

Northwest Ohio

Final Report

March 11, 2014



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**ENERGY EFFICIENCY AND CONSERVATION BLOCK GRANT (EECBG) –
BETTER BUILDINGS NEIGHBORHOOD PROGRAM**

Award Number: DE-EE- FC36-02R530594

BBNP Name: Toledo-Lucas County Port Authority as Grantee Recipient

Project Title: BetterBuildings NW Ohio

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EXECUTIVE SUMMARY

When the Toledo Lucas County Port Authority (TLCPA) filed for the Department of Energy EECBG grant in late 2009, it was part of a strategic and Board backed objective to expand the organization's economic development and financing programs into alternative energy and energy efficiency. This plan was filed with the knowledge and support of the areas key economic development agencies. The City of Toledo was also a key partner with the Mayor designating a committee to develop a Strategic Energy Policy for the City. This would later give rise to a Community Sustainability Strategic Plan for Toledo, Lucas County and the surrounding region with energy efficiency as a key pillar.

When the TLCPA signed the grant documents with the DOE in June of 2010, the geographic area was severely distressed economically, in the early stages of a recovery from over a 30% drop in business activity and high unemployment. The TLCPA and its partners began identifying potential project areas well before the filing of the application, continuing to work diligently before the formal award and signing of the grant documents. Strong implementation and actions plans and business and financing models were developed and revised throughout the 3 year grant period with the long term goal of creating a sustainable program. The TLCPA and the City of Toledo demonstrated early leadership by forming the energy improvement district and evaluating buildings under their control including transportation infrastructure and logistics, government services buildings and buildings which housed several for profit and not for profit tenants while completing significant energy efficiency projects that created public awareness and confidence and solid examples of various technologies and energy savings.

As was stated in the DOE Award Summary, the undertaking was focused as a commercial program delving into Alternative Energy Utility Districts; what are referred to in Ohio Statute as Energy Special Improvement Districts or ESIDs and what is nationally known as Property Assessed Clean Energy or PACE districts and PACE financing. The project methodology followed the identify, develop, implement, monitor and measure format. These districts began in Toledo and adjoining areas and are expanding to TLCPA's 28 county financing agency geographic footprint. What began as the Toledo Ohio Advanced Energy Improvement Corporation is now doing business as the Northwest Ohio Advanced Energy Improvement District recognizing it expansion into creating and financing other districts in NW Ohio. The program has been sought out as an advisor by major communities and states in the process of developing similar legislation and programs and has become one of the largest most successful PACE energy improvement and financing districts in the US.

The program and the energy district focused on transforming energy use, delivery, conservation and renewable energy as “options of first choice”. The significant energy savings paid for many of the improvements and created a financially viable program well beyond the grant period. The program has become a model within the State of Ohio and Nationally on how to implement and finance projects in broad energy districts including how to evolve and integrate several financing methodologies. It is a unique utilization of revolving loan funds and energy bond pooling with revenue backing primarily from energy improvement special assessments on commercial properties along with some power purchase agreement (PPA) and loan agreement revenue. The program has also incorporated Qualified Energy Conservation Bonds, State of Ohio Energy Loans (SEP), utility rebates, solar and renewable energy certificates, renewable tax incentives and grants, and owner funded equity as additional program leverage and funding. Other keys to this success have been a continual simplification and refinement of the application and documentation process to make funding available easily and quickly to building owners when they are prepared to commit to the project as well as act as a trusted facilitator and advisor to both building owners and other stakeholders. Taking a flexible and pragmatic approach to project evaluation and implementation that matches time and expense to the complexity of the project has been another key learning.

To date the program has closed 3 energy bond issues through the TLCPA sponsored and managed NW Ohio Bond Fund totaling \$16.54 million (of which \$3.34 million were QECB qualified). The program has turned over its \$3.0 million revolving loan fund twice as construction financing in advance of bond issuance and currently has issued \$1.25 million in revolving term loans. The program has \$1.66 million of remaining capacity for QECB qualified bonds. The program can issue an additional \$13.46 million in energy bonds continuing to utilize its DOE EECBG loan loss reserves. In addition, the program has available \$3.6 million of loan loss reserves from the State of Ohio, as an eligible Port Authority, that can back the issuance of an additional \$7.2 to \$14.4 million of energy bonds. This does not include additional bond capacity is available from the NW Ohio Bond Fund. The program is the master escrow agent for \$18 million of loan loss reserves from the State of Ohio for eligible Port Authorities that can be utilized to assist the formation of energy districts and financing programs in major metropolitan areas and regions around the State of Ohio. Other leveraged funds now total \$10 million; placing the total project value completed and financed at over \$30 million. In addition that program has generated an active pipeline of projects in various stages that total \$25 – \$30 million.

There was also a significant focus on a variety of building energy efficiency and renewable technologies, with energy efficiency the first level priority. Significant technologies have been evaluated such as building controls and systems integration, software, LED lighting, power correction, solar, wind, cogeneration and waste heat recovery or CHP, micro-turbines, geothermal HVAC, high efficiency conventional HVAC-boilers, chillers, and air handling. This has been accomplished across a wide range of types and sizes of commercial, industrial, multi-family,

governmental and educational facilities; identifying and recognizing the uniqueness of each project and the building owner's needs. Buildings have ranged from less than 5,000 square feet to over 500,000 square feet and financing projects from \$25,000 to over \$5,000,000. While the program has targeted to achieve 20% or more in energy savings, it has demonstrated that for buildings 15 years or older and with significant building system end of life issues that energy savings of 30%-50% are possible. The program is on track to exceed the 20% target. This has been accomplished by utilizing and developing local and regional energy services, equipment, development and implementation providers and a strong partnering orientation. To date 80% of the projects have been driven by energy efficiency with 20% considered renewable.

The program has quickly become one of the largest energy improvement districts in the US by both number of building projects and amount of financing completed. This has been driven by a start-up incubation within an organization with experience in land and building development and construction, project management and financing expertise. When combined with a strong partnering orientation through energy service providers, engineering, general contractor, and architectural firms and equipment providers the program has driven demand and extended its geographic reach. The significant marketing extension was achieved by utilizing local and regional economic development organizations, professional service groups, media exposure through significant project launch and completion events connected with job creation story, targeted industry verticals and organizations, data mining and utilization of web based technology.

