

## U.S. Department of Energy

**ENERGY EFFICIENCY AND CONSERVATION BLOCK GRANT (EECBG)  
PROGRAM PERFORMANCE REPORT**

Grant Number: EE0000750

Final Report: 

Grantee: Oakland County, Michigan

Activity: Act 5: New Airport Terminal Building - Energy Saving and Avoidance Construction Enhancements

Quarter: 07/01/2010 - 09/30/2010

Metric Activity: Government, School, Institutional Procurement

Status: Active

% of Work Complete: 45

## Activity Description:

This grant activity will assist in the construction of a new General Aviation Terminal and Administrative Building at the Oakland County International Airport. The new building will reuse the existing foundation, basement, and first floor slab of the existing building. The new building will incorporate LEED Certification practices. This grant activity helps provide for energy saving and avoidance construction enhancements above and beyond those required by local code. Grant Activity Details: 1. Hybrid HVAC system including geothermal field, \$189,700: Funding through this grant activity would provide the delta between a typical boiler and condenser HVAC system and the one designed for this facility. The system as designed provides for a vertical geothermal field with supplemental downsized high efficiency boiler and extensive zone and equipment automated controls. Estimated annual energy avoidance of 12,428 kWh per year or \$6,962 in utility costs is expected, as compared to the baseline ASHRAE 90.01 HVAC system to meet the current State of Michigan Energy Code. 2. Extensive building insulation, \$12,600: Extra roof deck insulation and triple glazed windows will be used in staff occupied areas of the building. Funding through this grant activity would provide the delta between typical insulation and double glazed windows. Estimated annual energy avoidance of 4,815 kWh per year or \$522.00 in utility costs compared to the baseline insulation requirements to meet the current State of Michigan Energy Code. 3. Energy efficient lighting systems, \$89,800: The funding in this activity will be used to incorporate lighting design enhancements to meet the recommended illumination levels by the IESNA and required lighting levels per state and national codes can be met. In addition, the goal is to reduce the connected lighting power use required by the state energy code by approximately 24%. Lighting design for the building consists of high performance fluorescent luminaires with the use of LED and metal halide sources for accent lighting. Lighting fixtures have been selected based on highest efficiency ratings. An automated light management system utilizing integrated occupancy sensors and daylight harvesting will be implemented as part of the lighting design. Estimated annual energy avoidance is 19,700 kWh to offset \$1,770 in utility cost. The funding request for interior lighting represents the delta between a standard lighting system and the system as planned for the facility which will exceed the codes and provide for the anticipated 24% reduction in energy cost. 4. Solar hot water heating: \$32,000: Install a roof top solar hot water collector to supply domestic hot water to the facility. The system would be the primary source of hot water supply for the building and would be backed up with a high efficiency on demand gas fired water heater. The estimated annual energy avoidance would be 77.5 Mcf per year or \$962 in utility costs compared to an 85% efficient storage type water heater. 5. Building commissioning services, \$75,900: Basic building commissioning services as required by LEED certification and the State of Michigan Energy Code are included in the funding for the construction of the facility. Funding through this grant activity would provide the delta between this work and a complete commissioning effort which would include extensive air balancing and calibration of all equipment, motors, and controls. The Lawrence Berkley National Laboratory reports that a 13% energy savings can be obtained through this effort.

## Key Dates:

DESCRIPTION	START DATE	COMPLETION DATE
Activity Planned	01/22/2010	07/01/2011
Activity Actual	01/22/2010	

**FUNDS SUMMARY**

## Activity Outlays by Source:

SOURCE/ CATEGORY	AGENCY/ DESCRIPTION	PLANNED	OUTLAYS TO DATE	% OF PLAN	07/01/2010- 09/30/2010			
Grant Funds								

## U.S. Department of Energy

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Activity: Act 5: New Airport Terminal Building - Energy Saving and Avoidance Construction Enhancements - continued -

Quarter: 07/01/2010 - 09/30/2010

Metric Activity: Government, School, Institutional Procurement

Status: Active

% of Work Complete: 45

## Activity Outlays by Source:

SOURCE/ CATEGORY	AGENCY/ DESCRIPTION	PLANNED	OUTLAYS TO DATE	% OF PLAN	07/01/2010- 09/30/2010			
Federal			231,772.95		231,772.95			
Total Grant Funds		400,800.00	231,772.95	58%	231,772.95			
<b>TOTAL OUTLAYS</b>		<b>400,800.00</b>	<b>231,772.95</b>	<b>58%</b>	<b>231,772.95</b>			

## Restrictive Fund Details by Category:

USE OF FUNDS	FEDERAL PLANNED	FEDERAL COSTS TO DATE	% OF TOTAL FEDERAL COSTS	07/01/2010- 09/30/2010			
Total Subgrants (Sub-Recipients)	0.00	0.00	0%	0.00			

## Subgrant Funds Details by Type:

SUBGRANT TYPE	SUBGRANTEE DESCRIPTION	PLANNED	OUTLAYS TO DATE	% OF TOTAL GRANT COSTS	07/01/2010- 09/30/2010			
Vendors								
	Frank Rewold & Son, Inc.		231,772.95		231,772.95			
Total Vendors			231,772.95		231,772.95			
<b>TOTAL SUBGRANTS</b>		<b>0.00</b>	<b>231,772.95</b>	<b>0%</b>				

**MILESTONES**

## Activity Milestone Status:

MILESTONE	PLANNED AMOUNT	TOTALS TO DATE	% OF PLAN	PLANNED START	ACTUAL START	ACTUAL COMPLETION	STATUS	07/01/2010- 09/30/2010			
Airport terminal construction / energy savings and avoidance components	508,250	231,773	46%	04/01/2010	04/01/2010		On-Time	231,773			

## U.S. Department of Energy

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Activity: Act 5: New Airport Terminal Building - Energy Saving and Avoidance Construction Enhancements - continued -

Quarter: 07/01/2010 - 09/30/2010

Metric Activity: Government, School, Institutional Procurement

Status: Active

% of Work Complete: 45

**METRICS**

## Required Metrics

JOB METRICS	PLANNED	%	TOTALS TO DATE	07/01/2010-09/30/2010			
<b>Hours Worked</b>			2,389.0000	2,389.0000			
Total hours worked through Non-Federal funds			0.0000	0.0000			
Total hours worked through Recovery Act funds			2,389.0000	2,389.0000			

