



PLANNING COMMISSION MEETING AGENDA SPECIAL/STUDY MEETING

500 W. Big Beaver
Troy, MI 48084
(248) 524-3364
www.troymi.gov
planning@troymi.gov

Michael W. Hutson, Chair, and Mark Maxwell, Vice Chair
Donald Edmunds, Philip Sanzica, Robert Schultz, Thomas Strat
John J. Tagle, Lon M. Ullmann and Mark J. Vleck

March 23, 2010

7:30 P.M.

Council Board Room

1. ROLL CALL
2. APPROVAL OF AGENDA
3. MINUTES March 9, 2010 Regular Meeting
4. PUBLIC COMMENTS – For Items Not on the Agenda
5. BOARD OF ZONING APPEALS (BZA) REPORT
6. DOWNTOWN DEVELOPMENT AUTHORITY (DDA) REPORT
7. PLANNING AND ZONING REPORT

STUDY ITEMS

8. RAPID ENERGY ASSESSMENT PROCESS (REAP) – Presentation by CWA
9. COMPREHENSIVE ZONING ORDINANCE UPDATE (ZOTA 236) - Energy and Natural Features Protection Article

OTHER BUSINESS

10. PUBLIC COMMENTS – Items on Current Agenda
11. PLANNING COMMISSION COMMENTS

ADJOURN

NOTICE: People with disabilities needing accommodations for effective participation in this meeting should contact the City Clerk by e-mail at clerk@troymi.gov or by calling (248) 524-3317 at least two working days in advance of the meeting. An attempt will be made to make reasonable accommodations.

The Regular Meeting of the Troy City Planning Commission was called to order by Chair Hutson at 7:30 p.m. on March 9, 2010, in the Council Chamber of the Troy City Hall.

1. ROLL CALL

Present:

Donald Edmunds
 Michael W. Hutson
 Mark Maxwell
 Philip Sanzica
 Robert Schultz
 Thomas Strat
 John J. Tagle
 Lon M. Ullmann

Absent:

Mark J. Vleck

Also Present:

R. Brent Savidant, Acting Planning Director
 Christopher Forsyth, Assistant City Attorney
 Zachary Branigan, Carlisle/Wortman Associates, Inc.
 Kathy L. Czarnecki, Recording Secretary

2. APPROVAL OF AGENDA

Resolution # PC-2010-03-015

Moved by: Schultz
 Seconded by: Maxwell

RESOLVED, To approve the Agenda as prepared.

Yes: All present (8)
 Absent: Vleck

MOTION CARRIED

3. MINUTES

Resolution # PC-2010-03-016

Moved by: Edmunds
 Seconded by: Strat

RESOLVED, To approve the minutes of the February 23, 2010 Special/Study meeting as prepared.

Yes: All present (8)
 Absent: Vleck

MOTION CARRIED

4. PUBLIC COMMENTS – Items not on the Agenda

There was no one present who wished to speak.

PUBLIC HEARING

5. ZONING ORDINANCE TEXT AMENDMENT (File Number ZOTA 242) – Agricultural Uses in R-1A through R-1E (One Family Residential) Districts

Mr. Savidant briefly reviewed the intent of the proposed Zoning Ordinance Text Amendment relating to agricultural uses in residential districts.

Mr. Ullmann asked how the proposed restrictions would affect a person who owns an existing farm. He expressed concern that the proposed regulations would hinder and potentially eliminate farming business.

Mr. Forsyth addressed the following:

- Michigan Right to Farm Act.
- Michigan Generally Accepted Agricultural & Management Practices (GAAMPs).
- Papadelis (Telly's Nursery) vs City of Troy lawsuit.
- Intent of proposed ZOTA.
 - Provide regulations, not prohibit farms.
 - Farmers could seek relief through Board of Zoning Appeals (BZA) process.
- Telly's Nursery.
 - Continue as legal, non-conforming use.
 - Existing structures remain in place.
 - Business to continue as usual.
 - Future expansion(s) would require compliance with new regulations.

Mr. Strat said adoption of the proposed ZOTA is not reasonable, and making a farmer expend money and time to go before the BZA for relief does not make sense.

PUBLIC HEARING OPENED

No one was present to speak.