Technical effectiveness has been high with building owners seeing immediate drops in energy demand along with increase productivity and comfort in the buildings. Most of the projects are driven by end of life equipment issues and the need to retrofit the buildings rather than the desire to save energy. This is due to the relative low cost of electricity and natural gas in Ohio. Economic viability has been driven by a combination of financing within the economic life of the equipment and the owners' investment and payback criteria. The program and its partners have educated people beyond simple payback methods to look at ROI and the life cycle of the equipment. This is especially critical when evaluating longer life mechanical or renewable assets where the program has become an important source of capital. This is well within best practice by ASRAE and others where energy savings and costs, O&M expenses and investment amortization are all modeled over the life of the asset. Program can track effectiveness of new technologies such as LED lighting and renewable technology implantation such as solar and larger geothermal HVAC implementations and offer demonstration sites and technology verification. The large and varied project portfolio provides benchmarking examples to owners with similar buildings.

The public benefit of the projects can be demonstrated in several ways. One of the discoveries of the research is the general lack of financing available to the small to medium sized commercial and not for profit sector which generally have transactions less than \$1 million and are not serviced by

part of the large ESCOs' and bank financing for the MUSH markets (municipal, university, hospital and school). This is also true for those businesses that may have bank financing available but desire a fixed rate beyond 5 years. To date less than 3% of our terms have been less than 5 years with the majority being 10 years (10%) and 15 years (87%). A total of 60,000 job hours have been created by the program to date.

Perhaps one of the best ways to examine the public benefit is to study the documents and process required to add a building and the project to the energy special improvement district and the legislation required to finance and place the assessment on the building. The building owner signs simple documentation that includes an agreement to be assessed which also identifies the project, its plan and energy savings. The building owner signs a petition which is presented to a city council or township asking for assistance in the completion of the project, its funding and the payback through an assessment. The City then passes a resolution of necessity accepting the petition, an ordinance to proceed with the project and an ordinance to levy the assessment.

The language contained within the Resolution of Necessity is as follows:

“That this Resolution is declared to be an emergency measure and shall take effect and be in force from and after its adoption. The reason for the emergency lies in the fact that this Resolution is necessary for the immediate preservation of the public peace, health, safety and property; and for the further reason that immediate action is necessary in order to conserve energy, protect the environment of the City, and undertake construction of necessary public improvements, as well as, provide and enable the timely levying, certification and collection of the special assessments for Special Energy Improvement Projects.”

In conclusion, the program in 3 years has obtained sustainability by creating a portfolio of financing and fee income that supports the programs ongoing implementation as the portfolio continues to grow annually. It has the continued senior management and board support of the sponsoring TLCPA organization to continue to operate and grow the business. It has achieved significant brand awareness and confidence in the market place as a financing solution in the commercial markets for energy efficiency and alternative energy where significant gaps in funding availability persist. It is well positioned for continued success in 2014 and beyond.

The results summarized and discussed above were facilitated by following the original objectives as noted in the DOE Award Summary and as listed below:

1. Partner with multiple local jurisdictions, planning agencies, local energy providers, community support groups, business and industrial groups, unions and trade associations, school districts and other support agencies.

2. Prioritize energy efficiency and energy conservation as a pre-requisite before investments are made in renewable energy; while integrating cost-effective, advanced renewable energy strategies.
3. Deliver significant, verified energy savings from a variety of projects, with a particular emphasis on efficiency improvements in residential, commercial, industrial and public buildings; with district-wide, high-quality retrofits providing significant efficiency improvements to a large fraction of buildings within targeted neighborhoods, industrial corridors and commercial areas; and expand on and connect these areas in future years.
4. Achieve measurable stretch goals, broad market participation and greater efficiency savings from building retrofits that will serve as pilot programs demonstrating the benefits of comprehensive community-scale energy-efficiency approaches and economy of scale, are broadly replicable and scalable, can make an impact regionally or nationally, and serve as examples to be duplicated across the country.
5. Maximize the creation/retention of jobs in NW Ohio and the US; and provide career paths and training for entry or advanced energy-related jobs, emphasizing diversity and inclusion of Disadvantage Business Enterprises. This will be a primary initial focus, as there are currently not enough trained installers available. Project Scope: TLCPA's 54 supporting partners will join together to engage the community to reduce fossil fuel consumption, maximize energy efficient economic development, delivering verified energy savings while creating a pilot building retrofit program that will create and maintain high paying jobs in area neighborhoods. The Program will deliver over \$100 million of project value.¹

FINAL TECHNICAL REPORT AND BEST PRACTICES

Institutional Design and Business Model

- Program should be connected to a sponsoring organization strategy and active executive leadership and ownership. If appropriate, this should flow to the board level or equivalent. Strategy must be supported by strong action and implementation plans and resources.
- The TLCPA sponsoring organization had an excellent reputation and brand in the community to deliver economic development impact and provided a solid platform to build a new program upon. Start-ups can be successful when launched within a sponsoring organization if the organization has related core competencies in energy services, business and economic development, project and construction management, and financing services.

¹ [Award Summary - Recovery.gov](#)

- TLCPA's NW Ohio Bond Fund had a strong 25 year track record. The energy program provided a strategic revenue growth area, investment diversification and a new economic development tool. This is a strong selling point to other communities exploring establishing and supporting energy efficiency financing programs and PACE districts. Providing and using a revolving loan fund as a construction and financial warehousing mechanism to get projects vetted and started and to aggregate projects into larger bond offerings has proven cost effective and efficient. This same structure is being adopted by other large programs. This financial aggregation into larger bond pools has made it easier for small to medium businesses and not for profits to access reasonable long term fixed rate funding for their projects. This market continues to be underserved nationally.
- Obtaining strong program partners leverages expertise, services, and market reach. Program must have adequate resources available throughout its implementation, ramp-up and ongoing management.
- Financing capacity, structure and documentation needs to be available early in the design and launch of the program. Keys are having a revolving loan fund or line of credit large enough to start the construction of multiple projects, strong financial underwriting, ability to aggregate smaller projects, a sponsoring organization with a strong financing management track record, and the ability to pool projects into larger fundings to access investment grade markets to insure a smooth flow and rate optimization.
- PACE financing within energy improvement district can be an effective financing tool offering lien security for the funding source. Multiple benefits exist for the building owner such as a solution to multi-tenant issues; improvements stay with the building; longer fixed rate financing terms, availability of financing to underserved markets, flexibility to complete construction and add on additional projects, up-front payment deferrals to enable project completion and energy savings flow. Lender consents are required and given and benefits lender's collateral value and cash flow to business borrower with no or minimal impact to financial ratios.

