

### Project/Performance Site Location(s)

**Project/Performance Site Primary Location**  I am submitting an application as an individual, and not on behalf of a company, state, local or tribal government, academia, or other type of organization.

Organization Name:

DUNS Number:

\* Street1:

Street2:

\* City:  County:

\* State:

Province:

\* Country:

\* ZIP / Postal Code:  \* Project/ Performance Site Congressional District:

**Project/Performance Site Location 1**  I am submitting an application as an individual, and not on behalf of a company, state, local or tribal government, academia, or other type of organization.

Organization Name:

DUNS Number:

\* Street1:

Street2:

\* City:  County:

\* State:

Province:

\* Country:

\* ZIP / Postal Code:  \* Project/ Performance Site Congressional District:

**Project/Performance Site Location 2**  I am submitting an application as an individual, and not on behalf of a company, state, local or tribal government, academia, or other type of organization.

Organization Name:

DUNS Number:

\* Street1:

Street2:

\* City:  County:

\* State:

Province:

\* Country:

\* ZIP / Postal Code:  \* Project/ Performance Site Congressional District:

## Application for Federal Assistance SF-424

Version 02

## \* 1. Type of Submission:

- Preapplication  
 Application  
 Changed/Corrected Application

## \* 2. Type of Application:

- New  
 Continuation  
 Revision

## \* If Revision, select appropriate letter(s):

## \* Other (Specify)

## \* 3. Date Received:

12/14/2009

## 4. Applicant Identifier:

## 5a. Federal Entity Identifier:

## \* 5b. Federal Award Identifier:

## State Use Only:

## 6. Date Received by State:

## 7. State Application Identifier:

## 8. APPLICANT INFORMATION:

\* a. Legal Name: Toledo-Lucas County Port Authority

## \* b. Employer/Taxpayer Identification Number (EIN/TIN):

34-6406986

## \* c. Organizational DUNS:

051625127

## d. Address:

## \* Street1:

One Maritime Plaza , 7th floor

## Street2:

## \* City:

Toledo

## County:

## \* State:

OH: Ohio

## Province:

## \* Country:

USA: UNITED STATES

## \* Zip / Postal Code:

43604

## e. Organizational Unit:

## Department Name:

## Division Name:

## f. Name and contact information of person to be contacted on matters involving this application:

## Prefix:

## \* First Name:

Matt

## Middle Name:

## \* Last Name:

Sapara

## Suffix:

Title: Director of Development

## Organizational Affiliation:

## \* Telephone Number:

419-243-8251

## Fax Number:

\* Email: msapara@toledoportauthority.org

**Application for Federal Assistance SF-424**

Version 02

**9. Type of Applicant 1: Select Applicant Type:**

E: Regional Organization

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

\* Other (specify):

**\* 10. Name of Federal Agency:**

Environmental Management Consolidated Business Cen

**11. Catalog of Federal Domestic Assistance Number:**

81.128

CFDA Title:

Energy Efficiency & Conservation Block Grant Program

**\* 12. Funding Opportunity Number:**

DE-FOA-0000148

\* Title:

Recovery Act: Energy Efficiency and Conservation Block Grants: Competitive Solicitation: Retrofit Ramp-up and General Innovation Fund Programs

**13. Competition Identification Number:**

Title:

**14. Areas Affected by Project (Cities, Counties, States, etc.):**

Allen, Ashland, Auglaize, Crawford, Defiance, Erie, Fulton, Hancock, Hardin, Henry, Holmes, Huron, Jackson, Lucas, Marion, Mercer, Ottawa, Paulding, Putnam, Richland, Sandusky, Seneca, Tuscarawas, Van Wert, Wayne, Williams, Wood, Wyandotte Counties

**\* 15. Descriptive Title of Applicant's Project:**

Advanced Energy & Hybrid-Geothermal Geo-Utility District

Attach supporting documents as specified in agency instructions.

Add Attachments

Delete Attachments

View Attachments

## Application for Federal Assistance SF-424

Version 02

## 16. Congressional Districts Of:

\* a. Applicant \* b. Program/Project 

Attach an additional list of Program/Project Congressional Districts if needed.

Add Attachment

Delete Attachment

View Attachment

## 17. Proposed Project:

\* a. Start Date: \* b. End Date: 

## 18. Estimated Funding (\$):

* a. Federal	<input type="text" value="40,000,000.00"/>
* b. Applicant	<input type="text" value="150,000,000.00"/>
* c. State	<input type="text" value="22,000,000.00"/>
* d. Local	<input type="text" value="16,000,000.00"/>
* e. Other	<input type="text" value="102,000,000.00"/>
* f. Program Income	<input type="text" value="30,000,000.00"/>
* g. TOTAL	<input type="text" value="360,000,000.00"/>

## \* 19. Is Application Subject to Review By State Under Executive Order 12372 Process?

- a. This application was made available to the State under the Executive Order 12372 Process for review on
- b. Program is subject to E.O. 12372 but has not been selected by the State for review.
- c. Program is not covered by E.O. 12372.

## \* 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes", provide explanation.)

Yes  No

21. \*By signing this application, I certify (1) to the statements contained in the list of certifications\*\* and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances\*\* and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001)

 \*\* I AGREE

\*\* The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions.

## Authorized Representative:

Prefix:  \* First Name: Middle Name: \* Last Name: Suffix: \* Title: \* Telephone Number:  Fax Number: \* Email: \* Signature of Authorized Representative:  \* Date Signed: 

Authorized for Local Reproduction

Standard Form 424 (Revised 10/2005)  
Prescribed by OMB Circular A-102

**Application for Federal Assistance SF-424**

Version 02

**\* Applicant Federal Debt Delinquency Explanation**

The following field should contain an explanation if the Applicant organization is delinquent on any Federal Debt. Maximum number of characters that can be entered is 4,000. Try and avoid extra spaces and carriage returns to maximize the availability of space.

**RETROFIT RAMP-UP AND GENERAL INFORMATION FUND RESPONSE  
FOA NUMBER: DE-FOA-0000148**

**Submitted by the Toledo Port Authority  
December 14, 2009**

**TOPIC AREA 1: RETROFIT RAMP-UP PROGRAM PROJECT NARRATIVE  
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## PROGRAM GOALS & OBJECTIVES

### Program Goals

The Advanced Energy Utility (AEU) District program of the Toledo-Lucas County Port Authority (Port Authority) will:

- Fundamentally and permanently transform energy use and the delivery of energy conservation retrofitting and alternative energy technology in Greater Toledo, Lucas County and Northwest Ohio, in a way that makes energy efficiency, conservation and renewable energy the "options of first choice";
- Create a program financially sustainable far beyond the grant period that harnesses the enormous financial power of area energy expenditures;
- Maximize the use of local and regional renewable energy and conservation system providers to strengthen the local alternative energy/energy service economy; develop alternative energy businesses, long-term jobs and careers.



### Program Objectives

- 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.
- 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.
- 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 that result in 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.
- Achieve measurable stretch goals, broad market participation and greater efficiency savings from building retrofits that can serve as pilot building retrofit programs demonstrating the benefits of comprehensive community-scale energy-efficiency approaches and economy of scale, that are broadly replicable and scalable, can make an impact regionally or nationally, and serve as examples to be replicated across the country.
- 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.

### **Toledo-Lucas County Port Authority: History & the AEU Partnership**

Toledo-Lucas County Port Authority ("Port Authority") is a Political Subdivision of the State of Ohio created in 1955 with the opening of the St. Lawrence Seaway to facilitate moving goods and services through the Seaway. Port Authority owns over 600 acres at the mouth of the Maumee River providing dockage, warehousing, stevedoring and handling services to over 12 million tons of waterborne cargo through facilities within the Port of Toledo. In 1972, Port Authority assumed operation and development of the region's 2 airports – Toledo Express Airport (TEA) and Toledo Metcalf Field (TMF). TEA is a commercial service airport, providing 4 areas of economic impact to NW Ohio (commercial passenger service, military support, air cargo and general aviation services). It is home to the Ohio Air National Guard 180<sup>th</sup> Tactical Fighter Wing, and also to BAX Global's air cargo hub supporting 2,500 jobs, with an annual regional economic impact of over \$650,000,000. TMF is a General Aviation Reliever airport in Wood County.

In 1988 the Port Authority established its Economic Development division to implement initiatives that strengthen and diversify the NW Ohio economy by encouraging investment in commercial, industrial, transportation and community development projects. Port Authority has the authority to issue Industrial Development and other Industrial & Lease Revenue bonds in 28 NW Ohio counties. Since inception in 1988 the Port Authority has completed a total of 97 bond issues totaling approximately \$1,052,735,900, leading to the creation or retention of over 11, 956 jobs.

### **The Northwest Ohio Bond Fund (NWOBF)**

In 1988, Port Authority created the NWOBF to provide long term, fixed-rate financing to support facilities and equipment for qualified businesses and governmental borrowers. Port Authority first capitalized the Debt Reserve for

the Bond Fund in 1988, and has increased the Reserve to \$6.5 Million. This "Program Reserve" along with a \$10 Million Letter of Credit has generated a BBB+ rating for the life of the Fund, providing project financing credit enhancement and allowing unrated borrowers to borrow at investment grade rates in financial markets. Recent economic pressure on ratings agencies have resulted in a downgrade of the bond fund to BBB-, however, the credit strength of the Fund is as strong as ever. In 21 years, with over \$203 Million in project financing, there has never been a default to a bondholder nor has there ever been a need to use Program Reserve to cure a defaulted borrower. Port Authority has recently appropriated \$2,000,000 and anticipates additional investment in the amount of \$6.4 Million to the Bond Fund reserve from other resources to restore the fund's BBB+ rating by March 2010. This \$203 Million has financed variety of important community development projects, leveraging the Fund over 31:1.

**Of \$40 Million requested here, Port Authority will put \$25 Million in the "Program Reserve" of the NWOBF to provide financing to the Advanced Utility District (AEU) Program. This will immediately be leveraged to issue a minimum of \$100 Million in debt in the first 15 months of the project; over \$150 Million in the 3 year project. More importantly, it will be leveraged many times again in the next 10 years to create a long-term sustainable financing mechanism for energy efficiency and alternative energy installations across the region.**

#### PROGRAM FEATURES

##### **Revenue, Financing & Sustainability Model**

As stated in "Goals", Toledo Lucas County Port Authority will leverage DOE funds through 7 primary mechanisms:

- 1) **Northwest Ohio Bond Fund (NOBF).** In each of the first 4 quarters of the grant period, Port Authority will receive \$5 Million from DOE and use it to issue at least \$20 Million in debt (per quarter) to support programmed projects (4:1). Historically the principal of outstanding debt has been reduced on average by 6-7%/Yr., which will create additional capacity beginning in year 2. Also, as buildings are connected to the AEU Districts, most will pay 10% of the cost of their individual installation (not of district-wide installation), which they get back several times over by the maximized Tax Credits AEU Management will help them obtain. As the Fund is increased through this 10% mechanism with each hook-up, and begun to be replenished by the 3<sup>rd</sup> quarter of the grant period, the Fund will, by itself, continue to leverage new debt and bring the leveraged amount to over 5:1 by the end of the 3 year grant period. It will continue to issue new debt for the program ad infinitum. Though it will not count in the grant reporting, per se, the fund will leverage more than 7:1 over an 8 year period, and at least 20:1 in the long term. Port Authority will also seek other Fund Enhancements allowing greater leverage.
- 2) **Revolving Loan Fund (RLF).** \$8 Million (20% of the \$40 Million grant) will be used to set up an RLF. While it will be used to help initiate early elements of the AEU program, such as Energy Audits and weatherization, it will be primarily used as a tool to assist in the practical leveraging of funds through the NOBF. As it is not cost effective to issue long-term fixed rate bonds for each small project, the RLF will be the initial financier of all but the largest projects, and these smaller projects will be aggregated (warehoused) into larger packages. The NOBF will then issue debt for the aggregate amount and replenish the RLF. Once the NOBF has issued debt to the limit of the \$20 Million deposited into the Program Reserve Fund (for at least \$80 million in project financing), the RLF will be reduced by \$5 Million, to bring the NOBF Program Reserve up to \$25 Million. The remaining \$3 Million in the RLF will continue to finance Energy Auditing, Weatherization and Energy Conservation projects for commercial, industrial, and residential buildings, as the 1<sup>st</sup> stage in joining the AEU District. This RLF may work cohesively with other state or local RLF and subsidy programs to finance the balance needed for any particular project.
- 3) **Private Financing.** Port Authority has identified several ESCO and Energy Efficiency contractors in the region that are also capable of providing private project financing for various energy efficiency and alternative energy projects on a per project basis. For example, Hardin Geotech (HGT), a primary project partner has the ability to finance up to \$100 Million in advanced geothermal retrofits, based on creating specific AEU Districts. This financing will cover installation of district-wide geothermal systems (including integrated Solar Thermal [hot water]) and individual building and residential hook up to the system (including all necessary equipment). It will not cover the cost of Energy Audits and weatherization, or the installation of additional renewable energy technologies. For these items - not covered by HGT's financing - approximately \$10 Million of Bond funding will be required. With approximately \$10 Million in Tax Credits on the \$100 Million in financed installation; HGT's financing is leveraging the \$8 Million in grant funds by 14:1. Essentially, using HGT financing for the geothermal

retrofits, this program is actually leveraging the immense financial power of the energy consumers of the Greater Toledo area to pay for this enormous energy saving program, from their future savings, through the AEU.

