation of these appliances will help the EPRI measure how much energy the appliances can save the average homeowner. With help from the Green Impact Zone’s community ombudsmen, homeowners were recruited to participate in the project, based on their active involvement in neighborhood and community events.
Outreach strategies implemented:

Educational and informational outreach approach

- Robo-calls — via recorded telephone messages, zone residents were:
  - Invited to attend informational session to learn about the appliance give-away program and how to qualify for the program.
  - Informed that a door-to-door team would be conducting an information drop.
- Neighborhood and community partner meeting updates.
- Information drop door-to-door.

Engagement strategies implemented:

Organization and/or individual relationship management approach

- Leveraging partnerships to facilitate training.
- Training and employment of minority plumbers and electricians.
- Zone ombudsmen managed each appliance installation to ensure residents understood the program requirements and served as a bridge between zone residents and KCP&L.

Energy impacts:

- Energy conservation through the use of efficient home appliances.

Neighborhood Capacity Building Impact:

- Selection of program participants was based on the level of involvement in their neighborhood association, thereby encouraging and rewarding their continued participation in the neighborhood association.

CASE STUDY 5: SmartGrid Demonstration Project

KCP&L deployed “smart grid” displays to more than 1000 residents in the Green Impact Zone and surrounding smart grid demonstration area starting in 2010. The displays interact with their new meter to allow consumers to see how much electricity they are using at any given time, allowing them to make better decisions about their energy use.

Outreach strategies implemented:

Educational and informational outreach approach

- Neighborhood and community partner meeting updates.
- Information drop door-to-door.
**Engagement strategies implemented:**

Organization and/or individual relationship management approach

- Leveraging partnerships to facilitate outreach.

**Energy impacts:**

- Of the 1,000+ SmartGrid displays place in homes, nearly 700 of them are still in use. (Others displays have been lost, and some residents could not be reached for comment or have moved away.)

- Of the 700 displays, 50 percent of them are being used by residents who say they value the information they receive from them.

- Seventy of these residents also enrolled in KCPL’s Time of Use rate pilot program, which offers customers a higher-than-standard rate during “peak” hours and a lower-than-standard rate during “off peak” times, thereby encouraging them to manage their costs by reducing their usage during peak hours. This program is only offered during the summer months, May 16 through Sept. 15. The results from those 70 homes:
  - 40 households saved energy and money for the entire summer.
  - The average savings for those customers was $31.56, a 9.5 percent reduction from the traditional rate structure.
  - 13 customers reduced their bill by more than 20 percent.

**CASE STUDY 6: Deconstruction / EnergyWorks KC**

In 2010, Wells Fargo donated 23 foreclosed properties to the Ivanhoe Neighborhood Council on behalf of the Green Impact Zone, along with $172,500 to help pay for rehabilitation or demolition, if that was the necessary outcome. Rather than just bulldoze the houses, the city of Kansas City’s EnergyWorks KC staff proposed deconstructing them. Deconstruction involves carefully dismantling building components for reuse and recycling.

MARC and the Green Impact Zone worked with EnergyWorks KC, the Ivanhoe Neighborhood Council, Habitat Restore and The ReUse People to develop a deconstruction training-project plan.

After reviewing 100 applications and interviewing 25 candidates, 14 participants were selected for the program. After the group completed the two-day, OSHA-10 training at the start of the program, one of the trainees, Rane Newman, was offered a job and accepted. The remaining participants finished the training, which included hands-on deconstruction of the house at 4429 Garfield.

**Outreach strategies implemented:**

Educational and informational outreach approach

- Robo-calls.
- Newsletter.
Neighborhood meeting updates.
Information drop door-to-door.

**Engagement strategies implemented:**
Organization and or individual relationship management approach
- Interviewed residents.
- Training and employment of zone residents.
- Worked in partnership with EnergyWorks KC partners coalition to train residents in deconstruction.

**Energy impacts:**
- Building deconstruction allows building materials to be reused, thereby reducing the energy required to produce virgin materials.

**Employment and Training Impact:**
- Residents who received deconstruction training now have an additional skill set that makes them more marketable to area contractors.

**Conclusion**

The Green Impact Zone was created to be a national model for placed-based investments that replace old paradigms with innovative, strategic approaches leading to community transformation. It also demonstrates the importance of effective outreach and engagement and the role strategic private-public partnerships play in tackling entrenched community challenges. This paper summarizes strategies employed by Green Impact Zone staff to increase awareness, and inform and educate residents about challenges and opportunities converging in their community. Another goal of this paper is to reinforce the argument that placed-based initiatives are effective approaches to build community capacity in ways that support quality lifestyles and foster equitable distributions of resources.

The first step in neighborhood transformation is acknowledging the wide range of social, economic and environmental issues in an urban community. Private and public investments in long-term community goals jump-start the transformation of a community in a way that is safe and attractive, paving the way to quality housing and a higher quality of life. Residents need information and tools to enhance their individual and the broader community’s problem-solving capacity. Effective outreach and engagement has the ability to raise awareness and broaden understanding that can lead to community transformation. Building resilient communities goes beyond the scope of public policies and practices. In the end, developing community resiliency at the household or neighborhood level will demonstrate a community’s ability to attract and maintain resources, creating stronger neighborhoods over time.

There is a spirit to outreach that says “positive change is possible.” It inspires hope to continue to pursue opportunities to improve the lives of residents in the community.
References


Mid-America Regional Council, Year Two Green Impact Zone Annual Report, September 2011, Kansas City, Missouri, p. 16.


This program is made available, in whole or in part, from the US Department of Energy, Office of Energy Efficiency and Renewable Energy, under Grant Award #DE-EE0003564 from the Energy Efficiency and Conservation Block Grant BetterBuildings Neighborhood Program made available, pursuant to the American Recovery and Reinvestment Act of 2009, to the City of Kansas City, Missouri.
DEVELOPING KANSAS CITY’S GREEN JOBS PIPELINE

Green Workforce Initiatives Task Force
8/1/2011
DEVELOPING KANSAS CITY’S GREEN JOBS PIPELINE

Part 1: An Introduction

In 2010, the Mid-America Regional Council (MARC) established a regional workforce group focusing on EnergyWorks KC. That program is made possible through a $20 million grant received by the City of Kansas City, Missouri to transform the energy retrofit market for residential, commercial, industrial and institutional buildings, initially in seven targeted neighborhoods and then throughout the metropolitan area. As part of that effort, MARC received $880,000 to assist with strengthening Kansas City’s green jobs pipeline to provide residents of target areas a career path for green job opportunities—from training to certification to employment.

As part of this effort, the Green Workforce Initiatives Task Force was established. The task force comprised representatives of the areas workforce development agencies on both sites of the state line, non-profit organizations committed to similar efforts, Green Impact Zone staff, educational institutions, and private business.

The charge of the task force was to:

1. Develop a vision for what a strong green jobs pipeline system might look like for the Kansas City region;
2. Identify the potential market for green jobs;
3. Ensure services provided by stakeholders are part of the current system and how stakeholders and others might be involved in strengthening the system; and
4. Develop a set of recommendations for improvements to the system, including but not limited to, how the EnergyWorks KC grant funds could be invested and criteria for selection of grant recipients.

To that end, the task force met four times from April to June 2011, resulting in:

- Strategies and tactics to strengthen the green jobs pipeline in the Kansas City region;
- Prioritization of those strategies;
- Criteria for awarding grant funds; and
- A recommended structure to evaluate funding request and a process to award the grant funds.
Developing Kansas City’s Green Jobs Pipeline

Part 2: Executive Summary

Over the course of a three-month time period, the Green Workforce Initiatives Task Force worked to determine how to strengthen the green jobs pipeline in the Kansas City region. The impetus for the effort was an $880,000 EnergyWorks grant, which has the purpose of providing residents of target areas a career path for green job opportunities--from training to certification to employment.

This executive summary outlines the results of the task force work:

- Pipeline Strategies
- Strategic Priorities
- Grant Award Criteria
- Structure and Process

The resources considered by the task force can be found in Section 3 of this document: The Pipeline Today in Kansas City and Elsewhere. Detail regarding task force deliberations can be found beginning on Page 19 in Section 4 of this document: Plan Development.
Section 2.1: Pipeline Strategies
On Page 36 of this document is the Green Workforce Pipeline, complete with the strategies, tactics to achieve them and potential partners.

- **Create a demand for Green Jobs**
  - Promote entrepreneurship and small business development for green businesses
  - Facilitate legislation at local and state level regarding green practices
  - Convene industry employers to identify green jobs and programs
  - Develop incentives for green job creation
  - Advocacy at federal and state levels
  - Create green procurement practices
  - Partner with local governments
  - Showcase success stories

- **Provide Training, Skills Development and Career Planning**
  - Identify employer training needs
  - Identify pathways to green jobs and ensure training is available, measurable and appropriate
  - Develop programs to re-train incumbent workers
  - Develop incumbent worker training programs that pay for themselves
  - Create career development programs that lead to jobs

- **Connect People to Green Jobs**
  - Link the skilled workforce to employers
  - Identify best practices training that is current/cutting edge
  - Develop a green center
  - Develop an on-line database for green jobs
  - Ensure potential employees have transportation to work

- **Develop Comprehensive Public Awareness Campaign**
Section 2.2: Strategic Priorities

The following are the strategies identified by the task force as those of the highest priority.

- **Create a demand for Green Jobs**
  - Promote entrepreneurship and small business development for green businesses
  - Convene industry employers to identify green jobs and programs
  - Facilitate legislation at local and state levels regarding green practices

- **Provide Training, Skills Development and Career Planning**
  - Identify employer training needs
  - Identify pathways to green jobs and ensure training is available, measurable and appropriate

- **Connect People to Green Jobs**
  - Link the skilled workforce to employers

- **Develop Comprehensive Public Awareness Campaign**

According to the Department of Labor, a green job is either:

A job in business that produces goods or provides services
that benefit the environment or conserve natural resources

OR

one in which workers' duties
involve making their establishment's production processes
more environmentally friendly or use fewer natural resources.
Section 2.3: Grant Award Criteria

The criteria by which funding requests should be considered are:

- **Priority**
  - Align with priorities identified by the task force
  - Create new green jobs
  - Focus on green job sectors with a strong economic base
  - Engage the employer in furthering the regional green jobs pipeline
  - Develop jobs that pay more than minimum wage or further a specific green job pathway
  - Foster collaboration either through public/private partnerships or by leveraging grant funds with other funding mechanisms

- **Population Served**
  - Assist the seven target neighborhoods as outlined in the EnergyWorks program
  - Engage and become a part of the community to which they are targeted
  - Focus on one of three groups within the workforce:
    - Those who have been unemployed for considerable time
    - Newly unemployed
    - Incumbent workers wanting to grow into green job
  - Serve a segment of the population most affected, including but not limited to: youth, underemployed, unemployed, veterans, older, and disadvantaged workers
  - Support other EnergyWorks programs

- **Accountable**
  - Are cost effective
  - Illustrate sustainability beyond the term of the grant
  - Are able to show measurable outcomes
  - Have demonstrated organizational capacity

*It should be noted that these criteria are meant simply to be guidelines. Grant proposals do not have to fulfill each of the criteria.*
Section 2.4: Structure and Process

The green jobs pipeline has three distinct elements: creating a demand for green jobs, providing training and skill development, and connecting people to green jobs. The task force has stated that the emphasis should be given to those programs that specifically train people for green jobs and programs that actually create green jobs.

There is also a recognition that to create the jobs and foster the need for training, employers, potential employees, the buying public, businesses and local government agencies need to be aware of the potential for green jobs.

The task force agreed that the following allocations be a guideline for the grant funds.

- 45 percent: Job creation programs
- 45 percent: Training and Skill development programs
- 10 percent: Public education

Organizations can apply for separate funding for multiple programs, but no one program be granted any more than 35 percent of the total funds available. It is recognized, however, that one organization could submit a proposal that has job creation, training and public education components. Lastly, it is anticipated that the grants will be targeted to non-profit and public organizations.

Understanding that it is the MARC Board of Directors that has ultimate responsibility and decision-making on how funds awarded to MARC are allocated, the task force recommends the following structure and process be used to allocate the $880,000 in EnergyWorks funds.

Structure
The grant selection committee should include community members, representatives from workforce development organizations and MARC staff. The persons representing workforce development agencies would have to agree to excuse themselves during discussion on any application for which there may be a conflict. The task force wants to ensure that the committee has members who have experience and expertise in workforce development and/or in green industries. Further, the committee’s work should be open and transparent.

Process
The task force work will result in a detailed plan for using the EnergyWorks KC funds for workforce development and would inform the work of whatever committee structure is adopted. The task force decided that the grant committee would first determine categories of programs and activities and solicit proposals form area organizations with responses outlining how the funds would be used. This provides the committee greater latitude in granting the funds.
Developing Kansas City’s Green Jobs Pipeline

Part 3: The Pipeline Today in Kansas City and Elsewhere

Before determining how to strengthen the green jobs pipeline in the Kansas City region, information was gathered about the pipeline as it currently exists and how it fits into the context of best practices from around the country. Task force members were surveyed, local resources and stakeholders were consulted, and best practices research was conducted. The research results are summarized in this section of the task force report.

Section 3.1: Kansas City’s Green Jobs Pipeline: 2011
To discuss the current state of the green jobs pipeline, task force members were surveyed; results of previous surveys were reviewed; and regional efforts of the Green Impact Zone, MARC and Kansas City Area Development Council (KCADC) were considered.

Task Force Survey
According to the task force member survey results, the predominant services provided are training programs, certification, and education and outreach for prospective employees. Few of the organizations represented by the task force provided workforce services to employers or conducted actual workforce development planning.

In terms of workforce development that specifically focuses on green jobs, much of the work is related to energy efficiency and home weatherization, energy auditors and environmental remediation. When asked what the organizations would hope to do in addition to their current work, they consistently replied that they would like to further develop green employment opportunities, including bringing green manufacturers to Kansas City, and to have a direct connection to the jobs that are in existence. More fully developing the demand for green jobs was identified as the greatest need in strengthening the green jobs pipeline in the Kansas City region. Put another way, the single largest barrier to developing a pipeline is the absence of demand for green jobs.
The task force members are optimistic about the region’s ability to strengthen the pipeline, building on what they consider a strong foundation. To that point, respondents said:

- The City of Kansas City is focused on sustainability.
- The community college system is working to support green education and job development.
- Organizations routinely partner to provide services to train the workforce for green job opportunities.

Lastly, the task force members share a concern about funding workforce development for green jobs as well as developing the green jobs. They cited a reduction in future grant funds, limited resources available to their students, and the number of private businesses now focused on green job development.

**Full Employment Council Survey**

The task force also reviewed a survey conducted on behalf of the Full Employment Council by the University of Missouri-Kansas City Center for Economic Information. The following are highlights of that survey.

- There are 138 organizations with more than 50 employees that are potential green employers. Of those, 22 completed the survey.
- 45% of respondents produce green goods.
- 60% of respondents intend to expand their production of green goods.
- Of those completing the survey, most considered that green jobs require a college degree, listing LEED certification as a specialized training requirement.

“*We need a different on-ramp for people from disadvantaged communities. The leaders of the climate establishment came in through one door and now they want to squeeze everyone through that same door.*

“If we want to have a broad-based environmental movement, we need more entry points. ...The green economy has the power to deliver new sources of work, wealth and health to low-income people.”

Green Impact Zone

The Green Impact Zone is focused on developing a comprehensive approach to transforming a community, addressing every facet of the community's life. One of the initial areas of focus is job training and placement, and the following are current initiatives.

- The Green Impact Zone staff is working with existing job training and career development organizations to ensure that residents of the zone have full access to existing programs and opportunities.

- The Metropolitan Energy Center (MEC), the Full Employment Council (FEC), the Metropolitan Community Colleges and other organizations already train and certify individuals and companies to do weatherization. The Green Impact Zone staff works with these organizations to ensure zone residents are fully aware of training opportunities in weatherization and are able to access them. The goal is to convert weatherization jobs to longer-term, career ladder jobs in construction.

- The Green Impact Zone will work with public and private partners to develop a pipeline not only of job training opportunities, but to make sure that these opportunities are connected to long-term private sector jobs.

Building a Greener KC

In 2009, the Building a Greener KC report was prepared for MARC by the Corporation for a Skilled Workforce with considerable stakeholder input provided through several planning meetings. Stakeholders identified how the region could meet the need for green workforce development. Listed here are some highlights from the executive summary.

- The industry is only slowly becoming “green” in response to customer demand. Demand is driven by incentives, public policy, and public awareness; knowledge of appraisers, lenders, and insurers; and the skills of architects, designers, and contractors in making a case for green building.

- Most training will be for incumbent workers and is most likely to be accomplished on the job.
• Green knowledge starts at the top; architecture, design, and management professionals need to understand and adopt green practices to enable construction workers to build green. Universities need to be part of the collaboration.

• There are a plethora of certifications for both buildings and workers, which can create confusion for consumers and professionals alike.

• If reliant on incentives, there is a danger that green practices may fade away when the incentives are no longer available. Green practices must become part of the culture – the way business is done.

• On-going collaboration among public and private education and training entities and between the training entities and employers would reduce duplication and increase relevance.

KCADC Advanced Energy Advisory Council
The Kansas City region’s efforts to expand and strengthen its advanced energy industry are supported by an advisory council consisting of local industry experts and advocates from education, economic development, utilities, real estate and other support industries.

The Advisory Council’s primary mission is to support the Kansas City Area Development Council (KCADC) in the attraction, expansion, retention and creation of companies or organizations in the advanced energy business. The Advisory Council’s recommendations assist in advancing the capacity and capabilities in the Kansas City area for designing, engineering, commercializing, and manufacturing advanced energy systems including wind, solar, fuel cells, high energy battery, and advanced bio-fuels. KCADC has identified an initial list of 20 employers involved in advanced energy business.

Current Kansas City Pipeline Conclusion
Upon reviewing Kansas City’s current green jobs pipeline, the task force was in consensus that there are many capable organizations providing training that were also willing to work together. Lacking is the demand for green jobs; the structure, process and program to develop that demand; and the funding to enhance green job development in our region.
Section 3.2: What’s Working Elsewhere

Understanding that other regions in the United States have already begun to strengthen their green jobs pipeline, a review was done of best practices from around the country. Some areas are still in the planning stages while others are actively pursuing their goals.

Green for All
Green for All is an Oakland, California organization that works in collaboration with the business, government, labor, and grassroots communities to create and implement programs that increase quality jobs and opportunities in green industry. As part of its work, Green for All has a Communities of Practice program, connecting practitioners with on-the-ground experience and national experts to develop cutting-edge practices for growing an inclusive green economy.

Green for All convened a group of training providers (like many of those in the Kansas City region) to start developing answers to questions about services, partnerships, curriculum, green credentials, links to employers, funding and measuring their results. To serve the workers it trains and the industries in which those workers should be placed, the training providers identified five keys to success for green workforce development. Those keys are:

1. Knowing the services, resources and advocacy needed for its target population;
2. Building strong relationships with the industry and its representatives to help the industry grow and connect graduates to good jobs;
3. Providing education, skills and industry certifications to bring its target population to the industry employment opportunities;
4. Meaningfully measuring and reporting success; and
5. Diversifying its funding.
Ella Baker Center Initiative: Oakland Green Jobs

The Green-Collar Jobs Campaign of the Ella Baker Center advocates for the creation of "green-collar" jobs (quality, career-track, skilled, hands-on jobs in industries like renewable energy, water and energy efficiency, green building, habitat restoration, sustainable agriculture, and more), especially for low-income communities and communities of color.

The effort is guided by the "Three Ps":

- **Partnerships**: Building cross-sector coalitions that include leaders from unions, green businesses, environmental organizations, social justice groups, and education and training institutions.
- **Policy**: Crafting public policy solutions.
- **Pilot Programs**: Demonstration projects.

Cornell Cooperative Extension: Tompkins County

The Cornell Cooperative Extension serves urban, suburban, town and rural areas by offering programs in five broad areas: Agriculture and Food Systems; Children, Youth, and Families; Community and Economic Vitality; Environment and Natural Resources; and Nutrition and Health.

One of its specific areas of focus is on green jobs. According to its website, “The emergence of green jobs in Tompkins County is becoming increasingly more evident as more homeowners begin to take steps towards making their homes more energy efficient. As the demand for home energy improvements increase, the need for a qualified workforce to meet those demands will likely increase at a rate higher than the current workforce can accommodate.”

The agency supports this endeavor through education for employees, homeowners and business owners. One such example is its Green Building Seminar Series. One such seminar was on the **Local Building Materials Initiative**, a Cooperative Extension program to catalog and promote building materials being manufactured within 100 miles of Ithaca. Participants discussed how to overcome some of the challenges of sourcing and working with local building materials.
The program has also identified barriers to developing a green workforce and strategies to overcome them.

<table>
<thead>
<tr>
<th>Potential Barriers</th>
<th>Successful Strategies</th>
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<tbody>
<tr>
<td>▪ Shortage of skilled workers and entrepreneurs to expand weatherization and efficiency programs on a community scale</td>
<td>▪ Subsidized occupational skills training with classroom, online, hands-on, and on-the-job instruction</td>
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<tr>
<td>▪ Lack of widely accessible and locally-offered training</td>
<td>▪ Partnerships with community colleges, vocational-technical institutions, and continuing education programs</td>
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<tr>
<td>▪ Lack of placement, training, and advancement opportunities for apprentice labor, journeypersons, crew leaders, managers, and entrepreneurs</td>
<td>▪ Added-skill re-training programs targeted to construction trades</td>
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<td>▪ Lack of integrated curricula among existing community colleges, vocational-technical schools, universities, and continuing education</td>
<td>▪ Construction trade apprenticeship programs</td>
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<td>▪ Training-to-work programs</td>
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<td>▪ Train-the-trainer workshops</td>
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<td>▪ Collaborations to integrate components of green jobs workforce development pipeline</td>
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Green Jobs Green New York: Workforce Development Program

The Green Jobs Green New York (GJ/GNY) Workforce Development Program is designed to create job opportunities, including opportunities for new entrants into the state's workforce, focusing on the long-term unemployed and displaced workers and new workforce entrants. The model below outlines key areas of coordination among the workforce development partners needed to deploy a comprehensive workforce development strategy.
The GJ/GNY has four key plans of action. They are as follows.

Equipment and Training Infrastructure Needs:
- Identify those who want to achieve certification.
- Create workshops and curriculum to support those needs.
- Provide equipment incentives and lending programs.
- Establish lab houses for field testing and certification.
- Work with training centers to schedule the field certification exam during the training for a more seamless path from training to certifications

Certifications and Company Accreditation:
- Develop standards and related certifications for the commercial and residential sectors.
- Work with partners to accredit training curriculum.
Apprenticeships/Internships/On the Job Training (OJT):
- Recruit entry-level workers to be employed by participating contractors.
- Finance internships and OJT to support businesses that hire employees from green jobs readiness programs.
- Establish intermediaries to work with businesses, community based organizations, labor organizations and training providers so that training addresses business needs.

Curriculum Development and Non-Constructions Jobs
- Create an inventory of existing curricula.
- Identify what specific skill gaps persist, job categories needed and training curricula needed.
- Designate training programs to administer soft and foundational skill instruction.

Evergreen Cooperatives
The Evergreen Cooperatives of Cleveland, Ohio are employee-owned, for-profit companies that are based and hire locally. Evergreen is a partnership among the residents of six of the city’s most disadvantaged neighborhoods and some of Cleveland’s most important “anchor institutions”, including the Cleveland Foundation, the City of Cleveland, Case Western Reserve University, the Cleveland Clinic, University Hospitals, and many others.

As the needs grew for economic development expertise, the Collective had to find business plan specialists, financing, workforce development trainers, community land trusts, and other partners. Community land trusts are set up now to buy the land while it’s really inexpensive –they can then ensure stable rents for businesses, as well as a good return on investment on the land, if the community development efforts continue to succeed and land values increase.

Financing for green businesses is provided by a group called the Evergreen Fund, which is a 501(c)3 loan fund that will have a revolving line. Three businesses were launched in 2009 and 2010. Descriptions of the businesses follow.

**Evergreen Cooperative Laundry:** The cooperative laundry is solar-powered, energy efficient industrial scale laundry facility. This business was developed primarily as a response to the large medical community need for washing medical garments, was the most likely candidate for success, and was thus the first effort of the group. The laundry is gearing toward capacity of 10 million pounds of medical laundry per year.

**Ohio Cooperative Solar (OCS):** OCS installs solar panels during the summer and focuses almost exclusively on weatherization during the winter. OCS employs about 100 people. OCS found that working with non-profit partners was a major benefit in taking advantage of tax credits.

**Green City Growers (GCG):** GCG is a year round hydroponic veggie greenhouse located in a former industrial area. With a five acre facility that can grow up to 4 million heads of lettuce a year, it has the potential to become a major player in the regional food network. Projections are that it should employ up to 50 people.
The next green businesses planned are a community newspaper and a construction firm (mostly for remodels and renovations of existing/dilapidated buildings).

Evergreen companies hire and train employees from low- and moderate-income neighborhoods for jobs in the cooperative enterprises. A local nonprofit specializing in workforce development is recruiting workers through church and other networks. More than 90 neighborhood residents—some who have been laid off during the current recession, others who have been underemployed for years—attended the first community hiring meetings. Some of these men and women have become the first Evergreen employee-owners.

**CleanEnergy Works Oregon**

CleanEnergy Works Oregon (CEWO) is a non-profit program established to reduce energy waste by encouraging homeowners to take action through transforming their energy-wasting homes into comfortable, energy efficient living spaces that keep cooler in the summer and warmer in the winter by offering no-money-down, easy financing and simple qualifications. CEWO hopes to transform at least 6,000 homes in three years. The program is made possible through partnerships among public, private and non-profit interests including utility companies, local lenders, local governments, Energy Trust of Oregon, the Oregon Dept. of Energy, and the U.S. Department of Energy.