METRIC ACTIVITY	METRICS	UNIT	TOTALS TO DATE	07/01/2010-09/30/2010			
<b>Obligations</b>							
Recovery Act funds obligated	Funds Obligated	Dollars	508,250.00	501,840.00			

METRIC ACTIVITY	METRICS	UNIT	TOTALS TO DATE	07/01/2010-09/30/2010			
<b>Government, School, Institutional Procurement</b>							
Units purchased, by type	Units purchased (Purchasables : Energy efficient HVAC units)	Count	8	8			

**INFRASTRUCTURE INVESTMENT**

Infrastructure Investment:

Does this activity contain an infrastructure investment? Yes

Rationale for Funding the Infrastructure Investment:

U.S. Department of Energy  
**ENERGY EFFICIENCY AND CONSERVATION BLOCK GRANT (EECBG)  
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Grantee: Oakland County, Michigan

Activity: Act 5: New Airport Terminal Building - Energy Saving and Avoidance Construction Enhancements - continued -

Quarter: 07/01/2010 - 09/30/2010

Metric Activity: Government, School, Institutional Procurement

Status: Active

% of Work Complete: 45

This activity helps provide for energy saving and avoidance construction enhancements above and beyond those required by local building and energy codes. Areas for the activity include:  
Hybrid HVAC system including geothermal field.  
Extensive building insulation.  
Energy efficient lighting systems.  
Solar hot water heating.  
Building commissioning services.

**QUALITATIVE DESCRIPTIONS**

Reporting Period: 07/01/2010- 09/30/2010

**Are you following the Plan? If not, describe the change in approach, and reasons for the change.**

Project progressing according to plan.

**What we expect to accomplish during the next period**

Installation of the heat pumps and other components of the HVAC system. Installation of the roof deck, windows, and outer walls of the building.

**Lessons Learned**

We have worked to improve communications between the architect, construction manager and the airport staff by including airport maintenance staff in the approval process for building components.

**Major Activities, Significant Results, Major Findings, and Key Outcomes**

Construction on the new building is well underway. Content covered by this activity is starting to become part of the project. Geothermal field installation was a major addition to the site. Mechanical components have been delivered and are being prepared for installation.

**What we planned to accomplish this period**

Installation of the geothermal field. Delivery of some mechanical components.

**Actual or Anticipated Problems or Delays and Corrective Action Plan**

Installation of the geothermal field was delayed by discovery of a high water table at the building site. While the field is above the water table, construction of foundations needed to progress before the field installation could be finalized. The delay was not significant to the installation of the field.

**Products Produced or Technology Transfer Activities Accomplished During the Reporting Period**

Eight heat pumps for the HVAC system were fabricated and delivered to the site for installation.

**Remarks**

None.

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Activity: Act 5: New Airport Terminal Building - Energy Saving and Avoidance Construction Enhancements - continued -

Quarter: 07/01/2010 - 09/30/2010

Metric Activity: Government, School, Institutional Procurement

Status: Active

% of Work Complete: 45

**APPROVALS**

<b>Reporting Period: 07/01/2010- 09/30/2010</b>				
APPROVER NAME	EMAIL ADDRESS	PHONE	STATUS	STATUS DATE
Beau Terhaar	beau.terhaar@go.doe.gov	(720) 356-1647	Approved	11/10/2010
Steven Stanford	stanfords@oakgov.com	(248) 858-0129	Submitted	10/25/2010

## U.S. Department of Energy

**ENERGY EFFICIENCY AND CONSERVATION BLOCK GRANT (EECBG)  
PROGRAM PERFORMANCE REPORT**

Grant Number: EE0000750

Final Report: 

Grantee: Oakland County, Michigan

Activity: Activity 1: Building and Facilities Energy Audits

Quarter: 07/01/2010 - 09/30/2010

Status: Active

Metric Activity: Building Energy Audits

% of Work Complete: 60

## Activity Description:

The County will, with assistance from an appropriate consulting contract firm, perform energy audits which will assist the County in selecting projects with a high return on investment (ROI) and to leverage County funds along with Utility, State, and other Federal grant monies. The following activities will be undertaken with the consultant: 1. Review the County's Energy Management Procedures for effectiveness and to assist with implementation. 2. Perform Phase I, preliminary walk-through, energy audits of County facilities and buildings for Facilities Management, Parks and Recreation, and the Water Resource Commissioner. Interviews with knowledgeable facilities personnel at each facility will help identify energy conservation opportunities. 3. Perform Phase II and III audits on projects identified during the Phase I audits as having energy saving opportunities with good ROI such that detailed project specification can be developed for bidding the work to be done under the individual projects. 4. The consultant will assist the County in meeting EECBG application documentation and reporting requirements. 5. With the assistance of the consultant, the County will utilize DTE and Consumers Power Utilities Energy Optimization funds to supplement and leverage block grant funding wherever possible. 6. The consultant will assist the County to combine projects of similar scope to take advantage of economies of scope and scale. Anticipated activity expenditures are as follows: Grant compliance and reporting: \$40,500 Phase I, II, and III energy audits: \$155,000

## Key Dates:

DESCRIPTION	START DATE	COMPLETION DATE
Activity Planned	01/27/2010	03/31/2011
Activity Actual	01/27/2010	

**FUNDS SUMMARY**

## Activity Outlays by Source:

SOURCE/ CATEGORY	AGENCY/ DESCRIPTION	PLANNED	OUTLAYS TO DATE	% OF PLAN	07/01/2010- 09/30/2010			
Grant Funds								
Federal			117,625.82		117,625.82			
Total Grant Funds		195,500.00	117,625.82	60%	117,625.82			
<b>TOTAL OUTLAYS</b>		<b>195,500.00</b>	<b>117,625.82</b>	<b>60%</b>	<b>117,625.82</b>			

## Restrictive Fund Details by Category:

USE OF FUNDS	FEDERAL PLANNED	FEDERAL COSTS TO DATE	% OF TOTAL FEDERAL COSTS	07/01/2010- 09/30/2010			
Total Subgrants (Sub-Recipients)	0.00	0.00	0%	0.00			