Hardin Geotech, Inc. is one of the nation's leading geothermal installers, and the largest in the Midwest, having been installing geothermal for over 25 years. In addition to over a dozen major installations in Indiana, Michigan and Ohio, HGT has recently completed geothermal for a major California Hospital – on the San Andreas Fault, the Golden Nugget Casino in Las Vegas, which may be first of many, and a new 42 story building in Chicago. Hardin has also patented new geothermal technology that reduced drilling costs by as much as 50%. He has also pioneered creating geothermal districts, and been able to access private financing in some cases.

- 4) **EECBG Funds.** The City of Toledo has already allocated \$50,000 from its EECBG funds for work required to set up and coordinate the development of the AEU. Additionally, those funds will support early energy audits and weatherization, and will coordinate with the AEU on spending \$3 Million from its Allocated EECBG funds for its downtown LED lighting retrofit program and a solar and wind power installation, with some AEU support. If future year's EECBG funds are available, they will be even more closely integrated into the AEU program.
- 5) **Toledo Foreclosure Fund.** \$4 Million from the City's \$12 Million Neighborhood Stabilization Fund will be coordinated with the AEU to assist families going through home foreclosure. (\$8 Million of the NSF will purchase the homes.) Homes are retrofitted (including geo and solar thermal in select areas) and then sold back to the families through lease-to-own, or land contracts. DOE grant funds are used only for energy conservation retrofits
- 6) **State of Ohio Office of Energy and Other Partner Funds.** The State of Ohio Department of Development has several programs that will be used to leverage the DOE and other program funds for the AEU. These programs include energy efficiency matching grants, Energy Efficiency Revolving Loan Funds, and other leveraged funds available to compliment the above listed funding. Additionally, several project partners have identified private funding sources to generate funds for their projects, providing further leverage to the program.
- 7) **Credits & Incentives.** A menu of ALL credits, incentives or subsidies, generally available but not always widely used, will be coordinated by project partner, Neighborhood Funding Resources (NFR), to assure that this project and its participants use each of the federal, state and local incentive programs to the greatest extent possible, to reduce investment/unit of savings and more quickly expand the program, including outside of Lucas County.

### **The Advanced Energy Utility District**

Port Authority will work initially with the City of Toledo and then with other cities in NW Ohio to set up Advanced Energy Utility (AEU) Districts. The AEU is a vehicle through which energy efficiency and alternative energy projects will be identified, evaluated, installed, financed and managed. An AEU uses the city's ability to insure customer payment by lien or service disconnection and this is vital to insure financing. Ohio has another significant tool for large utility users. House Bill HB1 approved Special Improvement Districts, in which a city can levy and actually sell a property in default for utility payments. This was done to specifically help finance solar installations. Port Authority is working with the Legislature to expand the program to all alternative energy systems. The AEU will utilize a team of trained and experienced partners to perform energy audits, system design, installation, and overall project management and evaluation. Port Authority will provide the financing to create a wide-scale energy efficient AEU able to be replicated across the US. Energy savings generated by the improvements will be used to pay the financing. The City and subsequent AEU's may utilize existing water and sewer utility infrastructure and billing processes for customer support, billing and collection services. This project has already identified buildings and retrofit projects that include efficiency improvements such as lighting replacement/upgrade, geo-thermal and solar-thermal installations, and building control system upgrades, which will result in a substantial energy savings. A portion of those savings is used to pay the financing, as well as other program costs, program management, reporting, and administrative functions. An AEU may be set up as department within the city where they are created, and utilize a portion of the future energy savings from the program participants to support the cost of managing the program.

Many energy efficiency improvements result in savings in excess of 60-80%. This and local, state and federal grants and tax credits and other incentives will provide adequate funding to repay all financing costs, cover program management costs, and still provide annual savings to the building/home owner to incentivize their participation. Furthermore, after debt for the improvements has been paid off, the building/home owner will then enjoy 100% of the savings resulting from the energy efficiency/alternative energy improvements for the life of the building.

### **ENERGY STAR Compliance Status**

The expected high levels of energy efficiency for various projects are well-matched for achieving ENERGY STAR status. All appropriate projects with commercial or manufacturing facilities will be targeted for qualification as ENERGY STAR facilities by scoring 75 or greater by adhering to the EPA's Guidelines for Energy Management, using the EPA Portfolio Manager and related tools, and following required verification and application processes. In residential projects, any retrofitting involving classic energy conservation will follow ENERGY STAR guidelines and tools and measures (such as SEER, EER, HSPF). All status information on ENERGY STAR information and project applications will be compiled and included as part of DOE progress and compliance reports.

### **Classic Energy Conservation Retrofitting**

Comprehensive energy and efficiency audits are included as a primary feature of all planned residential, public and commercial retrofit projects. The audits will be conducted by certified and experienced professional partners, using DOE's NEAT tool, and will be used in part to: 1) establish baseline metrics on energy consumptions, emissions and other relevant data, and 2) provide input into a more detailed project weatherization and retrofit plan. After this, all standard weatherization methods will be employed such as; insulation, caulking, air sealing and window replacement.

### **Geothermal, Solar Thermal and LED Lighting as Energy Conservation Retrofits:**

**Geothermal:** Geothermal HVAC is often defined as "alternative energy", though it is really an energy conservation retrofit; one of the most cost efficient, energy conserving retrofits, saving over 60% of the energy formerly expended. It puts no new energy production into a system to use, store or "net-meter" onto the "grid". It is simply a way to use local ground water temperatures (50°-55°), to replace 60° to 110° air in the summer and -20° to 40° air in the winter, as the starting point for any HVAC or heat pump system at the beginning of the heating/cooling process. This saves most of an air conditioning system's effort in the summer; and much of a heating system's work in the winter.

Geothermal also lends itself to a district-wide application more than other conservation retrofits or renewable energy technologies. It is generally more expensive in smaller applications; often extra vertical drilling is done to provide a safety factor or redundancy, and equipment set up is costly. Often an average house requires 1½ vertical digs, but 2 must be done. And in the same way that 40 houses on a street have 100 amp disconnects, but the utility company does not send 4000 amps of current down the street, a district-wide geothermal system will save over 20% of the borings needed over the same projects individually. Finally, (for example), a district-wide system using a utility raceway under a city street to serve the buildings on that street, greatly lowers the hook-up cost for each building by simply connecting to a "geo-water service" from the street in the basement, as it would water or electrical service.

District-wide energy geothermal conservation retrofitting can save each district 60-70%% of its current energy usages, has a 3-8 year payback, and thus greatly reduces the size of the need for other alternative energy technologies (solar, wind, etc) so that these add-ons may be much smaller and less costly.

**Solar Thermal (Hot Water):** Solar thermal collectors work synergistically with geothermal systems reducing the size of the ground-loop and heat pump and improving the co-efficient of performance. Solar panels collect heat from the sun year-round to boost the geo-exchange system. Excess heat from the heat-pump compressor is used to assist in home water heating. Vertical pipe loops reach about 150 ft. into the ground. A heat transfer fluid is circulated though the ground loops, extracting energy from the ground. In the winter, the system draws heat from the ground and releases it into the house for space heating. In the summer, it operates as an air conditioner dumping heat from the house into the ground. Combined geo/solar systems offer 4 times the efficiency of regular natural-gas systems. In residential settings the geothermal-solar thermal retrofit replaces up to 79% of homeowner's energy consumption.

**LED Lighting** is also defined by the AEU program as Energy Conservation – used before new energy production – rather than as renewable energy technology. It's energy and cost savings are well documented (often over 70%). Project partner Smashray is a local manufacturer of LED lighting retrofit kits that will be used to support this program.

### **Solar Photovoltaic, Wind and Other Technologies:**

Each AEU project will be built on a strong, high-yield energy production foundation based on a classic system of energy audits, weatherization and energy conservation (predicated on combined geothermal/solar-thermal systems).

They'll also generally use integrated real-time monitoring that can provide opportunities for increased incremental energy retrofit efficiencies, and also be useful in implementing other future renewable energy technologies.

Each AEU project will be scrutinized for opportunities to include renewables such as solar and wind, as well as fuel cells, stirling engines, etc, integrating and measuring these technologies based on unique facility and area characteristics, and local priorities. Each retrofit project, in effect, will be a unique energy conservation program that can serve as a platform for hybrid energy conservation configurations, for community demonstrations, public awareness and outreach, and scalable and replicable applications throughout the region and the country

Partner Summary			
Project (Site) Partners	Giant Industries	Toledo-Court, Safety, Service Bldg.	Water Treatment Facility
	Lockrey Manufacturing	Erie St Market	St. Luke's Hospital
	University of Toledo	Toledo-Health Center	Lucas County Metro Housing
	Toledo Zoo	Former Macomber School	Toledo Museum of Art
	DTID	Sylvania School	Adv. Dist. Generation - Jeep
	Child Ser. & County Fam. Ser. Bldgs	Toledo "Red Lights"	Waite High School
	Toledo Train Station	Greenhouse Industries	Evergreen School
	Toledo Express Airport	ProMedica Health Care	Old Orchard Neighborhood
Support Partners	<u>SUPPLIERS/PROVIDERS</u>	<u>TRAINING/EDUCATION</u>	<u>MANAGE/MARKET/ACCESSORS</u>
	Hardin Geotech	Adv. Distributed Generation	NFR
	Mechanical Energy Systems	Owens Corning CC	element-e
	Eco-1 Energy Distribution	New Century Career Center	Sutter Home Inspections
	Smashray (LED Lighting Mfg.)	Lucas County Workforce	Energy Performance Partners
	First Solar	Green Energy Ohio	City of Toledo & Lucas County
	Xunlight	Oregon Career & Tech Center	IBEW #8
	Sure Energy	<u>GENERAL SUPPORT</u>	Owens Corning
	<u>ENGINEERING/CONSULTING</u>	Maumee Valley Growers	LEWAS
	Tetra-Tech	Ohio Farm Bureau	County Comm. Assoc.
	TTL Associates	NWO - USGBC	International Facility Mngt. Assoc.
	PlugSmart Solutions	Parker Enterprises	Toledo Program of LISC

## PROJECT OVERVIEW

### Geographic Focus

Port Authority, with the City of Toledo and Lucas County, will develop series of Advanced Energy Utility Districts, starting within the City of Toledo. Some are planned geographic Districts, approached on a District-wide basis now. Others will focus on 1 or 2 key buildings in a targeted area in Year 1 or 2, to be expanded into Districts in Year 2 or 3. In future years, after DOE funds have been expended and leveraged, or sooner using new future funds, the program will expand to Lucas County and to Port Authority's 22 county jurisdictions for another 8-20 years, based on need.