**Efficiency Kansas-Westar**

The Efficiency Kansas program was created to encourage energy efficiency to enhance insulation, air sealing and heating and cooling systems to help residential and small business consumers save energy and reduce their monthly utility bills. The program is financed through federal stimulus funds received by the Kansas Energy Office. The program allows Westar Energy customers to repay the cost of energy efficiency improvements to their home or business through their Westar utility bills. The only initial cost to the consumer is the $100 energy audit required to be performed on a home or business.

**Best Practices Conclusion**

While the approaches and partners vary, programs from across the country focus on four aspects of developing a green jobs pipeline.

- Labor: Who will do the work?
- Training: What training is available? What training is needed? Who will provide the training?
- Jobs: What jobs are there now? What jobs will there be?
- Funding: How do we sustain these jobs and keep the funding for them?

The Green Workforce Initiatives Task Force decided to focus on these four areas.
Developing Kansas City’s Green Jobs Pipeline

Part 4: Plan Development

Section 4.1: Process and Assumptions for Its Work

The Green Workforce Initiatives Task Force was convened by the Mid-America Regional Council to review existing programs that would support a green career pipeline, identify additional needs for such a pipeline, identify resources, and develop a recommended path forward. At the conclusion of its work, the task force was to develop a set of recommendations for improvements to the system, including but not limited to how the EnergyWorks KC grant funds could be invested and criteria for selection of grant recipients.

The task force comprised members of workforce development organizations, area universities and community colleges, economic development agencies, non-profit groups and private businesses.

The task force met four times over a three-month period. Descriptions of each of those meetings appear later in this section. The work of the task force resulted in:

- Strategies and tactics to strengthen the green jobs pipeline in the Kansas City region;
- Prioritization of those strategies;
- A recommended structure to evaluate funding requests; and,
- A process to award the grant funds.

Assumptions for the Work

To set the foundation for its work, several assumptions were developed, including the elements of a green jobs pipeline, the definition of green jobs, and the spectrum of jobs to be considered.

Elements of a Green Job Pipeline

Based upon the feedback received from task force members through a survey and other research, the key elements of a green job were determined to be:

- Labor Pool—the people and available workforce who will enter the green career pipeline
- Training—providing training that is necessary to get and keep green jobs
- Jobs—identifying and developing green jobs for those in the labor pool
- Funding—securing resources for continued growth and development of the pipeline
Definition of Green Jobs
The task force determined that it would use the Department of Labor’s definition of green jobs for the purpose of this process. According to the Department of Labor, there are two types of green jobs:

1. Jobs in businesses that produce goods and services which benefit the environment or conserve natural resources; and
2. Jobs in which workers’ duties involve making their establishment’s production processes more environmentally friendly or use fewer natural resources.

Spectrum of Green Jobs
The goal of the EnergyWorks grant is to transform the building retrofit market to encourage greater energy efficiency and conservation and to put City of Kansas City, Missouri residents to work in retrofitting the buildings. However, the task force stated a desire to focus on the spectrum of green jobs for the purpose of its work. That spectrum falls into six categories. They are:

1. Green Building
2. Green Salvage and Remediation
3. Green Energy
4. Green Agriculture
5. Green Manufacturing
6. Green Public Administration

Section 4.2 Task Force Meetings
Meeting No. 1: April 13, 2011
The task force first convened on April 13, 2011. The purpose of the meeting was to ensure that all task force members had the same understanding of the task the lie ahead and to establish a solid foundation for their work. They discussed the survey in which they participated prior to the meeting; current efforts in the region to strengthen a green jobs pipeline; and what occurring in similar programs around the country.

The task force participated in an exercise to identify the strengths and weaknesses in the four elements of a green workforce pipeline: labor pool, training, jobs and funding. The results of that exercise can be found on Page 32 of this document.
Meeting No. 2: May 3, 2011

At its second meeting, the task force was asked to review potential strategies developed upon the strengths and weaknesses identified for labor pool; jobs; training and funding and discuss how best to achieve these strategies. The strategies considered were as follows.

**Labor Pool**

- Develop public awareness campaign of the green jobs opportunities and the spectrum of types of employees that can be hired, from senior citizens to high school graduates to those who have just gotten their GEDs.
- Work with existing employers to identify on-the-job training to increase green job skills among incumbent workers.
- Work with area transit agencies to develop routes that link the labor pool to green jobs locations.

**Jobs**

- Implement economic development incentives at all governmental levels for companies that provide green jobs and hire people currently being training for green jobs.
- Develop relationships with existing green companies within the Kansas City region to further enhance their markets.
- Foster green job growth through entrepreneurship and opening businesses such as those in the Evergreen Cooperative in Cleveland, Ohio.
- Expand the market for energy conservation employment by addressing state and local requirements and incentives.
- Work with the City of Kansas City, Missouri and other cities to encourage investments that create job opportunities through overflow control programs.
- Develop public awareness campaign for green industries, green jobs, and the green job pipeline.

**Training**

- Create training programs that focus on “soft” skills and life skills: communication, timeliness, conflict resolution.
- Work with potential employers to better understand the training that is needed.
- Think beyond “semester based” training to “training on demand” so that prospective workers can receive the training when they need it.
- Coordinate training efforts, consolidating where it makes sense and developing “centers of excellence.”
- Establish K-12 curriculum that focuses on awareness of and subsequent training for green jobs.
- Create curriculum for professionals within the green job spectrum and not just those at the entry level.
- Establish apprenticeships that lead to full-time work.
- Set requirements for contractors to obtain certifications and training before awarded work on public projects.
Funding
- Work with federal legislators to stabilize funding for such programs.
- Develop public awareness program aimed at lending institutions to enhance understanding of green businesses and green jobs.
- Encourage private foundations and major corporations to provide funds for K-12 curriculum, youth and adult job training, job placement services, apprenticeships and other programs that help build a qualified green jobs workforce.
- Target the use of available grant funding to create jobs through business development and entrepreneurship.

Meeting No. 3: June 14, 2011
Based upon the results of the previous meeting, the task force reviewed a green workforce pipeline schematic that contained strategies and tactics to achieve those strategies. Recognizing that the strategies, tactics and potential partners were not all inclusive, the task force was first asked whether any strategies are missing. Each participant was then given six dots and directed to place the dots by the six strategies they deemed most important.

The complete list of identified strategies and the results of the exercise appear below.

Create a Demand for Green Jobs
- Promote entrepreneurship and small business development for green businesses: 11
- Facilitate legislation at local and state (PACE) level regarding green practices: 6
- Convene industry employers to identify green jobs and programs: 8
- Develop incentives for green job creation (PACE legislation): 5
- Advocacy at Federal and State ($150 million available from State Department of Natural Resources) level: 4
- Create green procurement practices: 3
- Partner with local government: 0
- Showcase success stories: 0

Provide Training, Skills Development and Career Planning
- Identify employer training needs: 7
- Identify pathways to green jobs and ensure training is available, measurable and appropriate: 6
- Develop programs to re-train incumbent workers: 2
- Develop incumbent worker training programs that pay for themselves-2
- Create career development programs that lead to jobs: 0

Connect People to Green Jobs
- Link the skilled workforce to employers: 8
- Identify best practices training that is current/cutting edge: 4
- Develop a green center: 3
- Develop an on-line database for green jobs: 0
• Ensure potential employees have transportation to work: 0

Develop Comprehensive Public Awareness Campaign: 8
The development of a comprehensive public awareness campaign was originally included in “connecting people to green jobs.” However, the participants identified it as a premier strategy of its own.

Also at its third meeting, the task force discussed criteria regarding how to decide funds should be invested and grant recipients selected. The task force was asked to identify the categories of criteria and determine the measurements for each type of category.

Priority
Consider whether projects should be given preference that:
• Align with priorities identified by the task force
• Create new green jobs
• Assist the seven target neighborhoods as is outlined in the EnergyWorks grant.
• Take in to consideration that there are two different audiences: 1) Workers that have been unemployed for a long time and they need soft and hard skills training 2) Workers that are experiencing being unemployed for the first time
• Community penetration
• Accessible to the target market
• Creation of public/private partnerships
• Leveraging dollars with other funding mechanisms

Programs
• What kind of programs should be given preference?
• Do existing programs indicate expertise?
• Should innovation be supported?
• Are programs for incumbent workers considered differently than programs for those just entering the green jobs workforce?
• Identify short term victories
• Long-term investments (Ex. working with the deconstruction training class)
• Work based training vs. classroom training
• A community penetration component (on the street w/n the neighborhood to engage the residents). Program will need street credibility.

Other criteria
• Projects that foster collaboration
• Organizational capacity
• Sustainability beyond the term of the grant
• Leveraging other funds
• Targeting other specific groups such as youth
• Developing green jobs within the private sector
• Developing green jobs within the public sector
Meeting No. 4: June 29, 2011
At its final meeting, the task force reached consensus on the strategies of the highest priority, the criteria by which programs and services should be assessed and the structure and process which should be used to allocate the funds.

Strategic Priorities
The following are the strategies identified by the task force as those of the highest priority.

- Create a demand for Green Jobs
  - Promote entrepreneurship and small business development for green businesses
  - Convene industry employers to identify green jobs and programs
  - Facilitate legislation at local and state (PACE) level regarding green practices

- Provide Training, Skills Development and Career Planning
  - Identify employer training needs
  - Identify pathways to green jobs and ensure training is available, measurable and appropriate

- Connect People to Green Jobs
  - Link the skilled workforce to employers

- Develop Comprehensive Public Awareness Campaign

Criteria
The criteria by which funding requests should be considered are:

- Priority
  - Align with priorities identified by the task force
  - Create new green jobs
  - Focus on green job sectors with a strong economic base
  - Engage the employer in furthering the regional green jobs pipeline
  - Develop jobs that pay more than minimum wage or further a specific green job pathway
  - Foster collaboration either through public/private partnerships or by leveraging grant funds with other funding mechanisms

- Population Served
  - Assist the seven target neighborhoods as outlined in the EnergyWorks program
  - Engage and become a part of the community to which they are targeted
  - Focus on one of three groups within the workforce:
Those who have been unemployed for considerable time
- Newly unemployed
- Incumbent workers wanting to grow into green job
  - Serve a segment of the population most affected, including but not limited to: youth, underemployed, unemployed, veterans, older, and disadvantaged workers
  - Support other EnergyWorks programs

- Accountable
  - Are cost effective
  - Illustrate sustainability beyond the term of the grant
  - Are able to show measurable outcomes
  - Have demonstrated organizational capacity

The task force also warned against being so broad in the definition of green jobs so as to “greenwash,” calling virtually everything a green job in some way, while at the same time giving latitude in the definition.

Jobs should be tied to the goals of the EnergyWorks grant, which are to:
1) Transform the energy efficiency market in Kansas City, MO by educating property owners of the benefits associated with increasing a property’s energy efficiency and promoting the reduction of energy waste;
2) Stimulate the local economy by providing financing resources to property owners through the local loss reserve and other incentives, thus providing opportunities to use local, certified businesses to make improvements that reduce energy consumption; and
3) Stimulate the local economy by providing “green job” workforce development opportunities.

Funding Allocations
The green jobs pipeline has three distinct elements: creating a demand for green jobs, providing training and skill development, and connecting people to green jobs. The task force has stated that the emphasis should be given to those programs that specifically train people for green jobs and programs that actually create green jobs. There is also a recognition that to create the jobs and foster the need for training, employers, potential employees, the buying public, businesses and local government agencies need to be aware of the potential for green jobs.

The task force agreed that the following allocations be a guideline for the grant funds.
- 45 percent: Job creation programs
- 45 percent: Training and Skill development programs
- 10 percent: Public education

Organizations can apply for separate funding for multiple programs, but no one program be granted any more than 35 percent of the total funds available. It is recognized, however, that one organization could submit a proposal that has job creation, training and public education components. Lastly, it is anticipated that the grants will be targeted to non-profit and public organizations.
Implementing the Strategies: Structure and Process

Understanding that it is the MARC Board of Directors that has ultimate responsibility and decision-making on how funds awarded to MARC are allocated, the task force recommends the following structure and process be used to allocate the $880,000 in EnergyWorks funds.

Structure
The grant selection committee should comprise community members, representatives from workforce development organizations and MARC staff. The persons representing workforce development agencies would have to agree to excuse themselves during discussion on any application for which there may be a conflict. The task force wants to ensure that the committee has members who have experience and expertise in workforce development and/or in green industries. Further, the committee’s work should be open and transparent.

Process
The task force work will result in a detailed plan for using the EnergyWorks KC funds for workforce development and would inform the work of whatever committee structure is adopted. The task force decided that the grant committee would first determine categories of programs and activities and solicit proposals from area organizations with responses outlining how the funds would be used. This provides the committee greater latitude in granting the funds.
Developing Kansas City’s Green Jobs Pipeline

Appendices

Task Force Membership Page 29
Area Organizations Page 30
Green Jobs Pipeline: Strengths and Weaknesses Page 32
Green Workforce Pipeline: Strategies, Tactics and Partners Page 37
# Green Workforce Initiatives Task Force Membership

<table>
<thead>
<tr>
<th>Contact</th>
<th>Organization</th>
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<tbody>
<tr>
<td>Jensen Adams</td>
<td>Metropolitan Energy Center</td>
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<tr>
<td>Warren Adams-Leavitt</td>
<td>OAI, Inc.</td>
</tr>
<tr>
<td>Brian Alferman</td>
<td>Habitat ReStore KC</td>
</tr>
<tr>
<td>Scott Angelmeyer</td>
<td>Workforce Partnership</td>
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<tr>
<td>Scott Boyce</td>
<td>University of Central Missouri</td>
</tr>
<tr>
<td>Tiki Denham</td>
<td>Green Vets</td>
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<tr>
<td>Bob Housh</td>
<td>Metropolitan Energy Center</td>
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<tr>
<td>Rob Jones</td>
<td>EETCKC</td>
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<tr>
<td>Franciena King</td>
<td>Full Employment Council</td>
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<tr>
<td>Laura Lesniewski</td>
<td>BNIM</td>
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<tr>
<td>Roland Maliwat</td>
<td>KCP&amp;L</td>
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<tr>
<td>Anita Maltbia</td>
<td>Green Impact Zone</td>
</tr>
<tr>
<td>Jay Matlack</td>
<td>Kansas City Kansas Community College</td>
</tr>
<tr>
<td>Margaret May</td>
<td>Ivanhoe Neighborhood Center</td>
</tr>
<tr>
<td>Clyde McQueen</td>
<td>Full Employment Council</td>
</tr>
<tr>
<td>Dennis Murphey</td>
<td>City of Kansas City, Missouri</td>
</tr>
<tr>
<td>Troy Nash</td>
<td>Zimmer Construction</td>
</tr>
<tr>
<td>Matthew Nugent</td>
<td>PREP-KC</td>
</tr>
<tr>
<td>Richard Piper</td>
<td>Kansas City Kansas Community College</td>
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<tr>
<td>Ted Reiff</td>
<td>The ReUse People</td>
</tr>
<tr>
<td>Kristin Riott</td>
<td>Bridging the Gap</td>
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<tr>
<td>Clare Roberts</td>
<td>Metropolitan Community College</td>
</tr>
<tr>
<td>Debbie Rulo</td>
<td>Johnson County Community College</td>
</tr>
<tr>
<td>Gerald Schecter</td>
<td>City of Kansas City, Missouri</td>
</tr>
<tr>
<td>Randy Winchester</td>
<td>Johnson County Community College</td>
</tr>
<tr>
<td>Ryan Wing</td>
<td>Johnson County Community College</td>
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</table>
Area Organizations

Below is a summary of organizations within the Kansas City metropolitan area and their current role in environmental programs and workforce development as it pertains to green jobs.

**Bridging the Gap** educates citizens, businesses and government on the impact of decisions to make the region and community green, healthy and sustainable. They are currently applying jointly for an EPA grant with Metropolitan Energy Center and OAI of Chicago to coordinate the recruiting, training and ultimate placement of 48 people in the next two years. Bridging The Gap's role is to help with recruiting outreach and use their Environmental Excellence Business Network contacts to mentor green job trainees, provide some training about corporate needs, and find employment opportunities.

**Full Employment Council** serves as one-stop career center in Missouri for five counties: Jackson, Cass, Platte, Ray and Clay. They work with employers to supply them with a skilled workforce and provide job seekers with successful training. They have a Green Jobs Taskforce, Workforce Board for on-the-job training (OJT), and provide classroom training.

**The Greater KC Chamber of Commerce** convenes The Greater Kansas City Climate Protection Partnership and Chamber's Workforce Development Division are working on similar efforts in green job development in the region.

**Green Vet** is working with Ivanhoe Neighborhood on deconstruction activities with EnergyWorks KC. They train all veterans and native warriors in green collar careers and prepare through internship projects on tribal lands, while assisting in homelessness, childcare and transportation.

**Green Works KC** fosters relationships with urban youth through experiential learning and paid internship opportunities. Young adults learn to care for the environment, experience meaningful career ladders, gain skills that assist them in becoming productive employees.

**Habitat ReStore KC** accepts donations of new and used building materials from individuals, contractors and retailers. They will be receiving materials from EnergyWorks KC deconstruction projects. ReStore also has environmental initiatives such as: creating rain gardens, recycling material, and deconstruction activities.

**Johnson County Community College** offers training for Building Performance Institute (BPI) certifications, Efficiency Kansas auditors, energy efficiency workers, and other green collar jobs. They are working on developing a mentoring program for new people entering these fields of green collar work.

**KCP&L’s** Economic Development Division works with regional and local economic development groups. They help develop programs and services to educate and assist partners with business retention and recruitment efforts.
METROPOLITAN COMMUNITY COLLEGE offers training for Building Performance Institute (BPI) certification, energy efficiency improvement techniques, business development courses, etc. They are also working on a mentoring program for new energy auditors.

METROPOLITAN ENERGY CENTER (MEC) creates resource efficiency, environmental health, and economic vitality in the Kansas City region.

OAI, INC. is providing innovative workforce development in environmental remediation and home weatherization. OAI is currently researching potential employment and training opportunities in solid waste management as well.

PREP-KC works with school districts to increase college attendance, successful college completion and access to high-quality employment for urban students in the bi-state Kansas City region.

ReThink Energy works with local contractors, businesses and community leaders. They train unemployed and underemployed citizens in green jobs and entrepreneurship. Provide energy tech training.

UNIVERSITY OF CENTRAL MISSOURI (UCM) has a career services office that is a centralized center that serves the entire campus and works with students and alumni on degree programs and certifications in targeted industries, including green jobs. UCM also works with employers in job placement and internships.

WORKFORCE PARTNERSHIP is the one-stop career center in Kansas for three counties: Wyandotte, Johnson and Leavenworth. They work with employers to supply them with a skilled workforce and provide job seekers with successful training.
At its initial meeting, the task force participated in an exercise to identify the strengths and weaknesses in the four elements of a green workforce pipeline: labor pool, training, jobs and funding. The results of that exercise are provided here.

### Labor Pool

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Strong local work ethic</td>
<td>• Employers use existing workers, don’t hire new</td>
</tr>
<tr>
<td>• Depth of experience for construction workers in labor pool</td>
<td>• Broadband/tech limitations</td>
</tr>
<tr>
<td>• Large pool of unemployed available</td>
<td>• Lack of basic/soft skills</td>
</tr>
<tr>
<td>• Older workers with work ethic and skills</td>
<td></td>
</tr>
<tr>
<td>• Large potential for growth</td>
<td></td>
</tr>
<tr>
<td>• Individuals trained in green job skills waiting for economic recovery/demand</td>
<td>• Older workers less desirable by employer</td>
</tr>
<tr>
<td>• Additional job seekers can be trained relatively quickly</td>
<td>• Transportation to green work sites</td>
</tr>
<tr>
<td>• Agencies doing skill assessments increasing</td>
<td>• Knowledge or awareness of green jobs</td>
</tr>
<tr>
<td>• Strong regional work ethic</td>
<td>• Defining what a green job is</td>
</tr>
<tr>
<td>• Higher levels of education on average</td>
<td>• Accessibility for urban core job seekers to suburban jobs</td>
</tr>
<tr>
<td></td>
<td>• Not a ladder in place yet; we’re at first run</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• # of jobs needs to exceed trained pool. Need to cultivate</td>
</tr>
<tr>
<td></td>
<td>• Kansas and Missouri don’t require energy audits when homes sale. When Kansas and Missouri require audits the # of jobs will go up</td>
</tr>
<tr>
<td></td>
<td>• Lacking overall picture of available skills</td>
</tr>
<tr>
<td></td>
<td>• Segment of population lacks basic work skills; communications; problem solving; and conflict resolution</td>
</tr>
<tr>
<td></td>
<td>• Public education in core city</td>
</tr>
<tr>
<td></td>
<td>• Slow trend towards hiring</td>
</tr>
</tbody>
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### Jobs

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Entry level</td>
<td>• People don’t know it can be a career</td>
</tr>
</tbody>
</table>
There is a ladder (i.e. start as tech, can then move up)

- People can get jobs with re-training
- New green employers coming to Kansas City (ex. Nordic, Smith Elect.)
- Make at least a living wage
- City/Govt. contracts
- KCADC working to bring green employers to area
- Area employment/economic stability
- Unlimited potential
- Can be self-employed
- Green jobs currently have unknown potential
- Green jobs do not require (complete) retraining
- A lot of local/regional industries poised to “Go Green”
- A lot of people are already in green jobs (previously not called that)
- EDC/KCCC to the table towards employment T+E=jobs
- Utility incentives
- Attraction of green industries/EDC efforts
- $20 million – from EnergyWorks KC can help create demand

Existing pool is retrained and doesn’t allow unemployed in. Pool needs to be expanded
- New green companies outside of urban core (2 JC, stops on Troost helpful)
- Define “entry level”
- Employers depend on public contracts
- Requirements for pre-existing experience
- Companies not stepping up
- Economy and stimulus dollars will not be available
- Reduced support for small business and entrepreneurial activity
- Green industries may require less workforce
- A lot of education may be required (i.e. engineering, design etc.)
- Concise on skills/training needed for jobs
- Lack of sustained investments toward jobs
- Government $’s into private industries (EDC)
- Green market demand
- Coordination/competition between local organizations
- State line issues
- Public awareness
- Identification of green jobs in urban core
### Training

<table>
<thead>
<tr>
<th><strong>Strengths</strong></th>
<th><strong>Weaknesses</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• OAI</td>
<td>• Soft skills must be integral part of vocational training</td>
</tr>
<tr>
<td>• MCC</td>
<td>• Employer unambiguous regarding specific skills needed</td>
</tr>
<tr>
<td>• UCM</td>
<td>• Training that does not lead to jobs</td>
</tr>
<tr>
<td>• JCCC</td>
<td>• Stronger direct connection to employers</td>
</tr>
<tr>
<td>• MEC</td>
<td>• Stronger need for job path apprenticeships</td>
</tr>
<tr>
<td>• KCKSCC</td>
<td>• Employers need to be involved in training curriculum development</td>
</tr>
<tr>
<td>• Accredited portable certificates</td>
<td>• No overall plan/coordination</td>
</tr>
<tr>
<td>• Wealth of training opportunities</td>
<td>• Non degree job development certification</td>
</tr>
<tr>
<td>• Amount of Community Colleges, etc.</td>
<td>• Too many training opportunities</td>
</tr>
<tr>
<td>• Some = On-demand</td>
<td>• Lack of employer value of green job training</td>
</tr>
<tr>
<td>• Bi-state opportunities</td>
<td>• Duplication of training</td>
</tr>
<tr>
<td>• Online courses</td>
<td>• Non-coordination</td>
</tr>
<tr>
<td>• Public and private training</td>
<td>• Not readily available – semester based</td>
</tr>
<tr>
<td>• Unlimited opportunities: Anyone/Anything can be “Greener”</td>
<td>• Cost</td>
</tr>
<tr>
<td>• Anyone can engage (automotive, energy....)</td>
<td>• Non-alignment of training with jobs (ratio of demand to supply)</td>
</tr>
<tr>
<td>• Cost can be a strength compared to a 4-year degree</td>
<td>• Hard to define “green” (green-washing)</td>
</tr>
<tr>
<td>• Young people very interested in greener world once it’s presented to them</td>
<td>• Gotten away from trade skills in favor of more academic skills</td>
</tr>
<tr>
<td></td>
<td>• Lack of sufficient training to obtain final certification (e.g. energy evaluator) and lack of $’s to buy equipment</td>
</tr>
<tr>
<td></td>
<td>• Guidance of selecting which green job to pursue</td>
</tr>
<tr>
<td></td>
<td>• Lack of industry based opportunities</td>
</tr>
<tr>
<td></td>
<td>• More about job creation; Less about re-training existing job holders</td>
</tr>
<tr>
<td></td>
<td>• Funding opportunities and training</td>
</tr>
<tr>
<td></td>
<td>• Balancing time horizons: individual-now/industry-more time</td>
</tr>
<tr>
<td></td>
<td>• Green jobs not emphasized in K-12</td>
</tr>
<tr>
<td></td>
<td>• A lot of training at entry level. A need for professional development</td>
</tr>
<tr>
<td></td>
<td>• Training need to incorporate life skills for young and poor</td>
</tr>
</tbody>
</table>
## Funding

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Federal funding from ARRA grants</td>
<td>• Lack of scholarships for certification programs</td>
</tr>
<tr>
<td>• Pell Grants for student funding (sub line: tied to credit courses: 1 semester of college for Pell)</td>
<td>• ARRA dollars will go away in 1-2 years</td>
</tr>
<tr>
<td>• Training Funding exists</td>
<td>• Private/3rd party pay for students at university level</td>
</tr>
<tr>
<td>• EWKC- $20million – leverage for demand private market</td>
<td>• Employer demand for certification lacking</td>
</tr>
<tr>
<td>• “Green” stuff is attractive (driven by Administration)</td>
<td>• Possible lack of industry awareness/ green standards</td>
</tr>
<tr>
<td>• Any green opportunity has “Green Job” association</td>
<td>• Jobs may not exits</td>
</tr>
<tr>
<td>• Private sector funding/ Venture capital dollars are heavily investing in green and clean technology</td>
<td>• Companies unwilling to fund training</td>
</tr>
<tr>
<td>• Economic recovery beginning</td>
<td>• Lack of funding for incumbent workers</td>
</tr>
<tr>
<td>• Loan availability</td>
<td>• Lack of funding for entrepreneurs</td>
</tr>
<tr>
<td>• Local utilities becoming supportive</td>
<td>• Mostly federal (unreliable</td>
</tr>
<tr>
<td>• Potentials in addressing lending risks (credit enhancements)</td>
<td>• Bureaucracy associated</td>
</tr>
<tr>
<td>• Greater awareness results in greater acceptance</td>
<td>• Highly competitive</td>
</tr>
<tr>
<td>• As demand increases, jobs will increase</td>
<td>• W/in an organization, “Green” may be considered a “luxury”</td>
</tr>
<tr>
<td>• Kansas City has some local examples of green businesses working</td>
<td>• Lack of track record in knowing what we’re going</td>
</tr>
<tr>
<td></td>
<td>• Payback on “Green” (long)</td>
</tr>
<tr>
<td></td>
<td>• Requires upfront investment</td>
</tr>
<tr>
<td></td>
<td>• Short-term incentive programs ending will be detrimental to business models relying on them</td>
</tr>
<tr>
<td></td>
<td>• Lack of understanding of green project investments by banks</td>
</tr>
<tr>
<td></td>
<td>• Lack of $’s to market in areas of greatest need</td>
</tr>
<tr>
<td></td>
<td>• $’s for training does not carry over to gaining experience (apprenticeships)</td>
</tr>
<tr>
<td></td>
<td>• Poor economy delaying private sector green activity</td>
</tr>
<tr>
<td></td>
<td>• Green is new/ traditional feasibility studies don’t justify making a loan</td>
</tr>
</tbody>
</table>
Green Workforce Pipeline: Strategies, Tactics and Partners

**Employer Driven Approach**

1. **Identify and Create a Demand for Green Jobs**
2. **Provide Training Programs & Skills Development**
3. **Available Workforce: Connecting People with Job**

**Targeted Green Industry Sectors**
*Source: MERIC Green Jobs Report*

**Green Building and Construction**
The building and construction sector is the primary focus for EnergyWorks KC. This sector includes jobs found in construction related activities, household manufacturing, household appliance manufacturing, design and remodeling services, and remediation services.