## U.S. Department of Energy

**ENERGY EFFICIENCY AND CONSERVATION BLOCK GRANT (EECBG)  
PROGRAM PERFORMANCE REPORT**

Grant Number: EE0000750

Final Report: 

Grantee: Oakland County, Michigan

Activity: Activity 1: Building and Facilities Energy Audits - continued -

Quarter: 07/01/2010 - 09/30/2010

Status: Active

Metric Activity: Building Energy Audits

% of Work Complete: 60

## Subgrant Funds Details by Type:

SUBGRANT TYPE	SUBGRANTEE DESCRIPTION	PLANNED	OUTLAYS TO DATE	% OF TOTAL GRANT COSTS	07/01/2010-09/30/2010			
TOTAL SUBGRANTS		0.00	0.00	0%				

**MILESTONES**

## Activity Milestone Status:

MILESTONE	PLANNED AMOUNT	TOTALS TO DATE	% OF PLAN	PLANNED START	ACTUAL START	ACTUAL COMPLETION	STATUS	07/01/2010-09/30/2010			
Building and Facility Energy Audits	155,000	117,626	76%	06/09/2010	06/09/2010		On-Time	117,626			
Energy Savings and EECBG Consulting	40,500	0	0%	06/01/2010	06/01/2010		On-Time	0			

**METRICS**

## Required Metrics

JOB METRICS	PLANNED	%	TOTALS TO DATE	07/01/2010-09/30/2010			
<b>Hours Worked</b>			1,212.0000	1,212.0000			
Total hours worked through Non-Federal funds			0.0000	0.0000			
Total hours worked through Recovery Act funds			1,212.0000	1,212.0000			

METRIC ACTIVITY	METRICS	UNIT	TOTALS TO DATE	07/01/2010-09/30/2010			
<b>Obligations</b>							
Recovery Act funds obligated	Funds Obligated	Dollars	193,615.00	0.00			

## U.S. Department of Energy

**ENERGY EFFICIENCY AND CONSERVATION BLOCK GRANT (EECBG)  
PROGRAM PERFORMANCE REPORT**

Grant Number: EE0000750

Final Report: 

Grantee: Oakland County, Michigan

Activity: Activity 1: Building and Facilities Energy Audits - continued -

Quarter: 07/01/2010 - 09/30/2010

Status: Active

Metric Activity: Building Energy Audits

% of Work Complete: 60

METRIC ACTIVITY	METRICS	UNIT	TOTALS TO DATE	07/01/2010-09/30/2010			
<b>Building Energy Audits</b>							
Building energy audits, by sector	Audits performed (Sectors : Public)	Count	35	35			
	Floor space audited (Sectors : Public)	Squarefeet	1,473,531	1,473,531			
	Auditor's projection of energy savings (Sectors : Public)	Kilowatt-Hours	956,321	956,321			

## User Specified Metrics (Optional)

METRIC ACTIVITY	METRICS	UNIT	TOTALS TO DATE	07/01/2010-09/30/2010			
<b>Obligations (cumulative thru 03/31/10)</b>							
Recovery Act funds obligated (cumulative thru 03/31/10)	Cumulative funds encumbered thru 03/31/10	Dollars	0.00	0.00			

**QUALITATIVE DESCRIPTIONS**

Reporting Period: 07/01/2010- 09/30/2010

**Are you following the Plan? If not, describe the change in approach, and reasons for the change.**

The consultant had intended to deploy three teams, one for each area: Facilities Management, Water Resource Commissioner, and Parks & Recreation. It was determined that the team doing the work for Facilities Management should also do the work for Parks and that this work wait until the Facilities audits were complete.

**What we expect to accomplish during the next period**

Completion of audits, final recommendation report, begin RFP process for actual retrofits.

**Lessons Learned**

Audit process takes longer than anticipated.

**Major Activities, Significant Results, Major Findings, and Key Outcomes**

U.S. Department of Energy  
**ENERGY EFFICIENCY AND CONSERVATION BLOCK GRANT (EECBG)  
PROGRAM PERFORMANCE REPORT**

Grant Number: EE0000750

Final Report: 

Grantee: Oakland County, Michigan

Activity: Activity 1: Building and Facilities Energy Audits - continued -

Quarter: 07/01/2010 - 09/30/2010

Status: Active

Metric Activity: Building Energy Audits

% of Work Complete: 60

Reporting Period: 07/01/2010- 09/30/2010

The preliminary results of the energy audits suggest that interior lighting retrofits and chiller replacements are the projects that should be undertaken by Facilities and that pump motors and motor controls are the projects that should be undertaken by Water Resources.

**What we planned to accomplish this period**

Energy audits will be conducted on the majority of County facilities and buildings under contract with the consultant.

**Actual or Anticipated Problems or Delays and Corrective Action Plan**

Parks was slow to pull together energy use data, which in part, caused the redirection indicated above to use the same audit crew for Facilities and Parks.

**Products Produced or Technology Transfer Activities Accomplished During the Reporting Period**

Consultant has shared preliminary audit results with Facilities Management.

**Remarks**

None.

**APPROVALS****Reporting Period:** 07/01/2010- 09/30/2010

APPROVER NAME	EMAIL ADDRESS	PHONE	STATUS	STATUS DATE
Beau Terhaar	beau.terhaar@go.doe.gov	(720) 356-1647	Approved	11/10/2010
Steven Stanford	stanfords@oakgov.com	(248) 858-0129	Submitted	10/25/2010

## U.S. Department of Energy

**ENERGY EFFICIENCY AND CONSERVATION BLOCK GRANT (EECBG)  
PROGRAM PERFORMANCE REPORT**

Grant Number: EE0000750

Final Report: 