Program Design and Customer Experience

- Program should be designed to provide ease of customer application, approval, documentation and implementation over market competitive time periods. Program was supported by strong technical, legal, accounting & tax, and financing partners who assisted with program design and execution. Regular meetings with design partners and project management teams were also key.

- Approach should be based upon fostering strong customer relationships by meeting customer needs and providing a solutions orientation.
- Obtain energy data, site visit, application and customer financial information early to demonstrate customer commitment and shorten management decision timeframes.
- Provide funding from project start-up costs through construction and long term ownership and operation of the equipment. Be willing to give pre-approvals to customers as well as be ready to execute and provide funding when the customer is ready. Assist customers with process and provide decision support to facilitate.
- Consider quick assessment and pre-approval processes, matching time and expense to project size and complexity. Key processes should run in parallel and overlap as opposed to operating in a serial format.
- Customer outreach leveraged TLCPA existing contact database. It was designed to leverage an updated web platform and social media. It was also designed and executed to reach any stakeholder that could identify and influence a customer project. These included professionals, economic development organizations and government agencies. 14,393 email blasts have been sent with 3,201 hits.
- Customer outreach was also designed and supported to provide broad reaching learning through lunch and learns and conferences. Direct one on one support was provided to customers either with a partner joint call or meeting or individually. After successful design and launch, Nearly 2,300 meetings were conducted. TLCPA hired a permanent business development position which cross sells all of TLCPA's programs. Specific energy program marketing targets and messages are incorporated into overall marketing strategy.

Driving Demand

- Key to driving demand are partners that touch the customer for building system maintenance, energy and construction services. Examples are engineering firms, general contractors, electrical contractors, mechanical contractors, architectural firms, energy services companies, renewable energy developers and equipment companies and distributors. The most effective are those firms that have dedicated resources and experience in the energy efficiency and alternative energy. These firms are involved in all of our transactions whether they brought the customer or whether we brought them into facilitate. This is a key element of a successful program.

- Economic development and government agencies and company advisors such as lawyers, accountants, and bankers can be effective referral sources and program advocates.
- Demonstrated success in sponsoring workshops for government, professional groups, economic development entities and partners as well as sponsoring or supporting key local, regional and state energy conferences; included deep dive sessions and one on one partner company education. Focus on program offerings, how the process works and project examples.
- Efforts through industry organizations for manufacturers, groceries, healthcare, automotive dealerships, education and restaurants have not been successful. This is due in large part because many of them look for partners that can support their organizations statewide. Many of them have energy related service partners for energy supply aggregation and price breaks and energy evaluations. They are still lacking for statewide financing partners. Where we have obtained member list such as private schools and small healthcare, we have been contacting them directly and have obtained our first transactions in those sectors.
- Announcing and completing major projects promotes public awareness and the opportunity for free TV and newspaper coverage by creating news worthy stories of public interest including job creation and improving central city buildings. Paid for advertising demonstrated little benefit. Direct personal and web technology contact through relational databases was effective. Industry organizations, surprisingly less impactful.

Workforce Development

- Significant jobs and job hour creation are possible with this program type. Through the grant period of September 30, 2013 there were 102 jobs and 56,381 job hours created. These job hours have put hard hit skilled trades and contractors to work. It is important to identify market gaps to insure that individuals trained have a job upon training completion.
- Evaluate whether local utility programs are effective and whether there are resource gaps. Trained and equipped 2 auditors for residential market support by gas utility for program that was well designed but struggling for local market uptake. Additional training by professional energy services group, CSG, included field training, customer marketing skills and proprietary computer system energy savings and project modeling. New auditors need to be attached to working services or contracting business.

- Trained 2 commercial markets auditors to focus on small business, not for profit and multi-family markets with appropriate industry certifications. This was based upon an identified gap in the market place for auditors focused on those markets. Auditors were attached to a business dedicated to growing in the energy efficiency sector and had engineering or architectural backgrounds. Best practice dictates that not only should auditors have professional training and certification, but improve with additional field experience.
- Trained channel partners, especially engineering and contractor firms, to act in concert with program to facilitate project identification, implementation and completion.

Financing and Incentives

- Financing must be in place early in advance of full program launch, must be easy to understand, offer simple streamlined documentation and processes at fair market prices. Rates on terms less than 5 years have been 4% to 5% and on terms up to 15 years 5% to 6.5%. Transaction cost for financing has ranged from 2.25% to 3.0%.
- Offered some low rates as incentives early in the program with little take up. This could be due to the distressed local economy at launch. Made the decision to offer reasonable, competitive long term rates and have consistently marketed this with success.
- Initially offered a variety through combination of revolving loan and PACE structures. Initial PACE uptake slower due to newness of the product. Decided to offer PACE only with all others such as PPA loans on an exception basis. Simplified documentation as part of this process. This also made Lender consents easier to get because we were putting true special assessments on properties with an Agreement to be Assessed that we took care that it not read like a loan document. Assessment document does contain reps and warranties and due authorization language.
- 80% of our financing has been backed by PACE Assessments. PACE in the Toledo area has become the way to finance property energy efficiency improvements. Building owners like the fact that it does not affect their business lending relationships, that the money is available in a still tight market, the flexible payment terms that allow the project to get constructed and the energy savings flowing before their first payment is due and the fact that the assessment stays with the property upon sale. It also makes it easier for owners of multi-tenant buildings with triple net leases to commit to making the upgrade investments.

- Consider offering 100% financing from upfront design costs through construction and long term operation of the equipment that includes all of the cost necessary to implement the project.
- The integration of up front financial underwriting and revolving loan funds that can fund initial construction and aggregate transactions into larger pools for sale in the investment grade bond market has proven to be cost effective and timely. Loan loss reserves are necessary as this financial product sector continues to develop.
- The utilization of the above funding mechanism to support PACE financing in energy improvement districts has also proven highly effective and is a rapidly new growing financial services sector to support broad based energy efficiency retrofits and renewable energy investments.
- PACE districts can be efficiently managed by streamlining and providing a common format to required legislative documents. What can be perceived as a daunting undertaking in various state statutes can be simplified and implemented in a programmatic process.
- Information on utility rebate programs has been included in our marketing. These can range from rebates on project cost to subsidized energy audits. For larger mercantile electricity customers (>700,000 kWh per year) we have facilitated upfront rebates or ongoing rate relief which allows customers to get benefit of projects implemented over the last 3 years.
- Program success and implementation does not need to be heavily incentivized with rate discounts, utility rebates and other incentives. Program partners that bring customer relationships and are willing to commit time are also a key. Utility rebate levels and process requirements can slow down some aspects of project execution. Customer should evaluate the time to benefit of rebates versus project completion and energy savings realization.