- Uses environmentally friendly materials and methods for residential and non-residential infrastructure
- Converts existing property to lesson negative impacts on the environment
- Provides healthy living spaces
- Converts sustainable or renewable resources into energy
- Replenishes resources such as water and oxygen
- Lessons impact on the waste stream

**Green Manufacturing**
Includes jobs found in engineering, research and development firms, and across all manufacturing sectors. Jobs in this sector include those involved in the research, development, and production of materials, parts, and final products within the following categories.

- Energy Efficiency
- Health
- Renewable Energy
- Safety

**Green Energy**
Conversion from conventional sources of energy to the technology and development of renewable, clean energy resources. Examples include:

- Energy production and generation activities
- Power distribution and plant operations
- Turbine power generation
- Installation, repair and electronics for windmills
- Bio-fuel manufacturing
**Green Public Administration**
Includes jobs typically found in local, state, and federal government or in contracts related to government policy. Activities include the execution, oversight, and operational management of public policy in the areas of:

- Environmental Conservation
- Green Building
- Resource Management
- Energy
- Water Supply and Irrigation Systems
- Sewage Treatment

**Green Salvage/Remediation**
Includes jobs found in waste management, environmental engineering, chemistry, salvage and maintenance occupations. Examples of these activities include:

- Material Extraction
- Environmental Cleanup
- Re-Use
- Product Conversion

**Green Farming**
Jobs found in agriculture and forestry that include:

- Organic/Free Range Food Production
- Forest Preservation
- Renewable Energy Resource Production
## Create Demand for Green Jobs

<table>
<thead>
<tr>
<th>Strategies</th>
<th>Tactics</th>
<th>Potential Partners &amp; Implementers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Convene green industry employers from each green sector to identify programs they would implement to create more green jobs.</td>
<td>Partner with employer networking groups to host forums and engage employers to create regional Green Business Advisory Council.</td>
<td>Chamber's Climate Protection Group, MEC's Home Performance Contractor Network, Bridging the Gap's Environmental Excellence Business Network, FEC Green Career Advisory Council, UCM's NERI's Network, neighborhood based non-profits</td>
</tr>
<tr>
<td>Develop incentives that will result in more job creation within each green sector</td>
<td>Require training and hiring of area residents to receive such incentives</td>
<td>Private sector employers, public administration and local government programs, such as EnergyWorks KC</td>
</tr>
<tr>
<td>Identify products that can be manufactured in KC and develop business attraction package</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Create green procurement practices</td>
<td>Create cooperative among local organizations to purchase green materials</td>
<td></td>
</tr>
<tr>
<td>Require government contracted services to be provided by trained contractors</td>
<td>EnergyWorks KC and MEC require all contractors to be BPI certified</td>
<td></td>
</tr>
<tr>
<td>Require energy efficiency audits for commercial properties</td>
<td>City governments</td>
<td></td>
</tr>
<tr>
<td>Encourage local governments to adopt policies giving priority to bids for green products and/or from green businesses</td>
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<td></td>
</tr>
</tbody>
</table>
### Create Demand for Green Jobs, continued

<table>
<thead>
<tr>
<th>Strategies</th>
<th>Tactics</th>
<th>Potential Partners &amp; Implementers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Promote entrepreneurship &amp; small business development specifically focused on green businesses</td>
<td>Research franchises and green sectors that would be successful in KC</td>
<td>Kauffman FastTrac Programs, Small Business Development Centers</td>
</tr>
<tr>
<td></td>
<td>Provide small business development education and assistance</td>
<td>MCC's Training for Tomorrow The Marion Way's Small Business Operation Principles - fee based</td>
</tr>
<tr>
<td></td>
<td></td>
<td>UCN's NERI programs for entrepreneurs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Small Business Development Centers, Johnson County Community College</td>
</tr>
<tr>
<td></td>
<td>Create business partnerships and cooperatives between entrepreneurs</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Develop an urban agriculture cooperative</td>
<td>MCC &amp; JCCC offers Sustainable Agriculture Certificate affiliated with Johnson County Community College</td>
</tr>
<tr>
<td></td>
<td>Develop start-up packet for green contractors with information on permits, licensing, certifications, networking, available resources, marketing</td>
<td>Small Business Development Centers</td>
</tr>
<tr>
<td></td>
<td>Create incubator for green start-up businesses</td>
<td>Blue Hills Community Services</td>
</tr>
<tr>
<td></td>
<td>Develop funding mechanisms for small businesses, including revolving loan funds and cash grants to provide working capital</td>
<td></td>
</tr>
<tr>
<td>Partner with local governments to capitalize on programs that could provide green jobs</td>
<td>Work with Kansas City, Missouri and other communities to ensure Overflow Control Programs focus on green jobs</td>
<td></td>
</tr>
</tbody>
</table>
# Provide Training Programs & Skills Development

<table>
<thead>
<tr>
<th>Strategies</th>
<th>Tactics</th>
<th>Potential Partners &amp; Implementers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify employer training needs</td>
<td>Partner with workforce centers to identify employers' hiring needs, such as LEED certifications</td>
<td>One-stop career centers; Workforce Partnership, Full Employment Council</td>
</tr>
<tr>
<td>Identify pathways to green jobs and ensure training is available, measurable and appropriate</td>
<td>Work with to-be-established Green Business Advisory Council to identify pathways and necessary training</td>
<td>Chamber of Commerce, Labor Unions, neighborhood based non-profits</td>
</tr>
<tr>
<td>Develop articulation agreements among colleges and training provides to ensure that training programs are recognized from institution to another</td>
<td>JCCC programs:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Sustainability Supply Chain Course</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Sustainable Business Certificate, Solar Tech Program</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Energy Performance &amp; Resource Management-Residential Auditing, A.A.S.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Sustainable Agriculture Entrepreneurship Certificate</td>
<td></td>
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<tr>
<td></td>
<td>UCM NERI Programs:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Residential Energy Client Service Coordinator</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Retrepreneur Training Program</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Residential Energy Performance Administrator</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Field Project manager</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Energy Improvement model for Residential Energy Raters</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Phase Management for Retrofit</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Personnel Management for Retrofit</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MCC - Sustainability Programs:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Photovoltaics Certificate</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Energy Efficiency Certificate</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Green Manufacturing Certificate</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• HVAC Certificate or Associate's Degree</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MEC provides continuing education and professional development for contractors paid by the contractors</td>
<td></td>
</tr>
</tbody>
</table>
### Provide Training Programs & Skills Development, Continued

| Identify pathways to green jobs and ensure training is available, measurable and appropriate, continued | Develop articulation agreements among colleges and training provides to ensure that training programs are recognized from institution to another, continued | KCKKK Sustainability Programs:  
- Bio-fuel Production Operations,  
- Building Analyst Quick Start,  
- Certified Green Supply Chain Professional,  
- Certified Indoor Air Quality Manager,  
- Certified Indoor Environmentalist,  
- Natural Gas Plant Operations,  
- Performing Comprehensive Building Assessments,  
- Principles of Green Buildings,  
- Senior Certified Sustainability Professional,  
- Solar Power Professional,  
- Wind Energy Professional  
|---|---|---|
| EETCKC Training Programs:  
- BPI Building Analyst Training,  
- Energy Auditor Training,  
- Advance REM/Design,  
- Supplemental CAZ/Furnace Training,  
- BPI Building Analyst Certification | OAI, Inc Programs  
- Minority Worker Training Program:  
  - Hazardous Waste Operations and Emergency Response (HWOER)  
  - Asbestos Abatement Worker/Supervisor  
  - Lead Abatement Worker/Supervisor  
  - Lead Renovation, Repair and Painting,  
  - Mold Awareness  
  - 10-hour OSHA Certificate |  

---
## Provide Training Programs & Skills Development, Continued

<table>
<thead>
<tr>
<th>Strategies</th>
<th>Tactics</th>
<th>Potential Partners &amp; Implementers</th>
</tr>
</thead>
</table>
| Identify pathways to green jobs and ensure training is available, measurable and appropriate, continued | Develop articulation agreements among colleges and training provides to ensure that training programs are recognized from institution to another, continued | OAI, Inc Programs  
- EPA-ARRA Brownfields Job Training Program:  
  - Weatherization Technician  
  - Asbestos 16-hr Operations and Maintenance  
  - 40-hr Hazardous Waste Removal  
  - Lead for Remodelers, Renovators and Painters  
  - 10-hour OSHA General Safety  
  - Mold Remediation |
| Develop means to evaluate programs that provide quality training and appropriate certifications by incorporating DOE's Workforce Guidelines | | |
| Determine centers of excellence, with institutions capitalizing on their strengths | | |
| Provide soft skills and employability training | Use WorkKeys and WIN assessments at workforce centers and community colleges. | |
| Create career development programs that lead to jobs | Develop mentorship and internship programs, such as the Green Jobs Coaches program | MEC offers mentoring for contractors' first 3 jobs on utility rebate work |
| Solicit commitment from employers to provide internships, apprenticeships, and mentoring programs through 2013 | | |
| Train auditors in the art of marketing energy audits and conduct energy audits for small commercial businesses | MEC | |
| Develop program to re-train incumbent workers | Work with employers to target retraining, funding and career advancement | Kansas SESPT Training program, Missouri Energy Sector Job Training funds |
| Develop incentives for companies to "retrofit" current positions to green jobs | | |
## Connect People to Green Jobs

<table>
<thead>
<tr>
<th>Strategies</th>
<th>Tactics</th>
<th>Potential Partners &amp; Implementers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Link the skilled workforce to employers</td>
<td>Maintain a database of individuals with skills and credentials that are available for work</td>
<td>FED, Workforce Partnerships, Green Impact Zone, neighborhood based non-profits</td>
</tr>
<tr>
<td>Make workers accessible to employers through workforce centers and colleges</td>
<td>FED, Workforce Partnership, Green Impact Zone, Colleges &amp; Universities, neighborhood based non-profits</td>
<td></td>
</tr>
<tr>
<td>Develop and online database for green jobs</td>
<td>Link job seekers to training programs and certification requirements</td>
<td>KansasWorks &amp; Missouri Career Source, neighborhood based non-profits</td>
</tr>
<tr>
<td>Ensure potential employees have transportation available to get to work</td>
<td>Map where green jobs are located in the region, determine needed transportation options, and facilitate them</td>
<td>MARC Transportation Services; KCATA</td>
</tr>
<tr>
<td>Develop comprehensive public awareness campaign, targeting those new to the workforce, incumbent workers, employers and training providers</td>
<td>Encourage public transit agencies to consider greening of their operations</td>
<td>MARC Transportation Services; KCATA</td>
</tr>
<tr>
<td></td>
<td>Develop incentives for companies that provide transportation for employees in green jobs</td>
<td>MARC Transportation Services; KCATA</td>
</tr>
<tr>
<td></td>
<td>Create comprehensive program, identifying all means with which to reach target audiences</td>
<td>MARC Transportation Services; KCATA</td>
</tr>
<tr>
<td></td>
<td>Partner with school districts to create awareness and include green practices in curriculum</td>
<td>MARC Transportation Services; KCATA</td>
</tr>
</tbody>
</table>

This material is based upon work supported, in whole or in part, by the Department of Energy - Office of Energy Efficiency and Renewable Energy under Grant Award Number DE-EE0003564 from the Energy Efficiency and Conservation Block Grant Program made available pursuant to the American Recovery and Reinvestment Act (RECOVERY ACT) of 2009.

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TRAIN THE TRAINER

DECONSTRUCTION WORKER

BMRA Standardized Curriculum V1.1 02/15/13

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TRAIN THE TRAINER: DECONSTRUCTION WORKER

COURSE SYLLABUS

Enter Organization Name

<table>
<thead>
<tr>
<th>Dates:</th>
<th>Select Start Date to Select End Date</th>
<th>Instructor:</th>
<th>Enter Instructor Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time:</td>
<td>Enter start and end time</td>
<td>E-mail:</td>
<td>Enter contact email</td>
</tr>
<tr>
<td>Location:</td>
<td>Enter course location(s)</td>
<td>Phone:</td>
<td>Enter contact phone #</td>
</tr>
</tbody>
</table>

REQUIRED TEXTS/MATERIALS: Deconstruction Worker Training Lesson Plans and Accompanying Materials

Introduction to Deconstruction: A Comprehensive Training Workbook

COURSE WEBSITES: Enter course website, or type NA

COURSE PREREQUISITES: Candidate trainers must be pre-approved by the BMRA to be eligible for certification as a BMRA local trainer for Deconstruction Worker Training.

Experience as an adult educator and experience in the fields of construction, demolition, deconstruction, and/or building material reuse may be required.

COURSE DESCRIPTION: This training is designed to prepare trainers to present the introductory level deconstruction course, Deconstruction Worker Training (DWT).

COURSE OBJECTIVES:

By attending this training, participants will be able to:

1. Deliver the Deconstruction Worker Training (DWT) course content.
2. Prepare all facilities and materials for the DWT.
3. Incorporate adult learning principals into the DWT.
4. Modify DWT curriculum delivery to suit trainer style, student needs and training location.
5. Evaluate DWT participants and record results.
COURSE ACTIVITIES:

- **Discussion:**
  Active participation in discussion is crucial to content mastery and critical thought.

- **Experiential Activities:**
  Case studies, simulations, and role playing will be utilized to provide practice and deeper understanding of course content.

- **Competency Verification:**
  Classroom exercises, quizzes and assignments will be used to verify competency.

EVALUATION:
Successful completion of course and competencies verification and scores of 90% or greater on Deconstruction Worker Training certification exams (written and field) is required to obtain Trainer Certification.

SCHEDULE

<table>
<thead>
<tr>
<th>Day</th>
<th>Topic</th>
<th>Assignments/Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Introduction to Deconstruction Worker Train the Trainer</td>
<td>Course overview, course preparation, adult learning concepts</td>
</tr>
<tr>
<td></td>
<td>Deconstruction Worker Training Sessions (80 hrs.)</td>
<td>Lesson plans include trainer notes, engagement techniques, and alternative approaches. Participation in DWT training by all trainer candidates is strongly recommended. See instructor for alternative completion plan.</td>
</tr>
<tr>
<td></td>
<td>Individual Lesson Prep and Review</td>
<td>Before, during and after individual class sessions daily content will be prepped, reviewed, and results recorded. Participation by trainer candidates in strongly recommended. See instructor for alternative completion plan.</td>
</tr>
<tr>
<td></td>
<td>Course Close-Out and Review</td>
<td>Course close-out, review of training, participant evaluation, and tailoring curriculum to local needs.</td>
</tr>
</tbody>
</table>

*Note: Schedule is subject to change at instructor’s discretion.*
ATTENDANCE:
Learners are expected to attend introduction and review session in their entirety, and are strongly encouraged to attend all DWT sessions and Lesson Prep/Review sessions. There are no excused absences, but if you are unable to attend all sessions, you will be required to develop a personal completion plan with the instructor. Classes will start and end on time and attendance and punctuality are critical to learner success in this course.

PARTICIPATION:
Active participation in class sessions is essential to learning as well as to the effectiveness of the class environment. Active participation includes asking relevant questions, contributing to discussion, eliciting, listening to, and responding sensitively to the ideas of others, and actively engaging in all classroom activities.
TRAIN THE TRAINER

DECONSTRUCTION WORKER

LESSON PLAN
TRAIN THE TRAINER: DECONSTRUCTION WORKER

LESSON PLAN: DAY 1

When delivering a Train the Trainer (TtT) program, it is important to “practice what you preach.” Pay particular attention to the adult learning theory principals, and deliver your training consistent with those principals.

General Guidelines to Teach and Follow:

1. Be prepared
2. Respect participants time and experience
3. State your expectations
4. Get to know your audience
5. Engage the participants and draw on a variety of learning styles
6. Plan an activity that gets the students involved immediately
7. Be mindful of the attention span of adult learners
   a. 1 hr maximum of instruction before a break is ideal, especially in a lecture setting
   b. Change direction or style of instruction at ~15 minute intervals
8. Be mindful of your instructional flow and instructional pace (slow down)
9. Allow for and guide toward peer to peer learning opportunities
10. State the objectives, teach the materials, review the objectives

TRAIN THE TRAINER COURSE INTRODUCTION (30 min., 8:00am – 8:30am)

Exercise 1, Interactive Experiential Activity:

**Step 1:** If possible arrive well ahead of time and put the classroom into a disorderly state, i.e. crooked desk, loose materials, blocked pathways. Display yourself in an unprofessional manner, i.e. feet up on desk and sleeping. Enlist the help of one or two of the first students to arrive, and let them in on your ploy. Ask them to respond negatively to the disorder and your disrespectful behavior. A few minutes after the scheduled start “wake-up” and ask the participants if they are there for woodshop, and then act surprised when they state that they are not.

**Step 2:** Apologize for your ruse, and ask the participants how this experience made them feel. Note responses on the board. Ask everyone but your helpers to step back out of the room for a few minutes, and put the space into an interactive, organized, clean learning environment. Organize the desks into a U shape setup if possible, without podiums or other barriers between you and the participants. Place course materials neatly at each seat and put course info on the board or projector.

**Step 3:** Invite the participants back into the classroom, greet them on their way in, welcome them to the class, introduce yourself, and ask them to take a seat. Ask how the participants feel about this experience as compared to the first one. Discuss the learning environment and lead into the course outline.
Exercise 1 Alternate, Interactive Experiential Activity:

If you are not comfortable with, or do not feel that the above would be well received or manageable, follow the steps below (or something similar instead).

Step 1: Start with the classroom setup in a typical desk in rows and columns fashion. Begin by asking the class how this layout makes them feel. Does it make them feel like children? Does it lend for an interactive learning experience? Call on someone in the back of the class, and after they speak, ask the other students how they felt about turning around to hear his or her response.

Step 2: Ask everyone to stand-up, and direct them how to rearrange the classroom to your specification. Ask how the participants feel about this layout as compared to the first one. Discuss the learning environment and lead into the course outline.

TRAIN THE TRAINER COURSE OUTLINE (15 min., 8:30am to 8:45am)

Describe and identify the course materials that the participants have been provided. Walk the participants through the course syllabus and course expectations, and explain that the objectives will be covered in detail shortly. Manage expectations and answer questions accordingly.

5 Minute Break (5 min., 8:45am to 8:50am)

TRAIN THE TRAINER INTRODUCTIONS (~25 min., 8:50am to 9:15am)

Get to know your participants and introduce yourself to them. Ask each participant to tell the class about themselves by briefly answering a few questions, such as:

- What is your name?
- Why are you taking this class?
- What experience do you have in adult education, training, construction, demolition and/or deconstruction?
- Name something that you would like for your classmates to know about you.

Introduce yourself and describe your qualifications and experience. Instructor should pay close attention to time on this exercise, being careful to honor each participant’s experience, while not allowing this session to run over the allotted time. More participants = less time for each to introduce themselves.

TRAIN THE TRAINER COURSE OBJECTIVES (30 min., 9:15am to 9:45am)

PP slide 1. Program Introduction
Discuss program funding, partners and design emphasizing why this opportunity is available for the participants and what resources are available to help them succeed.

This is a great opportunity to invite all of the program partners and allow each of them to briefly state their role as it pertains to the participant experience.

PP slide 2. The Building Materials Reuse Association (BMRA)
The BMRA is a 501 c3 non-profit educational and research organization whose mission is to facilitate building deconstruction and the reuse / recycling of recovered building materials.

Successful completers of the Train the Trainer: Deconstruction Worker Training program and certification will be qualified to deliver the BMRA Deconstruction Worker Training under authority of a local license between the BMRA and the local training provider.

**Course Objectives**

Review the course objectives; discuss how and when each will be covered.

By attending this training, participants will be able to:

1. Deliver the Deconstruction Worker Training (DWT) course content.
   Introduced in Session 1 (today), K-W-L exercise (today), and individual action plans will be developed to ensure all course content is adequately learned. Ideally, each participant will have the opportunity to attend all 80hrs of the DWT, as well as the prep and review sessions.

2. Prepare all facilities and materials for the DWT.
   Handouts and guidance documents provided to participants (today), content discussed throughout TtT course and throughout DWT program. Briefly provide an overview of the guidance documents provided and how to use them.

3. Incorporate adult learning principals into the DWT.
   Taught in Session 2 (today) but covered and modeled throughout all aspects of the training.

4. Modify DWT curriculum delivery to suit trainer style, student needs and training location.
   Covered in review sessions (end of course), with preliminary discussions during DWT Training.

5. Evaluate DWT participants and record results.
   Covered in review sessions (end of course), with preliminary discussions during DWT Training.

**TRAIN THE TRAINER BREAK (15 min., 9:45am to 10:00am)**

**TRAIN THE TRAINER SESSION #1 COURSE CONTENT (50min., 10:00am to 10:50am)**

Review the learning objectives; explain that some of the content will be covered in today’s session, but much will need to be covered individually or during the DWT course sessions. Each participant will develop an individual action plan to ensure course content knowledge is established.
By attending this session, participants will be able to:

1. Understand the general core competencies to be delivered in the DWT.
   Slides, handout, and exercise (today); balance as established in action plan.
2. Access the resources needed to prepare for delivery of course content.
   Text, course materials, course attendance and participation, action plan.
3. Identify individual methods to be used to acquire knowledge needed for delivery of
   course content.
   K-W-L and action plan.
4. Begin developing an individual action plan for the course.
   Homework assignment.

**PP slide 8.** Core Competencies: What are they?

**PP slide 9.** Core Competencies: Where to find them.

**PP slide 10.** Core Competencies: For the Deconstruction Worker.

**PP slide 11.** Core Competencies: K-W-L exercise

Refer to “KCKCC Train the Trainer - CC KWL” handout and “KCKCC Train the Trainer -
Deconstruction Worker CCs” handout.

Beak participants into pairs or have them work individually depending on class dynamic.
Have each participant fill in the “K” and “W” portions of the handout with reference to the Deconstruction Worker CCs handout. Go around and review progress with each group and/or participant, reviewing a few at a time as a class. Explain how to use the “L” portion of the handout as a guideline for an action plan.

**PP slide 12.** Session #1 Review: Delivery of Course Content

**PP slide 13.** Session #1 Close: Delivery of course Content

Questions

**TRAIN THE TRAINER BREAK (10 min., 10:50am to 11:00am)**

**PP slide 14.** Break

**TRAIN THE TRAINER SESSION #2 Adult Learning Theory (60min., 11:00am to 12:00pm)**

**PP slide 15.** Title Page: Session #2, Adult Learning Theory

**PP slide 16.** Session #2 Learning Objectives

Review the learning objectives. Relate back to the first experience of the day. Highlight as you go, how your methods demonstrate adult learning theory practices.

By attending this session, participants will be able to:

1. Utilize the basic principles of adult learning and the strategies appropriate for teaching adults.
   Covered in the lesson and PP slides.
2. Implement strategies to create a comfortable learning environment.
   Relate this morning’s exercise. Also covered in the PP slides.
3. Understand the impact of physical positioning, gestures, use of podiums, and tone of voice on receptivity of audience.
   Interactive exercise and covered in PP slides.
4. Utilize active listening and feedback techniques.
   
   Covered in the PP slides and demonstrated during delivery.

**PP slide 17. Know Your Audience**
Discuss the differences between the needs of industry professionals seeking credentials, college students seeking a degree or certificate and participants in a workforce development program geared. Workforce development program participants are often, by design, the group with the most obstacles to employment. Discuss how this may affect your approach, expectations and priorities as an instructor.

**PP slide 18. Basic Principals**

Present the basic principles of adult learning theory (Andragogy) as a foundation for instructional practice.