Grantee: Oakland County, Michigan

Activity: Activity 2: Facilities Management Energy Program

Quarter: 07/01/2010 - 09/30/2010

Status: Active

Metric Activity: Building Retrofits

% of Work Complete: 0

## Activity Description:

This grant activity has five components: Building weather stripping program (Facilities Management): \$400,000; HVAC improvements (Facilities Management): \$700,000; Lighting Retrofits (Facilities Management); \$1,486,300; Pump optimizations (Water Resource Commissioner): \$750,000; Building envelope improvements: \$325,000 Energy Audits performed under the County's technical consultant services grant activity will help us to determine the best approach and priority for the projects we will pursue. 1. Weather Stripping: Oakland County Facilities Management operates over 40 County owned buildings encompassing nearly 2.0 million square feet. These buildings operate with an annual energy budget of over \$5.0 million dollars. We intend to restore building envelopes on several Oakland County-owned buildings by means of removal and replacement of caulking and weather stripping on the building's metal windows and doors. We anticipate saving between 4% and 7% of our heating and cooling costs by reducing the air leaks in our buildings. Envelope restoration will be done according to a prioritized ROI list. While this activity will not address every building within the County's inventory, it will establish an approach plan and permit us to address those buildings with the most significant potential energy savings. 2. HVAC Equipment Replacements: We have several inefficient chillers that need to be replaced because of high energy consumption and CFC's. The energy audits will help us identify and set priorities and it is anticipated that this activity will replace our largest energy users. We anticipate energy savings in the range of 15% to 35% with the installation of new units. 3. Funding in this activity will provide a significant opportunity for Oakland County Facilities to replace and retrofit existing office lighting with high efficiency T8 lamps and improved light fixtures. Work will be prioritized based on the results of the energy audits performed under activity 2 in our application. While the amount requested in the application will not fully cover the cost for lighting retrofits in all our buildings, it will permit the County to make significant reductions in energy consumption and provide us with a model for future work. 4. The Water Resource Commissioner's annual power cost is nearly \$2 Million for public water, wastewater and augmentation wells throughout Oakland County. This activity would act upon the energy audits and identify equipment replacement guidelines and conservation measures (lights, motion sensors, programmable thermostats, etc.). Additionally, since pumping typically accounts for 80 to 95% of the energy use, selected pump testing would be performed to determine overall pumping efficiency. In addition, a pump optimization program would be used to identify cost-effective pump combinations to meet the demands of the facilities. Typically, this type of analysis identifies savings in pump operations of 5% to 10% of the total energy use each year. Pump and motor modifications or the purchase of energy efficient pumps and equipment would be made based upon the results of the energy audit and ROI analysis. 5. This grant activity includes the replacement of windows at a park conference center facility. The Building was constructed in 1929 and utilizes a mix of original single pane and 30 year old deteriorated replacement windows. Windows would be replaced with new high efficiency double pane windows. Additional insulation will also be added to the building when the window work is being done. We anticipate a reduction of energy use in this building of 12% or more through this activity.

## Key Dates:

DESCRIPTION	START DATE	COMPLETION DATE
Activity Planned	08/01/2010	04/30/2012
Activity Actual		

U.S. Department of Energy  
**ENERGY EFFICIENCY AND CONSERVATION BLOCK GRANT (EECBG)  
 PROGRAM PERFORMANCE REPORT**

Grant Number: EE0000750

Final Report:

Grantee: Oakland County, Michigan

Activity: Activity 2: Facilities Management Energy Program - continued -

Quarter: 07/01/2010 - 09/30/2010

Status: Active

Metric Activity: Building Retrofits

% of Work Complete: 0

**MILESTONES**

Activity Milestone Status:

MILESTONE	PLANNED AMOUNT	TOTALS TO DATE	% OF PLAN	PLANNED START	ACTUAL START	ACTUAL COMPLETION	STATUS	07/01/2010-09/30/2010			
RFP Process for energy retrofit projects.	40,000	0	0%	10/01/2010	10/01/2010		On-Time	0			

**METRICS**

Required Metrics

METRIC ACTIVITY	METRICS	UNIT	TOTALS TO DATE	07/01/2010-09/30/2010			
<b>Obligations</b>							
Recovery Act funds obligated	Funds Obligated	Dollars	0.00	0.00			

METRIC ACTIVITY	METRICS	UNIT	TOTALS TO DATE	07/01/2010-09/30/2010			
<b>Building Retrofits</b>							
Buildings retrofitted, by sector	Buildings retrofitted (Sectors : Public)	Count	0	0			
	Square footage retrofitted (Sectors : Public)	Squarefeet	0	0			

**QUALITATIVE DESCRIPTIONS**

Reporting Period: 07/01/2010- 09/30/2010

<b>Are you following the Plan? If not, describe the change in approach, and reasons for the change.</b>
Audits have taken longer than expected.

U.S. Department of Energy  
**ENERGY EFFICIENCY AND CONSERVATION BLOCK GRANT (EECBG)  
PROGRAM PERFORMANCE REPORT**

Grant Number: EE0000750

Final Report: 

Grantee: Oakland County, Michigan

Activity: Activity 2: Facilities Management Energy Program - continued -

Quarter: 07/01/2010 - 09/30/2010

Status: Active

Metric Activity: Building Retrofits

% of Work Complete: 0

Reporting Period: 07/01/2010- 09/30/2010

**What we expect to accomplish during the next period**

We anticipate having a number of RFPs out for bidding or in for contracting during the next quarter.

**Lessons Learned**

The work involved in the audits was more extensive than first anticipated by both the County and consultant. As a result, the consultant has not always been able to deliver results when promised.

**Major Activities, Significant Results, Major Findings, and Key Outcomes**

Preliminary audits are pointing us in the direction of lighting retrofits and chiller replacements for Facilities Management as expected. Water Resources audits are pointing towards pump motors and motor controls.

**What we planned to accomplish this period**

Awaiting results of energy audits to determine what projects will be developed for implementation.

**Actual or Anticipated Problems or Delays and Corrective Action Plan**

Working to streamline RFP and bidding process to move forward on retrofits as quickly as possible.

**Products Produced or Technology Transfer Activities Accomplished During the Reporting Period**

Preliminary audit results have been reviewed by Facilities Management.