Data and Execution

- Obtaining up front energy data quickly along with onsite inspection can quickly benchmark a building and identify opportunities. Have customers sign utility data release forms to obtain information quickly and electronically. Data entry is still largely a manual process.
- Most small to medium size businesses do not possess the in-house skills to manage a construction project. Identify program partners with skills that match your customer

base to facilitate project identification, energy data, energy savings calculation, project design, specification, management and implementation.

- Match the complexity of the process to the size and complexity of the project. ASHRAE level 2 or higher audits are not needed with single measure projects, lighting projects, or where facility management is well aware of problem area and opportunities.
- Larger projects benefit from integrating design build with energy assessment or audit processes and additional measurement time in facilities. Most energy audits do not give biddable specifications. Including a building controls and systems integrator early in the evaluation process can be beneficial to determine the best approach to optimizing the building's systems while minimizing cost impact.
- Competitively bidding projects has demonstrated that there can be wide variations on project cost among highly qualified service providers. Construction cost estimates can also vary from contract amounts depending on the amount of time spent with specification and cost estimation process.
- Portfolio manager has been used as a tool to enter and aggregate utility data. Customers are still resistant to entering their own data. Financial Documentation requires customer to provide ongoing energy data.
- Energy savings in multi-measure retrofits of buildings and or systems 15 years or older have consistently demonstrated an ability to reduce building energy cost by 30% to 50%. Energy program savings of 20% is a realistically achievable goal. Significant maintenance and capital avoidance savings are also another source of savings. Ongoing maintenance and utility demand and cost measurement and planning are key to maximize savings.

ACCOMPLISHMENTS: Statement of Project Objectives (SOPO)

SOPO Task 1: Energy Efficiency Community Development

Energy Efficiency Action Teams implemented through the Toledo Energy Policy Committee, the BetterBuildings NW Ohio team and TLCPA Business Development, the NW Ohio Advanced Energy Improvement District Board, the Core Committee of the “Going Beyond Green” Toledo and Lucas County Community Sustainability Strategic Plan, specifically dedicated project teams and program partners.

The group has conducted nearly 2300 meetings to area businesses, government, economic development entities, professional and industry organizations, partners and advisors to promote, educate and identify energy efficiency retrofit opportunities. The program has become the facilitator of energy efficiency projects in the greater Toledo and NW Ohio area.

Program has achieved future long term sustainability for energy conservation, energy efficiency, innovation, technology and renewable projects. The program is active with multiple industry sectors and targeted business corridors and neighborhoods. The program has completed over \$30 million of projects, \$21 million of financing and has a future project pipeline of \$30 million.

The program has become the go to source for how to implement energy efficiency community development through energy special improvement districts both in the State of Ohio and Nationally. The group supports local, state, regional and national workshops, seminars, energy conferences, webinars and lunch and learns and has been highly recognized by the DOE, PaceNow, Community Development Finance Association, AEE, MEEA and OAEE for its business model and success.

The Program is a partner with the City of Toledo in the presidents BetterBuildings challenge committing to achieve 20% energy savings in 7.5 million square feet of buildings by 2015 and is on track to do so.

SOPO Task 2: Identification and Promotion of Energy Special Improvement Districts

The program has formed an AAEUD known in Ohio as Energy Special Improvement District (ESID) and Nationally as PACE for Property Assessed Clean Energy. Initially formed for the Cities of Toledo and Oregon, it now operates under the name NW Ohio Advanced Energy Improvement District. Expansion into communities and townships surrounding Toledo is expected for 2014 based upon identified projects. Districts have been formed for the Village of Crestline and the City of Marion.

The program has been identified as one of the largest and most successful in the US for the number of completed buildings in the district and the amount of financing. It is highly sought after by other states and large municipalities. It is active with Cleveland, Akron/Summit County, Columbus/Franklin County, Dayton/Montgomery County and Cincinnati and the State of Ohio in the advising, establishment and funding options for new PACE districts.

Directly and through partner relationships, it is perfecting the “PACE in the Box” concept for small to large municipalities.

SOPO Task 3: Measurement and Verification of Energy Savings



The original purpose was to put energy efficiency first while demonstrating the benefits of district heating and cooling with a focus on geothermal technology. The program has identified a large need for whole building energy efficiency retrofits due to high amounts of deferred maintenance and aging buildings and mechanical systems. These deep retrofits are demonstrating the opportunity to achieve 30% - 50% energy savings. The program is on target to save over 20% on a portfolio basis.

The program has conducted two geothermal feasibility studies in educational campus and government campus setting. Financing for the first geothermal projects have been closed with construction to begin in 2014. This should be the first geothermal project completed in an energy special improvement district. Record low natural gas and electrical prices in the area has slowed the development of these projects. Other potential large projects are awaiting new market tax credit approvals.

Two years of energy data is collected on nearly every project and is requested upfront with application process. Utility data consent forms are also provided for quicker access to energy data. Once energy data is obtained and square footage and building date/type from the county ARIES system, the building can be benchmarked through EPA Portfolio Manager or CBECS (Commercial Building Energy Consumption Survey). Energy savings calculations are required on every project by qualified professional. ASRAE level two audits have been obtained larger more complex projects. Audit and assessment process matched to size and complexity of project. Energy data for projects are loaded into EPA Portfolio Manager to track project and program progress.

Toledo Public Power has been reactivated as part of the Toledo Energy Policy Strategy and the first investments and connections have been made. The Program is in the development process of connecting to other industrial sights and identifying other investment and energy savings opportunities with the City of Toledo.

The Port Authority has established real time energy monitoring and management in 3 of its key facilities at the Airport, a large downtown office building and the MLK train terminal / office building. A large building portfolio controls and data collection project is in process with the City of Toledo for 2014.

SOPO Task 4: Highly Efficient and Sustainable Projects

The program has been successful identifying and implementing projects that generate significant savings in the range of 20% to 50%. The completion of these projects has provided the examples to encourage other acceptance.