1. Adults need to be involved in the planning and evaluation of their learning.
2. Adults need to know why they need to learn something.
3. Experience (including mistakes) provides the basis for learning activities.
4. Adults are most interested in learning subjects that have immediate relevance to their job or personal life.
5. Adult learning is problem-centered rather than content-centered.
6. Adults respond better to internal rather than external motivators. (Knowles, 1984)

**PP slide 19. Creating a Comfortable Learning Environment**

With the basic principles in mind, it is important to create a comfortable learning environment for adult learners. Bear in mind that there may be some resistance or intimidation associated with “school” for some adult learners.

A. Point out strategies to alleviate apprehension as indicated on slide. Approach the learning interaction as equals investigating and learning together.
B. Ask learners to suggest other ideas.
C. A particular caution is to make sure that you spend the time to consider learners’ responses when you elicit them.

**PP slide 20. Teacher/Trainer**
The role of the teacher/trainer should also be approached differently when working with adult learners. The didactic “big jug and little mugs” approach that many of us experienced as young students is not appropriate.

A. Because adult learners bring a wealth of life experience and are more self-directed, the trainer should act more as a catalyst, facilitator, guide, problem-poser, and content resource than the transmitter of information.
B. Guiding learners to question, discover, and reflect should be the real work of the trainer.

**PP slide 21. Strategies**
Share instructional strategies that align with the principles of andragogy.

A. Experiential learning activities are particularly effective as they require learners to problem solve and learn from any “mistakes” in their responses. Additionally,
activities such as case studies, simulations, and role playing are designed to have immediate relevance to the adult learner.

B. Graphic organizers can also be powerful learning tools as they assist learners with organizing material and they can be individualized by the learner to best meet their learning styles and preferences.

C. Because adult learners bring a wealth of previous life experience, rely heavily on these experiences as they relate to the topic being presented. Be sure to encourage learners to share experiences that went badly as well as those that went well. As noted in the principles of andragogy, mistakes can be powerful learning opportunities.

D. To encourage investment and engagement, make the relevance of this training explicitly clear to learners (i.e., to get a better job, to protect their safety on the job site, etc.). This can be accomplished by asking the learners themselves to explain how the training will be valuable to them.

E. Like you, adult learners have little patience for having their time wasted. Show respect for adult status/life responsibilities by being organized, staying on task, and starting and ending class sessions on time.

F. Adult learners often respect the knowledge of “peers” who have experience with the topic under discussion. As such, collaborative group work allows learners to learn from each other and act as “experts” when presenting what was learned to another small group or to the entire group.

**PP slide 22. Utilize and Stimulate the Senses**

Review the chart and discuss techniques to engage each mode. Pay particular attention to the estimate that we learn 90% of what we teach, and discuss how peer to peer learning can be encouraged to allow the participants to teach each other and thereby learn more themselves.

**PP slide 23. Accommodate Learning Styles**

Adults have distinct learning styles. In the simplest terms, adults learn best with their eyes, their ears, or their bodies.

- **Visual learners** – “Show me.”
  - Visual/verbal.
  - Visual/nonverbal.
- **Auditory/verbal learners** – “Tell me.”
- **Tactile/kinesthetic learners** – “Let me do it.”

Instructors should consider the learning styles of their students when preparing lessons.

- Visual learners learn best with their eyes. “Show me” is their motto. This group can be further divided into visual/verbal and visual/nonverbal learners.
  - Visual/verbal learners.
    - Learn best when information is presented visually and in words.
- Benefit from written information.
  - Visual/nonverbal learners.
    - Learn best when information is presented with graphics (e.g., in photos, pictures, charts, and diagrams).
    - Visualize a picture in their minds.
    - May not like to work in large collaborative groups.
- Auditory/verbal learners learn with their ears. “Tell me” is their motto.
  - Learn best when information is presented verbally.
  - Benefit from listening to lectures and participating in group discussions.
  - Learn best when interacting with others in a listening/speaking exchange.
- Tactile/kinesthetic learners learn with their bodies. Their motto is “Let me do it.”
  - Learn best when physically engaged in a hands-on activity.
  - In a classroom, prefer demonstrations to lectures.
  - Anecdotally, most WAP installers are tactile/kinesthetic learners. Show and tell, then let them at it.

Vary teaching techniques to address all three learning styles when course content allows.

Ask students which type of learner they think they are.

*Distribute “What’s Your Learning Style” and let students complete the questions. Were people right about their personal learning styles?*

**PP slide 24. Active Listening**

It is critically important that trainers practice active listening techniques.

A. If comments are not attentively listened to, adult learners may respond with resistance and disengagement. They are not interested in being humored and will not continue to contribute if their responses are not taken seriously and received as having value.

B. Present the active listening techniques presented on the slide.

   i. Role play – Divide into pairs and have trainers practice active listening techniques through role play

**PP slide 25. The Three R’s**

- Repeat.
- Respond.
- Reinforce.

Repeat valuable student comments and contributions to the class. This technique promotes conversation and applies one of the basic tenets of learning: reinforcement. For example, if a student points out a creative way to remove hardwood flooring in a bungalow, summarize the method, thereby acknowledging the contribution.

**PP slide 26. Know Your Goals**

Now that you understand how to engage the adult learner, be sure to apply those concepts to the goals that you seek to accomplish in the course. Does this change any of
your intended activities or responses? Does the class composition effect how you will seek to achieve these goals?

**PP slide 27. Session #2 Review: Adult Learning Theory**

**PP slide 28. Session #2 Close: Adult Learning Theory**

Questions

**PP slide 29. Reference**

**PP slide 30. Day 1 Review: Course Objectives**

Review what was covered today and re-discuss how and when the rest will be covered. Discuss the individual action plans; refer back to K-W-L worksheet. Discuss the upcoming training sessions and the Trainer Lesson Plans that they will receive, corresponding to each session. Note that blue boxes will contain rationales and pointers for trainers.

**PP slide 31. End of Session**

End of Day 1
TRAIN THE TRAINER

DECONSTRUCTION WORKER

PRESENTATION
Acknowledgment: “This material is based upon work supported, in whole or in part, by the Department of Energy - Office of Energy Efficiency and Renewable Energy under Grant Award Number DE-EE0003564 from the Energy Efficiency and Conservation Block Grant Program made available pursuant to the American Recovery and Reinvestment Act (RECOVERY ACT) of 2009.”
Welcome

V1.1 Train the Trainer: Deconstruction Worker

www.BMRA.org, contact@bmra.org, (773) 340-BMRA

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Course Objectives

By attending this training, participants will be able to:

1. Deliver the Deconstruction Worker Training (DWT) course content.
2. Prepare all facilities and materials for the DWT.
3. Incorporate adult learning principals into the DWT.
4. Modify DWT curriculum delivery to suit trainer style, student needs and training location.
5. Evaluate DWT participants and record results.

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TRAIN THE TRainers SESSION #1

DELIVERY OF COURSE CONTENT

Winter 2013

BMRA Train the Trainer: Deconstruction Worker
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Train the Trainer Session 1:
Delivery of Course Content

By attending this session, participants will be able to:

1. Understand the general core competencies to be delivered in the DWT.
2. Access the resources needed to prepare for delivery of course content.
3. Identify individual methods to be used to acquire knowledge needed for delivery of course content.
4. Begin developing an individual action plan for the course.
Core Competencies

The Core Competencies (CC) are groupings of skills, concepts and knowledge used by current deconstruction practitioners, identified by experienced industry experts, and required for workers in the deconstruction and building materials reuse industries.
Core Competencies

These CCs are found in the textbook:

- Refer to the content page and Introduction Page (iii) for a list and overview of the CCs.
- Each of the chapters of the Text cover a CC, likewise the DWT will roughly follow the CCs and reference them throughout.
Deconstruction Worker CCs

- Although there are 10 CCs, not all aspects of each CC will apply to the Deconstruction Worker Training.
- Refer to “Deconstruction Worker Core Competencies” handout.
- Using this handout and the Deconstruction Worker CC K-W-L worksheet let’s get a better understanding of your knowledge levels.
Learning the CCs

- What do you know about each of the CCs?
- What do you want to know?
- How will you go about learning it?
Train the Trainer Session 1 Review:

Delivery of Course Content

- Ten Core Competencies, with subsets specific to the Deconstruction Worker.
- Resources: Textbook, course materials, handouts, instructor, classroom, field and lab activities.
- Individual methods: Study, participation, practice.
- Develop an action plan.
TRAIN THE TRAINERS SESSION #2

ADULT LEARNING THEORY

Winter 2013

BMRA Train the Trainer: Deconstruction Worker

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Train the Trainer Session 2:

Adult Learning Theory

By attending this session, participants will be able to:

1. Utilize the basic principles of adult learning and the strategies appropriate for teaching adults.
2. Implement strategies to create a comfortable learning environment.
3. Understand the impact of physical positioning, gestures, use of podiums, and tone of voice on receptivity of audience.
4. Utilize active listening and feedback techniques.
Know Your Audience

Adult learners comprise a wide range of participants. It’s critical to understand who your students are.

- Why are they in the class?
- What are their backgrounds?
- What barriers exist?
- What base knowledge levels do they have?
Basic Principles

1. Adults need to be involved in the planning and evaluation of their learning.
2. Adults need to know why they need to learn something.
3. Experience (including mistakes) provides the basis for learning activities.
4. Adults are most interested in learning subjects that have immediate relevance to their job or personal life.
5. Adult learning is problem-centered rather than content-centered.
6. Adults respond better to internal rather than external motivators.

(Knowles, 1990)
Creating a Comfortable Learning Environment

- Adult-appropriate furniture and teaching space (no podium or desks in rows)
- Psychological safety created through respect and valuing learners’ life experiences
- Active listening and feedback

- Position yourself as an equal not an “authority” figure.
Teacher/Trainer

- Content Resource
- Facilitator
- Problem-poser
- Co-learner
- Guide

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Strategies

- Use Experiential Activities
  - Case studies
  - Simulations
  - Role playing (sparingly)
  - Demonstrations
  - Action projects
  - Brainstorming
  - Frequent Quizzes
  - Collaborative Group Work
  - Presentations

- Use Graphic Organizers
  - K-W-L
  - Compare/Contrast Chart
  - Venn Diagrams
  - Concept maps and sketches

- Draw heavily on learners’ previous experience.
- Explicitly explain how learning content will benefit the learner.
- Show respect through being organized and starting and ending on time.
- Open-ended questions

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Utilize and Stimulate the Senses

Do you actively engage your students?

It is estimated that we learn:

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10%</td>
<td>Of what we read.</td>
</tr>
<tr>
<td>20%</td>
<td>Of what we hear.</td>
</tr>
<tr>
<td>30%</td>
<td>Of what we see.</td>
</tr>
<tr>
<td>40%</td>
<td>Of what we see &amp; hear.</td>
</tr>
<tr>
<td>70%</td>
<td>Of what we experience.</td>
</tr>
<tr>
<td>90%</td>
<td>Of what we teach.</td>
</tr>
</tbody>
</table>

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Accommodate Learning Styles

Visual
Learners: “Show Me.”
Visual/verbal
Visual/nonverbal

Auditory/Verbal
Learners: “Tell me.”

Tactile/Kinesthetic
Learners: “Let me do it.”
Active Listening

- Stop other activities
- Make and maintain eye contact
- Lean slightly toward speaker
- Nod to indicate understanding
- Paraphrase what you heard
- Ask clarification questions if you are unclear

- Through verbal and non-verbal cues, encourage speaker to extend answer
- Allow speaker to finish without interruption

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The Three R’s

« Repeat
« Respond
« Reinforce

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Know your goals

How do your goals and the goals of the program impact the delivery of the training?

- Is the primary goal employment?
- Is it passing the class or obtaining the credential?
- Is it skill and knowledge building?
- Is this a prerequisite to another course?
Train the Trainer Session 2 Review:

Adult Learning Theory

- Reduce motivational barriers to learning.
- Recognize different learning styles (visual, auditory, and tactile) so that you can deliver effective training.
- Teachers facilitate learning, but it is the student’s responsibility to do the learning.
- Recognize and respect the life experiences the student brings to the classroom.
- Effective classroom management assures that everyone has a fulfilling educational experience.
- Understand your audience and your goals.
Train the Trainer Session 2 Review:

Close
References

Train the Trainer Day 1 Review:

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---

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---

These CCs are found in the textbook:

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(Kaufman, 1990)
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  - Venn Diagrams
  - Concept maps and sketches
- Draw heavily on learners’ previous experience.
- Explicitly explain how learning content will benefit the learner.
- Show respect through being organized and starting and ending on time.
- Open-ended questions
Utilize and Stimulate the Senses

Do you actively engage your students?

It is estimated that we learn:
- 10% Of what we read.
- 20% Of what we hear.
- 30% Of what we see.
- 40% Of what we see & hear.
- 70% Of what we experience.
- 90% Of what we teach.

Accommodate Learning Styles

Visual Learners: “Show Me.”
Auditory/Verbal Learners: “Tell me.”
Tactile/Kinesthetic Learners: “Let me do it.”

Active Listening

- Stop other activities
- Make and maintain eye contact
- Lean slightly toward speaker
- Nod to indicate understanding
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TRAIN THE TRAINER

DECONSTRUCTION WORKER

HANDBOUTS: GROUP 1
### Competency One: Introduction to Deconstruction

| Learners will be able to: |  
|----------------------------|--------------------------------------------------|
| 1.1                       | Define demolition and deconstruction and subsets thereof: Salvage, strip-out, and selective demolition. |
| 1.2                       | Define building materials reuse, total and selective. |
| 1.3                       | Define the goals of deconstruction and building material reuse. |
| 1.4                       | Describe the social, environmental, and economic advantages to deconstruction and building material reuse. |
| 1.5                       | Compare and contrast the methods of demolition and deconstruction and explain the advantages and disadvantages of each in particular situations. |
| 1.6                       | Identify building materials and core components: determining material volumes, structural types, and appropriateness for demolition and deconstruction. |

**Exposure for cursory understanding**

| Learners will be able to: |  
|----------------------------|--------------------------------------------------|
| 1.7                       | Identify salvage and recycling opportunities in residential, commercial, and institutional buildings. |
| 1.8                       | Identify building types and component systems. |
| 1.9                       | List, in order, the basic steps in deconstructing a building. |
| 1.10                      | List, in order, the basic steps to stripping out a building. |
| 1.11                      | Define construction and demolition waste, recycling, reuse, source separation and mixed debris. |
| 1.12                      | Identify reuse markets for materials generated on a deconstruction project. |

**Exposure for cursory understanding**

### Competency Two: Evaluating the Building Site

| Learners will be able to: |  
|----------------------------|--------------------------------------------------|
| 2.1                       | Describe the purpose of conducting a building site evaluation. |
| 2.2                       | List and describe the primary goals which a building site evaluation should achieve. |
| 2.3                       | Identify common structural components in a building by type. |
| 2.4                       | Locate load bearing partitions in a building. |
| 2.5                       | Conduct an exploratory investigation to identify building layers (e.g. roofing, partition finishes, flooring, etc.) and material types. |
| 2.6                       | Identify a building’s Mechanical, Electrical, Plumbing systems, their shut offs and the associated principles of operation for each type of system. |
| 2.7                       | Understand how building age may impact deconstruction project. |
| 2.8                       | Identify some of the structural hazards that might exist in a candidate building and solutions to minimize risk of structural failure while being deconstructed. |
| 2.9                       | Identify potential material egress routes and material staging, processing, and loading areas on a... |
2.10 Identify the major components in a contract agreement.

Exposure for cursory understanding

2.11 Locate permitted waste recycling markets on state, county, and regional waste district web pages.

Exposure for cursory understanding

2.13 Locate reuse markets and identify their acceptance guidelines.

Exposure for cursory understanding

2.14 Describe “salvage potential” and the factors to be considered in determining a building’s value.

Competency Three: Jobsite Safety

Learners will be able to:

3.1 Describe the all key safety concepts as they apply to a deconstruction site or project.

3.2 Identify and describe safety hazards that might be found on a deconstruction job site.

3.3 Describe the roles of planning, supervision, and teamwork in ensuring a safe deconstruction job site.

3.4 Identify and describe the roles of major federal regulating agencies (including OSHA and EPA) in governing safety practice for building deconstruction.

3.5 Describe the typical roles of state and local agencies, such as regional Clean Air Agencies, state Departments of Environmental Protection or local public utilities.

3.6 Demonstrate understanding, fitting and use of various types of Personal Protection Equipment (PPE) used on deconstruction projects.

3.7 Describe safety procedures applicable to non-structural salvage.

Competency Four: Hazardous Materials

Learners will be able to:

4.1 List and describe 12 types of chemical hazards that may be encountered on a deconstruction project.

4.2 Summarize OSHA safety requirements for working around asbestos-containing materials (ACM).

4.3 Summarize EPA requirements for handling and disposal of ACM.

4.4 Describe appropriate methods for recognizing and handling lead-based paint containing materials on a deconstruction job site.

4.5 Describe the basic requirements of the EPA Renovation, Repair, and Painting Rule and explain when it applies to a deconstruction job site.

4.6 List 3 products found in buildings that may contain mercury and describe how to handle them.

4.7 Describe hazards associated with pressure-treated (PT) wood and how to minimize those on a deconstruction job site.

4.8 List 3 products found in buildings that may contain polychlorinated biphenyls (PCBs) and describe how to handle them.

4.9 Describe an appropriate response for a worker who comes upon evidence for clandestine drug
4.10 Define “universal wastes,” list examples and describe how they should be handled when encountered on a deconstruction job site.

4.11 Describe typical safety measures for working with moldy materials.

4.12 Describe worker procedures to minimize exposure to silica on a deconstruction job site.

**Competency Five: Tools for Deconstruction and Building Material Salvage**

<table>
<thead>
<tr>
<th>Learners will be able to:</th>
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**Competency Six: Site Plan, Schedule, and Work Plan**

<table>
<thead>
<tr>
<th>Learners will be able to:</th>
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<tbody>
<tr>
<td>6.1</td>
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**Exposure for cursory understanding**

**Competency Seven: Nonstructural Salvage**

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<th>Learners will be able to:</th>
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</table>
### Competency Eight: Full Deconstruction

**Learners will be able to:**

8.1 Describe the basic steps in sequencing work for full deconstruction and identify potential variations in this order based on the type of building encountered.

8.2 Describe factors to consider before work starts.

8.3 Distinguish between a load bearing and non-load bearing wall.

8.4 Describe steps in roof deconstruction.

8.5 Describe steps in wall deconstruction.

8.6 Describe steps in floor deconstruction.

8.7 Describe steps in getting lumber ready for shipment.

### Competency Nine: Materials Management

**Learners will be able to:**

9.1 Demonstrate knowledge of locating local waste haulers, recyclers, and reuse centers.

9.2 Describe how C&D reuse/recycling infrastructure influences choices about material handling and disposition.

9.3 Demonstrate knowledge in estimating materials recovery from a salvage or deconstruction project.

9.4 Describe how efficiency can be achieved in moving, storing, loading, and transporting of recovered materials.

9.5 Identify commonly salvaged materials and components and describe how to handle them to retain maximum value.

9.6 Describe the process for removal, handling, storage/stacking, and loading/transport of:

- *Wood flooring*
- *Cabinets*
- *Doors*
- *Windows*
- *Lighting fixtures*
- *Appliances*
- *Siding materials*
- *Roofing*
- *Structural lumber*
- *Brick*

9.7 Identify commonly recycled building materials and describe how to sort and handle these
## Competency Ten: Job Closeout

Learners will be able to:

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<table>
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<tbody>
<tr>
<td><strong>10.1</strong></td>
<td>List the basic closeout requirements required for all deconstruction jobs.</td>
</tr>
<tr>
<td><strong>10.2</strong></td>
<td>Identify project specific closeout requirements and where to find them. <em>Exposure for cursory understanding</em></td>
</tr>
<tr>
<td><strong>10.3</strong></td>
<td>Define a “clean” post project job site.</td>
</tr>
<tr>
<td><strong>10.4</strong></td>
<td>Explain project reporting data, types and quantities of data tracked and how it is reported.</td>
</tr>
<tr>
<td><strong>10.5</strong></td>
<td>Conduct an end of project tool inventory.</td>
</tr>
<tr>
<td><strong>10.6</strong></td>
<td>List the OSHA regulations associated with protecting or grading open cellar holes.</td>
</tr>
</tbody>
</table>
## TRAIN THE TRAINER: DECONSTRUCTION WORKER

### CORE COMPETENCY (CC) K-W-L

<table>
<thead>
<tr>
<th>CC#</th>
<th>What I Already <strong>Know</strong> About The CC</th>
<th>What I <strong>Want</strong> To Learn About The CC</th>
<th>What I <strong>Learned</strong> About The CCs From This Lesson</th>
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# What’s Your Learning Style?

By Marcia L. Conner

Learning style refers to the ways you prefer to approach new information. Each of us learns and processes information in our own special style, although we share some learning patterns, preferences, and approaches. Knowing your own style also can help you to realize that other people may approach the same situation in a different way from your own.

Take a few minutes to complete the following questionnaire to assess your preferred learning style. Begin by reading the words in the left-hand column. Of the three responses to the right, circle the one that best characterizes you, answering as honestly as possible with the description that applies to you right now. Count the number of circled items and write your total at the bottom of each column. The questions you prefer provide insight into how you learn.

<table>
<thead>
<tr>
<th>Question</th>
<th>Response 1</th>
<th>Response 2</th>
<th>Response 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. When I try to concentrate...</td>
<td>I grow distracted by clutter or movement, and I notice things around me other people don’t notice.</td>
<td>I get distracted by sounds, and I attempt to control the amount and type of noise around me.</td>
<td>I become distracted by commotion, and I tend to retreat inside myself.</td>
</tr>
<tr>
<td>2. When I visualize...</td>
<td>I see vivid, detailed pictures in my thoughts.</td>
<td>I think in voices and sounds.</td>
<td>I see images in my thoughts that involve movement.</td>
</tr>
<tr>
<td>3. When I talk with others...</td>
<td>I find it difficult to listen for very long.</td>
<td>I enjoy listening, or I get impatient to talk myself.</td>
<td>I gesture and communicate with my hands.</td>
</tr>
<tr>
<td>4. When I contact people...</td>
<td>I prefer face-to-face meetings.</td>
<td>I prefer speaking by telephone for serious conversations.</td>
<td>I prefer to interact while walking or participating in some activity.</td>
</tr>
<tr>
<td>5. When I see an acquaintance...</td>
<td>I forget names but remember faces, and I tend to replay where we met for the first time.</td>
<td>I know people’s names and I can usually quote what we discussed.</td>
<td>I remember what we did together and I may almost “feel” our time together.</td>
</tr>
<tr>
<td>6. When I relax...</td>
<td>I watch TV, see a play, visit an exhibit, or go to a movie.</td>
<td>I listen to the radio, play music, read, or talk with a friend.</td>
<td>I play sports, make crafts, or build something with my hands.</td>
</tr>
<tr>
<td>7. When I read...</td>
<td>I like descriptive examples and I may pause to imagine the scene.</td>
<td>I enjoy the narrative most and I can almost “hear” the characters talk.</td>
<td>I prefer action-oriented stories, but I do not often read for pleasure.</td>
</tr>
<tr>
<td>8. When I spell...</td>
<td>I envision the word in my mind or imagine what the word looks like when written.</td>
<td>I sound out the word, sometimes aloud, and tend to recall rules about letter order.</td>
<td>I get a feel for the word by writing it out or pretending to type it.</td>
</tr>
<tr>
<td>9. When I do something new...</td>
<td>I seek out demonstrations, pictures, or diagrams.</td>
<td>I want verbal and written instructions, and to talk it over with someone else.</td>
<td>I jump right in to try it, keep trying, and try different approaches.</td>
</tr>
<tr>
<td>10. When I assemble an object...</td>
<td>I look at the picture first and then, maybe, read the directions.</td>
<td>I read the directions, or I talk aloud as I work.</td>
<td>I usually ignore the directions and figure it out as I go along.</td>
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<tr>
<td>11. When I interpret someone’s mood...</td>
<td>I examine facial expressions.</td>
<td>I rely on listening to tone of voice.</td>
<td>I focus on body language.</td>
</tr>
<tr>
<td>12. When I teach other people...</td>
<td>I show them.</td>
<td>I tell them, write it out, or I ask them a series of questions.</td>
<td>I demonstrate how it is done and then ask them to try.</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>Visual:</strong> _____________________</td>
<td><strong>Auditory:</strong> _____________________</td>
<td><strong>Tactile/Kinesthetic:</strong> _____________________</td>
</tr>
</tbody>
</table>

The column with the highest total represents your primary processing style. The column with the second-most choices is your secondary style.

Your primary learning style: _____________________

Your secondary learning style: _____________________

Now that you know which learning style you rely on, you can boost your learning potential when working to learn more. For instance, the following suggestions can help you get more from reading a book.

If your primary learning style is **visual**, draw pictures in the margins, look at the graphics, and read the text that explains the graphics. Envision the topic or play a movie in your thoughts of how you’ll act out the subject matter.

If your primary learning style is **auditory**, listen to the words you read. Try to develop an internal conversation between you and the text. Don’t be embarrassed to read aloud or talk through the information.

If your primary learning style is **tactile/kinesthetic**, use a pencil or highlighter pen to mark passages that are meaningful to you. Take notes, transferring the information you learn to the margins of the book, into your journal, or onto a computer. Doodle whatever comes to mind as you read. Hold the book in your hands instead of placing it on a table. Walk around as you read. Feel the words and ideas. Get busy—both mentally and physically.

**More information on each style, along with suggestions on how to maximize your learning potential, is available in the book Learn More Now** (Hoboken, NJ; John Wiley & Sons, 2004).