**Remarks**

None

**APPROVALS****Reporting Period:** 07/01/2010- 09/30/2010

APPROVER NAME	EMAIL ADDRESS	PHONE	STATUS	STATUS DATE
Beau Terhaar	beau.terhaar@go.doe.gov	(720) 356-1647	Approved	11/10/2010
Steven Stanford	stanfords@oakgov.com	(248) 858-0129	Submitted	10/25/2010

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**ENERGY EFFICIENCY AND CONSERVATION BLOCK GRANT (EECBG)  
PROGRAM PERFORMANCE REPORT**

Grant Number: EE0000750

Final Report: 

Grantee: Oakland County, Michigan

Activity: Activity 3: Airport Site Lighting LED Replacements

Quarter: 07/01/2010 - 09/30/2010

Status: Active

Metric Activity: Government, School, Institutional Procurement

% of Work Complete: 0

## Activity Description:

Funding in this grant activity will provide replacement LED lamp heads for all existing exterior HID light poles on the entrance boulevard drive, parking lot, and pedestrian entrance way to the terminal. The new terminal building is being located on the foundation of the existing building so site amenities are being retained. Existing HID lamp heads will be replaced but the existing poles and structures will be retained. The County plans to use a Michigan produced product designed for retrofit applications ([www.xusledlighting.com](http://www.xusledlighting.com)). Lighting controls are an integrated part of the approach with these lamp heads. Photocell and timer technology will be used to control lighting from the building's energy management system. The fixtures also incorporate a thermal controlled cooling fan to assist with lamp light. LED site lighting will consume approximately 50% less energy than traditional HID lamp sources.

## Key Dates:

DESCRIPTION	START DATE	COMPLETION DATE
Activity Planned	01/22/2010	07/01/2011
Activity Actual	01/22/2010	

**FUNDS SUMMARY**

## Activity Outlays by Source:

SOURCE/ CATEGORY	AGENCY/ DESCRIPTION	PLANNED	OUTLAYS TO DATE	% OF PLAN	07/01/2010- 09/30/2010			
Grant Funds								
Federal			9,320.00		9,320.00			
Total Grant Funds		224,300.00	9,320.00	4%	9,320.00			
TOTAL OUTLAYS		224,300.00	9,320.00	4%	9,320.00			

## Restrictive Fund Details by Category:

USE OF FUNDS	FEDERAL PLANNED	FEDERAL COSTS TO DATE	% OF TOTAL FEDERAL COSTS	07/01/2010- 09/30/2010			
Total Subgrants (Sub-Recipients)	0.00	0.00	0%	0.00			

## Subgrant Funds Details by Type:

SUBGRANT TYPE	SUBGRANTEE DESCRIPTION	PLANNED	OUTLAYS TO DATE	% OF TOTAL GRANT COSTS	07/01/2010- 09/30/2010			

U.S. Department of Energy  
**ENERGY EFFICIENCY AND CONSERVATION BLOCK GRANT (EECBG)  
 PROGRAM PERFORMANCE REPORT**

Grant Number: EE0000750

Final Report:

Grantee: Oakland County, Michigan

Activity: Activity 3: Airport Site Lighting LED Replacements - continued -

Quarter: 07/01/2010 - 09/30/2010

Status: Active

Metric Activity: Government, School, Institutional Procurement

% of Work Complete: 0

Subgrant Funds Details by Type:

SUBGRANT TYPE	SUBGRANTEE DESCRIPTION	PLANNED	OUTLAYS TO DATE	% OF TOTAL GRANT COSTS	07/01/2010-09/30/2010			
Vendors								
	Neumann Smith Architecture		9,320.00		9,320.00			
Total Vendors			9,320.00		9,320.00			
<b>TOTAL SUBGRANTS</b>		0.00	9,320.00	0%				

**MILESTONES**

Activity Milestone Status:

MILESTONE	PLANNED AMOUNT	TOTALS TO DATE	% OF PLAN	PLANNED START	ACTUAL START	ACTUAL COMPLETION	STATUS	07/01/2010-09/30/2010			
Installation of LED street lighting.	75,000	0	0%	10/01/2010	10/01/2010		On-Time	0			
Design and engineering services for LED street lighting.	10,000	9,320	93%	06/01/2010	07/01/2010	09/30/2010	On-Time	9,320			

**METRICS**

Required Metrics

JOB METRICS	PLANNED	%	TOTALS TO DATE	07/01/2010-09/30/2010			
<b>Hours Worked</b>			96.0000	96.0000			
Total hours worked through Non-Federal funds			0.0000	0.0000			
Total hours worked through Recovery Act funds			96.0000	96.0000			

## U.S. Department of Energy

**ENERGY EFFICIENCY AND CONSERVATION BLOCK GRANT (EECBG)  
PROGRAM PERFORMANCE REPORT**

Grant Number: EE0000750

Final Report: 

Grantee: Oakland County, Michigan

Activity: Activity 3: Airport Site Lighting LED Replacements - continued -

Quarter: 07/01/2010 - 09/30/2010

Status: Active

Metric Activity: Government, School, Institutional Procurement

% of Work Complete: 0

METRIC ACTIVITY	METRICS	UNIT	TOTALS TO DATE	07/01/2010- 09/30/2010			
<b>Obligations</b>							
Recovery Act funds obligated	Funds Obligated	Dollars	81,537.00	72,217.00			

**INFRASTRUCTURE INVESTMENT**

Infrastructure Investment:

Does this activity contain an infrastructure investment? Yes

Rationale for Funding the Infrastructure Investment:

Installation of LED street lighting will save energy and reduce maintenance costs for the entrance road and parking lot at the Airport.
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**QUALITATIVE DESCRIPTIONS**

Reporting Period: 07/01/2010- 09/30/2010

<b>Are you following the Plan? If not, describe the change in approach, and reasons for the change.</b>
Proceeding as planned.
<b>What we expect to accomplish during the next period</b>
Installation should be completed in the next quarter.
<b>Lessons Learned</b>
Capital cost for LED light fixtures is dropping as manufacturing ramps up and demand increases. Technology continues to evolve.
<b>Major Activities, Significant Results, Major Findings, and Key Outcomes</b>
Sample lamp installed for evaluation and approved by the Engineer and Airport.
<b>What we planned to accomplish this period</b>
Bid review and acceptance. Contracting the work. Scheduling the installation of the Street Lighting.
<b>Actual or Anticipated Problems or Delays and Corrective Action Plan</b>
Appropriate lamp arm needed to be specified and accepted by the Airport. Reusing existing poles.
<b>Products Produced or Technology Transfer Activities Accomplished During the Reporting Period</b>

## U.S. Department of Energy

**ENERGY EFFICIENCY AND CONSERVATION BLOCK GRANT (EECBG)  
PROGRAM PERFORMANCE REPORT**

Grant Number: EE0000750

Final Report: 

Grantee: Oakland County, Michigan

Activity: Activity 3: Airport Site Lighting LED Replacements - continued -

Quarter: 07/01/2010 - 09/30/2010

Status: Active

Metric Activity: Government, School, Institutional Procurement

% of Work Complete: 0

Reporting Period: 07/01/2010- 09/30/2010

Sample lamp examined under various weather conditions and approved for use on the project.