At the end of Quarter 3, 68 projects had been completed with 12 in construction. 145 projects are under review and 66 prospects have been identified. 227 energy assessments have been completed. By the end of Quarter 4 it is expected that...

2.8MW of solar projects have been completed at two of the area's largest power users, the GM Powertrain plant and the City of Toledo water treatment plant.

The Programs financing portfolio and income generation are now at a rate to sustain the program well into the future. Over \$16.5 million of bond financing has been completed, \$2.65 million of state energy loans completed, \$1.25 million of revolving term loans pushing the financing portfolio over \$20.5 million.

The program has achieved additional leverage of \$10 million and has sufficient bonding capacity to double the portfolio again.

SOPO Task 5: Sustainable Workforce Development and Job Retention

In total, the program has generated 60,000 job hours to date, putting construction workers and skilled trades to work in what is the still recovering construction industry.

Trained and equipped 2 energy auditors for Conservation Services Group, the program administrator for the Columbia Gas Home Energy Saves Residential Program. The Utility's program was struggling for penetration in the Toledo market. Also provided marketing funding and coordinated targeted neighborhoods in the Toledo area.

Trained 2 energy auditors as BPI building energy and envelope specialists and multi-family. One trained as AEE commercial. Auditors trained for market gap in small business, not for profit and multi-family energy assessment resources. This also supported the energy efficiency capability of a minority supported business in the central city.

Completed two large solar projects that showcased local product and design talent including solar project developers and management, solar project engineering, design and implementation, a local startup inverter company, locally made thin film solar panels and locally engineered and designed solar racking for both rooftop and ground mounted installations. Several of the resources were located at the University of Toledo Incubation Center.

Several energy service firms, engineering companies, and contractors in the energy efficiency business added people resources because of program demand. Others decided to enter the business because of the success of the program. There was a new startup in the larger commercial

market because of the interaction of different personnel with the program and its success and a start-up focused on small commercial and multi-family in the central city.

Enabled the start-up and growth of a small law firm specializing in energy practices including assisting with the development in energy special improvement districts.

Trained Port Authority staff on documentation of energy efficiency transactions.

SOPO Task 6: Project Management and Reporting

DOE Reporting submitted as required, grant period extended to September 30, 2013. Close-out reporting finalized. On-going reporting for BetterBuildings President's Challenge.

BBNWO progress reports are presented monthly to Port Authority Senior Management, Finance committee of the board of directors and the overall Board of Directors. All energy bond financing is also approved by the same committees and Board along with the ESID Board. Comprehensive annual reports and forecast are also presented to the groups.

All projects and financials of borrower approved monthly by senior investment committee of Port CEO, COO, CFO and BBNWO Executive Director. Also, regular progress reporting and program decision making conducted by the committee.

BBNWO Executive Director is also the Chairperson of the Energy Special Improvement District – The NW Ohio Advanced Energy Improvement District. Port COO and CFO are also on the ESID board. All projects and financing are approved by the ESID Board. The ESID signs the Loan Agreement with the TLCPA which places an energy bond through the Port managed NW Ohio Bond Fund. The Bonds and the Loan Agreement are supported with revenue from energy special assessments on the property and other financing contract revenue. ESID code of regulations requires an annual plan and voting of the members.

All projects with energy special assessments are also approved by the respective City Councils such as Toledo and Oregon with legislation passed that includes a Resolution of Necessity for each project, an Ordinance to Proceed with each project and an Ordinance to Levy Special Assessment on each project.

All projects are voluntary actions by the building owners and a petition is filed with the appropriate City Council to kick off the legislative approval process.

Large projects with the City of Toledo and the TLCPA required regular project management and construction management meetings.

Two years of energy data are collected on nearly every project and is requested upfront with application process. Utility data consent forms are also provided for quicker access to energy data. Once energy data is obtained and square footage and building date/type from the county ARIES system, the building can be benchmarked through EPA Portfolio Manager or CBECS (Commercial Building Energy Consumption Survey). Energy savings calculations are required on every project by qualified professional. ASRAE level two audits have been obtained larger more complex projects. Audit and assessment process matched to size and complexity of project.

Energy data for projects are loaded into EPA Portfolio Manager to track project and program progress.

CHALLENGES

- Deeply depressed local economy with slow economic recovery.
- Record low utility costs for electricity and natural gas.
- Building and business owners' and Municipality priorities.
- Financial products were new and needed documentation development, education, proof of concept and demonstration of market acceptance at both the customer level and the investment level by bond market institutional investors.
- Time and resources.
- Difficulty in getting and managing data.
- Lack of utility program incentives and cooperation.

PROGRAM SUSTAINABILITY PLANS

- **Program Name:** BetterBuildings NW Ohio; which works in conjunction with the NW Ohio Advanced Energy Improvement District an energy special improvement district in the state of Ohio utilizing PACE financing.
- **Building Upgrade or market transformation goals:** Program is still targeting to complete \$100 million of projects and achieve 20% energy savings. Program also is a President's BetterBuilding Challenge Partner committing to 7,500,000 square feet of buildings achieving 20% energy savings by 2015. Toledo Lucas County Port Authority has a track record of offering and managing financing programs some of which are now 25 years old.

- **Market served:** Commercial markets for public and private sector including for profit, not for profit, local governments and education. Focused on filling market gap for energy efficiency and alternative energy transactions under \$1,000,000 for building retrofits with fixed rate terms up to 15 years.
- **Product or service offered:** 100% Energy efficiency fixed rate financing backed by energy special assessment on property on terms from 3 years to 15 years. Power Purchase agreements and loan agreements considered in some applications.
- **Intended collaboration with partners:** Strong go to market strategy through contractors, engineering firms, architects, business professionals and economic development agencies both directly and using web based capabilities.
- **Sustainability communication strategy to the public:** Program and product offerings were integrated with the TLCPA business development team in 2012 and actively co-marketed in 2013 and beyond. (Attached is a recent example of the brochure dated 11/1/13). Actively conducting lunch and learns to stakeholders and partners, workshops, webinars and supporting local and regional energy conferences. Program highlighted in Toledo Lucas County Port Authority annual meetings to the Public and monthly Board Committee and Board Meetings. Also actively communicated and managed through NW Ohio Advanced Energy District monthly Board meetings and annual members' meeting as well as through ongoing legislative actions with local municipalities on project locations in their jurisdictions. BBNWO website has been up and running on the TLCPA web site since early 2011 at: <http://www.toledoportauthority.org/en-us/programs/betterbuildingsnwo.aspx>

VERIFICATION OF DATA

DOE BBNIS. Attach other sources of information or independent evaluations that occurred on projects during the grant period.