### Program Design

Each building or District of buildings will undergo the same Program Elements; based on the Project Objectives:

- **Energy Audits & Initiation of Energy Conservation Retrofitting.** In the 1<sup>st</sup> quarter of 2010, buildings and areas planned for Yr. 1 activity will undergo energy audits if they have not had one. With available funds from the City of Toledo EECBG grant, funds from other loans or grants from the state, the AEU RLF or from the main body of the DOE grant, these Yr. 1 buildings and areas will undergo weatherization and energy conservation retrofitting based on the results of the audits. The same will happen for buildings and districts in Yr. 2 and Yr 3.
- **Planning Advanced Energy Utility Districts.** Each building or area will undergo planning for the installation of a geothermal field and heat pump system. In many cases Solar Thermal (Solar Hot Water) will be integrated with the geothermal as the two work in tandem to lower energy use (and costs), especially in northern winters. Plans

will be made on whether to use alternative energy creation systems (solar, wind, fuel cell, alternative fuel, stirling engine, etc), again based on the audits, building use, cost and ROI; layered in after conservation retrofitting. In industrial areas special energy saving techniques, including energy from waste streams may be implemented.

- **Advanced Utility District Funding.** 5 sources of funds will be used to accomplish the project:
  - Beginning in the 3<sup>rd</sup> quarter of 2010, the NOBF will issue \$20-25 Million in debt (bonds) for energy audits, weatherization, geo/solar thermal installation, or for installing alternative energy add-ons to the systems.
  - The AEU RLF will fund smaller projects, while the NWOBF aggregates them into larger packages. The RLF is repaid, when each package is financed. \$3 Million of the RLF will fund smaller aspects of the program, or used as matching funds for energy conservation retrofitting, or cost effective alternative energy add-ons.
  - For initial projects in Year 1/2 and District-wide areas, project partner Hardin Geotech's (HGT) \$100 Million in financing for geothermal/solar thermal and new controls in AEU Districts will ensure "shovel readiness" at the very beginning of the grant period. HGT will work with Port Authority and the City in early 2010 to have a Power Purchase Agreement in place by March so financing can be arranged and projects started as soon as the grant period begins (4/1/10) through 2011. HGT financing won't pay for alternative energy additions, just the geothermal/solar thermal retrofits, so the NWOBF or the RLF will fund these added on programs,
  - Some buildings and projects may already have funding, such as a builder's current budget for standard HVAC installation in a building. This may now be reduced, and the builder will get a superior system.
  - A series of other state and local grants, RLFs and other subsidies as well as Federal and State tax credits will also be used to further extend the primary three project financing aspects, above.
  - Over time, new funding/financing may be possible, through union pension funds, school retrofit budgets, etc.

**Maximizing Tax Credit Use & Additional Future Financial Leveraging**

- **Business Development.** Port Authority and the City will work with local and regional manufacturers to plan large scale contracted purchasing of the materials and equipment needed by the project. Once grant or EECBG funds, or HGT financing is in place, Port Authority will enter into purchase agreements with manufacturers, giving them a commitment and advanced notice (even now in the project planning) to be able to plan expansions of their businesses; perhaps borrowing against the contracts so they can get the maximum possible profit and growth from the AEU Program. This is a prime example of one of the benefits of economy of scale to the area.

- **Job Development.** Over 6000 direct sustainable jobs will be created as a result of this project in the 3 years. These projects will also provide the necessary impetus to bolster local manufacturing facilities.

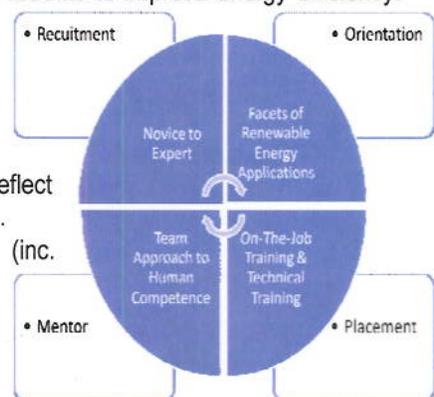
The table below summarizes the job creation estimates produced through the job calculator tool from the American Council for an Energy Efficiency Economy (ACEEE), using realistic estimates as primary inputs.

Year 1	Year 2	Year 3	Year 5	Year 10
859	2,554	2,879	1,361	1,211

- The AEU project directly addresses 2 of 4 primary areas for green jobs identified in the Worldwatch Institute report on green jobs. Similarly, the Center for American Progress report advocates a green economic recovery package focused on priority investment areas; prioritizing retrofits to improve energy efficiency. The audit, geothermal, solar and related industries not only represent the most high-return investments for energy savings, but one of the largest areas of untapped potential for economic growth and job creation.

- Hardin Geotech alone estimates over 1,100 long-term jobs just for the geothermal program. And, as the ACEEE table does not reflect manufacturing jobs created, this program will surpass those numbers.
- Reports will all include information on direct/indirect jobs (inc. manufacturing, suppliers & other activities).

- **Workforce Development.** Local and regional businesses will have access to Job & Career Training programs designed to create career paths for long term employment – not temporary jobs. The chart shown



on the right illustrates the intended concept of developing a workforce for a sustainable economy. Several committed program partners will provide certification, career training, career development and financial support. The Lucas Co. Workforce Development Agency (LCWDA) has committed financial support for job placements as well accreditation, apprenticeship programs and more. The International Brotherhood of Electrical Workers (IBEW No. 8) has made similar commitments. Public institutions such as Owens Community College and the Univ. of Toledo have made commitments for leveraging their renewable energy programs. The New Century Career Center has committed to leverage its resources and expertise providing training and career resources as a "bridge school" for entry-level workers in renewable industries.

- **Compliance and Reporting.** Beginning before the project starts, Port Authority, with project partner "element-e" and the project management will work with DOE to create the type of reporting and compliance documents that DOE requires to collect and authenticate all necessary project materials, not only for Port Authority and DOE's use, but to develop the model for future projects, using the reliable data collected in this program, in easily followed formats. Information collected, compiled and provided to the DOE will, at a minimum include:
  - **Real Time Monitoring and Data Collection.** Each project will incorporate aggregated intelligent systems such as Cisco Network Building Mediator to monitor both renewable energy and existing HVAC systems. These systems allow for continuous automated control, remote monitoring and control, and data collection to ensure efficiency levels are met and maintained and accurate project statistics are readily available.
  - **Records & Documentation** of expenses for project activity, administration, evaluation and leveraged funds. As a public agency, the Toledo Port Authority will likely automatically meet or exceed compliance needs through its requirement to retain its public documents for public inspection.
  - Port Authority will use existing programs and procedures to attract and train minority and disadvantaged business enterprises and then report their participation back on a quarterly basis.
  - **Ongoing Status Reports:** email reports with information on status, impacts, developments, roadblocks, etc.
  - **Annual Strategy Report** information will include: jurisdictional area; plan implementation; partner status; leveraged funds; baseline energy; and GHG emissions. It will document forecasts; goals/objectives for energy use, emissions reductions and energy efficiency increase (including renewable technologies), and action/plans/strategies/implementation schedule to meet the goals. Additional information will be provided on: outcomes and benefits, jobs created/ retained, energy saved, renewable energy capacity, GHG emissions reduced, funds leveraged, information on obstacles to reaching goals, and strategies to remove obstacles; policies and administrative, an evaluation, monitoring and verification plan; plan for sustainability beyond grant period; plans for funds by adjacent eligible units of local governments; plans to coordinate and share information with the state regarding activities; and plans for how funds will be coordinated with leveraged funds including other Recovery Act funds, to maximize benefits locally and regionally.
  - **Quarterly Progress Reports** on information such as: total amount of covered funds received, amount expended, detailed list of projects or activities for expended funds. Also included: infrastructure investment by state and local governments; purpose, total cost, rationale for funding infrastructure investment; agency contact, information on subcontracts awarded. Detailed metrics will be provided on: jobs created/retained, energy (kwh/therms/gallons/BTUs/etc.) saved, renewable energy generated, emissions reduced, and cost savings. And additional key metrics on building codes and standards; building retrofits; clean energy policies; energy audits; use of energy efficiency rating and labeling systems; any government, school, institutional procurement; industrial process efficiency (kwh equivalents); loans and grant summaries; energy market development information; financial incentives for energy efficiency and other investments; technical assistance information (affecting transportation); workshops, training and education; workforce statistics; marketing/communications activities; detailed energy savings and job creation information (#, type, duration); energy capacity and generation, and emissions reductions (tons) (CO2 equivalents).
- **Project Management** includes a comprehensive approach to long-term facility needs beyond just considering energy saving and operational improvement opportunities, including repair and maintenance issues that have a direct impact on facilities and operations. This is supported by a task-driven process valuing experience and "best practices" utilized in successful performance contracts across the US. The project management team will take the complexity of performance contracting parts, broken down into manageable tasks. Key phases include:

- **Project Development Phase.** Includes audit to identify energy and operations-based performance contracting opportunities, as well as maintenance, comfort, safety, regulatory and capital planning issues that can be addressed proactively. Survey components in the audit include those related to building energy retrofit opportunities, HVAC, utility usage, lighting, automation and controls, water/sewage, maintenance and more. Specific prioritized recommendations will be made for any weatherization and retrofit plan adjustments based on leveraged energy savings and long term impact on economic growth factors.
- **Implementation Management Phase.** This includes developing a Master Schedule and communications plans as well as monitoring and tracking of materials and qualified resources using subcontractors and partners, inspecting and overseeing execution of master plan to ensure quality, compliance and acceptance, and assigning tasks to the Project Team. Other responsibilities include commitments, available resources and subcontractor bids, documenting projected cash flow, project strategy, guiding project execution and project control tailored to the particular project's complexities, forecasting the project cost, job site visits and inspections, conducting scheduled job progress meetings, managing customer billings, verifying/correcting energy conservation measures for installation and operation, and approving progress payments.
- **Performance Management Phase.** This phase includes elements designed to ensure that savings and performance are managed and maintained. Responsibilities include: savings verification and reporting, proactive monitoring and performance diagnostics, coordinating training, coordinating and deploying warranty, operations, and maintenance services, and more. Port Authority has identified several candidates (bios included) who may be part of the management team; likely be put together through an RFP.
- **Manufacturing:** Toledo is already a world leader in solar manufacturing (First Solar alone has 800 jobs), SmashRay manufactures high-end LED lighting and SUREnergy is a growing wind equipment manufacture. A goal of this program is to create long-term jobs, by using the funds for AEU installations to also guarantee sales and help these companies grow, and in the process possibly lower the costs to the project, and demonstrate again another benefit of economy of scale. While promoting the AEU program (below) the project will also be promoting these and many other, current and developing companies in the renewable energy industry.

**Marketing/Promotion.** Port Authority will hire as part of the Project Staff a full-time Director of Marketing & Sales to implement the project's promotional and educational strategies. With assistance from Project partners NFR and element-e, a program will be begun to promote the creation of new AEUDs across NW Ohio; focusing at first on public buildings, schools, industrial facilities and older commercial districts. They will also target hotels, banks and other commercial interests, as well as unions and pension funds). The following organizations have provided written commitments for marketing and public relations support: LEWAS (Lake Erie Western Alliance for Sustainability), LISC (Local Initiatives Support Corporation) City of Toledo (by Resolution), US Green Building Council (USGBC); NW Ohio Chapter and First Energy. Other partners will include the Building Owners Association (BOMA), International Facility Managers Association (IFMA ), Ohio Energy Companies (all have green programs), Dayton Power, Duke Energy, Wabash Valley Power Assoc., Buckeye Power, Yellow Springs Nature's Energy, American Municipal Power/Green Mountain Energy, Palmer Energy, Toledo Art Museum and Chamber of Commerce. NFR will also develop a clearing house mechanism that assists projects in using all possible tax credits, subsidies and grants; and also determines, gets approved and sells Carbon Credits, RECs, ACECs and other similar subsidies.