**Remarks**

None.

**APPROVALS****Reporting Period:** 07/01/2010- 09/30/2010

APPROVER NAME	EMAIL ADDRESS	PHONE	STATUS	STATUS DATE
Beau Terhaar	beau.terhaar@go.doe.gov	(720) 356-1647	Approved	11/10/2010
Steven Stanford	stanfords@oakgov.com	(248) 858-0129	Submitted	10/25/2010

U.S. Department of Energy

**ENERGY EFFICIENCY AND CONSERVATION BLOCK GRANT (EECBG)  
PROGRAM PERFORMANCE REPORT**

Grant Number: EE0000750

Final Report:

Grantee: Oakland County, Michigan

Activity: Activity 6: New Airport Terminal Building - Transportation Alternatives

Quarter: 07/01/2010 - 09/30/2010

Status: Active

Metric Activity: Transportation

% of Work Complete: 5

Activity Description:

This grant activity will assist in the construction of a new General Aviation Terminal and Administrative Building at the Oakland County International Airport. The new building will reuse the existing foundation, basement, and first floor slab of the existing building. The new building will incorporate LEED Certification practices and will be the County's first LEED registered building. This grant activity will provide the local community and traveling public an alternative approach to extensive travel for business meetings. Grant Activity Details: Members of the public, local business community, or visitors by air that need a private space to conduct business will be able to use one of three private office rooms or the conference center by checking in or through advanced registration with Airport administration. The airport's central location within the County and easy access off main roads make it a good location for promotion of limited commutes rather than extensive travel within the region. It is the County's intent to promote these spaces and equipment as a means to alternative travel for meetings. Keeping travel local or conducting business through video conference will promote better use of resources and time. As the airport is already a regional and international transportation terminal, the County wants to promote it as a terminal for alternative modes of "e-transportation" as well. The rooms will be available at little or no cost to the user for daily use and will only seek to recoup direct cost technology fees. Funding through this grant activity will provide the energy efficiency and technology delta for the construction of three telecommuter offices and a conference center. The County is providing the funding to construct the office and conference spaces. Energy efficiency upgrades will include insulation, windows, lighting and lighting controls all exceeding current energy codes in efficiency. The offices will also showcase locally produced LED lighting replacements for fluorescent fixtures. Within the three offices, technology promoting connectivity will include internet through WiFi and webcam enabled large flat screen wall mounted monitors. Within the Conference Center teleconference audio visual equipment would enable communications with other equally equipped facilities anywhere in the world. Making this technology available to the local business community and to the business community that uses the airport by air will create opportunities for limiting or eliminating local as well as air travel throughout the region. WiFi service will also be available throughout the main lobby of the building. This grant activity will also fund an in-building web based display system that will provide users with the energy savings and GHG avoidance values for use of the space. Being web based, the information will also be available on the County's web site.

Key Dates:

DESCRIPTION	START DATE	COMPLETION DATE
Activity Planned	01/22/2010	07/01/2011
Activity Actual	01/22/2010	

**MILESTONES**

Activity Milestone Status:

MILESTONE	PLANNED AMOUNT	TOTALS TO DATE	% OF PLAN	PLANNED START	ACTUAL START	ACTUAL COMPLETION	STATUS	07/01/2010-09/30/2010			

U.S. Department of Energy  
**ENERGY EFFICIENCY AND CONSERVATION BLOCK GRANT (EECBG)  
 PROGRAM PERFORMANCE REPORT**

Grant Number: EE0000750

Final Report:

Grantee: Oakland County, Michigan

Activity: Activity 6: New Airport Terminal Building - Transportation Alternatives - continued -

Quarter: 07/01/2010 - 09/30/2010

Status: Active

Metric Activity: Transportation

% of Work Complete: 5

**MILESTONES**

Activity Milestone Status:

MILESTONE	PLANNED AMOUNT	TOTALS TO DATE	% OF PLAN	PLANNED START	ACTUAL START	ACTUAL COMPLETION	STATUS	07/01/2010-09/30/2010			
Design, provide, and install A/V systems for the conference center and telecommuting offices.	75,000	0	0%	11/01/2010				0			
Design and engineer two electric vehicle charging stations for public use at the terminal building.	5,000	0	0%	10/01/2010	10/01/2010		On-Time	0			

**METRICS**

Required Metrics

METRIC ACTIVITY	METRICS	UNIT	TOTALS TO DATE	07/01/2010-09/30/2010			
<b>Obligations</b>							
Recovery Act funds obligated	Funds Obligated	Dollars	3,640.00	0.00			

**INFRASTRUCTURE INVESTMENT**

Infrastructure Investment:

Does this activity contain an infrastructure investment? Yes

Rationale for Funding the Infrastructure Investment:

U.S. Department of Energy  
**ENERGY EFFICIENCY AND CONSERVATION BLOCK GRANT (EECBG)  
PROGRAM PERFORMANCE REPORT**

Grant Number: EE0000750

Final Report: 

Grantee: Oakland County, Michigan

Activity: Activity 6: New Airport Terminal Building - Transportation Alternatives - continued -

Quarter: 07/01/2010 - 09/30/2010

Metric Activity: Transportation

Status: Active

% of Work Complete: 5

Members of the public, local business community, or visitors by air that need a private space to conduct business will be able to use one of three private office rooms or the conference center by checking in or through advanced registration with Airport administration. The airport's central location within the County and easy access off main roads make it a good location for promotion of limited commutes rather than extensive travel within the region.