DEVELOPED PRODUCTS: Publications, presentations, marketing materials, models, websites, networks or collaborations fostered, data / databases, education.

BETTERBUILDINGS NORTHWEST OHIO: *Compilation of Marketing, Publications and Presentations*

2010 – Q3

Publications: The Toledo –Lucas County Port Authority has printed classified ads to local newspapers such as The Sojourner’s Truth, Toledo Blade, La Prensa, El Tiempo, and the Toledo Journal for legal, accounting, and technical advisors for the Program.

Presentations: Kevin Moyer, Executive Director of the Program attended a Toledo Energy Policy Committee meeting and gave a presentation of the overall program. Also, he presented at the Toledo – Lucas County Port Authority Finance Committee meeting.

2010 – Q4

Presentations: Toledo Regional Architects Contractors Engineers (PPT), Ohio Energy Summit (PPT), Industrial Energy Conference, Toledo Regional Chamber of Commerce (PPT), Toledo Energy Policy Committee, City of Toledo, City of Oregon, University of Toledo and numerous companies, schools and vendors’ organizations.

2011 – Q1

Publications: Toledo Blade article, “Oregon seeks financing to aid its buildings’ energy efficiency”, March 23, 2011. Toledo Blade Earth Day article, “BetterBuildings Northwest Ohio can help with energy improvements”, April 13, 2011. Television story aired on WTOL/Channel 11 featuring BBNWO and City of Toledo project, March 2011.

Presentations: Presentation to Illuminating Engineers Society, meeting with delegation from Pakistan to discuss Energy Efficiency and Alternative Energy. City of Toledo Council, City of Oregon Council, Lucas County, Valentine Theater, Seagate Centre, International Facilities Healthcare Engineers Association.

2011 – Q2

Publications: The following media stories were published in 2nd quarter:

- Columbia Gas Newsletter
- “City of Toledo to Conduct Energy Audits”, Channel 11 WTOL – April 5, 2011
- “BetterBuildings Northwest Ohio Can Help With Energy Improvements”, Toledo Blade – April 13, 2011
- “Columbia Gas and TLCPA Form Unique Partnership for Energy Efficiency and Green Careers”, spots on all local news stations – May 12, 2011
- “Save Money With a Columbia Gas Audit”, Channel 13 ABC News – May 12, 2011
- “Port Authority and Columbia Gas Announce Energy Program Partnership”, Toledo Free Press – May 13, 2011
- “Improving Buildings Across Northwest Ohio By Financing Energy Efficiency Technology”, GEM Energy Services Newsletter – June 16, 2011
- “The Toledo/Lucas County Port Authority and SSOE Group Helping to Make Energy Efficiency More Accessible to Local Community”, SSOE Group – June 28, 2011

Presentations: The Executive Director presented to the TLCPA Board of Directors Finance Committee Meeting on June 17th, 2011 an update on the progress of the BBNWO Program. In addition, general informational program overviews were presented to the following organizations in the 2nd quarter:

- International Facilities Healthcare Engineers Association – Keynote Speaker
- Oregon Economic Development Foundation

- Toledo Express Airport – Tenant Meeting
- Ottawa Hills Energy Task Force
- City of Toledo – Fire and Police Department Leaders
- ProMedica Health System
- Catholic Diocese of Northwest Ohio (over 40 parish leaders)

2011 – Q3

Publications: The following media stories were published in 3rd quarter:

- “5-Acre Solar Field Unveiled at Collins Park” – WTOL Channel 11 News – 8/10/11
- “Solar Power Will Generate Savings for Toledo” – 13 ABC News – 8/10/11
- “Solar Energy to Power Toledo Water Treatment Plant” – Toledo Blade – 8/11/11
- “Solar Energy to Power Toledo water Treatment Plant” – TMC News – 8/11/11
- “Solar Field to Power Toledo Water Plant” – FOX Toledo News – 8/11/11

Presentations:

- Executive Director presented “*BBNWO: A DOE BetterBuildings Community Update Program Partner for Energy Efficiency and Alternative Energy*” – a webinar which focused on the energy efficiency revolving loan fund and was hosted by Climate Communities on 7/7/11.
- Executive Director presented “*Tax Incentives & Funding for Renewable Energy*” to the Ohio Energy Solutions Summit sponsored by the Electrical Labor Management Cooperation Committee on 9/30/11.
- Executive Director attended “*Northern OH’s Clean Energy Future: Regional Prosperity, Opportunity, Leadership*” hosted by Oberlin College on 9/16/11.
- Executive Director attended “*The Ohio Governor’s 21st Century Energy & Economic Development Summit*” hosted by Ohio State University on 9/21-22/2011.

(If you need copies of any of the following presentations please let us know).

2011 – Q4

Publications: The following media stories were published in 4th quarter:

- “Columbia Gas Offers Westgate Winterizing” – Toledo Free Press November 3, 2011
- “Toledo’s Westgate Area Chosen to be a part of Energy-Efficient Initiative” – WTOL Channel 11 News – 11/3/11
- “Valentine Theatre Goes Green” – WNWO NBC News – 11/9/11
- “Pilot Site Saves on Energy Costs” – Toledo Blade – 1/9/12

Presentations:

- Executive Director participated on panel at Annual DOE BetterBuildings Workshop, Presenting Business Model, in Burlington, VT on 10/24-26/11.
- Executive Director and Transaction Manager presented “*Preserving Budgets and Capital: Creating Cost Savings and Profits Through Energy Efficiency Projects*” at the Pathways to Energy Efficiency Conference sponsored by the Lucas County Sustainability Commission and Strategic Energy Solutions on 11/18/2011.
- Executive Director presented “*Balancing Energy Supply and Demand: Toledo and Northwest Ohio Perspective*” at the Annual PJM 20/20 Grid Conference in Washington DC on 11/29-30/11.
- Presented BBNWO Energy Program update to the TLCPA Board of Directors on 12/15/11.