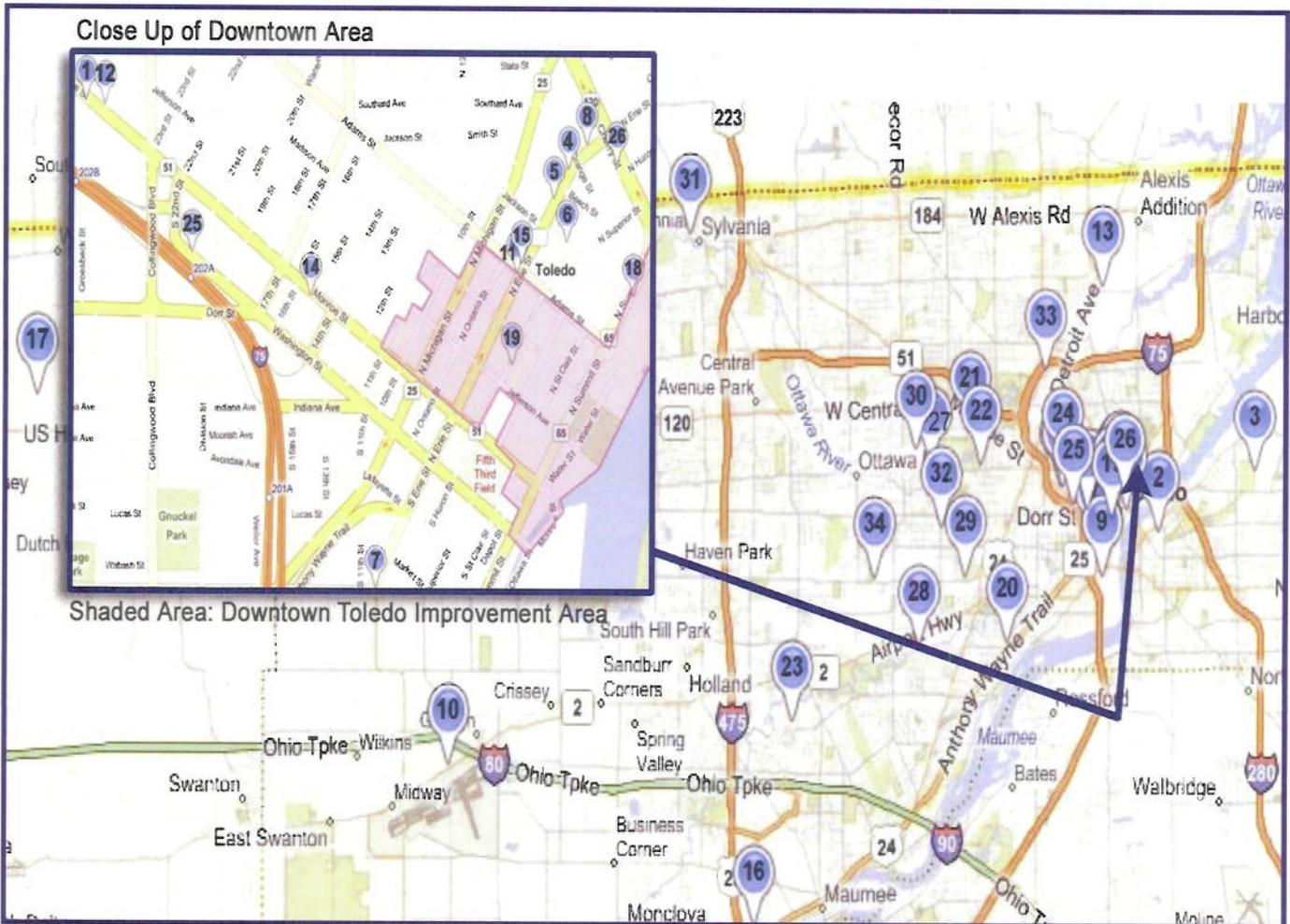
Marketing and Education Plan Summary			
<b>Mission</b>	To reach out to the Port Authority district-wide community. To educate target markets in energy conservation initiatives. To generate increased program advocacy and adoption for current and future efforts.		
<b>Target Markets</b>	Residential	Commercial	Industrial
	Schools	Municipalities	Public Organizations
	Business Owners	Consumers	Homeowners
<b>Strategies</b>	Awareness/Appreciation	Education and Demonstration	Follow Up & Engagement
	Website Portal(s)	Direct Mail (Utility Bill Inserts/Email	Social Media
<b>Tactics</b>	Partner Campaigns	Public Announcements	Traditional Media

Leveraging Fund Element	Leverage Amount
Northwest Ohio Bond Fund/RLF	\$28M leverages 150M; \$30M Tax Credits; \$40M in Grants/Carbon Credits; and \$14M in partner financing- 8:5:1; Over 8 Years 10:1; Long term - 20:1.
Financing: Hardin Geotech, Inc (HGT)	\$8 Million Leverages \$100,000 in Financing; \$10 in Tax Credits: 14:1.
City of Toledo	\$4 Million leverages \$16 Million (EECBG & NSF) Funds: 4:1
Overall	\$40 Million leverages \$360 Million – 9:1; Long Term- 20-1

**Evaluation**

Third party evaluation of program parameters will be provided by Project Partner element-e, whose principals have a proven track record in the auto industry, working with the program management staff, and using objective measurement methods for: program design and engineering, installation, delivery, energy impacts/outcomes, workforce development, community awareness/marketing. Ongoing evaluation summaries will be included as part of progress reports. In addition, detailed evaluation information will be included in quarterly and annual reporting, and element-e will work with the management team, along with outside evaluators in creating a model program.

**Project Site Map**



**Project Implementation**

Some sites had advanced planning and energy audits, others are based on estimates from energy conservation/system providers. All must have an energy audit, and the order of projects will be subject to change, based on audits, as well as environmental assessments, which each must have, prior to any specific energy conservation or renewable energy system getting final approval for financing for the AEU from the NWOBF.

<b>Toledo Museum of Art</b>	
<p><b>Site 1</b></p> <p><u>Size:</u> 5 buildings; 493,982 SF</p> <p><u>Cost:</u> \$1,002,000</p>	<p>The 109-year old Toledo Museum of Art is focused on energy conservation. Its 36-acre campus is in the heart of Toledo and is free to all. In 10 years it's energy consumption by 70% through a 100kW rooftop solar array, micro-turbines and LED lighting. It now has engineering plans for a 2<sup>nd</sup> 100kW rooftop solar array (\$752,000) and 2 - 11kW wind turbines (\$250,000). The 5 campus buildings need energy audits to determine the opportunity for further efficiency. Then insulation will be added to decrease energy loss, interior/exterior LED lighting enhancements; microturbines in the Glass Pavilion; efficient HVAC systems (which may include geothermal will be installed.</p>
<b>Toledo Public Schools</b>	
<p><b>Site 2</b></p> <p><u>Size:</u> 277,000SF</p> <p><u>Cost:</u> \$2,094,120</p>	<p>Waite High School's main body was built in 1914. While control systems were updated in the 1980s the heating plant is still the original steam boilers. Except for a few window AC units in a few classrooms, there is no AC in that section. In the moratorium on natural gas heated buildings in the 70's, Toledo schools added a technical skill center to Waite. It has the original electric HVAC system. Most lighting was switched to T-8 in the 90s but some incandescent and T-12 fluorescents are still used. Toledo Schools will retrofit the building with state of the art HVAC and lighting. Other elementary schools will be chosen, based of energy audits for upgrade in Year 2.</p>
<b>City of Toledo</b>	
<p><b>Sites 3, 4</b></p> <p><u>Size:</u></p> <p>a) City-wide; b/c) 40,000 SF</p> <p><u>Cost:</u> a) \$1.3 M b/c) \$4 Million</p>	<p><u>Project a):</u> Replacement of Traffic Signal Lamps with LED; will complete the current traffic signal lamp replacement program by replacing all remaining incandescent lamps throughout the city with LED units, using EECBG funds dedicated to the project. Estimated cost (\$600,000) will result in an annual energy savings of an additional 2.5 million kwh. The City will bear all personnel costs. Projected energy cost savings over the guaranteed 5-year life of the units is \$1.3 million. It's expected that 11 jobs will be created/retained by this project.</p> <p><u>Project b):</u> Photovoltaic Electric Generation System at the Collins Park Water Treatment Plant: Installation of a 1 megaWatt net metering photovoltaic (PV) electric generation system, which is a City owned facility. The plant encompasses 125 acres in mixed residential area with nearby roadways providing an unobstructed view of the array showcasing the installation for public critique. Estimated installed costs range from \$7,500 to \$9,500/kWatt, or up to \$9.5 million for a 1 megaWatt system. Given the large capital outlay, Toledo proposes to construct the array in 4 phases. The initial 250 kW installation has an estimated installed cost of \$2.4-\$3.0 million.</p> <p><u>Project c):</u> Installation of a single 1 megaWatt (1 MW) turbine Wind Electric Generation System at the Collins Park Water Treatment Plant: The Plant filters an average of 80 million gallons of water/day on a 125 acre site located at 600 Collins Park Drive on Toledo's east side. The City has appropriated \$1 million from its capital improvement fund as a match to the EECBG funds for this project.</p>
<b>Toledo Municipal Buildings</b>	
<p><b>Sites 5-8</b></p> <p><u>Size:</u> 5 Sites; 388,155 SF</p> <p><u>Cost:</u> \$15,137,000</p>	<p>The City will renew 5 municipal buildings: the Court (100,800 SF), Safety building (107,211SF), Service building #1 (161,772SF), Erie Street Market (114,144SF) and the Health Center (66,000SF). Technologies considered are: mechanical measures, energy management/control and lighting. The estimated cost (\$15,137,000) will return a total savings of \$2,040,000/ year.</p>

<b>Toledo Train Station</b>	
<b>Site 9</b>	<p>Located at 415 Emerald, this 30 acre, 100,000SF site was built in 1950. It consists of 9 separate buildings. PA completed an \$8.5 million renovation in 1996; but it is still in need of major energy infrastructure improvements; which will include weatherization, LED or other alternative lighting, geothermal HVAC, and it will feature solar roofed passenger shelters along the tracks. In addition to other commercial uses the Train Station will house the AEU program management, as well as the offices for a number of the project participants (such as NFR, element-e and NC3); and it will also house the actual AE Utility offices.</p> <p><b>Size:</b> 100,000 SF  <b>Cost:</b> \$1,756,000</p>
<b>Toledo Express Airport</b>	
<b>Site 10</b>	<p>Updating existing runway lighting infrastructure with energy efficient, cost-saving LED lights. Projected Energy saved: 70% reduced power consumption; 164,000 kwh. Projected GHG Emissions Reduced (CO2 Ton Equivalents): Reduced by 128 Metric Tons. Cost of the project include: Equipment Costs: Regulators: 1,784 @ \$889,600 each; Cables: 325,754 feet = \$390,400; Installation: \$320,000.</p> <p><b>Eng Savings:</b>  Power consump. reduced 70%</p>
<b>Downtown Toledo Special Improvement District (DTID)</b>	
<b>Sites 11, 12 &amp; 19</b>	<p>a) Children Services Building (1701 Adams St.) is vital to the Special Improvement District, with outdated HVAC, lighting and controls. The plan includes an audit, weatherization, replacing 747 florescent lights, geothermal HVAC and controls.  b) County Family Service Building; responsible for all local welfare programs (2400 Monroe St.) is also very visible in DTID. It is old technology that will be updated by replacing old lighting, windows and adding a geothermal field for heating and cooling.  c) In Year 2/3 an AEU District will expand out from these 2 buildings to cover the entire 20 block DTID; relying mostly on audits, weatherization, geothermal and solar thermal, along with new LED and other alternative lighting</p>
<b>Lockrey Manufacturing</b>	
<b>Site 13</b>	<p>Lockrey Manufacturing's building and land (203 Matzinger Rd.) consists of multiple contiguous parcels totaling almost 8 acres. Lockrey provides precision machining and fabrication services for wide variety of industries including agriculture, aviation, military, aerospace, medical and energy. The facility - part of which dates to the 1950s--provides manufacturing and office space. The long-term benefits include the retention of 70 jobs in Toledo, and competitive advantages, resulting in another 20 jobs in 5 years.</p> <p><b>Size:</b> 100,000 SF  <b>Cost:</b> \$4,006,000</p>
<b>Macomber</b>	
<b>Site 14</b>	<p>Q3 Development Inc will be providing the building and land to participate in the first phase of the hybrid utility system. The proposed property is located at 1501 Monroe St; the building was constructed in 1937. The parcel size is approximately 5 acres and the estimated redevelopment cost is \$16m. Q3 will use Geo-thermal technology as an alternative energy source.</p> <p><b>Size:</b> 232,264 SF  <b>Cost:</b> \$16 Million</p>
<b>Neighborhood Stabilization</b>	
<b>Site 15</b>	<p>This \$12 Million City program buys homes in or nearing foreclosure, provides weatherization and energy conservation retrofitting, and then sells the home back to the current owner on a land contract, lease-to-own or other sales mechanism that solves the foreclosure problem. About \$9 Million is expected to be spent on purchases; with \$3 Million for retrofits. \$4 Million in AEU funds will be spent in order to increase the amount for retrofits, and to include geo/solar thermal and energy efficient lighting.</p> <p><b>Size:</b> 100-200 Homes - 2010  <b>Cost:</b> \$12 Million</p>