**QUALITATIVE DESCRIPTIONS**

Reporting Period: 07/01/2010- 09/30/2010

<b>Are you following the Plan? If not, describe the change in approach, and reasons for the change.</b>
Work on the RFP will begin in November. We hope to have bids back after the first of the year.
<b>What we expect to accomplish during the next period</b>
RFP for A/V design and installation services should be out for bid by the end of this period. Design and engineering work for the charging stations should be complete and bid by the end of this period.
<b>Lessons Learned</b>
Changing user needs can be accommodate through the design process when parties involved are willing to make compromises.
<b>Major Activities, Significant Results, Major Findings, and Key Outcomes</b>
None to date.
<b>What we planned to accomplish this period</b>
Issue an RFP for A/V design and installation services for the meeting space and telecommuting offices.
<b>Actual or Anticipated Problems or Delays and Corrective Action Plan</b>
The local police department asked to establish a mini-station in the building and airport administration had concerns over the location of the telecommuting offices. As a result revisions were made to the lower level floor plan to accommodate the offices outside of the administrative suite. In doing so, the telecommuting offices are now closer to the elevator and entrance to the building.
<b>Products Produced or Technology Transfer Activities Accomplished During the Reporting Period</b>
Decision was made to add two electric vehicle charging stations to the project.
<b>Remarks</b>
None.

**APPROVALS**

## U.S. Department of Energy

**ENERGY EFFICIENCY AND CONSERVATION BLOCK GRANT (EECBG)  
PROGRAM PERFORMANCE REPORT**

Grant Number: EE0000750

Final Report: 

Grantee: Oakland County, Michigan

Activity: Activity 6: New Airport Terminal Building - Transportation Alternatives - continued -

Quarter: 07/01/2010 - 09/30/2010

Metric Activity: Transportation

Status: Active

% of Work Complete: 5

**APPROVALS**

<b>Reporting Period: 07/01/2010- 09/30/2010</b>				
APPROVER NAME	EMAIL ADDRESS	PHONE	STATUS	STATUS DATE
Beau Terhaar	beau.terhaar@go.doe.gov	(720) 356-1647	Approved	11/10/2010
Steven Stanford	stanfords@oakgov.com	(248) 858-0129	Submitted	10/25/2010

## U.S. Department of Energy

**ENERGY EFFICIENCY AND CONSERVATION BLOCK GRANT (EECBG)  
PROGRAM PERFORMANCE REPORT**

Grant Number: EE0000750

Final Report: 

Grantee: Oakland County, Michigan

Activity: Activity 4: New Airport Terminal Building - Renewable Energy Enhancements

Quarter: 07/01/2010 - 09/30/2010

Status: Active

Metric Activity: Government, School, Institutional Procurement

% of Work Complete: 18

## Activity Description:

This grant activity will assist in the construction of a new General Aviation Terminal and Administrative Building at the Oakland County International Airport. The new building will reuse the existing foundation, basement, and first floor slab of the existing building. The new building will incorporate LEED Certification practices. Funding in this activity will showcase several locally produced emerging energy technologies. Photovoltaic roofing on low slope roof surfaces: \$72,700 Photovoltaic roofing on metal pitched slope roof surfaces: \$112,600 Wind turbine for electrical generation: \$60,700 Solar powered building signage: \$25,300

1. Photovoltaic Roofing on low slope roof surfaces: Install a 5.8KW photovoltaic system on the low slope portion of the building. System shall consist of crystalline silicon modules in a fixed mounted array. The array shall be oriented for optimal energy production (42 degree tilt at 180 degrees azimuth) and located to avoid shading from roof top equipment and adjacent building structural elements. The array shall be mounted on permanent structural supports that raise the bottom of the array 24" above the roof surface to allow re-roofing without removing the PV modules. The PV array shall be connected to the building electrical system through an UL1741 grid-tie inverter that is approved by the local utility. Estimated annual energy production: 6,700 kWh to offset approximately \$603 in utility costs. Project to utilize US manufactured PV panels (Evergreen,Solarworld), Michigan manufactured components (Evergreen Solar - string ribbon wafers used in the panels), and US manufactured inverters (PV Powered).

2. Photovoltaic roofing on metal pitched slope roof surfaces: Install approximately 10KW building integrated photovoltaic laminate system on the sloped standing seam roof. System shall consist of triple-junction amorphous silicon panels design specifically for integration to a metal roof system (UniSolar PVL). The panels will be installed at a 24 degree tilt, 204 degree azimuth with little or no shading expected. The PV array shall be connected to the building electrical system through an UL1741 grid-tie inverter that is approved by the local Utility. Estimated annual energy production: 11,900 Kwh to offset approximately \$1,071 in utility cost. The system will utilize Michigan manufactured PV laminate (Unisolar) and US manufactured inverters (PV Powered).

3. Wind turbine for electrical generation: Install a single vertical shaft Windspire wind turbine as manufactured by Michigan based Mariah Power. Estimated annual production for the unit is 1,100 kWh to offset \$99 in utility costs. The system will utilize US manufactured inverters (PV Powered).

4. Solar powered building signage: This installation will include roof mounted photocells and storage batteries located inside the building to provide power to LED signage on the face of the building. Signage will activate with a photocell and draw down from the storage batteries before switching over to grid supplied power when needed. Signage will identify the building and public entrance.

## Key Dates:

DESCRIPTION	START DATE	COMPLETION DATE
Activity Planned	01/22/2010	07/01/2011
Activity Actual	01/22/2010	

**FUNDS SUMMARY**

## Activity Outlays by Source:

SOURCE/ CATEGORY	AGENCY/ DESCRIPTION	PLANNED	OUTLAYS TO DATE	% OF PLAN	07/01/2010- 09/30/2010			
Grant Funds								
Federal			61,284.80		61,284.80			
Total Grant Funds		271,300.00	61,284.80	23%	61,284.80			
<b>TOTAL OUTLAYS</b>		<b>271,300.00</b>	<b>61,284.80</b>	<b>23%</b>	<b>61,284.80</b>			

## U.S. Department of Energy

**ENERGY EFFICIENCY AND CONSERVATION BLOCK GRANT (EECBG)  
PROGRAM PERFORMANCE REPORT**

Grant Number: EE0000750

Final Report: 

Grantee: Oakland County, Michigan

Activity: Activity 4: New Airport Terminal Building - Renewable Energy Enhancements - continued -