2012 – Q1

Publications: The following media stories were published in 4th quarter:

- “*Pilot Saves on Energy Costs*” - Toledo Blade January 2012
- “*GM Plant Roof To Produce Energy*” – Toledo Blade March 2012
- “*Finance Your Energy Improvements With Energy Savings*” – Toledo Chamber of Commerce Monthly Newsletter – February 2012

Presentations:

- Attended the Midwest Energy Efficiency Alliance conference – Chicago, IL 1/11-13/2012.
- Presented to the Toledo Chapter of the National Association of Insurance and Financial Professionals (NAIFA) – Toledo, OH 1/19/12.
- Presented to the Maumee Rotary Club – Maumee, OH 1/25/12.
- Hosted and presented to the Northwest Ohio International Facilities Management conference – BBNWO offices, Toledo, OH 1/15/12.
- Presented to Napoleon Schools and Alex Products – Napoleon, OH 1/16/12.
- Attended the 16th Annual Ohio Energy conference hosted by the Manufacturers' Education Council – Columbus, OH 2/21-23/12.
- Presented at the "How Green is Your Valley? The Opportunities and Challenges of LEED Building" seminar hosted by Eastman and Smith – Toledo, OH 2/23/12.
- Sponsored and presented to "Doing Business with the Port Authority and City of Toledo" for suppliers and contractors – BBNWO offices, Toledo, OH 3/1/12.
- Met with Public Utilities Commissioner of Ohio – Columbus, OH 3/5/12.
- Present to Toledo Chapter of Financial Executives International (FEI) – Toledo, OH 3/8/12.
- Attended US Green Building Council Board meeting – Toledo, OH 3/15/12.
- Attended E3 Committee meeting – Columbus, OH 3/19/12.
- Presented 4 presentations to classes and Keynote Community address "Leadership & Creating Green Communities: Job Creation & Economic Development Impact", as Visiting Executive to the University of Findlay – Findlay, OH 3/21/12.
- Attended the Wood County Economic Development Commission Annual meeting – Perrysburg, OH 3/21/12.
- Attended the Northwest Ohio Regional Economic Development Association (NORED) Annual meeting – Perrysburg, OH 3/22/12.
- Sponsored booth and attended the Facility Expo sponsored by the Facilities Healthcare Engineers Association – Toledo, OH 3/28/12.

2012 – Q2

Publications: The following media stories were published in 2nd quarter:

- "City of Toledo Going Green with Energy Efficiency Upgrades" – WTOL Channel 11 News; April 2012
- "\$5 million in Energy Efficiency Upgrades for Toledo" – FOX Toledo News; April 2012
- "Energy Upgrades Planned for City Buildings" – Toledo Blade; April 2012
- "Energy Upgrades to Save Toledo Money" – 13 ABC News; April 2012
- "3 East Toledo Facilities Affected – City, Port Working on Energy Efficiency Improvements" – The Press; April 2012
- "Toledo Taking Part in Better Buildings Challenge" – WTOL Channel 11; June 2012
- "Energy Spotlight" columns #1-5 – Toledo Free Press, bi-weekly beginning Earth Day; April 2012

Presentations:

- Panelist at the University Clean Energy Alliance of Ohio (UCEAO) forum – Columbus, OH; April 3, 2012
- Presented to the Ohio Board of Regents – Columbus, OH; April 18, 2012
- Attended US Green Building Council regional board meetings – Toledo, OH; Monthly
- Attended City of Oregon Schools Wind Turbine Commissioning Ceremony – Oregon, OH; April 27, 2012

- Presented to the City of Oregon Navarre Avenue Stakeholders meeting – Oregon, OH; April 27, 2012
- Presented to Fostoria Economic Development Council – Fostoria, OH; May 3, 2012
- Presented to Young/Women’s Professional Organizations sponsored by Plante Moran – Toledo, OH; May 8, 2012
- Attended AGLF/ELFA conference – Chicago, IL; May 10-11, 2012
- Attended White House Roundtable discussion/US EPA – Toledo, OH; May 24, 2012
- Attended and presented at the Better Buildings Summit for State and Local Communities conference – Denver, CO; June 25-27, 2012

2012 – Q3

Publications: The following media stories were published in 2nd quarter:

- *“Toledo Setting P.A.C.E.”* article written by BBNWO legal advisor, Todd Williams of Williams, Allwein & Moser – GEO/Green Energy Ohio News Magazine; Volume 5/Issue 2/Summer 2012, Page 9
- *“Port Authority hints at partnership announcement in redevelopment of Overland Industrial Park”* – Toledo Free Press; September 21, 2012
- *“Oregon becomes energy special improvement district”* – Toledo Blade; September 25, 2012
- *“Oregon: City helps businesses fund energy-efficiency network”* – The Columbus Dispatch; September 2012
- *“UT student wins one of two civil engineering scholarships in Ohio”* – UT News; September 28, 2012
- *“Energy Spotlight”* columns #6-12 – Toledo Free Press, bi-weekly; July-September 2012

Presentations:

- Presented to Ohio Big 8 Cities Consortium – Toledo, OH; July 26, 2012
- Presented to Efficiency Cities Network Webinar; August 14, 2012
- Attended Task Force on Clean Energy Webinar; September 12, 2012
- Attended CDFA’s Pooled Energy Bonds Webinar; September 13, 2012
- Presented to City of Maumee – Maumee, OH; September 14, 2012
- Presented to City of Oregon Council – Oregon, OH; September 17, 2012
- Attended Energy Choice for Ohio: Impacts of Efficiency, Technology, and Carbon Management conference – Columbus, OH; September 18, 2012
- Presented to Toledo-Lucas County Port Authority’s Annual Report to the Community – Toledo, OH; September 20, 2012
- Presented to Rotary Club of Sylvania – Sylvania, OH; September 20, 2012
- Attended CDFA Ohio Financing Roundtable conference; Plante Moran presented on ESID – Columbus, OH; September 25, 2012
- Presented to City of Sylvania – Sylvania, OH; September 26, 2012

2012 – Q4

Publications: The following media stories were published in 2nd quarter:

- Featured in Ohio Grocers’ Association “Weekly Checkout” newsletter; December 20, 2012
- *“Energy Spotlight”* columns #6-12 – Toledo Free Press, bi-weekly; July-September 2012

Presentations:

- Presented to City Council of Maumee – Maumee, OH; October 1, 2012
- Attended Ohio Air Quality Development Authority – Columbus, OH; October 10, 2012
- Presented/Attended GreenTown Toledo conference – Toledo, OH; October 25-26, 2012