<b>Site 16</b>	<p><b>St. Lukes Hospital</b></p> <p>Toledo's St. Luke's Hospital has been a community fixture for over a century, although it moved to a new site in 1972. Now, what was once new, is very out of date, and energy expenses as well as patient comfort and safety are an especially delicate issue. St. Luke's has examined the potential for geothermal, and with Hardin Geotech's successful hospital installations, it will now move into the 21<sup>st</sup> Century. In addition to Geothermal it will undergo weatherization, install LED parking lot and safety lighting, as well as install Wind and Solar.</p>
<b>Size:</b> 500,000	
<b>Cost:</b> \$8,030,000	
<b>Site 17</b>	<p><b>Evergreen School</b></p> <p>Evergreen Schools buildings consist of: a high school: 100,797 sq. ft.; middle school: 65,186 sq. ft.; elementary school: 68,000 sq. ft.; and a bus garage/vocational ed. building: 1350 sq. ft. The 78 acre-district's ultimate goal is to reduce its carbon footprint and provide a priceless educational benefit for its students, staff and community.</p>
<b>Size:</b> 235,333 SF	
<b>Cost:</b> \$3,717,450	
<b>Site 18</b>	<p><b>One Seagate Center</b></p> <p>One Seagate Center is the tallest building in Toledo, built as the centerpiece to the Seagate Project. Located off Summit St. on the shore of the Maumee River in downtown Toledo. This high-rise structure houses commercial businesses and residential suites, and has 293,000SF of glass. Plans include weatherization, geothermal and solar/thermal hot water, as well as solar and wind applications.</p>
<b>Size:</b> 32 Story 800,000 SF	
<b>Cost:</b> \$10 Million	
<b>Site 20</b>	<p><b>Toledo Zoo</b></p> <p>The Toledo Zoo plans a solar array for the Zoo's main visitor parking lot, referred to as the "Solar Walkway" project. A multi-functional, artistic steel structure that will support 1,422 First Solar FS-272 solar modules projected to produce 120 MWh/year. The walkway cover will span 1500 lineal feet and will serve multiple operational and educational purposes. It will provide shade and shelter for Zoo visitors as they enter and exit the Zoo; reduce the Zoo's reliance on purchased electrical energy; help reduce electrical load which in turn will keep the Zoo from making a significant capital investment in a new electrical distribution system; and will serve as an educational resource to inform visitors as we strive to meet the Zoo's mission to "conserve the natural world."</p>
<b>Size:</b> 1500 SF	
<b>Cost:</b> \$8 Million	
<b>Site 21</b>	<p><b>ProMedica</b></p> <p>ProMedica Healthcare is a locally owned non-profit healthcare system founded in 1986, comprised of 10 hospitals in Ohio and Michigan with over 15,000 employees. The 1<sup>st</sup> ProMedica facility was the 794 bed Toledo Hospital, founded in 1874. ProMedica has recently tested high efficacy LED lighting for special use situations in 2 hospitals. They switched T-8 lighting to LED and saw a reduction in consumption of approximately 60%. ProMedica wants to implement a large scale installation of LED lighting throughout various portions of The Toledo Hospital, its smaller medical office buildings, and general support office buildings located around The Toledo Hospital campus. This project will initially include the Main Branch, Toledo Hospital as well as Flower Hospital.</p>
<b>Size:</b> 232,264 SF	
<b>Cost:</b> \$16,989,449	
<b>Sites 22-26</b>	<p><b>Lucas Metropolitan (HUD) Housing Authority</b></p> <p>Pursuant to 24 CFR 990 LMHA can finance energy improvements by leveraging energy savings from the retrofits. It has evaluated this opportunity to enhance its properties while saving itself and resident's energy related expenses. LMHA owns and manages 3,100 rental units across Lucas County and energy improvements can be implemented on every unit. Initially large high rise buildings are targeted, then buildings where LMHA pays utilities; finally those where LMHA does not pay utilities. Initial projects include: Ashley Arms 1950 W. Bancroft, 35,000SF (40 units); Dorrell Manor 5836 Southwyck Blvd, 72,125SF (102 units); Parqwood Apartments 2125 Parkwood, 114,800SF (137 units); TenEyck Towers 240 21st St, 85,250SF (155 units); Vistula Manor 615 Cherry St, 88,800SF (164 units).</p>
<b>Size:</b> 395,975	
<b>Cost:</b> \$18 M	

University of Toledo	
<b>Sites 27-29</b>	<p>The University of Toledo has 3 campuses on 798 acres: a) Main; b) UT Health &amp; Science; c) Scott Park. UT needs to meet a requirement of a 20% reduction by 2014; total Job Creation of 150 people. The Implementation Plan is: an investment grade energy audit is currently taking place and will conclude in March 2010. Following the acceptance of the report by the UT Board of Trustees, projects will be selected based on payback and funding, the projects will then be bid for implementation. Geo/solar thermal and LED lighting are under the highest consideration. UT would not have the funds for this without this program.</p>
<b>Size:</b> 3 campuses 7,644,392 SF	
<b>Cost:</b> \$30 Million	
<b>Site 30</b>	<p><b>Old Orchard Residential</b></p> <p>Old Orchard residential neighborhood on the west side of the city, just north of the main campus of UT; designated as Census Tract 13.01. The neighborhood consists of mostly single family, owner-occupied homes (1166 single family homes) built from 1920 to 1960. The median age home is 68 years; 94% heated by gas; 4% by electricity; 1% by fuel oil, kerosene, etc. Residents have above average median income and housing values are above the median for Toledo. Given the age of the homes and neighborhood demographics, it is ideally suited for implementation of a district-scale energy efficiency and renewable energy program and residents favor the opportunity to upgrade their homes with weatherization, geothermal and solar thermal, under the program.</p>
<b>Size:</b> 1 sq mile; 1166 homes (1900 SF avg)	
<b>Cost:</b> \$11,764,940	
<b>Site 31</b>	<p><b>Sylvania School</b></p> <p>The Sylvania School System is currently installing a Hardin geothermal system in an elementary school, and the early success of this program, including the cost savings for the installation, over many other quotes received, has helped the system to decide to provide geothermal at all of its campuses. While geothermal and solar thermal are the highest priority, limited Wind/ Solar is also being planned</p>
<b>Size:</b> 220,000	
<b>Cost:</b> \$5,213,200	
<b>Site 32</b>	<p><b>Giant Industries</b></p> <p>Hybrid Alternative Energy System. Located in heavy industrial enterprise zone. 10 acres, 90,000 sq. ft. of office and manufacturing space. The building is not a brownfield, but it does have very out of date energy systems. With the aid of the AEU, Giant is both weatherizing, and installing geothermal and indoor/outdoor LED lighting, but also planning solar for its roof, and wind for its parking lot.</p>
<b>Size:</b> 90,000 SF	
<b>Cost:</b> \$2,805,400	
<b>Site 33</b>	<p><b>Advanced Distributed Generation – Jeeps Pkwy</b></p> <p>This project will Reuse &amp; Revitalize this historical landmark on Jeep Parkway: the home to the Jeep, and a major manufacturer and employer for the greater Toledo area. Reviving this plant, especially with greatly reduced costs for developers, with Geothermal and Wind and Solar farms and LED lighting, and perhaps tying it in to new technology manufacturing, would provide a major lift to the area; ..</p>
<b>Size:</b> 657,300 sq ft	
<b>Cost:</b> \$1,624,620	
<b>Site 34</b>	<p><b>Greenhouse Industries</b></p> <p>Administered by Maumee Valley Growers Association; cooperative project with University of Toledo's Urban Affairs Center &amp; the USDA. Project consists of a glass greenhouse that will utilize Geothermal (used inside greenhouse as radiant heat in the soil) as well as solar and other alt-energy technologies. UT has already conducted an energy audit.</p>
<b>Size:</b> 89,000 SF	
<b>Cost:</b> \$1,077,740	

1. MERIT REVIEW CRITERIA :		Criterion 1. Leveraging and Sustainability
Sub Criteria	Grant Response Facts	
Leverage grant: innovative fiscal tools/ strategies.	<ul style="list-style-type: none"> <li>• 9:1 leverage in 3 years based on: 5:1 on \$150M from NWOBF (6:1 with \$40M Tax Credits; 7:1 with \$40M in other Private, state and other funds); 20:1 on \$5 M leveraging \$100M in HGT financing; 5:1 on \$4 M leveraging \$25M in City NSF and EECBG funds; 2:1 on the RLF.</li> </ul>	
Creates major sustainable market transformation after grant is exhausted.	<ul style="list-style-type: none"> <li>• NWOBF and RLF are perpetual; creating access for all other potential project partners.</li> <li>• 6000 direct jobs created in 3 years, using ACEEE calculations and industry-accepted inputs</li> <li>• Commitment workforce training partners ensures skilled worker capacity to meet demands</li> <li>• Advanced Utility concept actually creates ongoing sustainable energy savings – freeing up capital for consumers and business owners alike. Furthermore, the availability of tax incentives and credits provides additional funds that may be used within the local economy.</li> </ul>	
Criterion 2. Project Impact		
Sub Criteria	Grant Response Facts	
Achieves economy of scale/ critical mass in focused retrofit program, mitigating risk of mortgage defaults/ foreclosures with measures such as in "PF for PLPs".	<ul style="list-style-type: none"> <li>• \$306M in projects, bought and built locally will lower costs, assist manufacturing</li> <li>• Advanced Utility based on energy conservation lowers utility costs for target markets including businesses, public entities, and all levels of homeowners.</li> <li>• Finance mechanism requires little or no capital outlay from target markets</li> <li>• The availability of jobs (and reduced energy cost) the best way around foreclosure</li> <li>• With the City NSF program 3-500 homes wick be bought, retrofit and sold back.</li> </ul>	
Energy saved/emissions avoided; reasoned estimate of number of buildings retrofitted (inc. past project completion) in light of EECBG funds requested. The reasonable projections of average utility savings.	<ul style="list-style-type: none"> <li>• Targeted retrofits based on custom energy audits and weatherization strategies.</li> <li>• All building projects are targeted for ENERGY STAR best in class ratings.</li> <li>• Energy conservation, based on best-in-class geothermal-solar thermal, LED, and weatherization provide 60-80% energy savings, per industry calculators.</li> <li>• Energy audits, renewable add-ons (solar, wind) improve savings to 70-90%.</li> <li>• Emissions reduction estimated at 8,685 tons (mt's).</li> <li>• 18 Yr 1 sites include 4 by City, 3 that NWOBF finances but are private projects; 3 that were already planned, but now with retrofit; of 8 left; 5 are small, 3 are large.</li> </ul>	
Project can be ad-opted in other communities.	<ul style="list-style-type: none"> <li>• The AEU can be adapted by any community or utility; especially by a Port (with Bonding)</li> <li>• Detailed program metrics and documentation will provide templates for replication and adoption as well as records of best practices, successes and potential obstacles.</li> </ul>	
Criterion 3: Project Approach		
Sub Criteria	Grant Response Facts	
Mgt strategy (outreach/ mktg, funding structure, implementing/delivery/ monitoring/ verification plan, strategy for feedback/ continuous improvement.	<ul style="list-style-type: none"> <li>• Project management has proven strategies, proven leadership, known personnel</li> <li>• Very experienced (20 yr) successful financial leadership/staff from the Port</li> <li>• Mktng Dir. Hired, supported by proven marketing/communications partners</li> <li>• Leveraging of public and private partners for additional outreach and marketing</li> <li>• Continual measurement of project progress against goals and objectives</li> <li>• Monthly Board/Status meetings, ongoing status reports and documentation</li> </ul>	
Clear goals, defined tasks/methods, objective deliverables, realistic milestones.	<ul style="list-style-type: none"> <li>• 3 goals consistent with DOE's; change energy conservation, sustain financially and jobs.</li> <li>• Each provider has years of experience, and local/regional manufacturer support.</li> <li>• Implementing partners experienced in fulfilling same roles in different projects/programs.</li> <li>• Energy conservation/GHG reduction from 34 projects in 3 years is realistic with financing</li> </ul>	
Institutional, regulatory or market barriers identified; reasonable approach to overcoming them.	Market barriers to solar/wind is the low ROI, mitigated by cost savings from scale of work, and local providers, and financing from energy savings from higher ROI systems geo/solar thermal, LED. Geothermal, known for high capital/low operating cost, has much better ROI when installed in larger, or district-wide systems; LED market leaders are foreign, making cheap products; committing to high quality products will boost local manufacturer.	