Quarter: 07/01/2010 - 09/30/2010

Metric Activity: Government, School, Institutional Procurement

Status: Active

% of Work Complete: 18

## Restrictive Fund Details by Category:

USE OF FUNDS	FEDERAL PLANNED	FEDERAL COSTS TO DATE	% OF TOTAL FEDERAL COSTS	07/01/2010-09/30/2010			
Total Subgrants (Sub-Recipients)	0.00	0.00	0%	0.00			

## Subgrant Funds Details by Type:

SUBGRANT TYPE	SUBGRANTEE DESCRIPTION	PLANNED	OUTLAYS TO DATE	% OF TOTAL GRANT COSTS	07/01/2010-09/30/2010			
Vendors								
	Frank Rewold & Son, Inc.		24,546.13		24,546.13			
	Neumann Smith Architecture		36,738.67		36,738.67			
Total Vendors			61,284.80		36,738.67			
<b>TOTAL SUBGRANTS</b>		0.00	36,738.67	0%				

**MILESTONES**

## Activity Milestone Status:

MILESTONE	PLANNED AMOUNT	TOTALS TO DATE	% OF PLAN	PLANNED START	ACTUAL START	ACTUAL COMPLETION	STATUS	07/01/2010-09/30/2010			
Design and engineering services for renewable energy components in the new airport terminal building.	49,650	36,739	74%	03/01/2010	03/01/2010		On-Time	36,739			

U.S. Department of Energy  
**ENERGY EFFICIENCY AND CONSERVATION BLOCK GRANT (EECBG)  
 PROGRAM PERFORMANCE REPORT**

Grant Number: EE0000750

Final Report:

Grantee: Oakland County, Michigan

Activity: Activity 4: New Airport Terminal Building - Renewable Energy Enhancements - continued -

Quarter: 07/01/2010 - 09/30/2010

Metric Activity: Government, School, Institutional Procurement

Status: Active

% of Work Complete: 18

**MILESTONES**

Activity Milestone Status:

MILESTONE	PLANNED AMOUNT	TOTALS TO DATE	% OF PLAN	PLANNED START	ACTUAL START	ACTUAL COMPLETION	STATUS	07/01/2010-09/30/2010			
Installation of renewable energy components on the airport terminal building project.	280,000	24,546	9%	07/01/2010	07/01/2010		On-Time	24,546			

**METRICS**

Required Metrics

JOB METRICS	PLANNED	%	TOTALS TO DATE	07/01/2010-09/30/2010			
<b>Hours Worked</b>			636.0000	636.0000			
Total hours worked through Non-Federal funds			0.0000	0.0000			
Total hours worked through Recovery Act funds			636.0000	636.0000			

METRIC ACTIVITY	METRICS	UNIT	TOTALS TO DATE	07/01/2010-09/30/2010			
<b>Obligations</b>							
Recovery Act funds obligated	Funds Obligated	Dollars	317,015.37	267,365.37			

**INFRASTRUCTURE INVESTMENT**

Infrastructure Investment:

Does this activity contain an infrastructure investment? Yes

U.S. Department of Energy  
**ENERGY EFFICIENCY AND CONSERVATION BLOCK GRANT (EECBG)  
PROGRAM PERFORMANCE REPORT**

Grant Number: EE0000750

Final Report: 

Grantee: Oakland County, Michigan

Activity: Activity 4: New Airport Terminal Building - Renewable Energy Enhancements - continued -

Quarter: 07/01/2010 - 09/30/2010

Metric Activity: Government, School, Institutional Procurement

Status: Active

% of Work Complete: 18

Rationale for Funding the Infrastructure Investment:

Investment in these systems will provide a local platform to showcase renewable technologies fabricated and installed by local companies.  
Reduction in the building energy costs will result as well.

**QUALITATIVE DESCRIPTIONS**

Reporting Period: 07/01/2010- 09/30/2010

<b>Are you following the Plan? If not, describe the change in approach, and reasons for the change.</b>
Yes, Rewold awarded sub-contracts to provide these systems during this quarter.
<b>What we expect to accomplish during the next period</b>
Installation of the roof deck (not funded by EECBG) should permit the installation of the PV systems late in the quarter. Building conduits for systems wiring will go in during this period.
<b>Lessons Learned</b>
Design documentation can take longer than anticipated. Product reviews are an important part of the process and should not be rushed.
<b>Major Activities, Significant Results, Major Findings, and Key Outcomes</b>
Sub-contracts awarded, steel reinforcements for roof mounted photovoltaic units installed.
<b>What we planned to accomplish this period</b>
Bid results for the various systems will be reviewed and proposals accepted for fabrication and installation.
<b>Actual or Anticipated Problems or Delays and Corrective Action Plan</b>
Structural engineers were slow to process design changes for additional steel requirements for the roof deck for support of the PV structures. Issues with which applied PV system would work best with the standing seam roof and the coordination of warranty issues between the roof manufacturer and the PV manufacture had to be resolved.
<b>Products Produced or Technology Transfer Activities Accomplished During the Reporting Period</b>
Steel for PV installed on roof deck.
<b>Remarks</b>
None.

**APPROVALS**

<b>Reporting Period:</b> 07/01/2010- 09/30/2010				
APPROVER NAME	EMAIL ADDRESS	PHONE	STATUS	STATUS DATE

U.S. Department of Energy  
**ENERGY EFFICIENCY AND CONSERVATION BLOCK GRANT (EECBG)  
PROGRAM PERFORMANCE REPORT**

Grant Number: EE0000750

Final Report: 

Grantee: Oakland County, Michigan

Activity: Activity 4: New Airport Terminal Building - Renewable Energy Enhancements - continued -

Quarter: 07/01/2010 - 09/30/2010

Metric Activity: Government, School, Institutional Procurement

Status: Active

% of Work Complete: 18

**APPROVALS**

<b>Reporting Period: 07/01/2010- 09/30/2010</b>				
APPROVER NAME	EMAIL ADDRESS	PHONE	STATUS	STATUS DATE
Beau Terhaar	beau.terhaar@go.doe.gov	(720) 356-1647	Approved	11/10/2010
Steven Stanford	stanfords@oakgov.com	(248) 858-0129	Submitted	10/25/2010