- Presented “A Midwest Look at the BetterBuildings Challenge” to Midwest Energy Efficiency Alliance webinar; October 11, 2012
- Presented to City of Oregon/Navarre Ave Stakeholders – Oregon, OH; October 19, 2012
- Attended BBNWO Intern’s Thesis Presentation at Sustainable-U conference at University of Toledo – Toledo, OH; October 23, 2012
- Attended Nextronex and Solar Planet presentation and demonstration at University of Toledo – Toledo, OH; October 23, 2012
- Attended GEM Energy Management’s “Critical Power and Data Summit” at University of Toledo – Toledo, OH; November 7, 2012
- Attended Northwest Ohio Manufacturing Forum & Expo at Bowling Green State University – Bowling Green, OH; November 9, 2012
- Attended Ohio School Boards Association Capital Conference & Tradeshow – Columbus, OH; November 12-13, 2012
- Presented to Northwest Ohio Regional Economic Development Association – Perrysburg, OH; December 13, 2012

2013 – Q1

Publications: The following media stories were published in 1st quarter:

- “Setting the PACE: Financing Commercial Retrofits,” – PACENow and Institute for Building Efficiency; February 2013

Presentations:

- Attended DOE Workshop, “Working Together to Advance Energy Efficiency: Partnerships for Tackling Persistent Barriers and Achieving Results” – Chicago, IL; January 16, 2013
- Attended Midwest Energy Efficiency Alliance’s (MEEA), “Midwest Energy Solutions Conference” – Chicago, IL; January 16-18, 2013
- Presented to Fulton County Community Improvement Corporation – Wauseon, OH; January 22, 2013
- Presented to Lucas County Bar Association – Toledo, OH; February 11, 2013
- Sponsored and Presented at TLCPA Lunch and Learn – Toledo, OH; February 12, 2013
- Attended DOE Webinar, “Preliminary Process and Market Evaluation: BetterBuildings Neighborhood Program” – February 13, 2013
- Attended CDFA’s Reshored Manufacturing webinar series – February thru May 2013
- Attended Ohio Manufacturers’ Education Council’s, “19th Annual Energy Management Conference” – Columbus, OH; February 19-20, 2013
- Attended American Electric Power (AEP) President’s Breakfast – Columbus, OH; February 19, 2013
- Presented to Allen County and City of Lima Economic Development Group – Lima, OH; February 21, 2013
- Presented to University of Toledo College of Law Class, “Alternative Energy Law” – Toledo, OH; February 25, 2013
- Presented to BDM One Energy – Findlay, OH; February 26, 2013
- Presented/Attended to the Ohio Green Symposium – Columbus, OH; February 28, 2013
- Presented to the DOE at Annual Site Visit – Toledo, OH; March 7, 2013
- Served as panelist at Ohio State University’s Extension Workshop, “Energize Ohio Business and Manufacturer” – Findlay, OH; March 14
- Attended Leadership Toledo Breakfast – Toledo, OH; March 15, 2013
- Participated at Facilities Healthcare Engineers Association (FHEA) Annual Tradeshow – Toledo, OH; March 19, 2013
- Participated at TLCPA Annual Contractors Event – Toledo, OH; March 21, 2013
- Presented to real estate firm, Reichle Klein/CB Ellis Sales Development Group – Toledo, OH; March 26, 2013

- Participated in DOE Peer Exchange Call, “Financing and Revenue” – March 28, 2013

2013 – Q2

Presentations:

- Attended Advanced Energy Economy Ohio (AEE Ohio) CEO meeting – Columbus, OH; April 1, 2013
- Attended TRACE Conference, “BIM: The Challenges, Rewards, and Possibilities – Toledo, OH; April 9, 2013
- Attended First Energy Solutions Energy Summit for Toledo Edison Customers – Perrysburg, OH; April 10, 2013
- Presented to the City of Dublin – Dublin, OH; April 10, 2013
- Presented to Findlay Energy Forum sponsored by Findlay/Hancock County Alliance – Findlay, OH; April 15, 2013
- Presented to City of Marion – Marion, OH; April 23, 2013
- Presented to Mercy Health Partners Executive Team – Toledo, OH; April 26, 2013
- Attended DOE BetterBuildings Pre-Conference and Annual Workshop – Denver, CO; April 29-30, 2013
- Hosted Senator Sherrod Brown Tour of General Motors Powertrain Toledo Solar Installation – Toledo, OH; May 2, 2013
- Attended American Council for Energy Efficient Economy (ACEEE) 7th Annual Energy Efficiency Finance Forum – Chicago, IL; May 13-15, 2013
- Presented to Parker Energy Solutions’ Regional Energy Industry Forum – Toledo, OH; May 16, 2013
- Presented to Green Energy Ohio’s (GEO) Financing Renewable Energy Across Ohio Conference – Dublin, OH; May 18, 2013
- Attended DOE BetterBuildings’ Summit for State and Local Communities. Participated in Panel “Maximizing Impact – Creative Approaches to Engaging Your Private Sector in Community-Wide Energy Programs” – Washington DC; May 29-30, 2013
- Sponsored, Attended and Presented at CDFR/Senator Brown’s Stakeholder Meeting on Energy Efficiency and Ohio Energy Efficiency and Building Retrofit Conference – Toledo, OH; June 5, 2013
- Attended and Presented at PACENow/Johnson Controls “Pick Up the PACE” Conference – Washington DC; June 12-13, 2013
- Hosted Media Event with Columbia Gas’ Home Performance Solutions – Toledo, OH; June 17, 2013
- Attended DOE/EERE Clean Manufacturing Initiative – Toledo, OH; June 21, 2013

2013 – Q3

Presentations:

- Presented to City of Marion, Marion, Ohio – July 1, 2013
- Presented to City of Worthington, Worthington, Ohio – July 1, 2013
- Presented at SSOE conference, “The Evolving Energy Landscape,” and served as a panelist on public and private discussion, Oregon, Ohio – July 16, 2013
- Presented to the Ports of Cincinnati and Columbus, Toledo, Ohio – July 21, 2013
- Participated on Ohio’s Energy Future conference call, Toledo, Ohio – August 15, 2013
- Presented to Detroit Port Authority, Toledo, Ohio – August 26, 2013
- Attended and presented at PACENow’s “Advancing Commercial PACE,” conference, Tarrytown, NY – September 18-20, 2013
- Attended the Lucas County Sustainability Commission’s “Going Beyond Green Initiative,” Toledo, Ohio – September 25, 2013