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TRAIN THE TRAINER

DECONSTRUCTION WORKER

HANDOUTS: GROUP 2
TRAIN THE TRAINER: DECONSTRUCTION WORKER

CLASSROOM SUPPLIES AND FACILITIES

Participant Classroom Supply Requirements and Recommendations

**EACH PARTICIPANT***
- Curriculum, handouts, agendas, etc.
- Three ring binder, 2” minimum
- Loose-leaf ruled paper or notebooks, three-hole punched
- Loose-leaf graph paper or notebooks, three-hole punched
- Highlighter (qty. 2)
- Ballpoint pen (qty. 2)
- Calculator (basic solar)
- Pencil pouch for binder (over the course of a program, including the pencil pouch saves considerably on replacement of calculators, pens, pencils and highlighters – available at many dollar stores for $1.00ea)
- Name tents
- Other support materials as required

* Whenever possible, all of the supplies in this category should be ready and available on or before the first day of class, laid out and organized for each participant.

**GENERAL USE (disposable)**
- Index Cards
- Sticky notes
- Poster-size table-top/easel pads
- Markers
- Paper Clips, alligator clips
- Staples
- Dry-Erase Markers
- Coffee, sugar, creamer
- Water (water cooler, water fountain, tap, bottled)
- Other general office supplies

**GENERAL USE (durable)**
- Coffee Maker
Coffee Mugs and water cups (disposable if wash sink is unavailable)
- Printer/Copier/Scanner
- Digital Camera, Video Camera
- Pencil Sharpener
- Stapler/staple remover
- Three hole punch
- Scissors
- Ruler
- Push Pins
- Clip Board(s)
- Easel(s)
- Bell
- Flash Drive
- Other general durable supplies

**Classroom Facility Requirements and Recommendations**

- Seating and work-surface (desk/table) for each participant with ample room for active participation in classroom activities
  - Flexible space preferred (ability to rearrange desks and chairs to suit activities and groups)
- Comfortable, well lit, quiet, clean, and safe learning environment with good acoustics and functional layout
  - Environmental controls are preferred, such as the ability to dim overhead lights at the projection screen while maintaining light levels in the rest of the classroom; windows that allow in natural light but have operable shades; basic temperature controls, etc.
- Ample white board, chalkboard, “smart” board, large paper pad, or other displayed writing surface space with sufficient supply of corresponding writing utensils (i.e. dry-erase markers)
  - Multiple white boards, including mobile white boards preferred
- Overhead projector of sufficient brightness and clarity with remote control and appropriately sized projection screen
  - Full AV capability (i.e. speakers)
- Instructor work-surface/podium or table that allows instructor to view computer screen while participants view projection screen
  - This surface is ideally at standing height or is adjustable between sitting and standing
  - Dedicated instructor layout space for materials and props
- Internet access, preferable wireless
- Availability of computer lab for participants with internet access and word processing software
• Laptop cabinet with a unit available for use by each participant at the instructor's discretion
• **Not** desktop computers in the same classroom that is being used for general instruction

☐ Proximal restroom, break-room and other facilities to quickly accommodate participant needs
  - Microwave, refrigerator, dishes and utensils (disposable if wash sink is unavailable)
  - Access to snacks and refreshments (provide if budget permits)
  - Lunch tables and seating, ideally separate from classroom space (picnic table is a good carpentry project)

☐ Wall mounted clock, trash receptacle, recycling bin, tack board, etc.

☐ Other basic classroom and training center amenities

**Other Requirements and/or Recommendations**

☐ Lab space equipped with tools, props and equipment for hands-on activities, tool sign offs, demonstrations, testing, etc.
  - Ideally, this space will be adjacent to or within the same facility as the classroom space
  - Alternatively, or additionally, a training project may be used. This location would ideally be located relatively near the training facility

*See criteria for lab space, props, equipment and training project for additional information*

☐ Transportation for field trips and field activities

☐ Time cards or swipe cards for attendance tracking and job readiness (sign-in sheets will suffice, but do not have the same impact)

☐ Lockers or other semi-secured personal space for participants (good carpentry training project)
  - If lockers are unavailable, consider dedicated desk space for items to remain overnight

☐ Uniform and/or durable clothing, i.e. matching branded, long-sleeve jersey polo
  - Opportunity to brand program and foster unity and teamwork
  - Clothing for classroom has different requirements than clothing needed for lab or field activities (see field supply requirements)

☐ Reference library with books, magazines, manuals and other publications relevant to the fields of deconstruction, construction, demolition, waste, recycling, reuse, worker safety, jobsite hazards, etc.

☐ Samples library of deconstruction materials, tools, products, etc.
TRAIN THE TRAINER: DECONSTRUCTION WORKER

TOOLS AND EQUIPMENT: LAB AND FIELD COMPONENT

**Personal Protective Equipment (PPE)**
Refer to Text Book CC3 for more information on PPE

**EACH PARTICIPANT PPE**
- ☐ Hard hat
- ☐ Safety glasses (standard, over glasses fit, or prescription as needed)
- ☐ Hearing protection (disposable ear plugs provided daily or individual ear muffs)
- ☐ Dust mask and/or respirators (disposable provided daily or individual respirators)
  - ☐ For lead: HEPA respirator (P100 NIOSH rating) or Disposable P100 filtering facepiece.
  - ☐ For normal dust and respiratory protection: Respirator or disposable NIOSH N95
  - ☐ See CC3, page 3-21 to 3-24 for more information
- ☐ Safety vest, high visibility
- ☐ Work gloves (semi-disposable coated gloves or durable individual pairs)
- ☐ Disposable coveralls (i.e. Tyvec Suits) (as needed, and primarily for lead safe work)
- ☐ Steel toed boots (steel insoles also recommended)
- ☐ Durable outerwear (i.e. jeans and long sleeve work shirt)

**RECOMMENDED/OPTIONAL EACH PARTICIPANT PPE**
- ☐ Back brace
- ☐ Knee Pads
- ☐ Rain protection
- ☐ Other weather protection as needed (i.e. cold weather attire)

**TRAINING CENTER PPE (SETS/QUANTITIES AS NEEDED)**
- ☐ Safety Harness / Fall Protection (fall arrest harness, lanyard and anchor)
- ☐ First Aid Kit
- ☐ Eye Wash
- ☐ Fire extinguisher(s)
- ☐ Fencing
- ☐ Drinking water and cups
- ☐ Propane heater
- ☐ Lock-out kits
- ☐ Debris chutes (manufactured or site built)
- ☐ Hepa Vac
Participant Tools and Equipment Requirements and Recommendations
Refer to Text Book CC5 for more information on tools and equipment

EACH PARTICIPANT TOOLS
☐ Tool Bag/Bucket
☐ Tool Belt
☐ Utility Knife
☐ Tape Measure
☐ Pencil, Crayon, Marker
☐ Flashlight or Headlamp (LED)
☐ Hammer (claw)
☐ Flat Bar
☐ 5 in 1 tool
☐ Nail Puller/Nipper or other general pliers
☐ Nail set/punch
☐ Screwdriver set or multi function sets (i.e. 4 in 1, ratcheting with interchangeable tips)

TRAINING CENTER TOOLS (HAND TOOLS)
☐ Assortment of hammers, mallets and sledges, qty. as needed
  ☐ Claw hammers in variety of weights and lengths
  ☐ Sledge hammers in variety of weights and lengths
  ☐ Specialty hammers, i.e. masonry
  ☐ Mallets, i.e. rubber, plastic, wood
☐ Assortment of prybars, flatbars and crowbars, qty. as needed
  ☐ Flatbars in a variety of lengths and styles (the longer the better)
  ☐ Prybars and crowbars in a variety of lengths and styles
  ☐ Specialty, i.e. cat’s paw, pike poles, demo bars
☐ Assortment of handsaws, qty. as needed
  ☐ Standard hand saw / contractors saw
  ☐ Japanese hand saw
  ☐ Hacksaw
  ☐ Bow saw
☐ Assortment of shovels, rakes and brooms and clean-up tools, qty. as needed
  ☐ Various shovels for scooping up material and debris
  ☐ Roofing shovels and other shovels used for material removal
  ☐ Push brooms and sweeping brooms for dust and light debris
  ☐ Rakes and other clean-up tools
☐ Assortment of chisels, qty. as needed
  ☐ Wood chisels in various sizes
Masonry chisels in various sizes

Assortment of pliers and wrenches
  - Standard and adjustable pliers in a variety of sizes and styles
  - Needle-nose and other specialty pliers
  - Locking and gripping pliers in a variety of sizes and styles
  - Standard and adjustable wrenches in a variety of styles and sizes

Screwdriver set
Socket wrench set
Bolt cutter
Snips
Wire cutter
Shims and wedges

TRAINING CENTER TOOLS (POWER TOOLS AND PNEUMATIC TOOLS)
- Reciprocating saws with a variety of blades (corded preferred, cordless too if budget permits)
- Circular saws with nail biting blades (worm drive preferable)
- Chain Saw(s) (recue saw and carbide blades preferred)
- Angle Grinder/Cut-off tools with a variety of cut-off and grinding wheels
- Pneumatic nail remover, i.e. Nail Kicker
- Drill drivers (corded and cordless) with bit sets
- Impact drill drivers with bit sets
- Hammers drills, demolition hammers and/or power chisels (budget permitting)
- Mini-router and/or oscillating multi-tool
- Table saw (budget permitting)
- Chop saw / Miter Saw (budget permitting)
- Shop Vac

SITE SPECIFIC TOOLS AND EQUIPMENT
- Generator
- Compressor
- Job box/gang box
- Cutting torch and tank
- String lights / site lighting
- Saw horses (great carpentry project)
- Assortment of ladders, i.e., telescoping, extension, folding, step
- Extension cords
- Locks and chains
MATERIAL HANDLING TOOLS AND EQUIPMENT
- Pallets
- Shrink wrap
- Banding cart
- Ratcheting straps
- Rope and other straps
- Carts, dollies and hand trucks
- Wheelbarrows
- Pallet jack
- Trash cans

MATERIAL MOVING AND PERSONELL TRANSPORTATION EQUIPMENT
- Forklift
- Telescoping fork lift, crane or boom
- Box truck
- Flatbed/Stake truck
- Tools and participant transportation vehicle(s), i.e. van, pickup truck, bus
- Excavator

SITE SERVICES / RENTAL
- Porta-John
- Wash Station
- Scaffolding
- Dumpster (if needed)

OTHER TOOLS AND CONSIDERATION (SEE CC5 FOR MORE INFORMATION
- Electrical tools
- Plumbing tools

DISPOSABLE SUPPLIES NOT NOTED ABOVE
- Trash bags
- Poly sheeting
- Various blades
- Gas for generator
- Other as needed
TRAIN THE TRAINER: DECONSTRUCTION WORKER

IDEAL FIELD HOUSE TRAINING CANDIDATE

Every deconstruction project is different and housing stock varies considerably around the country, and although almost any field site could be used effectively for training, and would be better that having none, below is a list of characteristics and circumstances that would be ideal in a training house.

- Single family detached residential structure
  - Detached garage or no garage preferred
- Adjacent vacant lot or open space on lot
- Accessible lot for equipment and trucking
- Building size ranging from 1400 to 2400SF
- Open space and floor plan to the extent possible in a small house
  - Large enough rooms to allow for training group size
  - Trainees will be divided into groups to accommodate any constraints
- Older construction, circa 1920
- Wood framed, platform construction is ideal, but balloon is perfectly acceptable
- Full basement, assuming excavation and backfill costs are covered, otherwise pier and post
- Standing height, floored attic space
- Hardwood floors
- Exterior ideally would be one layer of unpainted siding
  - Preferably not brick (unless partial deconstruction is acceptable, or removal can be outsourced as a potential source of revenue)
  - Preferably no asbestos (unless previously abated)
- Structurally sound or able to easily braced to safely accommodate training needs
- No major additions or major structural modification detected
- More simple construction styles are preferred
  - For example, Colonial or Bungalow as opposed to Gothic or Victorian
- Little or no fire damage
- Little or no water damage
- Little or no active mold present
- Little or no indication of pest or pet damage
- Limited other hazards and/or hazards removed prior to training (excluding lead)
  - Asbestos abatement already performed
  - Lead hazard will be assumed in painted materials
- All clearances, titles, permitting and shut-offs complete or readily able to be completed
- All required insurances and budget consideration resolved and in place
- Relatively close to the training center
- Relatively close to a hardware store
- Professional Deconstruction or Demolition partner in place to complete project after training, or opportunity for extended training (budget permitting)
TRAIN THE TRAINER: DECONSTRUCTION WORKER

OTHER TRAINING PROGRAM CONSIDERATIONS

☐ Support services and other work skills support considerations
  • General case management
    ▪ Food
    ▪ Housing
    ▪ Transportation
    ▪ Day care
    ▪ Adult basic education
    ▪ Clothing (basic, job and interview)
    ▪ Reading glasses
  • Contextualized math and math tutoring
  • Communication and contextualized reading
  • Professional work skills
    ▪ Interviewing
    ▪ Resumes
    ▪ Employability skills
  • Customer service
  • Financial literacy
  • Job placement

☐ Pre-Screening Considerations
  • Physical Exam
  • Career based physical exam and body mechanics
  • Drug Screen
  • Background checks
  • TABE and/or Work Keys testing
  • Industry Pre-Test / Post-Test

☐ Prerequisite Considerations
  • OSHA 10 Hour Construction
  • First Aid, CPR, AED
  • EPA Lead RRP
  • Asbestos Awareness (Class IV)

☐ Other Certification Considerations
  • HAZWOPER
  • Asbestos Worker or Supervisor
• Lead Worker or Supervisor
• Fork Lift Operator
• Truck Driver
☐ Employer advisory council
☐ Open computer lab time
☐ Open shop and field time
☐ Open Study Sessions
☐ Opportunities for internship, volunteer, or paid work experience
☐ Practice Test Sessions
DECONSTRUCTION WORKER TRAINING

DAY 1: SESSION 1

BMRA Standardized Curriculum V1.1 02/15/13

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DECONSTRUCTION WORKER TRAINING

COURSE SYLLABUS

Enter Organization Name

| Dates: Select Start Date to Select End Date | Instructor: Enter Instructor Name |
| Time: Enter start and end time | E-mail: Enter contact email |
| Location: Enter course location(s) | Phone: Enter contact phone # |

REQUIRED TEXTS/MATERIALS: Deconstruction Worker Training Course Materials

Introduction to Deconstruction: A Comprehensive Training Workbook (2012), by Building Materials Reuse Association

COURSE WEBSITES: Enter course website, or type NA

COURSE PREREQUISITES: OSHA 10 hour Construction (minimum)
Asbestos Awareness (Class IV) (minimum)
EPA Lead RRP
First Aid, CPR, AED
HAZWOPER

COURSE DESCRIPTION:

The Deconstruction Worker Training (DWT) course is an introductory course in deconstruction. Successful completion of this course will prepare learners for the competency based credentialing exam. Passing the exam will demonstrate content knowledge and necessary skills to qualify learners as deconstruction workforce ready.

This course is designed as an 80 hour course conducted 8 hours per day for duration of 10 days. The 8 daily hours of instruction will include both classroom and in-field/experiential instruction.

The course format arranges the material into the following 10 competencies:

- Introduction to deconstruction, evaluating the building site, job site safety, hazardous materials, tools, site and work plans, non-structural salvage, full deconstruction, materials management, and job closeout.

While some competencies will require more instructional time than others, one competency will be covered per day on average.
COURSE OBJECTIVES:

By attending this training, participants will be able to:
1. Demonstrate an understanding of salvage and deconstruction practices, buildings, and building materials.
2. Describe the process of evaluating a building deconstruction site.
3. Follow safety measures applicable to building deconstruction and building material salvage activities.
4. Identify environmental hazards associated with deconstruction and building material salvage activities.
5. Identify types and demonstrate use of tools applicable to deconstruction and building material salvage activities.
6. Understand a site plan and schedule for building deconstruction.
7. Describe and/or demonstrate steps and processes involved in nonstructural salvage.
8. Describe and/or demonstrate steps and processes involved in full deconstruction.
9. Understand basic materials management principals applicable to deconstruction and building material salvage activities.
10. Follow steps as assigned to facilitate closing out a building deconstruction project.

COURSE ACTIVITIES:

- **Reading:**
  Reading relevant sections of the textbook, prior to presentation in class, will better prepare the learner for meaningful discussion and important questions. Participants are expected to complete any reading assignments as assigned by the instructor.

- **Discussion:**
  Active participation in discussion is crucial to content mastery and critical thought, both necessary for successful course completion and preparation for the workforce.

- **Hands-on/experiential activities:**
  In addition to classroom presentation, activities, and discussion, learners will participate in simulations, case study, research, and in-field exercises. These hands-on activities are essential to learner practice and understanding of deconstruction. Learners are expected to dress appropriately and as recommended by the instructor to safely participate in all activities. Learners must wear appropriate personal protective equipment at all times, and as directed by the instructor and/or site safety officer.

- **Competency Verification:**
  A quiz or skills assessment will follow instruction on each competency. Competency will be demonstrated at 75%.
EVALUATION:

Successful completion of course, quizzes, skills assessments and all classroom activities with an average grade greater than 75%, as well as meeting attendance and participation criteria is required to pass the course and participate in credential exams.

In addition to prerequisites and work experience, passing of Deconstruction Worker Training certification exams (written and field) are required to obtain certification.

SCHEDULE:

*Note: Schedule is subject to change at instructor’s discretion.*

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<td>CC9: Materials</td>
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<td>CC10: Job Closeout</td>
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<td>Or Test Center</td>
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<td><strong>Testing 2</strong></td>
<td>Lab</td>
<td>Skills Verification Exam</td>
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<td><strong>Testing 3</strong></td>
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<td>Skills Verification Exam</td>
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<td><strong>Testing 4</strong></td>
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<td>Skills Verification Exam</td>
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ATTENDANCE:

Learners are expected to attend all class (classroom and in-field) sessions in their entirety. There are no excused absences. If you are unable to attend a session, you will be required to develop a personal completion plan with the instructor (if feasible and at the instructor’s discretion). Classes will start and end on time and attendance and punctuality are critical to learner success in this course. Course is sequential; therefore missing a training session will disqualify learners from participating in sessions that follow. At the instructor’s discretion you may be disqualified from participation due to absence or tardiness.*

PARTICIPATION:

Active participation in class sessions is essential to learning as well as to the effectiveness of the class environment. Active participation includes completing course readings prior to class, asking relevant questions, contributing to discussion, eliciting, listening to, and responding sensitively to the ideas of others, and actively engaging in all classroom activities. Lack of participation will constitute an absence, and may result in disqualification at the instructor’s discretion.*

LEARNERS WITH DISABILITIES:

Deconstruction work is a physically demanding field, and while there are positions in the industry that may accommodate certain physical disabilities, participants in this training program must perform physically rigorous activities including, but not limited to lifting, carrying, climbing, and bending. Ability to perform these physical aptitudes ensures that learners can safely participate in the activities required during training, certification testing and employment.

* Refer to Attendance Policy, Participant Expectations and School Handbook (if applicable) for additional information.
DECONSTRUCTION WORKER TRAINING

LESSON PLAN: COURSE OVERVIEW

With Train the Trainer Notes and Guidelines

TITLE: Course Overview – Deconstruction Worker Training (DWT)

UNIT GOAL: Gain an understanding of the course content, expectations and format

COURSE OBJECTIVES:

By attending this training, participants will be able to:

1. Demonstrate an understanding of salvage and deconstruction practices, buildings, and building materials.
2. Describe the process of evaluating a building deconstruction site.
3. Follow safety measures applicable to building deconstruction and building material salvage activities.
4. Identify environmental hazards associated with deconstruction and building material salvage activities.
5. Identify types and demonstrate use of tools applicable to deconstruction and building material salvage activities.
6. Understand a site plan and schedule for building deconstruction.
7. Describe and/or demonstrate steps and processes involved in nonstructural salvage.
8. Describe and/or demonstrate steps and processes involved in full deconstruction.
9. Understand basic materials management principals applicable to deconstruction and building material salvage activities.
10. Follow steps as assigned to facilitate closing out a building deconstruction project.

ICE BREAKER (5 min., 8:00am to 8:05am)

As students enter the classroom, welcome them, and begin passing around samples, tools, products and pictures that are interesting, cool, unique, etc. Settle the class and ask students what they think the tools are used for, what the products are made of, what the pictures are of, etc. This should be quick and designed to engage the new participants. You don’t have to explain what they are yet; just treat this as teasers of what is to come. Remember to show your enthusiasm for these items and excitement to be able to share your knowledge with the class.

Examples of items include: pneumatic denailer, reclaimed wood cutting board, antique door hardware, an action shot from a deconstruction site, an inventory picture of from a building material reuse retail establishment, a piece of reclaimed oak flooring, a sealed container of vermiculite, a cat’s paw, etc.
**COURSE OUTLINE (25 min., 8:05am to 8:30am)**
Describe and identify the course materials that the participants have been provided. Walk the participants through the course syllabus and course expectations, and explain that the objectives and policies will be covered in detail shortly. Describe the course schedule. Manage expectations and answer questions accordingly.

**INTRODUCTIONS (30 min., 8:30am to 9:00am)**
Get to know your participants and introduce yourself to them. Ask each participant to tell the class about themselves by briefly answering a few questions, such as:
- What is your name?
- Why are you taking this class?
- What work experience do you have?
- What is something that you would like for your classmates to know about you?
Introduce yourself and describe your qualifications and experience.
Instructor should pay close attention to time on this exercise, being careful to honor each participant’s experience, while not allowing this session to run over the allotted time. More participants = less time for each to introduce themselves.

**10 MINUTE BREAK (10 min., 9:00am to 9:10am)**
Break

**COURSE OVERVIEW (30 min., 9:10am to 9:40am)**

**PP slide 1.** Program Introduction
Discuss program funding, partners and design emphasizing why this opportunity is available for the participants and what resources are available to help them succeed.
This is a great opportunity to invite all of the program partners and allow each of them to briefly state their role as it pertains to the participant experience.

**PP slide 2.** The Building Materials Reuse Association (BMRA)
The BMRA is a 501 c3 non-profit educational and research organization whose mission is to facilitate building deconstruction and the reuse/recycling of recovered building materials.
Successful completers of the Deconstruction Worker Training program and certification will be qualified to work in the fields of deconstruction and building materials reuse.

**PP slide 3.** Title Page: Course Outline
Briefly describe what will be covered in this session

**PP slide 4.** Course Description
Review the course description and focus on the highlighted key words

**PP slide 5.** Course Objectives
Review the course objectives; discuss how and when each will be covered.

**PP slide 6.** Credentialing Process: Phase 1
Explain Phase 1 of the credentialing process, and congratulate them for completing the first step and beginning the next by taking this course. Review what “Successful Completion” entails.
PP slide 7. Credentialing Process: Phase 2
Explain Phase 2, reassuring them that this course is designed to prepare them for success and will provide them with all of the resources needed to pass.

PP slide 8. Credentialing Process: Phase 3
Explain Phase 3, reassure them that 2000 hours is only a year or two of experience, referring back to the introductions, did any of the participants have prior work experience that could possibly count toward the 2000 hrs?

Explain what the credential means to the industry, employer, resume, etc. Discuss what “competency” means and review what it means specifically in the context of this training program and credential.

PP slide 10. It’s up to you!
Discuss the importance of attendance and participation.

PP slide 11. Review and sign
Review participant expectations, attendance policy. Take any questions. Ask them to sign and then collect signature pages.

5 MINUTE BREAK (5 min., 9:40am to 9:45am)

PP slide 12. Break

PRE-TESTS (60 min., 9:40am to 10:40am)
Briefly discuss the pre-test process and purpose; then administer the pre-tests
(See “Discuss pre-tests” section below for talking points)

10 MINUTE BREAK (5 min., 10:40am to 10:50am)
Break

DISCUSS PRE-TESTS (30 min., 10:50am to 11:20am)
Ask the participants what they thought about the pre-tests and how they think they did. Reassure everyone that they were not expected to know any of the material, but that the results will help you to guide and tailor the curriculum to best suit their needs. Emphasize that the pre-test is also used as a tool to introduce them the concepts that they will be learning in the coming weeks.

Thank them for taking the pre-tests, and remind them that they will be taking the same test at the end of the class, and that those results help us to evaluate the program, but in no way impact their grade. Reiterate that the pre-test will not be returned to them, but you will be glad to share the results with them if they are interested.

Ask if any of the questions stood out to them or if there were any they dying to know the answers to. Select a sampling of questions and go over the answers in brief. Explain that most of the questions will be covered in detail during the course.
**FACILITY TOUR AND HOUSEKEEPING (30 min., 11:20am to 11:50am)**
Take the participants on a tour of the facilities, including any shop and lab spaces. Discuss field house if applicable. Provide an overview of classroom vs. lab vs. field expectations. Assign lockers and tool bags/buckets if applicable.

**CLOSURE (10 min., 11:50am to 12:00pm)**
Review course objectives and schedule, discuss what will be covered in the afternoon session.

**END OF SESSION – LUNCH (30 min., 12:00am to 12:30pm)**

**MATERIALS, EQUIPMENT AND RESOURCES**
- Projector, screen, PowerPoint slides
- Whiteboard and markers and/or easel paper
- Pre-Tests

**ASSESSMENT:**
- Formative: Discussion
- Summative: Pre-Tests

**ADAPTATIONS AND MODIFICATIONS:**
Direct questioning is perceived differently in different cultures. As such, observe cultural sensitivity when determining appropriate questioning methods.

Response wait time will also need to be longer for non-native English speakers. Typical wait time should be 5-7 seconds. For English Language Learners and Speakers of English as a Second Language, wait time should be increased by 3-5 seconds.
DECONSTRUCTION WORKER TRAINING

DAY 1: SESSION 1

PRESENTATION
Acknowledgment: “This material is based upon work supported, in whole or in part, by the Department of Energy - Office of Energy Efficiency and Renewable Energy under Grant Award Number DE-EE0003564 from the Energy Efficiency and Conservation Block Grant Program made available pursuant to the American Recovery and Reinvestment Act (RECOVERY ACT) of 2009.”
Welcome

V1.1 Deconstruction Worker Training

Building Materials Reuse Association

www.BMRA.org, contact@bmra.org, (773) 340-BMRA
Course Description

- The Deconstruction Worker Training (DWT) course is an introductory course in deconstruction. Successful completion of this course will prepare learners for the competency based credentialing exams. Passing the exams will demonstrate content knowledge and necessary skills to qualify learners as deconstruction workforce ready.