Address environmental, health/safety/permit/compliance issues in accord with NEPA).	3 project partners are brownfield specialists; all properties will be assessed. City Health & Safety Dept will oversee all projects. Project Management includes personnel from Port, well versed in major construction issues; contracted or hired project management will have considerable experience in similar work. Energy Providers are ALL very experienced
Criterion 4: Project Partnerships	
Sub Criteria	Grant Response Facts
Range of partners from government, private sector, other organizations.	<ul style="list-style-type: none"> <li>Project partners include representation from schools and universities, manufacturing, low and moderate income residential, commercial, and public/non-profit institutions.</li> <li>Support partners include schools and universities, manufacturing, residential advocate organizations, commercial businesses, and public/non-profit institutions. See pg. 6 list.</li> </ul>
Roles/responsibilities of partners/team member identified and matched to their ability to manage/implement proposed project.	<ul style="list-style-type: none"> <li>Program oversight and standards set by a Board of Advisors led by public/private leaders.</li> <li>Representation on board from a broad base of partners from providers/manufacturers, training/education/workforce development, energy consulting and marketing/management.</li> <li>Port Authority oversight through Exec. Dir, Development Dir. and full time employee; budgeted roles for administration, program, marketing/sales and finance and management.</li> <li>Dedicated Ramp Up: Full Time Employees (FTE's) included in budget for administration management and program management for City of Toledo and Advanced Energy Utility</li> </ul>
Ability to succeed, qualifications/exp of orgs/persons.	<ul style="list-style-type: none"> <li>All partner team members identified have been pre-evaluated for credentials, experience and relevance to program needs.</li> <li>Full team bios and partner letters of commitment included in appendix</li> </ul>

**Other Selection Factors: Diversity of awards, including multiple locations, climates, and program structures.**

- A widely diverse community (social, economic, racial); broad mix of sites (public, industry, business, residential, schools; projects in diverse urban areas; future expansion to 28 Port Authority counties includes rural/suburban.
- Diverse conservation/energy applications, and unique AEU Districts designed for maximum conservation using multiple technologies (geo/solar-thermal, LED, solar photovoltaic, wind) and retrofit models. A unique Bond Fund model; one that can be adopted anywhere sound management can be shown.

**Impact on reducing property owners' risk of loan default by reducing energy bills:** Based on audit-based weatherization, geo/solar thermal and LED/alt. lighting, even without solar/wind, utility bills can be reduced by 80+%, though financing may take 40% of the cost savings until paid, But more importantly the AEU is working with the City to buy, retrofit and sell back 100+ homes in foreclosure in 2010, to be sold back to the owner (land contract /lease-to-own). The NWOBF can help the city leverage buying far more homes-in-foreclosure, to retrofit and sell back.

**Adopt updated building codes (those with authority) by close of the FOA:** The City, on 10/2/07, adopted "a Green Policy to promote sustainable development strategies" calling for "examining all practices in regards to sustainability" and considering "environmental quality and green practice ...policy changes to encourage low impact development... and environmentally responsible growth ... when establishing land use policy and infrastructure development." New ordinances were adopted, leading to updated codes. Economic duress slowed the process.

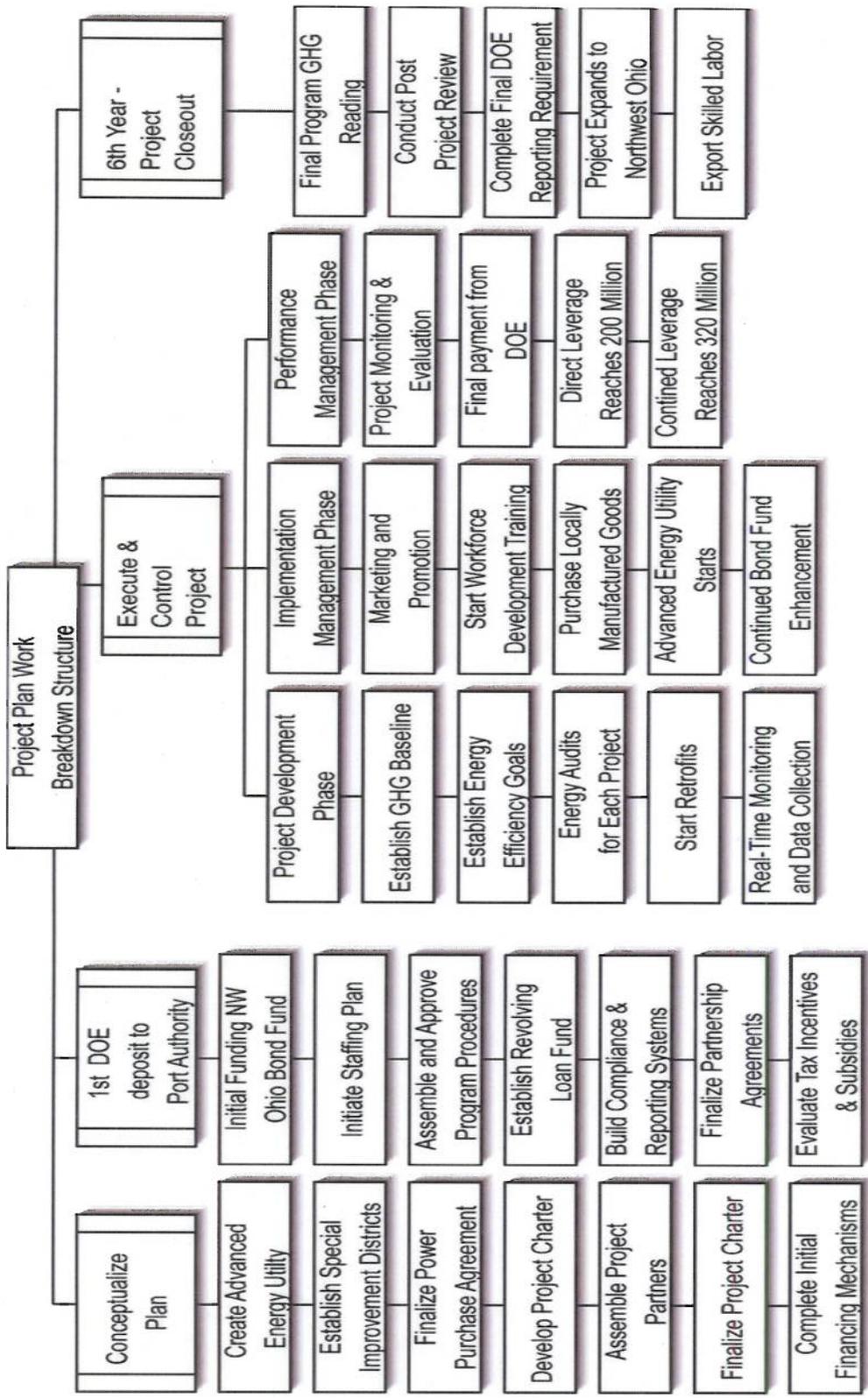
**Building energy codes for residential/commercial buildings meet/exceed most recent Standard, or equivalent:** City is working on these updates, and the AEU program will intensify the effort to complete this work.

**Promote/enhance ARRA objectives: job creation/preservation and economic recovery expeditiously.**

This is covered in depth as an answer to Item 6 Below: ARRA Information, which asks the same question.

**The impact on and benefits to a diversity of communities, including low-income and rural communities.**

- No direct cost to target audiences, inc. low income residential, due to using financing paid back by savings.
- 20-30% average monthly utility savings for residential customers on an ongoing basis.
- Federal tax credits resulting in an average of \$5,000-\$8,000 awarded per household.
- More than 6,000 projected direct jobs including many entry level career opportunities.
- Career and workforce development through committed partner agencies with incentives for displaced workers.



Project Spend Plan and Schedule

Activity Schedule	Q	Funding		State Date	End Date
		EECBG	Other		
Initiate Project	Pre	\$0.00	\$0.00	2/28/06	2/29/12
Create Advanced Energy Utility(AEU)	Pre	\$0.00	\$0.00		
Establish Special Improvement Dist	Pre	\$0.00	\$0.00		
Finalize Power Purchase Agreement	Pre	\$0.00	\$0.00		
Develop Project Charter	Pre	\$0.00	\$0.00		
Assemble Project Partners	Pre	\$0.00	\$0.00		
Formalize Financing Mechanisms	Pre	\$6,876,000.00	\$10,215,000.00		
Evaluate Tax Incentives and Subsidies	1st	\$0.00	\$0.00		
1st Deposit to LC Port Authority	1st	\$0.00	\$0.00		
Initiate Staffing Plan	1st	\$0.00	\$0.00		
Create Program Procedures	1st	\$0.00	\$0.00		
Establish Revolving Bond Fund	1st	\$0.00	\$0.00		
Build Compliance and Reporting Sys.	1st	\$0.00	\$0.00		
Finalize Partnership Agreements	1st	\$5,752,000.00	\$26,045,000.00		
Execute & Control Project	2nd	\$0.00	\$0.00		
Project Development Phase	2nd	\$0.00	\$0.00		
Establish Green House Gas Baseline	2nd	\$0.00	\$0.00		
Establish Energy Efficiency Goals	2nd	\$0.00	\$0.00		
Process AEU Financing	2nd	\$0.00	\$0.00		
AEU Enegineering & Planning	2nd	\$0.00	\$0.00		
Project Energy Audits	2nd	\$0.00	\$0.00		
Building Retrofits	2nd	\$5,862,000.00	\$31,910,000.00		
Marketing and Promotion	1st	\$0.00	\$0.00		
Workforce Development	1st	\$0.00	\$0.00		
Real-time Monitoring & Data Coll.	1st	\$0.00	\$0.00		
Performance Evaluation	3rd	\$0.00	\$0.00		
File Progress Report End Yr 1	3rd	\$0.00	\$0.00		
AEU Enegineering & Planning	3rd	\$0.00	\$0.00		
Project Energy Audits	3rd	\$0.00	\$0.00		
Building Retrofits	3rd	\$0.00	\$0.00		
Building Retrofits	3rd	\$0.00	\$0.00		
Marketing and Promotion	3rd	\$0.00	\$0.00		
Workforce Development	3rd	\$0.00	\$0.00		
Real-time Monitoring & Data Collection	3rd	\$5,964,000.00	\$31,910,000.00		
Performance Evaluation	4th	\$0.00	\$0.00		
File Progress Report End Yr 2	4th	\$0.00	\$0.00		
AEU Enegineering & Planning	4th	\$0.00	\$0.00		
Project Energy Audits	4th	\$0.00	\$0.00		
Building Retrofits	4th	\$0.00	\$0.00		
Marketing and Promotion	4th	\$0.00	\$0.00		
Workforce Development	4th	\$0.00	\$0.00		
Real-time Monitoring & Data Coll.	4th	\$4,366,000.00	\$39,625,000.00		
Performance Evaluation	5th	\$0.00	\$0.00		
File Progress Report End Yr 3	5th	\$0.00	\$0.00		
AEU Enegineering & Planning	5th	\$0.00	\$0.00		
Project Energy Audits	5th	\$0.00	\$0.00		
Building Retrofits	5th	\$0.00	\$0.00		
Marketing and Promotion	5th	\$0.00	\$0.00		
Workforce Development	5th	\$0.00	\$0.00		
Real-time Monitoring & Data Coll.	5th	\$860,000.00	\$39,265,000.00		
Performance Evaluation		\$0.00	\$0.00		
Progress Report Yr 2 to 6	6th - 12	\$21,730,000.00	\$542,852,500.00		
Project Closeout	Final	\$0.00	\$0.00		
Final GHG reading	Final	\$0.00	\$0.00		
Conduct Post Project Review	Final	\$0.00	\$0.00		
Final DOE Report Requirement	Final	\$0.00	\$0.00		
<b>Totals</b>		<b>\$51,410,000.00</b>	<b>\$721,822,500.00</b>		