- This course is designed as an 80 hour course conducted 8 hours per day for duration of 10 days. The 8 daily hours of instruction will include both classroom, lab and/or in-field hands-on experiential instruction.
Course Objectives

By attending this training, participants will be able to:

1. Demonstrate an understanding of salvage and deconstruction practices, buildings, and building materials.
2. Describe the process of evaluating a building deconstruction site.
3. Follow safety measures applicable to building deconstruction and building material salvage activities.
4. Identify environmental hazards associated with deconstruction and building material salvage activities.
5. Identify types and demonstrate use of tools applicable to deconstruction and building material salvage activities.
6. Understand a site plan and schedule for building deconstruction.
7. Describe and/or demonstrate steps and processes involved in nonstructural salvage.
8. Describe and/or demonstrate steps and processes involved in full deconstruction.
9. Understand basic materials management principals applicable to deconstruction and building material salvage activities.
10. Follow steps as assigned to facilitate closing out a building deconstruction project.

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Credentialing Process

How do I become certified, and what does that mean?

**Phase 1**

- Obtain Prerequisites
  - Successfully complete this course.
    - Quizzes
    - Skills assessments
    - Classroom activities
    - Reading assignments
    - Homework
    - Attendance
    - Participation

- Receive certificate of completion from qualified trainer
Credentialing Process

How do I become certified, and what does that mean?

Phase 2

- Pass the written exam with a score of 75% or better
  - 2 hr timed test, 100 questions
- Pass the skills certification exam
  - 20 hands-on and/or verbal components
  - Competency score must be achieved on all stations
- Receive Provisional Credential from BMRA
Credentialing Process

How do I become certified, and what does that mean?

Phase 3

- Obtain 2000 hours of documented industry experience
  - Verified by the BMRA
- Receive Full Credential from BMRA
- Maintain credential through continuing education as required
How do I become certified, and what does that mean?

What it means

- The BMRA Deconstruction Worker Credential is a competency based credentialing process.
- Potential employers value trained and certified workers.
- Some funders may require the use of certified workers.
- This course will help to prepare you for a pathway of success and opportunity in the field of deconstruction and related industries.

Competency as defined for the Deconstruction Worker:

The possession of the minimum level of knowledge and proficiency required to receive and process information, make informed decisions and take physical action to adequately, safely, and repeatably deliver deconstruction and related services as assigned.
It’s up to you!

We’re here to help, but you have to do your part.

**Attendance**

- There is no such thing as an “excused” absence.
- If you have previous commitment that cannot be rescheduled, and it takes precedence over your future career, talk to me first so that we can develop an individual action plan to ensure that you receive the missed content (if possible).
- If you have an emergency, please deal with it as needed and meet with me as soon as you are able to develop an individual action plan to ensure that you receive the missed content (if possible).

**Participation**

- Participation is critical to success. Attendance without participation = failure.
- Be on time, every day. Return from breaks and lunch on time, every time.
- Engage in and contribute to classroom, field and lab activities.
- Read the materials, do the work and study.
- Don’t sleep or use cellular phones in class, in the lab or in the field.
- Eat healthfully and get adequate sleep at night.
Review and Sign
DECONSTRUCTION WORKER TRAINING

DAY 1: SESSION 1

HANDOUT: PRESENTATION
Welcome

COURSE OUTLINE

Winter 2013

BMRA Deconstruction Worker Training
Course Description

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Credentialing Process

- How do I become certified, and what does that mean?

**Phase 1**
- Successfully complete this course.
  - Quizzes
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  - Reading assignments
  - Homework
  - Attendance
  - Participation
- Receive certificate of completion from qualified trainer
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Credentialing Process

How do I become certified, and what does that mean?

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---

Credentialing Process

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DECONSTRUCTION WORKER TRAINING

DAY 1: SESSION 1

HANDOUT: CC’S
## Core Competencies

### Competency One: Introduction to Deconstruction

<table>
<thead>
<tr>
<th>Learners will be able to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 Define demolition and deconstruction and subsets thereof: Salvage, strip-out, and selective demolition.</td>
</tr>
<tr>
<td>1.2 Define building materials reuse, total and selective.</td>
</tr>
<tr>
<td>1.3 Define the goals of deconstruction and building material reuse.</td>
</tr>
<tr>
<td>1.4 Describe the social, environmental, and economic advantages to deconstruction and building material reuse.</td>
</tr>
<tr>
<td>1.5 Compare and contrast the methods of demolition and deconstruction and explain the advantages and disadvantages of each in particular situations.</td>
</tr>
<tr>
<td>1.6 Identify building materials and core components: determining material volumes, structural types, and appropriateness for demolition and deconstruction. (Exposure for cursory understanding)</td>
</tr>
<tr>
<td>1.7 Identify salvage and recycling opportunities in residential, commercial, and institutional buildings.</td>
</tr>
<tr>
<td>1.8 Identify building types and component systems.</td>
</tr>
<tr>
<td>1.9 List, in order, the basic steps in deconstructing a building.</td>
</tr>
<tr>
<td>1.10 List, in order, the basic steps to stripping out a building.</td>
</tr>
<tr>
<td>1.11 Define construction and demolition waste, recycling, reuse, source separation and mixed debris.</td>
</tr>
<tr>
<td>1.12 Identify reuse markets for materials generated on a deconstruction project. (Exposure for cursory understanding)</td>
</tr>
</tbody>
</table>

### Competency Two: Evaluating the Building Site

<table>
<thead>
<tr>
<th>Learners will be able to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1 Describe the purpose of conducting a building site evaluation.</td>
</tr>
<tr>
<td>2.2 List and describe the primary goals which a building site evaluation should achieve.</td>
</tr>
<tr>
<td>2.3 Identify common structural components in a building by type.</td>
</tr>
<tr>
<td>2.4 Locate load bearing partitions in a building.</td>
</tr>
<tr>
<td>2.5 Conduct an exploratory investigation to identify building layers (e.g. roofing, partition finishes, flooring, etc.) and material types.</td>
</tr>
<tr>
<td>2.6 Identify a building’s Mechanical, Electrical, Plumbing systems, their shut offs and the associated principles of operation for each type of system.</td>
</tr>
<tr>
<td>2.7 Understand how building age may impact deconstruction project.</td>
</tr>
<tr>
<td>2.8 Identify some of the structural hazards that might exist in a candidate building and solutions to minimize risk of structural failure while being deconstructed.</td>
</tr>
<tr>
<td>2.9 Identify potential material egress routes and material staging, processing, and loading areas on a</td>
</tr>
</tbody>
</table>
2.10 Identify the major components in a contract agreement.
   Exposure for cursory understanding

2.11 Locate permitted waste recycling markets on state, county, and regional waste district web pages.
   Exposure for cursory understanding

2.13 Locate reuse markets and identify their acceptance guidelines.
   Exposure for cursory understanding

2.14 Describe “salvage potential” and the factors to be considered in determining a building’s value.

Competency Three: Jobsite Safety

Learners will be able to:

3.1 Describe the all key safety concepts as they apply to a deconstruction site or project.

3.2 Identify and describe safety hazards that might be found on a deconstruction job site.

3.3 Describe the roles of planning, supervision, and teamwork in ensuring a safe deconstruction job site.

3.4 Identify and describe the roles of major federal regulating agencies (including OSHA and EPA) in governing safety practice for building deconstruction.

3.5 Describe the typical roles of state and local agencies, such as regional Clean Air Agencies, state Departments of Environmental Protection or local public utilities.

3.6 Demonstrate understanding, fitting and use of various types of Personal Protection Equipment (PPE) used on deconstruction projects.

3.7 Describe safety procedures applicable to non-structural salvage.

Competency Four: Hazardous Materials

Learners will be able to:

4.1 List and describe 12 types of chemical hazards that may be encountered on a deconstruction project.

4.2 Summarize OSHA safety requirements for working around asbestos-containing materials (ACM).

4.3 Summarize EPA requirements for handling and disposal of ACM.

4.4 Describe appropriate methods for recognizing and handling lead-based paint containing materials on a deconstruction job site.

4.5 Describe the basic requirements of the EPA Renovation, Repair, and Painting Rule and explain when it applies to a deconstruction job site.

4.6 List 3 products found in buildings that may contain mercury and describe how to handle them.

4.7 Describe hazards associated with pressure-treated (PT) wood and how to minimize those on a deconstruction job site.

4.8 List 3 products found in buildings that may contain polychlorinated biphenyls (PCBs) and describe how to handle them.

4.9 Describe an appropriate response for a worker who comes upon evidence for clandestine drug
4.10 Define “universal wastes,” list examples and describe how they should be handled when encountered on a deconstruction job site.

4.11 Describe typical safety measures for working with moldy materials.

4.12 Describe worker procedures to minimize exposure to silica on a deconstruction job site.

---

**Competency Five: Tools for Deconstruction and Building Material Salvage**

Learners will be able to:

| 5.1 | Define what a tool is in the context of salvage and deconstruction and articulate the hallmarks which make a tool valuable. |
| 5.2 | Identify and describe appropriate uses of typical hand tools in salvage and deconstruction activities. |
| 5.3 | Identify and describe appropriate use of typical power tools in salvage and deconstruction activities. |
| 5.4 | Demonstrate the use of the most common tools used in salvage and deconstruction. |
| 5.5 | Explain how the scale of a project affects the choice of tools for that project. |

---

**Competency Six: Site Plan, Schedule, and Work Plan**

Learners will be able to:

| 6.1 | Follow a site safety plan including the identification of hazards overhead, underfoot, and in the way and how to best protect from these potential hazards. |
| 6.2 | Describe how to secure a job site. |
| 6.3 | Describe how to plan for and protect from weather and natural elements including rain, snow/ice, cold, heat, and rain. |
| 6.4 | Identify utility shut offs/disconnects, turn them off, and lock them out or contract to have them disconnected by service providers. |

*Exposure for cursory understanding*

---

**Competency Seven: Nonstructural Salvage**

Learners will be able to:

| 7.1 | Explain how non-structural salvage fits into a deconstruction project. |
| 7.2 | Explain considerations for stand-alone non-structural salvage projects (no deconstruction). |
| 7.3 | Describe factors influencing the order in which items are salvage. |
| 7.4 | List and describe, in order, the steps in safely removing carpet. |
| 7.5 | List and describe, in order the steps in safely removing appliances. |
| 7.6 | List and describe, in order, the steps in safely removing countertops and cabinets. |
| 7.7 | List and describe, in order, the steps in safely removing finished wood flooring. |
| 7.8 | List and describe, in order, the steps in safely removing windows. |
| 7.9 | List and describe, in order, the steps in safely removing doors. |
| 7.10 | List and describe, in order, the steps in safely removing sinks, tubs, toilets, and other plumbing |
7.11 List and describe, in order, the steps in safely removing light fixtures.
7.12 Explain the importance of reevaluating materials for reuse potential during and after removal.

## Competency Eight: Full Deconstruction

Learners will be able to:

| 8.1 | Describe the basic steps in sequencing work for full deconstruction and identify potential variations in this order based on the type of building encountered. |
| 8.2 | Describe factors to consider before work starts. |
| 8.3 | Distinguish between a load bearing and non-load bearing wall. |
| 8.4 | Describe steps in roof deconstruction. |
| 8.5 | Describe steps in wall deconstruction. |
| 8.6 | Describe steps in floor deconstruction. |
| 8.7 | Describe steps in getting lumber ready for shipment. |

## Competency Nine: Materials Management

Learners will be able to:

| 9.1 | Demonstrate knowledge of locating local waste haulers, recyclers, and reuse centers. *Exposure for cursory understanding* |
| 9.2 | Describe how C&D reuse/recycling infrastructure influences choices about material handling and disposition. *Exposure for cursory understanding* |
| 9.3 | Demonstrate knowledge in estimating materials recovery from a salvage or deconstruction project. *Exposure for cursory understanding* |
| 9.4 | Describe how efficiency can be achieved in moving, storing, loading, and transporting of recovered materials. |
| 9.5 | Identify commonly salvaged materials and components and describe how to handle them to retain maximum value. |
| 9.6 | Describe the process for removal, handling, storage/stacking, and loading/transport of:  
  * Wood flooring  
  * Cabinets  
  * Doors  
  * Windows  
  * Lighting fixtures  
  * Appliances  
  * Siding materials  
  * Roofing  
  * Structural lumber  
  * Brick |
| 9.7 | Identify commonly recycled building materials and describe how to sort and handle these |
### Competency Ten: Job Closeout

Learners will be able to:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>10.1</strong></td>
<td>List the basic closeout requirements required for all deconstruction jobs.</td>
</tr>
<tr>
<td><strong>10.2</strong></td>
<td>Identify project specific closeout requirements and where to find them.</td>
</tr>
<tr>
<td><strong>10.3</strong></td>
<td>Define a “clean” post project job site.</td>
</tr>
<tr>
<td><strong>10.4</strong></td>
<td>Explain project reporting data, types and quantities of data tracked and how it is reported.</td>
</tr>
<tr>
<td><strong>10.5</strong></td>
<td>Conduct an end of project tool inventory.</td>
</tr>
<tr>
<td><strong>10.6</strong></td>
<td>List the OSHA regulations associated with protecting or grading open cellar holes.</td>
</tr>
</tbody>
</table>

*Exposure for cursory understanding*
DECONSTRUCTION WORKER TRAINING

PARTICIPANT EXPECTATIONS

Students are required to adhere to Student Policies and Procedures regarding academic integrity and student conduct, as well as all other applicable handbooks and manuals.

Training Hours
8:00 A.M. – 4:30 P.M. Monday through Friday

Professional Conduct
Participants are expected to conduct themselves as business professionals at all times. Professional conduct includes, but is not limited to:

- Treating fellow students, instructors and staff in a respectful manner. This includes using professional language at all times.
- Attending all class sessions.
- Arriving on time, not leaving class early, and taking only authorized breaks.
- Conducting personal business on break times and/or lunch time, not during class time
- Not bringing any food/drink into the computer lab.
- Only going on websites as required by the instructors. Computer use is monitored and tracked. Accessing unauthorized web sites is strictly prohibited. This includes, Facebook, YouTube, etc. while in class.
- Turning off all cell phones while in class. It is rude, disruptive, and unprofessional to have a cell phone ring during class. If you must have your cell phone on, please keep it on vibrate.

Alcoholic Beverages and Drugs
Use, possession, or distribution of alcohol, and drugs are forbidden. Persons appearing in the building or project site while under the influence of alcoholic beverages, narcotics, or other dangerous drugs, except as expressly permitted by law, will be subject to disciplinary and/or legal actions.

Children and Pets
Children and pets are not allowed in the classroom, lab or on project sites.

Dress Code Information
Students in the program are to adhere to the following general dress code. Exceptions and modifications are made at the discretion of the instructor.

Permitted attire for lab and field work:
Durable outerwear
- Pants (jeans or other durable work pants)
- Long sleeved work shirts (Henley or other durable shirt)
Steel toed work boots
Permitted attire for classroom activities:
All clothing listed above for lab and field work is also acceptable for the classroom
Also acceptable is any professional/business casual attire
Hats, hoods and caps are **NOT** permitted to be worn in the classroom

Unsafe attire:

- Loose fitting clothing or accessories
- Unkempt or long hair that is not contained
- Earrings, necklaces, bracelets, rings or other jewelry that may interfere with safe tool use
- Long Fingernails (fingernails should be trimmed and neat)
- Clothing must protect skin (i.e. no shorts, skirts, halter tops, sweat pants, pajamas etc.)

Other attire:

- All PPE as provided to participants
- Layers and outerwear as needed for cold weather
- Rain gear as needed for rainy conditions
- Change of clothes to protect against hazards
Confirmation of Understanding Program Expectations
I have read and comprehend the BMRA Deconstruction Worker Training Participant Expectations. My signature below indicates that I agree to be governed by the information provided. Failure to follow these established guidelines will cause disciplinary action up to and including dismissal from the BMRA Deconstruction Worker Training Program.

Date ___________________________ Class ___________________________

Name ___________________________ ___________________________
Print Name ___________________________ Signature
DECONSTRUCTION WORKER TRAINING

ATTENDANCE POLICY

The BMRA Deconstruction Worker Training Program prepares participants to work in the deconstruction and building materials reuse industries. Part of being work ready and employable, is demonstrating reliability and punctuality to potential employers through attendance. This program is progressive and intensive; absenteeism and/or tardiness will greatly diminish participant’s ability to succeed. This 80hr course is divided into 4hr segments, for a total of 20 segments. Attendance and participation in all segments is expected. Tardiness and absenteeism will be recorded.

Training Hours
8:00 A.M. – 4:30 P.M. Monday through Friday

Lunch
Lunch will typically be held from 12:00 P.M. – 12:30 P.M. Monday through Friday, but specific activities or functions may require alternate schedules. Changes to the schedule will be made at the instructor’s discretion, and do not alter Attendance Requirement as outlined below.

Breaks
Breaks will be scheduled at the instructor’s discretion. Breaks, as scheduled by the instructor, apply to the Attendance Requirements as outlined below.

Attendance Requirements
• An absence during any segment is counted as 1 point. Missing more than 2hrs of any segment will be considered as an absence.

• A tardy during any segment is counted as a ½ point. Missing more than 15 total minutes from any segment will be considered as a tardy (this includes arriving late or departing early from any segment, lunch or break, as well as leaving training at any time other than scheduled.

• Lack of participation, sleeping or disruptive behavior during any segment will, at the instructor’s discretion, be counted as a tardy or absence.

• Points resulting from absenteeism or tardiness are cumulative. The accumulation of greater than 2 points by any participant may result in expulsion from the program.

THERE ARE NO EXCUSED ABSENCES OR TARDIES

In the case of a building or public transportation shut down the necessary adjustments to participant attendance and/or course schedule will be made. Attendance will be recorded through sign in sheets. If a participant neglects to sign in, it is the participant’s responsibility to notify one of the instructors, in written form, as soon as possible. Participants may request to see their attendance record at any time.
Confirmation of Understanding Program Expectations
I have read and comprehend the BMRA Deconstruction Worker Training Program Attendance Policy. My signature below indicates that I agree to be governed by the information provided. Failure to follow these established guidelines will cause disciplinary action up to and including dismissal from the BMRA Deconstruction Worker Training Program.

Date ___________________________ Class ___________________________

Name ___________________________ ______ ___________________________
Print Name ___________________________ Signature ___________________________
DECONSTRUCTION WORKER TRAINING

DAY 1: SESSION 1

PRE/POST TESTS
DECONSTRUCTION WORKER TRAINING

PRE/POST TEST

Name: ______________________________________________________ Date: ______________________

This pre-test is for evaluation purposes only. Do your best. If you do not know the answer, move on to
the next question.

1) What 2 factors determine the size a foundation must be:
   a. The age and color of the house
   b. The weight of the house and soil density
   c. The soil density and location of the house
   d. The weight of the house and its location

2) What is a beam?
   a. A vertical structural framing member resting on 2 or more points
   b. A horizontal non-structural framing member resting on 2 or more points
   c. A horizontal structural framing member resting on 2 or more points
   d. A vertical non-structural framing member resting on 2 or more points

3) What is a cantilever?
   a. A floor that extends past the exterior wall of the floor below
   b. A wall that extends past the floor above
   c. A floor that has no bridging
   d. A wall that has no headers

4) What is a band joist?
   a. A beam that rests on 3 or more points
   b. The outer most floor joist surrounding the floor system
   c. The inner most floor joist
   d. A beam that rests on only 1 point

5) The bridging in a house:
   a. Holds up the sub floor
   b. Holds up the floor joists
   c. Keeps the walls straight
   d. Keeps the floor joists straight
6) A house with a slab on grade foundation:
   a. Has trench footings
   b. Has a crawlspace
   c. Has a basement
   d. Has no footings

7) Every house has a sill plate, attaching the house to the foundation.
   True
   False

8) Name 2 different materials foundations can be made of: _____________ and __________.

9) Name the 2 most common types of residential framing: _____________ and ___________________.

10) An elevation is:
    a. The direction a house faces
    b. A 3D picture of the house
    c. A 2D picture of one side of the house
    d. Is a compass direction

11) A truss is an engineered structural roof framing member put together by gussets.
    True
    False

12) Doors have sashes and panes.
    True
    False

13) What is a header?
    a. A vertical structural framing member installed above a window or door opening that carries all the weight above.
    b. A horizontal non-structural framing member installed above a window or door opening that carries all the weight above.
    c. A vertical non-structural framing member installed above a window or door opening that carries all the weight above.
    d. A horizontal structural framing member installed above a window or door opening that carries all the weight above.
14) Fill in the boxes with options listed below:

Jack Stud, Header, Cripple, Stud, Bottom Plate, Double Top Plate, King Stud, Rough Sill

15) A load bearing building member:
   a. Can safely be removed
   b. Lubricates a door hinge
   c. Carries the weight of structures above it
   d. Is usually an interior wall

16) A fenestration is a:
   e. Type of door
   f. Type of window
   g. Hole in the building for pipes
   h. Purposeful hole in the building envelope to place a door or window

17) When you walk into the doorway of a house you step across the?
   a. Threshold
   b. Gateway
   c. Sill
   d. Jamb

18) Name 4 types of windows: ________________, ________________, ________________, and ________________.
19) Old windows used ______________ to keep them from slamming shut.
   a. Springs
   b. Levers
   c. Sash weights
   d. Sash panes

20) New windows are usually installed with a nailing fin.
    True
    False

21) What is deconstruction?

22) The 3 components of the Triple bottom line are:
    a. Social, Economic, and Creative
    b. Social, Economic, and Environmental
    c. Economic, Creative, and Environmental
    d. Social, Creative, and Environmental

23) The triple bottom line approach is ultimately a focus on:
    a. Sustainability
    b. Confidentiality
    c. Responsibility
    d. Municipality

24) Two types of deconstruction are:
    a. Demolition and salvage
    b. Structural and non-structural
    c. Structural and implosion
    d. Renovation and skimming

25) Which of the following could be a barrier to deconstruction?
    a. Deconstruction is good for the environment
    b. Deconstruction puts money into the community
    c. Demolition waste is inexpensive to dispose of
    d. Demolition takes longer
26) What things can we do to stop the linear cycle for construction debris?
   a. Put trash in the landfill
   b. Recycle and reuse
   c. Build less
   d. Burn our trash on sites

27) Which is a benefit of deconstruction over demolition?
   a. Employs less people
   b. Sends more garbage to the land fill
   c. Is better for the environment
   d. Is faster

28) What one step does a licensed contractor need to do prior to pulling a demolition permit?
   a. Disconnect the utilities
   b. Abate lead and asbestos
   c. Open hole inspection
   d. Environmental assessment

29) What are 2 materials that generally have a salvage value?
   a. Asphalt shingles, stucco
   b. Wood, metal
   c. Metal, concrete
   d. Concrete, plaster

30) The first step of structural deconstruction generally consists of doing 2 things; they are:
   a. Roof removal, window removal
   b. Abatement, window removal
   c. Clean up, roof removal
   d. Abatement, clean up

31) The chimney should be removed:
   a. In sections starting at the top
   b. First
   c. Last
   d. In sections starting at the bottom
32) The term “carbon footprint” refers to:
   a. The amount of greenhouse gases emitted by and individual in a year
   b. The amount of carbon we can salvage from a structure
   c. The amount of carbon dioxide emitted due to the consumption of fossil fuels by a particular person, group, etc
   d. The amount of pollution in the air and ground

33) When doing a full structural deconstruct, the contractor should disassemble the house in a certain order. Out of the options below which would be the best order?
   a. Window and door removal, appliance and fixtures, abate and clean up, exterior and interior finishes, walls and floors, roof removal
   b. Abate and clean up, exterior and interior finishes, appliance and fixtures, window and door removal, roof removal, walls and floors
   c. Abate and clean up, appliance and fixtures, window and door removal, interior and exterior finishes, roof removal, walls and floors
   d. Interior and exterior finishes, abate and clean up, appliance and fixtures, window and door removal, roof removal, walls and floors

34) Which of the following is a way to reduce the “carbon footprint” during the deconstruction process?
   a. Working lead safe
   b. Using heavy machinery
   c. Using diesel generators
   d. Using well maintained equipment

35) Diversion rate refers to:
   a. A general guideline to build by
   b. The amount of money that salvaged materials can be sold for after calculating costs
   c. The percentage of material removed that was salvaged as opposed to disposed of
   d. An equation used to calculate the capacity of a sewer pipe

36) What does LEED stand for?
   a. Leadership in Environmental and Economic Decision
   b. Leadership in Energy Efficient Design
   c. Leadership in Energy and Environmental Design
   d. Leadership in Energy Equation Diagrams
37) LEED provides a guideline and awareness in sustainable building practices.
   True
   False

38) Name three characteristics that affect salvage value.
   1. _______________________
   2. _______________________
   3. _______________________

39) How many square feet of flooring are in the house below? ____________

40) How many square feet of siding are on the house below? ____________
DECONSTRUCTION WORKER TRAINING

MATH PRE/POST TEST

Name: ________________________________________________ Date: ___________________

This pre-test is for evaluation purposes only. Do your best. If you do not know how to solve the problem, move on to the next question. Show all of your work, and do not erase.

You may use a calculator to answer the following questions. Answers may be expressed in decimal or fraction form.

1) 8 1/2” - 7 1/8”
2) 23 1/4” - 7 1/8”
3) 23.25 x 12.75
4) 350/40 = ________
5) 3/8 x 120 = ________
6) How many inches are in 5 feet? ________
7) One square foot equals how many square inches? ________
8) What is the perimeter of the house diagrammed below? ________ feet
9) What is the area of the house diagrammed below? ________ square feet
10) What is the volume of the house diagrammed below? ________ cubic feet
11) What is 75% of 2,400? ________
Write in the measurement indicated by the arrow pointing at the tape measure.

12) _____ 13) _____ 14) _____ 15) _____

16) If you have a piece of lumber that is 6” wide, 2” thick and 6’ long, how many board feet would you have? __________

17) If you have a piece of hardwood flooring that is 3 ½” wide, ¾” thick and 12’ long, how many square feet of flooring would you have? __________

18) If you have a piece of base molding that is 7 7/8” tall, 5/8” thick and 14’ long, how many linear feet of molding would you have? __________

19) If it takes 2 minutes for you to salvage one brick (making it ready for resale), and you can resell each brick for $0.45, how long will it take for you to have $49.50 worth of brick ready for resale? __________

20) How much does a 10lb bag of dirt weight? __________
DECONSTRUCTION WORKER TRAINING

DAY 1: SESSION 1

PRE/POST TESTS – ANSWER KEYS
DECONSTRUCTION WORKER TRAINING

PRE/POST TEST

Name: ________________________________________________ Date: ___________________

This pre-test is for evaluation purposes only. Do your best. If you do not know the answer, move on to the next question.

1) What 2 factors determine the size a foundation must be:
   a. The age and color of the house
   b. **The weight of the house and soil density**
   c. The soil density and location of the house
   d. The weight of the house and its location

2) What is a beam?
   a. A vertical structural framing member resting on 2 or more points
   b. A horizontal non-structural framing member resting on 2 or more points
   c. **A horizontal structural framing member resting on 2 or more points**
   d. A vertical non-structural framing member resting on 2 or more points

3) What is a cantilever?
   a. **A floor that extends past the exterior wall of the floor below**
   b. A wall that extends past the floor above
   c. A floor that has no bridging
   d. A wall that has no headers

4) What is a band joist?
   a. A beam that rests on 3 or more points
   b. **The outer most floor joist surrounding the floor system**
   c. The inner most floor joist
   d. A beam that rests on only 1 point

5) The bridging in a house:
   a. Holds up the sub floor
   b. Holds up the floor joists
   c. Keeps the walls straight
   d. **Keeps the floor joists straight**
6) A house with a slab on grade foundation:
   a. Has trench footings
   b. Has a crawlspace
   c. Has a basement
   d. Has no footings

7) Every house has a sill plate, attaching the house to the foundation.
   True
   False

8) Name 2 different materials foundations can be made of: Concren and Block/CMU
   Brick, Stone, Wood, Pre-Cast

9) Name the 2 most common types of residential framing: Platform and Balloon

10) An elevation is:
    a. The direction a house faces
    b. A 3D picture of the house
    c. A 2D picture of one side of the house
    d. Is a compass direction

11) A truss is an engineered structural roof framing member put together by gussets.
    True
    False

12) Doors have sashes and panes.
    True
    False

13) What is a header?
    a. A vertical structural framing member installed above a window or door opening that carries all the weight above.
    b. A horizontal non-structural framing member installed above a window or door opening that carries all the weight above.
    c. A vertical non-structural framing member installed above a window or door opening that carries all the weight above.
    d. A horizontal structural framing member installed above a window or door opening that carries all the weight above.
14) Fill in the boxes with options listed below:

Jack Stud, Header, Cripple, Stud, Bottom Plate, Double Top Plate, King Stud, Rough Sill

15) A load bearing building member:
   a. Can safely be removed
   b. Lubricates a door hinge
   c. Carries the weight of structures above it
   d. Is usually an interior wall

16) A fenestration is a:
   e. Type of door
   f. Type of window
   g. Hole in the building for pipes
   h. Purposeful hole in the building envelope to place a door or window

17) When you walk into the doorway of a house you step across the?
   a. Threshold
   b. Gateway
   c. Sill
   d. Jamb

18) Name 4 types of windows: Wood, Vinyl, Aluminum, and

Steel, Fiberglass, Glass Block, Glass Block
19) Old windows used ______________ to keep them from slamming shut.
   a. Springs
   b. Levers
   c. **Sash weights**
   d. Sash panes

20) New windows are usually installed with a nailing fin.
   True
   False

21) What is deconstruction?

   Deconstruction is the systematic dismantling and removal of a structure or its parts to salvage and harvest the components, with the purpose of reusing and/or recycling these reclaimed materials and commodities for their maximum value.

22) The 3 components of the Triple bottom line are:
   a. Social, Economic, and Creative
   b. **Social, Economic, and Environmental**
   c. Economic, Creative, and Environmental
   d. Social, Creative, and Environmental

23) The triple bottom line approach is ultimately a focus on:
   a. **Sustainability**
   b. Confidentiality
   c. Responsibility
   d. Municipality

24) Two types of deconstruction are:
   a. Demolition and salvage
   b. **Structural and non-structural**
   c. Structural and implosion
   d. Renovation and skimming

25) Which of the following could be a **barrier** to deconstruction?
   a. Deconstruction is good for the environment
   b. Deconstruction puts money into the community
   c. **Demolition waste is inexpensive to dispose of**
   d. Demolition takes longer
26) What things can we do to stop the linear cycle for construction debris?
   a. Put trash in the landfill
   b. **Recycle and reuse**
   c. Build less
   d. Burn our trash on sites

27) Which is a benefit of deconstruction over demolition?
   a. Employs less people
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29) What are 2 materials that generally have a salvage value?
   a. Asphalt shingles, stucco
   b. **Wood, metal**
   c. Metal, concrete
   d. Concrete, plaster

30) The first step of structural deconstruction generally consists of doing 2 things; they are:
   a. Roof removal, window removal
   b. Abatement, window removal
   c. Clean up, roof removal
   d. **Abatement, clean up**

31) The chimney should be removed:
   a. In sections starting at the top
   b. First
   c. Last
   d. In sections starting at the bottom
32) The term “carbon footprint” refers to:
   a. The amount of greenhouse gases emitted by an individual in a year
   b. The amount of carbon we can salvage from a structure
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   d. Leadership in Energy Equation Diagrams
37) LEED provides a guideline and awareness in sustainable building practices. 
   True
   False

38) Name three characteristics that affect salvage value.
   1. Condition
   2. Quantity
   3. Demand
   Any other reasonable answers accepted

39) How many square feet of flooring are in the house below? 1584 SF

40) How many square feet of siding are on the house below? 2188 SF
DECONSTRUCTION WORKER TRAINING

MATH PRE/POST TEST

Name: ________________________________________________ Date: ___________________

This pre-test is for evaluation purposes only. Do your best. If you do not know how to solve the problem, move on to the next question. Show all of your work, and do not erase.

You may use a calculator to answer the following questions. Answers may be expressed in decimal or fraction form.

1) 8 1/2” + 23 3/8” = 30 3/8 or 30.375
2) 23 1/4” - 7 1/8” = 16 1/8 or 16.125
3) 7 1/8” x 12.75 = 93.75
4) 350/40 = 8.75
5) 3/8 x 120 = 45
6) How many inches are in 5 feet? 60”
7) One square foot equals how many square inches? 144 sq. in.
8) What is the perimeter of the house diagrammed below? 148 feet
9) What is the area of the house diagrammed below? 1,032 square feet
10) What is the volume of the house diagrammed below? 8,256 cubic feet
11) What is 75% of 2,400? 1,800

Answer Key

49 5/8 or 49.625
30 3/8 or 30.375
36
8.75
45
60”
144 sq. in.
148 feet
1,032 square feet
8,256 cubic feet
1,800
Write in the measurement indicated by the arrow pointing at the tape measure.

12) \underline{\text{5/8"}}  \hspace{1cm} 13) \underline{\text{2 3/8"}}  \hspace{1cm} 14) \underline{\text{3 3/8"}}  \hspace{1cm} 15) \underline{\text{5 3/16"}}

16) If you have a piece of lumber that is 6” wide, 2” thick and 6’ long, how many board feet would you have? \underline{6 BF}

17) If you have a piece of hardwood flooring that is 3 ½” wide, ¾” thick and 12’ long, how many square feet of flooring would you have? \underline{3.5 SF}

18) If you have a piece of base molding that is 7 7/8” tall, 5/8” thick and 14’ long, how many linear feet of molding would you have? \underline{14 LF}

19) If it takes 2 minutes for you to salvage one brick (making it ready for resale), and you can resell each brick for $0.45, how long will it take for you to have $49.50 worth of brick ready for resale? \underline{3hrs 40min}

20) How much does a 10lb bag of dirt weight? \underline{10 lbs}
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Introduction

The Mid-America Regional Council is a key participant in the EnergyWorks KC regional partnership whose mission is to transform the energy efficiency market in the metropolitan region. The partnership has worked to accomplish this task through policy changes and development of programs, capacity, and tools that will increase the demand for energy efficiency.

In 2012, the MARC Board authorized a study to assess the feasibility of creating a Property Assessed Clean Energy (PACE) program in the Kansas City region. In general terms, PACE provides a funding mechanism for energy efficiency and renewable energy improvements to existing commercial properties. Local governments establish PACE Districts, which are operated by a separate appointed board or by that local government. The boards issue municipal revenue bonds or locate traditional sources of capital, and then make loans to property owners to fund energy retrofit projects. Property owners volunteer to participate in the program, and once projects are approved for lending, a contractual assessment between the property owner and the Clean Energy Development Board is place on the property as security for the bonds or loans. Owners repay the loan through the special assessment that is included in their property tax bills, typically over a 10- to 20-year term. The approach is entirely market based and each property owner in the district, which can cover more than one jurisdiction, can voluntarily opt into the program.

The initial study found that PACE is successful in other parts of the country and could offer many opportunities to commercial entities in our region. MARC has since continued that work, meeting with cities and counties in the metropolitan area to further evaluate interest and craft a business plan in hopes of developing one or more PACE programs.

Under Missouri statutes, a Clean Energy Development Board is established as a separate political subdivision that has the authority to enter into contracts with property owners to levy special assessments for energy efficient or renewable energy improvements to pay off bonds or loans issued for that purpose. Kansas has not yet approved enabling legislation for PACE. While no state statute regarding PACE financing exists in Kansas, communities could authorize the mechanism through their home rule authority.

In both Kansas and Missouri, cities and counties could cooperate on all aspects of a PACE program or only certain aspects of the program, such as the issuance of bonds, energy audits, qualification of applicants and education about PACE.

Generally, city staff and economic development professionals are supportive of the idea of providing PACE financing in the Kansas City region. Missouri communities are more eager given that the state has already adopted enabling legislation.
However, one question is consistent: How can such a program be established, managed and administered in the region as efficiently and effectively as possible? The initial approach being considered is that the Mid-America Regional Council could play such a role.

This document serves as an initial program manual that can and likely will be revised as the program becomes operational and responds to needs. It details the program terms governing all program participants, including property owners and lenders. By submitting an application, applicants warrant that they have read this handbook in its entirety, and that they understand and agree to the terms set forth herein.

**Program Goals**

The Kansas City Regional PACE program will help property owners of improved real property make principled investments in the long-term health of the local, state, and national economy and global environment by providing a long-term financing mechanism for energy conservation improvements.

By enabling property owners to take responsible energy conservation actions, the program will allow them to reduce their utility bills. At the same time it boosts the local economy through workforce job creation and economic development.
The Case for PACE

States across the country that have authorized the use of PACE financing recognize that stimulating the market for cost-effective energy efficiency upgrades in commercial buildings is a public purpose with multiple benefits. A PACE program has the potential to increase property values, create jobs, protect the tax base, increase local economic activity, safeguard the environment, and promote the general welfare of the people of the Kansas City region.

The list of advantages of using PACE for energy efficient upgrades is extensive.

The Business Case

Financial
- Potential for lower electric, gas and water utility bills
- Improvements to property can be made with no or low up-front costs and can be financed over an extended period of time
- Assessment attaches to property and can transfer to new owner with property sale
- PACE improvements may increase property value
- Property assessment may be off balance sheet, preserving capital for core business investments
- Long-term payback, up to 20 years, allows for greater return on investment
- For managed properties, reduced tenant turnover as a result of more comfortable and healthy indoor environment
- Improvement costs and benefits align under most lease structures (e.g. property tax pass-through to tenants)
- List of contractors may be vetted to promote quality improvements

Environmental
- Improved indoor air quality
- More comfortable buildings
- Lower carbon footprint

The Case for Cities and Counties
- A PACE program encourages and supports shifting to greater efficiency and renewable energy.
- The program offers a streamlined clearinghouse for information, providing tools and resources to property owners that will enable them to take action.
- By implementing a PACE program, communities invest in local job creation and retention and reduce environmental impacts.
- Priority lien position in Missouri creates secure financing mechanism and general fund protection. As of this writing, the assessment would not be a priority lien in Kansas.
**Benefits to Contractors**
- Increased number of local jobs created and retained as a direct result of funding existing building retrofits, particularly in the renewable energy and construction fields
- Program marketing and outreach (e.g. local government’s PACE program website) provides source of customer lead generation

**Benefits to Mortgage Lenders**
- Reducing utility bills increases property owner’s ability to make mortgage payments.
- Improvements financed by PACE can decrease operating costs, increase net operating income, and can therefore increase the value of the property.
- PACE projects enhance the lender’s collateral by improving the property.
- Unless altered by the assessment contract, in the event of default, the full amount of the assessment will be due.
- Purchasing the PACE bonds might be an investment opportunity for the existing mortgage lenders, who could now offer what is essentially a new “green” financial product to their customers.
Program Description

The Kansas City Regional PACE Program encompasses (insert jurisdictions here).

Eligibility requirements are laid out beginning on Page 8 of this document, but in general:

- The cost of the energy improvements will be paid for in energy cost savings over the life of the assessment. This requirement improves the participant’s debt-to-income ratio, increasing the participant’s ability to repay PACE assessments and other debt, such as mortgage payments.
- The term of the assessment will not exceed the useful life of the improvements, better ensuring a property owner’s ability to repay throughout the life of the PACE assessment. (It is important to note that the useful life of the measure often exceeds the assessment term.)

Financing is available to commercial applicants with a minimum project amount of $5,000. The amount available for financing is based on the value of the property, and the assessment stays with the property.

There are several ways to structure PACE financing, including the open market approach where investors invest in individual PACE projects and the pooled bond approach in which projects are aggregated and funded through a subsequent bond issuance. There are other PACE models that are funded through individual micro-bonds similar to open market programs, however, these bonds are either purchased exclusively by a single private entity or the local government (i.e., The Sonoma County program) rather than through a variety of financial institutions. In the open market model, rates and terms are negotiated between the lender and property owner and determined by the credit quality of the individual building with the added security of the senior PACE assessment. The pooled bond allows funders to spread risk across a portfolio of projects so that the rate is determined by the size and diversity of the pool as well as the credit quality of the buildings in that pool. The following section discusses the feasibility of issuing a pooled bond.

The repayment obligation then is secured by a senior lien on parity with general taxes in Missouri; however, it may be of a lesser lien priority in Kansas. In all cases, the obligation is expected to be repaid on the same cycle and with the same process as are property taxes.
Operating Procedures

Eligible Property Owners
Property owners may be individuals, associations, business entities, cooperatives, and virtually any owner who pays real property taxes. All financed properties must be located within the Clean Energy Development Board financing district. Participating counties, cities, and incorporated towns or villages will be identified on the Program website. Additionally, certain eligibility criteria must be satisfied. Financing could be approved if the following criteria are met:

- The property must be a non-residential property as defined as (1) a property for which the primary use is not residential or (2) a property used for multi-family housing with five or more units.
- Property title is vested in the applicant(s), without federal or state income tax liens, judgment liens, or similar involuntary liens on the property.
- Property owner is current on property taxes for all properties owned.
- Property owner is not in bankruptcy and the property is not an asset in a bankruptcy proceeding.
- Property owner is current on all mortgage(s).
- Improvement costs are reasonable to property value. As a guideline, proposed improvements should not exceed 10 percent of current market value. If the proposed project exceeds this guideline or otherwise does not appear prudent when compared to the property’s value, the program manager may require additional information supporting both the reasonable relationship of the improvements to the property, and information related to the ability of the property owner to repay. If the property, is unencumbered by a lien (property is owned free and clear), the applicant may submit for a project up to 50 percent of the property’s market or appraised value, whichever is higher (i.e., the project to value ratio may be greater than 10 percent but cannot exceed 50 percent). These projects will be evaluated on a case-by-case basis.
- The property must have a physical building occupancy rate of 50 percent or higher. If the occupancy rate is not at this level, the program manager, in concert with the Board, can evaluate the merits of the application.
- Mortgage-related debt plus program financing must not exceed 70 percent of the estimated market value of the property.
- Total annual property taxes and assessments due on the property cannot exceed 5 percent of the property’s market value, as determined at the time of approval of the assessment contract.
Eligible Projects

PACE financing is intended principally for retrofit activities to replace outdated, inefficient equipment, and to install new equipment or site improvements that reduce energy consumption, produce, renewable energy, or reduce energy through water conservation.

The property owner must have an audit conducted on the property that corresponds to the types of authorized improvements the owner wants to finance, and those authorized improvements must appear as identified opportunities or recommendations in the resulting audit report. The program reserves the right, on a case-by-case basis, to review and approve improvements that do not appear as an identified opportunity or recommendation in the report.

An eligible energy efficiency improvement project or renewable energy improvement project, or a combination of the two, must be $5,000 or greater. The savings from the project must exceed the cost of the improvements over the life of the improvement.

Energy Efficiency Improvement means any acquisition, installation, or modification on or of publicly or privately owned property designed to reduce the energy consumption of the property, including, but not limited to:

a) insulation in walls, roofs, attics, floors, foundations, and heating and cooling distribution systems;
b) storm windows and doors, multi-glazed windows and doors, heat-absorbing or heat reflective windows and doors, and other window and door improvements designed to reduce energy consumption;
c) automatic energy control systems;
d) heating, ventilating, or air conditioning units and distribution system modifications and replacements;
e) caulking and weather-stripping;
f) replacement or modification of lighting fixtures to increase energy efficiency of the lighting system without increasing the overall illumination of the building unless the increase in illumination is necessary to conform to applicable state or local building codes;
g) energy recovery systems;
h) daylighting systems;
i) green infrastructure; and,
j) any other system eligible for funding under the federal Qualified Energy Conservation Bonds or federal Clean Renewable Energy Bonds.
Ineligible Projects
Those fixtures and equipment that are not attached to the real property or building and can be easily removed are not eligible for financing through the program (for example, screw-in flourescent light bulbs.) Any projects that cannot be explained in terms of industry standard engineering or scientific principles are also not eligible.

Eligible Contractors
Only contractors who have registered with the program manager (“Registered Contractors”) may complete program-financed installation work. “Registered Contractors” must register with the program and provide evidence that they meet all applicable state and city or county licensing requirements, including insurance and/or bonding requirements. They must also agree to all terms and conditions of the program. A contractor may register as a “Registered Contractor” by contacting the Program and providing the information required, but is not “registered” until the program approves that registration.

If a contractor is required to have a contractor’s license for a particular type of work (e.g., electrical, mechanical, etc.) in that city or county, a registered contractor with that license must be used to install that improvement. If a registered contractor without the correct license uses a subcontractor with the correct license, then the subcontractor’s license information must be provided and the subcontractor must also register with the program. All solar PV and solar thermal systems must be installed in conformance with the manufacturers’ specifications and with all applicable electrical and building codes and standards.

There are two primary types of contractors that may participate in the program: auditors and installation contractors.

The commercial building energy audit market is fragmented, with no universally accepted standards for auditors. Property owners are encouraged to select an auditor with the experience, skills, and accreditation appropriate for their building and project type, provided that the auditor must be a “qualified energy auditor” who can meet Missouri Department of Natural Resources certification requirements.

The program encourages applicants to do research and receive bids from multiple contractors before signing a contract. Neither the board nor the program manager is responsible for determining the appropriate equipment, price or contractor for the property. By establishing these contractor eligibility criteria, the program is not recommending a particular contractor or warranting the reliability of any installer. The program is a financing program only. Neither the board nor the program manager will participate in the resolution of any dispute between applicants or their installers or equipment manufacturer.
Eligible Costs and Program Fees

Project Costs
Eligible costs of the energy efficiency improvements include the cost of equipment and installation. Installation costs may include, but are not limited to, energy evaluation consultations, labor, design, drafting, engineering, permit fees, and inspection charges.

The installation of energy savings improvements can be completed by a registered contractor of the property owner’s choice meeting the criteria outlined earlier. Eligible costs do not include labor costs for property owners that elect to do the work themselves.

Property owners who elect to engage in broader projects—such as a business remodeling—may only receive financing for that portion of the cost of retrofitting existing structures with energy and water conservation improvements. Repairs and/or new construction do not qualify for PACE financing, except to the extent that the construction is required for the specific approved improvement. Repairs to existing infrastructure, such as water and sewer laterals, are considered repairs and are not eligible.

The value of expected rebates, but not the value of expected tax credits, will be deducted from PACE financing. Additionally, the timing of PACE financing and rebates should be carefully reviewed by the owner to satisfy the total project cost.

Program Fees
The following program fees will be the responsibility of the property owner. The annual assessment fee will be included on the annual tax statement from the county treasurer. The other fees must be paid at the time they are incurred.

a. Title costs, including title insurance, where required. Projects greater than $500,000 will require title insurance.

b. Recording fee for documents required to be recorded by State law.

c. Assessment collection and processing costs will be added to the annual assessment on property tax bills unless they are waived by the county.

d. Multiple disbursements will be subject to a fee of $150 per disbursement and interest will begin to accrue on the entire assessment amount at the time of the first disbursement. There are two conditions under which property owners can receive multiple disbursements. The first is for installing an improvement $25,000 and greater. The second condition under which multiple disbursements can be received is when a project entails multiple improvements and/or multiple contractors. Payment can be made to any contractor who has completed his portion of the work or who has completed the improvement and provides a final invoice and a final permit for that work.
Refunds of Costs and Fees
If an applicant exercises the Right to Cancel within the three-day rescission period following assessment contract signing, the costs expended by the program will be refunded, with the exception of the initial application fee. No fees or costs will be refunded for an application withdrawn before assessment contract signing or after the three-day right of rescission period.

Application Fee
A one-time, non refundal fee of $50 will be paid at the time of the initial application.

Loan Origination Fee
A one-time loan origination fee of 5 percent of the total amount of the project is required, with the amount of such fee capped at $5,000.

Program Parameters

Minimum Energy Financing Amount and Duration of Assessment
Contracts are available for up to 20-year terms to accommodate a wide range of efficiency improvements and renewable energy investments. The minimum amount for a PACE project is $5,000.

Maximum Energy Financing Amount
Improvement costs must be reasonable to property value; however, there is no fixed maximum “cap” for a contract. All applications must be reviewed and approved by the board.

Lender Consent
To participate in the program, commercial and industrial property owners must obtain lender consent from all lenders having existing mortgage debt on the property, including consent to the subordination of their security to the lien of special tax assessments. Signed lender consent forms must be provided during the second stage of processing the application.
Assessment Interest Rate
The program manager will set the interest rate for a contract at the time the program and property owner enter into the assessment contract. The interest rate will be fixed at that point and will not go up.

Property Assessment Lien
All property owners must sign and notarize the assessment contract and implementation agreement (“contract documents”). Upon execution of the assessment contract, the program manager records an assessment lien against the property through the county assessor. The lien will be for the full amount of the assessment on the property that secures the assessment, plus a pro rata share of closing costs if a pooled bond or all closing costs if a micro bond is issued. The assessment will include a component of interest on the amount disbursed to the property owner that accumulates from the disbursement date through the next term of tax assessment.

The assessment agreement is sent to the appropriate county collector who collects special assessments in the same manner and with the same procedures as ad valorem real property taxes.

Delinquent Assessment Collections
Delinquent assessments will be collected using the laws and powers authorized under state statutes for collecting property taxes and assessments. Failure to pay a scheduled assessment will make all assessments accelerate and become due.

Application Process
The Kansas City Regional PACE Program provides financing for the installation of energy efficiency improvements and renewable energy generation projects permanently fixed to real property within the district. Property owners repay the program through an assessment on their property payable in annual installments on their property tax bills.

A. Project Scoping
The first step in the process is project scoping. By participating in this program, property owners are making a financial investment; this decision should be made based on both the efficiency and the cost effectiveness of the improvements. Conducting an energy audit will help property owners assess energy efficiency and renewable energy opportunities for their property. Accordingly, an energy audit is required to participate. Costs incurred to conduct onsite audits or surveys may be included in the application for PACE financing.
B. Program Application
The property owner completes an application form. The property owner submits the application together with its required attachments and a $50 application fee. Applications will be processed once completed on first-come, first-served basis.

C. Application Review
During the application review process, program staff verifies that:

- the application is complete and accurate;
- all eligibility requirements are met; and,
- program funding is available.

Within 15 business days of receipt of an application, program staff notifies the property owner whether the application is incomplete. An application shall be deemed incomplete if it is missing any information or attachments the property owner is required to provide. All requested documentation must be submitted within 30 days.

An application shall be submitted to the Clean Energy Development Board for approval if program staff have verified that the application is complete and accurate, meets all requirements, and funding is available. An application shall be deemed denied if program staff cannot verify that the application meets all requirements.

With respect to an application to finance a renewable energy generation system(s) other than solar (such as wind or geothermal) or a custom energy efficiency measure(s) (such as a combined heat and power system cogeneration system), or to finance an emerging technology (“Custom Measures”), staff reserves the right to require the appropriate engineering documentation and energy studies showing the energy savings and/or energy generation capabilities of the proposed project. The program may also charge an additional administrative fee for this technical review to be discussed with the property owner before proceeding.

D. Assessment Contract and Implementation Agreement
All property owners must sign and notarize the assessment contract and the implementation agreement. Four business days from the execution of the contract documents, staff will issue a Notice to Proceed to the property owner, and the program will place a lien for the full amount of the assessment on the property that secures the assessment.
E. Assessment Lien
Upon execution of the assessment contract, the program records an assessment lien against the property. The lien will be for the full amount of the assessment on the property plus closing costs if bonds are issued that secures the assessment.