Activity Schedule	Q	EECBG	Other	State Date	End Date
Project Management and Planning				2/28/06	2/29/12
Year 1					
Conceptualize Plan					
Create Advanced Energy Utility				3/1/10	3/31/10
Establish Special Improvement Dist.				3/10/10	9/21/10
Finalize Power Purchase Agreements				4/16/10	4/30/10
Develop Project Charter				4/23/10	5/2/10
Assemble Project Partner:				5/7/10	5/21/10
Finalize Project Charter				5/7/10	5/21/10
Formalize Financing Mechanism				6/4/10	6/18/10
Funds to Port Authority				6/15/10	6/18/10
Initial Funding NW OH Bond Fund				6/15/10	6/25/10
Initiate Staffing Plan				7/1/10	7/26/10
Assemble program Procedures				7/15/10	7/26/10
Establish Revolving Loan Fund				7/17/10	8/2/10
Build Compliance & Reporting Sys				7/17/10	8/2/10
Finalize Partnerships Agreements				8/2/10	8/13/10
Evaluate Tax Incentives & Sides				8/2/10	9/1/10
Execute & Control Project				8/30/10	
Project Development Phase				8/30/10	
Establish GHG Emmission Baseline				9/1/10	9/10/10
Establish Energy Efficiency Goals				9/10/10	9/17/10
Energy Audit For Each Project				9/17/10	
Start Retrofits				9/20/10	9/20/10
Real-Time Monitoring & Data Coll.				9/17/10	
Implementation Management Phase				9/17/10	
Marketing and Promotion				9/17/10	
Workforce Development Training				9/10/10	
Buy Locally Manufactured Goods				10/10/10	
Performance Management Phase				8/30/10	
Project Monitoring				8/30/10	
Final Payment from DOE				1/15/11	1/17/11
Leverage Reaches 200 Million				7/1/11	
Leverage Reaches 320 Million				5/15/12	
Project Closeout				2/29/12	
Final Program GHG Reading				2/29/12	
Conduct Post Project Review				3/1/12	
Final DOE Reporting Requirement				5/19/12	
Years 2 through 6 will continue on the same cycle as the first					

4. RELEVANCE & OUTCOMES/IMPACTS

Relevance to FOA objectives: utility of the outcomes; target community of beneficiaries: The FOA targeted:

- High leverage/long-term sustainability: The AEU will leverage 7:1 in hard retrofit funds (9:1 including Tax Credits and subsidies to owners) and the NWOBF is a proven long-term agent to assure an 8-20 year program.

- **Regional planning:** Almost all NW Ohio stakeholders are project partners; the utilities are in discussion. Energy conservation/renewable energy providers and manufacturers are included for long term business and job growth.
- **Make energy conservation 1<sup>st</sup> priority/verifiable savings:** The basis of the program is financing energy retrofits from the proven energy savings of known energy conservation practices, particularly the enormous proven savings from geo/solar thermal. Of the 1<sup>st</sup> \$230 Million spent on projects, \$160 Million is for conservation, before \$70 Million is spent on renewable energy. (Much of that is solar, as Toledo is a leading manufacturing.
- **Economy of scale:** With a 3 year, \$306 Million budget for energy conservation retrofitting and renewable energy, the program will achieve economies of scale in bringing down manufacturing and installation costs, job creation, in helping local energy-related businesses grow, and in the increases that will occur to the Bond Fund.
- **Fundamentally change energy markets:** Community-based utility companies will be a substantial change.
- **Create Jobs:** The program creates over 6000 energy economy jobs; re-channeling much of the \$2.7 Billion paid by Toledo residents spend for energy into jobs paid for by the energy savings and through enlightened financing. HGT estimates that the \$150 Million in geothermal alone will create 800 jobs that will last for years. T
- **Be a replicable model:** This program will be documented for all relevant parameters, especially job creation, energy savings, ROI and the growth of the Bond Fund. It is a program that many cities could implement, but it is one that all Port Authorities, which have the same bonding capacity, if not the Credit Enhancement to use their Funds as Toledo-Lucas County Port Authority, could use as a model for metropolitan regions and their Ports.
- **Achieve a high % of sites in target areas:** This program will have a monumental effect on energy consumption in Toledo, and the public impact should include great pride as well as a sense of purpose. Each project grew from a unique set of needs that these retrofits address each will have different relevance, outcomes and impacts.
- The project, as example, can also respond to some very old questions:

How to generate funds to get this financially distressed city on a path to financial stability?

A successful AEU generating funds from business and residents, while cutting their - and the city's - utility costs, will bring in needed funds in the short term, and set the city on a better financial path. Funds will greatly increase when project financing is paid off in 3-5 years, creating a large annual revenue stream, or further cost savings.

How to bring new development to a city with economic disadvantages for developers/business?

Toledo and Midwest cities have serious disadvantages. The public relations value of the AEU greatly conserving energy, reducing costs, and responding to public desire to control our energy future (and climate) are new tools for development personnel. AEU development dollars can make a difference in interesting the development community.

How to replace jobs lost in the near past?

Toledo area residents were very hard hit by job losses in the recent recession. This project has tangible jobs predicated on emerging but proven industries. Many are jobs that a family and a middle class can be re-built around: new 21<sup>st</sup> Century jobs, energy jobs, green jobs. While some of these new jobs require engineering and college degrees, many more rely on transferable skills from manufacturing and on entry-level workers, who can then rise as far as they want to in the new energy economy. The fact that someone can start out digging a geo-field, and grow into an installer with on the job training, then with tutoring and classes, become a heat-pump installer, an installation crew chief and then an ongoing service or maintenance provider, is just one of the many viable career path options. Similar paths also exist in the business-end of the AEU, or equipment manufacturing, for those with other skills. Many will start as paid apprentices, but have exponential opportunities for growth as new geo/solar thermal, wind, and solar systems are installed across Ohio and the US. Commitments from project partners to expand these AEU's will ensure that the jobs learned in this project continue to have applications for many years to come in emerging areas.

What can halt the loss of those "good paying jobs", the manufacturing jobs that stabilized our cities?

One answer is to develop markets that utilize the region's core competence. Northwest Ohio builds things. Recently, Toledo has been building alternative energy components. The AEU program will use those components close to home. Then, market development will halt the loss of good paying jobs! The increased product manufacturing and the skilled and unskilled jobs, with the management team and the project partners can make this a long-term program, retrofitting NW Ohio, while promoting the new manufacturing and workers trained here in Greater Toledo.

## 5. ROLE OF PARTICIPANTS

Role	Description	Approach
Board of Advisors	Sets standards, provides oversight	Diverse mix:public/private leaders
Executive Director	Day to day executive oversight	Led by Paul Toth, Executive Dir
Development Director	Day to day development oversight	Matt Sapara, Dev Dir
Administrative Manager	FTE Admin. for Retrofit Ramp Up Program	Included in budget
Program Manager	FTE managing program elements	Included in budget
Marketing Director	FTE managing marketing/ sales efforts	Included in budget
City of Toledo Managers	FTEs managing City of Toledo elements	Included in budget
AEU Managers	FTEs managing AEU Program elements	Included in budget
Financial Director	FTE managing program financial efforts	Included in budget
Provider Partners	Provide component, manufacturing support	Represented on Advisory Board
Training/Education Partners	Provide education, career/workforce support	Represented on Advisory Board
Energy Partners	Provide energy efficiency/service support	Represented on Advisory Board
Management/Mrktng Partners	Provide management and marketing support	Represented on Advisory Board
General support	Provide general support for program success	Represented on Advisory Board

## 6. RECOVERY (ARRA) ACT INFORMATION

This project defines the above criteria. It will begin within 30 days of the grant award, and put a growing number of people to work each month, as each project starts. The project design is to use the 80% of utility costs that now leave the area to buy fuel, and refocus them to provide jobs, economic development funds, and stability for the region.

### Defining the Need & Need for DOE Funds

It's hard to compete with so many cities, especially in the Midwest, whose fortunes and hope were dashed in the economic crisis. This region has a diverse racial, social and economic population with unemployment at 14%. While manufacturing was once the prime industry, it now employs fewer Toledoans than healthcare. The City and Lucas County are among the most economically challenged areas in Ohio and the US. So perhaps the best way to differentiate Toledo's need is to emphasize what can be accomplished, alongside what has been achieved by the City and the Port Authority, and how much can be done with a relatively small investment. Toledo is a world leader in solar energy manufacturing. Business has leveraged Toledo's legacy as the Glass Capitol to benefit the solar industry's need for glass substrate for panels. UT and Bowling Green have solar energy research grants Toledo is the world leader in thin film solar technology and Xunlight and First Solar have over 1000 manufacturing jobs, Toledo and Lucas County will be a showcase for energy conservation and renewable technologies. The city is also far along in LED retrofitting. LED manufacturer, SmashRay provides a high quality alternative to cheap foreign LED lighting.

Much of this was made possible by the NWOBF, which set aside \$6.5 million, 20 years ago, and has acted a non-profit community bank, putting city needs ahead of profit, and yet making substantial gains on its investments that are all plowed back into the community. Port Authority planned this new use of its NWOBF before this FOA. Then the plan relied heavily on ESCOs in a more limited funding mechanism against energy savings, taking many dollars in profit out of the community and many years to grow. Now Port Authority will use \$25 Million to start a program that will last for decades. Only \$9 Million in grant funds are not used for retrofits or renewable energy; mostly in Yrs 1/2 to start 2 new businesses; a) the company that will distribute \$350 Million for energy conservation and renewable energy project over 3 years and b) the AEU Company that will last as long as the City of Toledo, spurring economic development, new jobs, and energy efficiency through their customer's energy savings.

The great bulk of the grant (\$31 Million) will finance over \$200 Million in projects during the grant period, and remain in place for years to come, financing projects in 28 NW Ohio counties. Through a series of calculated finance mechanisms, the Port Authority will be able leverage DOE funds 9 to 1 (or more) over a 3 year period; and more than 20:1 over the long-term, expanding the program through all of the 28 NW Ohio counties in its jurisdiction. As Ports across the country have the same bonding capacity, if not the Credit Enhancement to use their Funds as Toledo-Lucas County Port Authority has done, this project could serve as a model for metropolitan regions and their Ports to work more cohesively together, for the greater benefit of all of their citizens as well as the country as a whole.

## PROJECT PARTNER LIST

### Project Name

Toledo Port Authority
Toledo City Council Resolution
Toledo Museum of Art
Toledo Public School - Waite High School
Lockrey Manufacturing
Macomber Bldg
Evergreen School Local School District
Toledo Zoo
ProMedica Health Care The Toledo Hospital
LMHA
University of Toledo
Old Orchard Residential Neighborhood
Children Services Building
County Family Services Building
Toledo Express Airport
Water Treatment Facility
Toledo "Red Lights"
Toledo Train Station
Sylvania School
Giant Industries
Advanced Distributed Generation-Jeep



December 10, 2009

Department of Energy

RE: Department of Energy Grant Application

To Whom It May Concern:

The Toledo-Lucas County Port Authority ("Port Authority") is applying for the Department of Energy Retrofit Ramp and General Information Fund for a \$40,000,000 grant in order to leverage and assist alternative energy projects while creating and retaining jobs in Northwest Ohio.

The Port Authority created the Northwest Ohio Bond Fund ("NWOBF") in 1988 as a financing tool and to offer long term fixed rates at investment rates to small and medium sized companies in Ohio. The program has been rated BBB+ for over 20 years but was recently downgraded to BBB- due to the economy in Ohio. The program has proven to be a success with over \$200,000,000 in bonds issued.

The Port Authority is the sole custodian of the NWOBF and all reserves for the program are held by the bond fund trustee, The Bank of New York Mellon Trust. The fund currently has over \$28,000,000 in its reserve fund. If the grant is awarded to the Port Authority, it intends to invest a portion of the funds into the reserve fund. It is anticipated that the additional reserves will help improve the current rating of the program at least back to its original rating of BBB+. This will also allow the Port Authority to leverage the grant funds as was done with the current program reserves and increase the number of bonds issued. Alternative energy projects will be a focus of the Port Authority and the NWOBF to issue bonds to finance these projects. As a result, these projects, which are historically difficult to finance, will have the opportunity to obtain long term financing at investment grade rates while creating and retaining jobs in Northwest Ohio.

In addition to the administration of the NWOBF, the Port Authority owns approximately 2,500 acres of land in Lucas County, Ohio. The main assets associated with this real estate portfolio is the seaport, airport and the train station

The Port Authority is excited about the opportunity to utilize these grant funds in a manner that would be beneficial to the community, the Department of Energy and the Port Authority. We believe this is a chance for alternative energy projects to grow and to leverage the funds that are currently available for these projects.

Sincerely,



Matt Sapara  
Director of Development

Department of Development  
Energy Efficiency and Conservation Block Grant: Competitive Solicitation  
D. Amstutz, ext. 2492

**RES. 664-09**

**Encouraging the Mayor to partner with the Toledo-Lucas County Port Authority for the purpose of preparing a grant application for funding from the Energy Efficiency and Conservation Block Grants (EECBG): Competitive Solicitation: Retrofit Ramp-up and General Innovation Fund Programs, and declaring an emergency.**

**SUMMARY & BACKGROUND:**

The Toledo-Lucas County Port Authority, working with the City of Toledo, several private companies and energy conservation experts will submit a grant application to the Department of Energy to implement the first phase of a community-wide Alternative Energy Conservation Strategy and Program. On June 9, 2009 City Council adopted Resolution 335-09 directing the Administration to commit \$50,000 from the Energy Efficiency and Conservation Block Grant to prepare a plan for a citywide energy efficiency retrofit program. While the Port Authority is bearing the expense to prepare this grant-funding request, the City, when their \$50,000 EECBG funding becomes available, agrees to participate in an effort to coordinate energy conservation and renewable energy projects for the community. This Resolution encourages the Administration to enter into a partnership with the Toledo - Lucas County Port Authority to prepare this grant application and to implement the program should the grant application be successful. A community-wide energy efficiency retrofit program has the potential to lower energy bills over the course of the program while improving the quality of Toledo's building stock. The cost of the improvements to the industrial, commercial and residential units will be paid for out of the savings realized from reduced energy bills. NOW, THEREFORE,

Be it resolved by the Council of the City of Toledo:

SECTION 1. That the Mayor is encouraged to enter into a partnership with the Toledo-Lucas County Port Authority for the purpose of preparing a grant application for funding from the Energy Efficiency and Conservation Block Grant: Competitive Solicitation: Retrofit Ramp-up and General Innovation Fund program.

SECTION 2. That this Resolution is hereby declared to be an emergency measure necessary for the immediate preservation of the health and welfare of the City of Toledo, and for the further reason that immediate effect to this legislation is necessary to meet the grant application deadline and that the more quickly the City plans for a city-wide energy efficiency program, the sooner the substantial benefits of such a program will be made available to property owners in the City of Toledo.

Vote on emergency clause: yeas 12, nays 0.

Adopted: DEC 8 2009, as an emergency measure: yeas 12, nays 0.

Attest: [Signature]  
Clerk of Council

[Signature]  
President of Council

Approved: \_\_\_\_\_

[Signature] 12/10/09  
Mayor

I hereby certify that the above is a true and correct copy of a Resolution adopted by Council DEC 8 2009.

Attest: [Signature]  
Clerk of Council

RECEIVED  
DEC 14 2009  
City of Toledo  
Environmental Services



December 9, 2009

Mr. Paul Toth  
Toledo-Lucas County Port Authority  
One Maritime Plaza  
Toledo, Ohio 43604

**Re: United States Department of Energy (DE-FOA-0000148) EECBG: Retrofit Ramp-Up and General Innovation Fund Program, Topic 1**

Dear Mr. Toth:

The purpose of this letter is to confirm the Toledo Museum of Art's commitment to support Toledo Lucas County Port Authority and their application for a U.S. Department of Energy grant to be used to implement the first phase of a District wide advanced energy and hybrid utility system.

The Toledo Museum of Art is pleased to be part of this unique project that will lay the groundwork for sustainable energy savings as part of an energy conservation strategy which will be implemented over a wide geographic area and become the catalyst for installing and implementing several alternative energy and alternative technology enhancements for Northwest Ohio and Southeastern Michigan businesses and residents.

Respectfully,

A handwritten signature in black ink, appearing to read "Rod Bigelow", written over a horizontal line.

Rod Bigelow  
Interim Executive Director & COO  
Toledo Museum of Art  
(419) 255-8000

December 11, 2009

Mr. Paul Toth  
Toledo-Lucas County Port Authority  
One Maritime Plaza  
Toledo, Ohio 43604

RE: United States Department of  
Energy (DE-FOA-0000148)  
EECBG: Retrofit Ramp-Up and  
General Innovation Fund  
Program, Topic 1  
Toledo Public Schools  
Building for Success Program  
Energy Efficient Design  
LEED Certification Goal

Dear Mr. Toth:

The Toledo Public School's Building for Success Program, Segment 4 Hawkins ES (59,157 s.f.) and Segment 5 projects are all designed for a minimum of LEED Silver Certification. Segment 5 consists of new replacement schools Beverly K-8 (90,618 s.f.), East Toledo K-8 (68,331 s.f.), Longfellow ES (43,957 s.f.), Marshall ES (45,217 s.f.), Old Orchard ES (46,722 s.f.), Pickett ES (43,562 s.f.), Riverside ES (59,157 s.f.), the Ottawa River ES Addition (28,833 s.f.) and the renovation of Jesup W. Scott HS (284,716 s.f.), originally opened in 1913 and a significant anchor for the Old West End of Toledo. Each of the projects is being designed with the emphasis on energy conservation.

## **MECHANICAL**

The mechanical systems for the Toledo Public Schools are being designed with systems and equipment of the latest technology. The heating, ventilating and air conditioning systems are using geothermal heat pump equipment, variable refrigerant flow equipment and ice storage equipment with high efficiency chillers to reduce energy usage and demand. All systems are controlled with direct digital controls that through an integration package combine all schools into one energy management and control system. Plumbing systems utilize low water usage fixtures and will incorporate solar panels for domestic water preheating.

## **ELECTRICAL**

The electrical systems for the Toledo Public Schools have been designed with the following energy conservation features.

1. Reduction in exterior site lighting power density lowers energy usage.
2. Exterior site luminaires selected are Dark Skies compliant.
3. Energy efficient lamp and ballast combination reduces lighting energy usage, and mechanical equipment sizing, and HVAC energy usage.

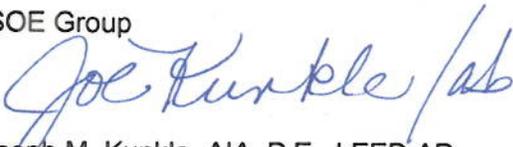
Mr. Paul Toth  
Toledo-Lucas County Port Authority  
December 11, 2009  
Page 2 of 2

4. Lighting control device for offices, small group rooms, and small toilets lowers energy usage.
5. Low voltage lighting relay system for gymnasium, media center, student dining, corridors, large toilets, locker rooms, and exterior lighting lowers energy usage.

Please feel free to contact me with any questions or if additional information is required.

Sincerely,

SSOE Group



Joseph M. Kunkle, AIA, P.E., LEED AP  
Vice President

cc: John Foley - TPS  
John Gilliland - TPS  
Ann Bruning – SSOE Group





December 11, 2009

Toledo-Lucas County Port Authority  
1 Maritime Plaza  
Toledo, OH 43604-1853

Re: Support for Grant DE-FOA-0000148

Dear Mr. Paul Toth:

The purpose of this letter is to confirm Lockrey Manufacturing's commitment to support the Toledo-Lucas County Port Authority in conjunction with the City of Toledo and Lucas County, and their application for a U.S. Department of Energy grant that will implement the first phase of a district wide advanced energy utility system.

This letter is to confirm information required for the submittal of the Federal grant in support of permanent energy efficiency and sustainable program creation. Lockrey Manufacturing will be providing the building and land to participate in the first phase of the hybrid utility system. The proposed site is located at 203 Matzinger Road, Toledo, Ohio and consists of multiple contiguous parcels totaling approximately eight acres.

Lockrey Manufacturing provides contract precision machining and fabrication services to customers in a wide variety of industries, including the agriculture, aviation, aerospace, military, medical and energy sectors. Our facility-- a portion of which dates back to the 1950s--provides 100,000 square feet of manufacturing and office space.

Our company has been part of Toledo for over 50 years. Ten years ago we became employee owned, seemingly a great partner opportunity for the Port Authority. An important facet of our success is the continual evaluation and implementation of equipment and technology that will reduce our energy consumption and allow us to utilize alternative production sources that result in reduced greenhouse gas emissions. The long-term benefits accruing from this project will assist in the retention of 70 jobs in Toledo, and it is anticipated that the competitive advantages realized will result in the creation of another 20 jobs within the next five years.

We are excited to be a part of such an important project that will lay the groundwork for substantial energy savings as part of an innovative Energy Conservation Strategy to be implemented over a wide geographic area, while also providing funds to install several alternative energy and alternative technology enhancements.

If you have any questions, please do not hesitate to contact me by phone at (419) 476-6572, extension 146 or via email at [craigl@lockreymanufacturing.com](mailto:craigl@lockreymanufacturing.com).

Sincerely,

A handwritten signature in blue ink, appearing to read "Craig LaHote". The signature is fluid and cursive, with the first name "Craig" being the most prominent part.

Craig LaHote  
VP of Sales and Marketing  
Lockrey Manufacturing, Inc.



Date 12/11/09

Toledo-Lucas County Port Authority  
1 Maritime Plaza  
Toledo, OH 43604-1853

Re: Support for Grant DE-FOA-0000148

Dear Mr. Paul Toth:

The purpose of this letter is to confirm Q3 Development Inc's commitment to support the Toledo-Lucas County Port Authority in conjunction with the City of Toledo and Lucas County, and their application for a U.S. Department of Energy grant that will implement the first phase of a district wide advanced energy utility system.

This letter is to confirm information required for the submittal of the Federal grant in support of permanent energy efficiency and sustainable program creation. Q3 Development Inc will be providing the building and land to participate in the first phase of the hybrid utility system. The proposed property is located at 1501 Monroe St, the building was constructed in 1937 and is approximately 232,264 sf. The parcel size is approximately 5 acres and the estimated redevelopment cost is \$16m. Q3 is of exploring the potential use of Geo-thermal technology as an alternative energy source. We are excited to be a part of such an important project that will lay the groundwork for substantial energy savings as part of an innovative Energy Conservation Strategy to be implemented over a wide geographic area, while also providing funds to install several alternative energy and alternative technology enhancements.

If you have any questions, please do not hesitate to contact me at 419-720-5252

Sincerely,

A handwritten signature in black ink, appearing to read 'James Jackson', is written over a horizontal line.

Name: James Jackson

Title CEO

Entity name: Q3 Development Inc

*A message from the superintendent....*



# *Evergreen Local Schools*

December 10, 2009

Toledo-Lucas County Port Authority  
1 Maritime Plaza  
Toledo, OH 43604-1853

Re: Support for Grant DE-FOA-0000148

Dear Mr. Paul Toth:

The purpose of this letter is to confirm Evergreen Local Schools' commitment to support the Toledo-Lucas County Port Authority in conjunction with the City of Toledo and Lucas County, and their application for a U.S. Department of Energy grant that will implement the first phase of a district-wide advanced energy utility system.

This letter is to confirm information required for the submittal of the Federal grant in support of permanent energy efficiency and sustainable program creation. Evergreen Local Schools will be providing the buildings and land needed to participate in the first phase of the hybrid utility system. Our school buildings consist of a high school building with 100,797 sq. feet, a middle school building with 65,186 sq. feet, and an elementary building with 68,000 sq. feet. In addition, we have a bus garage/vocational education building with 1350 sq. feet. Our district, which sits on 78 acres, would definitely benefit from this grant, with our ultimate goal of reducing our carbon footprint and providing a priceless educational benefit for our students, staff, and community.

Evergreen Local Schools are excited to be a part of such an important project that will lay the groundwork for substantial energy savings as part of an innovative Energy Conservation Strategy to be implemented over a wide geographic area, while also providing funds to install several alternative energy and alternative technology enhancements.

If you have any questions, please do not hesitate to contact me by phone at 419-644-3521 (ext. 1132), or through email (Evergreen\_S@nwoca.org).

Sincerely,

A handwritten signature in black ink that reads "Jim Wyse". The signature is written in a cursive, flowing style.

Jim Wyse, Superintendent  
Evergreen Local Schools