F. Installation of Improvements
Property owner enters into a contractual arrangement directly with a registered contractor for improvements. All work is subject to the appropriate jurisdiction’s permitting and inspections and all other applicable federal, state, and local laws and regulations. All work must be completed, including the final inspection, within 90 days of execution of the assessment contract. The property owner and the program manager may agree to an extension of this completion date for good cause.

G. Progress Payments/Multiple Disbursements
If the maximum assessment amount is $25,000 or greater, the property owner may request in writing that the program make progress payments prior to the completion of the project. An applicant may request one or more interim disbursements if 75 percent of materials have been delivered and secured onsite. Following an inspection to verify this, 75 percent of the material on a cost basis has been delivered and secured, the program will fund up to 50 percent of the total approved amount.

H. Final Inspections & Disbursement of Financing
After improvements are completed, the property owner must contact the local permitting agency for a final inspection and final permit. The property owner notifies the program that all work has been completed and submits final documentation: final permit, invoices showing all costs, less any rebate amounts, and a Request for Disbursement form including signatures by contractors.

Checks will be prepared in accordance with the disbursement cycle. The amount disbursed will be the lesser of (i) the maximum assessment amount provided in the assessment contract or (ii) the actual costs.

Application

See Page 17.
## Appendices

A. Application  
   Page 17  
B. Terms  
   Page 23  
C. Model Ordinance  
   Page 24
Appendix A: Application

Section 1: Eligibility Requirements

- Applicant(s) is/are legal owner of the property described in the Application (the “Property”).
- Property is developed and located within the district.
- Property Owner is current on all property taxes for all properties owned within the district.
- Property Owner is current on all mortgage(s).
- Property Owner is not in bankruptcy, and the property is not an asset in a bankruptcy.
- There are no federal or state income tax liens, judgment liens, or similar involuntary liens on the Property.
- Improvement costs are reasonable for the scope of the proposed project and to Property value.
- Requested Financing Amount does not exceed 10 percent of the Property Market Value.
- The lien to value ratio (excluding the Requested Financing Amount) does not exceed 100 percent.
- Total annual property taxes, plus current assessments, including projected annual PACE assessments due on the property do not exceed 5 percent of the property’s market value, as determined at the time of approval of the contractual assessment.
- Property has a physical occupancy rate of 50 percent or more.
- All mortgage lenders must sign a lender consent form for this application to be approved.
**Section 2: Applicant Information**

<table>
<thead>
<tr>
<th>Property owner(s) legal name(s) as they appear on property tax records</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owner 1</td>
</tr>
<tr>
<td>Owner 2</td>
</tr>
<tr>
<td>Owner 3</td>
</tr>
<tr>
<td>Owner 4</td>
</tr>
</tbody>
</table>

**Property owner contact information**

<table>
<thead>
<tr>
<th>Name</th>
<th>E-mail Address</th>
<th>Daytime telephone number</th>
</tr>
</thead>
</table>

**Physical property address and assessor’s parcel number (Site of improvements)**

<table>
<thead>
<tr>
<th>Street Address</th>
<th>City and State</th>
<th>Zip Code</th>
</tr>
</thead>
</table>

Assessor’s parcel number for subject property

**Section 3: Property Information**

**Property Type (Check all that apply.)**

___Agricultural  
___Commercial  
___Industrial  
___Multi-Family(5+ units)  
___Other________________________________________________________

---

Page 18 of 32
**Section 4: Proposed Improvement Project Information**

<table>
<thead>
<tr>
<th>Proposed Improvement Project (Add additional pages if necessary.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy analysis method?</td>
</tr>
</tbody>
</table>

1. **Proposed improvement measure name**
   - Type of improvement (check one)
   - Quantity and/or size. Indicate number of windows and doors separately.
   - Units
   - Proposed improvement make and model
   - Proposed improvement specifications
   - Proposed Improvement Cost
   - Less rebate
   - Plus estimated permit fee
   - Net proposed improvement cost

2. **Proposed improvement measure name**
   - Type of improvement (check one)
   - Quantity and/or size. Indicate number of windows and doors separately.
   - Units
   - Proposed improvement make and model
   - Proposed improvement specifications
   - Proposed Improvement Cost
   - Less rebate
   - Plus estimated permit fee
   - Net proposed improvement cost

3. **Proposed improvement measure name**
   - Type of improvement (check one)
   - Quantity and/or size. Indicate number of windows and doors separately.
   - Units
   - Proposed improvement make and model
   - Proposed improvement specifications
   - Proposed Improvement Cost
   - Less rebate
   - Plus estimated permit fee
   - Net proposed improvement cost

*For each proposed improvement, provide not just the contractors’ bids and specifications, but also the energy audit report, the written mortgage lender acknowledgement form.
# Total Project Costs (sums from above)

<table>
<thead>
<tr>
<th>Proposed improvement cost</th>
<th>Less rebates</th>
<th>Plus estimated permit fees</th>
<th>Net proposed improvement cost</th>
</tr>
</thead>
</table>

# Itemized estimated costs of improvement(s) – Documentation required*

<table>
<thead>
<tr>
<th>Construction contract(s) (bid price for cost of materials and labor Less any applicable rebates), excluding permit fees:</th>
<th>$________________________</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contingency allowance (optional) (10% of above-single disbursement contracts under $25,000 only)</td>
<td>$________________________</td>
</tr>
<tr>
<td>Onsite energy and water survey/analysis costs</td>
<td>$________________________</td>
</tr>
<tr>
<td>Professional services (appraisal, drafting, engineering, project Management and/or plan preparation costs</td>
<td>$________________________</td>
</tr>
<tr>
<td>Permit Fee ____________________ Permit included in bid</td>
<td>$________________________</td>
</tr>
<tr>
<td>Total</td>
<td>$________________________</td>
</tr>
</tbody>
</table>

**Requested Financing Amount**

$________________________

---

**Requested assessment payment period**

- [ ] 5 years
- [ ] 10 years
- [ ] 15 years
- [ ] 20 years
**Required documentation**

_____ Organizational documents if property owner is not on title as in individual, i.e. trust documents showing the “powers of the trustee” to encumber the property.

_____ Energy audit reports.

_____ Contractor’s bid(s) or proposal(s), which include the contractor’s name and license number (unless self-installing).

_____ Copies of all rebate applications relating to the improvements.

_____ Statements, purchase orders or other evidence of cost for items not covered by the contractor’s bid or proposal.

_____ Current mortgage statements, transaction histories, or other evidence that all mortgages or any other loans secured by the property are current.

_____ Signed lender acknowledgement form from lender.

Program staff may request additional information and documentation they think is necessary to prudently administer the program. Such information and documentation could include without limitation additional comparison bids and information related to the market value of the property.

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**Project Verification Documents**

A copy of a signed final permit inspected by the city’s building Inspection staff.  
Initial Here

A copy of the final invoice from all contractors. Payment is disbursed after completion of work.

For a single disbursement for contracts under $25,000, one payment is issued after all contractors’ work is completed.

Property is subject to an annual administrative assessment.

Property is subject county collector’s fee.

Prepayment is accepted for a total remaining balance, however no partial prepayment is allowed.

Accrued interest—Interest begins accruing on the bonded amount at the time of disbursement.
## Important Notations

<table>
<thead>
<tr>
<th>Important Notations</th>
<th>Initial Here</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work cannot begin until Notice to Proceed is issued.</td>
<td></td>
</tr>
<tr>
<td>Payment is disbursed after completion of work.</td>
<td></td>
</tr>
<tr>
<td>For a single disbursement for contracts under $25,000, one payment is issued after all contractors’ work is completed.</td>
<td></td>
</tr>
<tr>
<td>Property is subject to an annual administrative assessment.</td>
<td></td>
</tr>
<tr>
<td>Prepayment is accepted for a total remaining balance, however no partial prepayment is allowed.</td>
<td></td>
</tr>
<tr>
<td>Accrued interest-Interest begins accruing on the bonded amount at the time of disbursement.</td>
<td></td>
</tr>
</tbody>
</table>

An owner cannot cancel the process after the assessment contract is recorded. However, in the event a property owner cancels financing prior to this time, all expenses incurred by the program for will be the responsibility of the applicant. The program will terminate the lien evidenced by recordation of the Notice of PACE benefit assessment upon receipt of reimbursement from the applicant for these expenses.
## Appendix B: Terms

The following table summarizes the Program’s major bond and legal documents.

<table>
<thead>
<tr>
<th>Document</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form of Lender Acknowledgement</td>
<td>Relates to a property owner’s existing mortgage lender/lienholder, whereby that existing lender/lien holder (i) acknowledges the levy of special taxes/assessments and the creation of the special tax/assessment lien and (ii) agrees that the proposed special tax/assessment lien will not constitute an event of default or trigger the exercise of any remedies under the loan documents in force between the existing lender/lienholder and the property owner.</td>
</tr>
<tr>
<td>Assessment Contract</td>
<td>Document pursuant to which the property owner agrees to the levy of the PACE benefit assessment for purposes of the issuance by the Municipality of a PACE bond to a project lender.</td>
</tr>
<tr>
<td>Notice of PACE Benefit Tax Lien</td>
<td>Document, which is recorded in the real property records to provide notice of a lien to secure payment of special taxes/assessment on the property.</td>
</tr>
<tr>
<td>Form of Bond Purchase Contract</td>
<td>A contract between the district and the lender, pursuant to which the lender (i) agrees to purchase a PACE bond issued by the Municipality and (ii) makes representations and warranties that it is a “qualified investor”. This contract also reflects the basic financing terms agreed between the lender and the property owner.</td>
</tr>
</tbody>
</table>
Appendix C: Model Ordinance

BILL NO.________________

SPONSORED BY:

ORDINANCE NO. ____________________________

AN ORDINANCE ESTABLISHING ARTICLE _____ (CLEAN ENERGY DEVELOPMENT BOARD) AND AMENDING CHAPTER __ OF THE CODE OF THE CITY OF ___________ BY PROVIDING FOR PROPERTY ASSESSED CLEAN ENERGY FUNDING FOR SPECIFIED PURPOSES.

WHEREAS, the development, production, and efficient use of clean energy and renewable energy, as well as the installation of energy efficiency and renewable energy improvements to publicly and privately owned real property, will create jobs for residents of the City, retain and encourage the expansion of existing businesses, advance the economic well-being and public and environmental health of the City and contribute to the energy independence; and

WHEREAS, the 95th General Assembly of Missouri has enacted Sections 67.2800 et seq. RSMo., the "Property Assessment Clean Energy Act" (the "Act"); and

WHEREAS, that Act authorizes a municipality, which has adopted a Property Assessed Clean Energy Ordinance, to establish a Clean Energy Development Board ("Board") to initiate and administer a Property Assessed Clean Energy ("PACE") Program, so that owners of qualifying property can access funding for energy efficiency and renewable energy improvements to their properties located in the City; and

WHEREAS, the primary intent of funding energy efficiency and renewable energy improvements, pursuant to the Act, is to promote the public purposes described above; and

WHEREAS, the City wishes to establish a Board to initiate and administer a PACE Program.

NOW, THEREFORE, BE IT ENACTED BY THE BOARD OF ALDERMEN/CITY COUNCIL OF THE CITY/COUNTY OF ____________, MISSOURI, AS FOLLOWS:

Section 1. The City Code, Chapter __, _________________, is hereby amended by adding one new Article, to read as follows:

Article ______ - Clean Energy Development Board
Sec 1.1 PURPOSE AND AUTHORITY

A. Purpose. By and through this Ordinance, the City of __________, Missouri (the "City") declares as its public purpose the establishment of a Clean Energy Development Board ("Board") to enable its citizens and the owners of non-residential properties located within the jurisdictional boundaries of any Participating Entity to participate in a Property Assessed Clean Energy Program so that property owners can access funding for energy saving improvements to their properties located within the jurisdictional boundaries of any Participating Entity. The City also desires to provide a vehicle for other municipalities in the State of Missouri to participate in a Property Assessed Clean Energy Program through the expansion of the jurisdictional and geographic boundaries of the Clean Energy Development District, in accordance with the procedures set forth in Sec. 1.3 (E)

B. Authority. This Ordinance is enacted pursuant the authority granted by the Property Assessment Clean Energy Act, Section 67.2800 et seq. RSMo.

Sec. 1.2 TITLE AND DEFINITIONS

A. Title. This Ordinance shall be known and may be cited as "__________Property Assessed Clean Energy (PACE) Ordinance."

B. Definitions. Except as specifically defined below, words and phrases used in this Ordinance shall have their customary meanings. As used in this Ordinance, the following words and phrases shall have the meanings indicated.

"Assessment Contract" means a contract entered into between the _____________ Board and a property owner pursuant to which the property owner agrees to pay an annual special assessment for a period of up to twenty years in exchange for financing of an energy efficiency improvement or a renewable energy improvement by the _____________ Board.

"Bond" means any bond, note or similar instrument issued on behalf of the _____________ Board.

"Energy Efficiency Improvement" means any acquisition, installation, or modification on or of publicly or privately owned property designed to reduce the energy consumption of such property, including, but not limited to:

1. Insulation in walls, roofs, attics, floors, foundations, and heating and cooling distribution systems;
2. Storm windows and doors, multi-glazed windows and doors, heat absorbing or heat reflective windows and doors, and other window and door improvements designed to reduce energy consumption;
3. Automatic energy control systems;
4. Heating, ventilating, or air conditioning distribution system modifications and replacements;
5. Caulking and weather-stripping;
6. Replacement or modification of lighting fixtures to increase energy efficiency of the lighting system without increasing the overall illumination of the building.
unless the increase in illumination is necessary to conform to applicable state or local building codes
7. Energy recovery systems; and
8. Daylighting systems.

"Municipality" means any county, city or incorporated town or village of the state of Missouri.

"Participating Entity" means a city or county adopting an ordinance authorizing participation in the _________ PACE Program or an ordinance that is substantially in the same form and containing virtually identical provisions to this ordinance.

"Project" means any energy efficiency or renewable energy improvement.

"Property Assessed Clean Energy Assessment or PACE Assessment" means a special assessment voluntarily agreed to by the owner(s) of and imposed on qualifying property to repay the PACE Board for PACE Funding of energy efficiency and/or renewable energy improvements made to that qualifying property.

"Property Assessed Clean Energy Development Board or Board" means the _________ Board formed by the Participating Entity, pursuant to this ordinance and Section 67.2810 et seq. RSMo.

"Property Assessed Clean Energy District or District" means the district in which the PACE Program may operate and that is defined geographically to include the entire area within the jurisdictional boundaries of a Participating Entity as determined by municipal boundary lines, and as may be expanded to other municipalities in accordance with Sec. 1.3(E) below.

"Property Assessed Clean Energy Funding or PACE Funding" means funds provided to the owner(s) of qualified property by the Board for energy efficiency and/or renewable energy improvements.

"Property Assessed Clean Energy Program or PACE Program" means a program established pursuant to the authority granted by Sections 67.2800 et seq. RSMo. (the "PACE Act") by a municipality or multiple municipalities under which property owners can obtain funding for energy efficiency and/or renewable energy improvements on qualifying property.

"PACE District Administrator" means either the Board or an entity, including but not limited to Mid-American Regional Council, with which the Board contracts to initiate and administer the PACE Program.
"Qualifying Property" means real property located in the District.

"Renewable Energy Improvement" means any acquisition and installation of a fixture, product, system, device, or combination thereof on publicly or privately owned property that produces energy from renewable resources, including, but not limited to, photovoltaic systems, solar thermal systems, wind systems, biomass systems, or geothermal systems.

Sec. 1.3 PACE PROGRAM

A. _________ PACE Board, Creation and Membership. The _________ PACE Board, which shall be a political subdivision of the state of Missouri, is hereby established. The Board shall consist at all times of at least three members, and shall include representatives from each Participating Entity. Provided that, if only one entity has adopted an ordinance substantially similar to this ordinance, all three members shall be from the entity first passing this or a substantially similar ordinance. Upon the passage of this ordinance by a second Participating entity, the Board shall be composed of two representatives from each Participating Entity. Upon the passage of this ordinance or a substantially similar ordinance by three or more Participating Entities, each Participating Entity shall have at least one representative on the Board, and Participating Entities with a population in excess of 75,000 shall have two representatives on the Board. In the instance of Participating Entities passing this ordinance or a substantially similar ordinance after the initial passage of this ordinance by a Participating Entity, once three Participating Entities have passed this or a substantially similar ordinance, the member or members (depending on how many members that Participating Entity is authorized hereby) first appointed by each Participating member shall remain a member of the Board and later appointed members' terms shall automatically expire. The members of the initial ______ Board shall be appointed by the chief executive official of the Participating Entity, with the advice and consent of that Participating Entity's governing body. Each member shall be appointed for a term of _____ years, except that for those Participating Entities with more than one representative, one Board member shall be appointed for _____ years and one Board member shall be appointed for _____ years. Members of the Board are not required to be residents of the Participating Entity.

B. Replacement of Members. Upon the death, resignation, or expiration of term of any member of the Board, a replacement shall be appointed by the chief executive official with the advice and consent of the governing body.

C. Authority. The Board shall oversee the PACE Program in accordance with this Ordinance and the PACE Act and shall have all powers necessary and convenient to carry out and effectuate the provisions of the PACE Act, including, but not limited to the following powers:

1. to adopt, amend, and repeal bylaws which are not inconsistent with Section 67.2800 et se..RSMo;
2. to adopt an official seal;
3. to sue and be sued;
4. to make and enter into contracts and other instruments with public and private entities;
5. to accept grants guarantees, and donations of property, labor, services, and other things of value from any public or private source;
6. to employ or contract for such managerial, legal, technical, clerical, accounting, or other assistance it deems advisable;
7. to levy and collect PACE Assessments under an Assessment Contract with a property owner and to record those PACE Assessments as a lien on the property;
8. to borrow money from any public or private source and issue bonds and provide security for the payment of the same;
9. to finance a Project under an PACE Contract;
10. to collect reasonable fees and charges in connection with making and servicing Assessment Contracts and in connection with any technical, consultative, or project assistance services offered;
11. to invest any funds not required for immediate disbursement in obligations of the state of Missouri or of the United States or any agency or instrumentality thereof, or in bank certificates of deposit; provided, however, the limitations on investments provided in this subdivision shall not apply to proceeds acquired from the sale of bonds which are held by a corporate trustee;
12. to take whatever actions necessary to participate in and administer the PACE Program; and
13. to enter into cooperation contracts with other municipalities, as authorized by Sections 71.210 et seq. RSMo., to undertake any or all of portions of the administration of the PACE Program as the parties to that contract shall agree best serves the interests of the contracting parties.

D. Advisory Committee. The PACE Board may establish a PACE Advisory Committee, composed of individuals with expertise in banking, financial advice and underwriting, energy efficient and renewable energy improvements, construction, sustainable communities and development, public works and facilities or any other area of expertise the PACE Board deems will further the objectives and purposes of the PACE Program. The Advisory Committee shall be composed of at least five (5), but not more than eleven (11) members. Any member of the PACE Board may nominated an individual for membership on the Advisory Committee, but individuals shall become Committee members only upon a majority vote of the members of the PACE Board. The Advisory Committee shall elect a Chairperson, Vice Chairperson and Secretary, each of which shall serve two (2) years terms. The Advisory Committee shall meet as directed by the PACE Board and upon written notice from the Secretary at the call of the Chairperson, given three (3) business days in advance of the meeting. The Advisory Committee's role shall be purely advisory and it shall have no decision making authority with respect to the PACE Program.
E. PACE District. The Participating Entities hereby establish a PACE District in which the Board may operate a PACE Program. The PACE District is initially defined geographically as being all the area within the corporate boundaries of the Participating Entities as they exist on the date of this ordinance and as they may be amended from time to time. It is anticipated that the PACE District will include the corporate boundaries of a minimum of X Participating Entities.

F. Additions to the District. To promote and facilitate energy efficiency and renewable energy, the Participating Entities and the Board shall make available to other municipalities memberships and participation in the Board, upon the adoption of an ordinance in a form approved by the Board, electing to join the PACE District and adopting the terms of this Article to the extent that these terms are applicable. Upon delivery of a duly authenticated ordinance to the Board or its designee, that municipality shall become a member of the District and the jurisdictional and geographic boundaries of the PACE District shall thereafter be altered to include the corporate limits of that municipality.

G. Board Funding. The ________PACE Board shall oversee the PACE Program allowing owners of Qualifying Properties located in the District, who choose to obtain funding for energy efficiency and/or renewable improvements to their property through PACE Funds disbursed and administered by the Board, pursuant to an Assessment Contract. The PACE Funds are available from the Board through financing sources and structures approved and authorized by the Board.

H. Issuance of Bonds.
1. The Board may issue bonds payable from PACE Assessment revenues and from any other revenues pledged thereto. The bonds shall be authorized by resolution of the Board, shall bear such date or dates, and shall mature at such time or times as the resolution shall specify: provided that, the term of any bonds issued for a clean energy conduit financing shall not exceed twenty years. The bonds shall be in such denomination, bear interest at such rate, be in such form, be issued in such manner, be payable in such place or places, and be subject to redemption as such resolution may provide. Notwithstanding any provision to the contrary under this section, issuance of the bonds shall conform to the requirements of subsection 1 of section 108.170 RSMo.

2. Bonds issued by the Board shall not constitute an indebtedness of the state or any municipality. Neither the state nor any municipality shall be liable on those bonds, and the form of the bonds shall contain a statement to that effect.

I. PACE Assessments. The total special assessment levied against a property under an Assessment Contract shall not exceed the sum of the cost of the Project, including any required energy audits and inspections, or portions thereof financed through the participation in the PACE Program or clean energy conduit financing, including the costs of any audits or inspections required by the Board, plus all administrative fees, interest, and other financing costs reasonably required by the Board.
Sec. 1.4 PACE Program Administration.

The __________ PACE Board shall initiate and oversee or cause to be initiated and overseen the functions of the PACE Program. The PACE Board may act as the PACE Program manager or may contract with a third party, including but not limited to Mid-America Regional Council, to carry out the day-to-day functions of the PACE Program. The PACE Program manager shall:

I. establish application requirements and provide property owners with an application to apply for PACE Funds;

J. develop criteria and standards for the approval of Projects submitted by property owners for financing with PACE Funds, including, but not limited to requiring Projects to meet certain energy efficiency standards;

K. require an initial energy audit conducted by a qualified home energy auditor, as defined in subsection (4) of subsection (1) of section 640.153, RSMo., as a prerequisite to the receipt of PACE Funds;

L. develop criteria and standards to ensure that property owners approved by the Board for PACE Funding have good credit-worthiness or shall otherwise be considered a low risk for failure to meet the obligation of the Program;

M. review applications and select qualified Projects;

N. upon finding that there are sufficient resources to complete the Project and that the estimated economic benefit expected from the Project during the financing period is equal to or greater than the cost of the Project, enter into Assessment Contracts with property owners to pay annual special assessments for a period not to exceed twenty (20) years, as specified in the Assessment Contract;

O. develop a form of Assessment Contract that includes, but is not limited to the following:

1. a description of the project, including the estimated cost of the project and details on how the project will either reduce energy consumption or create energy from renewable sources;

2. a mechanism for:
   (i) verifying the final costs of the project upon its completion; and
   (ii) ensuring that any amounts advanced or otherwise paid by the Board toward costs of the project will not exceed the final cost of the project;

3. an acknowledgment by the property owner that the property owner has received or will receive a special benefit by financing a project through the Board that equals or exceeds the total assessments due under the assessment contract;

4. an agreement by the property owner to pay annual special assessments for a period not to exceed twenty years, as specified in the assessment contract;

5. a statement that the obligations set forth in the assessment contract, including the obligation to pay annual special assessments, are a covenant that shall run with the land and be obligations upon future owners of such property; and

6. an acknowledgment that no subdivision of property subject to the Assessment Contract shall be valid unless the Assessment Contract or an amendment
thereof divides the total annual special assessment due between the newly subdivided parcels pro rata to the special benefit realized by each subdivided parcel.

P. provide a copy of each executed Assessment Contract to the County Assessor and County Collector and cause a copy of each such Assessment Contract to be recorded in the real estate records of the Recorder of Deeds;

Q. perform or cause to be performed any inspection as the Board may deem necessary to verify Project completion;

R. authorize and disburse the PACE Funds to the property owners; and

S. receive the PACE Assessments from the County Collector.

Sec. 1.5 Adoption of Education and Outreach Program.

The Board may adopt and implement an education and outreach program so that citizens within the PACE District, as may be expanded, are made aware of energy saving opportunities, including the opportunity to fund energy efficiency and renewable energy improvements from PACE Funds.

Sec. 1.6 Liability of Municipal Officials; Liability of Municipality.

Notwithstanding any other provision of law to the contrary, municipal officers and municipal officials, including, without limitation tax assessors and tax collectors, are not personally liable to the Board or to any other person for claims, of whatever kind or nature, under or related to a PACE Program, including, without limitation claims for or related to uncollected PACE Assessments. No Participating Entity shall be liable to a property owner for or related to energy savings improvements funded under a PACE Program. The PACE District and the Board shall for all purposes be considered an independent entity and shall not be considered a subdivision of the any Participating Entity or of any future member of the PACE District.

Sec. 1.7 Special Assessment Lien

Special assessments agreed to under an assessment contract shall be a lien on the property against which it is assessed on behalf of the Board from the date that each annual assessment under the assessment contract becomes due. Such special assessments shall be collected by the county collector in the same manner and with the same priority as ad valorem real property taxes. Once collected, the county collector shall pay over such special assessment revenues to the Board in the same manner in which revenues from ad valorem real property taxes are paid to other taxing districts. Such special assessments shall be collected as provided in this subsection from all subsequent property owners, including the state and all political subdivisions thereof, for the term of the assessment contract.

Section 2. This Ordinance shall be in full force and effect from and after the date of its passage and approval or upon passage of an ordinance creating a PACE Program by at least XXX other Participating Entities, whichever shall occur earlier.