PUBLIC HEARING CLOSED

Mr. Ullmann voiced concern that the proposed language might result in potential lawsuits against the City in the future. He asked which governmental entities would be under the proposed restrictions.

Mr. Savidant said the proposed amendment would affect only new construction of agriculture structures in the City within the R-1A through R-1E zoning districts. He indicated the applicability of the proposed ZOTA is limited; noting the number of farm sites within the City is few. Mr. Savidant addressed accessory structures with respect to the proposed ZOTA, and noted there would be no negative effects on existing structures until such time that damage might occur beyond a certain percentage and reconstruction of the buildings is considered.

Mr. Ullmann said the proposed ZOTA is unduly restrictive, and broadly restricts buildings on acreage property.

Mr. Savidant addressed the legal requirements for publication of Public Hearing notices.

Resolution # PC-2010-03-017

Moved by: Sanzica

Seconded by: Schultz

RESOLVED, That the Planning Commission hereby recommends to the City Council that Articles 4, 10, and 40 of Chapter 39 of the Code of the City of Troy, pertaining to the regulation of agricultural uses in One Family Residential Zoning Districts, be amended as printed on the proposed Zoning Ordinance Text Amendment.

Yes: Edmunds, Hutson, Maxwell, Sanzica, Schultz, Tagle

No: Strat, Ullmann

Absent: Vleck

MOTION CARRIED

Mr. Ullmann said the proposed ZOTA is unduly restrictive. Mr. Ullmann said small buildings on large pieces of property would be unduly restrictive and the few residents in the agricultural business could lose structural buildings, potentially putting them out of business.

Mr. Strat agreed the proposed ZOTA is overly restrictive and unreasonable.

PRELIMINARY SITE PLAN

6. **PRELIMINARY SITE PLAN REVIEW (File Number SP 958)** – Proposed Service Station/Convenience Store, Southeast corner of Rochester and Wattles, Section 23, Currently Zoned H-S (Highway Service) District

Mr. Savidant said the application was inadvertently accepted as a preliminary site plan application when it requires Special Use Approval. At the time of the discovery, Mr. Savidant reported it was too late to meet the deadlines to publish a

Public Hearing notice for the meeting this evening. He announced a Public Hearing is scheduled for the April 13, 2010 Regular meeting.

Mr. Savidant noted the intent in keeping the item on tonight's agenda is to address the preliminary site plan as submitted. Mr. Savidant addressed the property as relates to the condemnation proceeding and Rochester Road widening.

Mr. Branigan reviewed the Preliminary Site Plan application and cited the following site plan deficiencies:

- Obtain Planning Commission modification for the proposed two (2) parking space deficiency. Mr. Branigan noted support for the deviation in parking.
- Provide locations and details for ADA ramps along perimeter sidewalks and barrier-free parking spaces. This can be done prior to Final Site Plan approval.
- Obtain a determination from the Planning Commission that a 30-inch wall is suitable in lieu of a greenbelt; also to extend the wall to the southwest at the corner and remove the 2-foot section of wall at the southwest corner of the property.

Mr. Branigan said it is recommended to approve the Preliminary Site Plan conditioned upon the outstanding items as noted in the Consultant report, indicating the petitioner cannot go forward until Special Use Approval is granted.

Mr. Schultz asked if there were any comments or recommendations from the City Traffic Engineer or Oakland County Road Commission (OCRC) relating to the two curb cuts on Rochester Road.

Mr. Savidant replied that the City Traffic Engineer approved the site plan as proposed.

Mr. Edmunds brought attention to the fact that the plant materials list does not correlate with the tree and plant designations on the landscape plan.

Tom August, attorney, 121 W. Long Lake Road, Bloomfield Hills, was present to represent the petitioner. Mr. August introduced Leo Gonzales, project manager, and Sam Beydoun, principal property owner. Mr. August addressed specifics relating to the Special Use Approval.

Leo D. Gonzales, CRS Commercial Real Estate Services, 10741 Fellow Hills, Plymouth, briefly addressed rooftop mechanical screening and construction materials.

Discussion followed on:

- Traffic circulation.
- Landscaping; i.e., additional plantings, irrigation, correlation of plant materials list to designations on landscape plan.
- Screen wall; i.e., materials, location, length.
- Uniformity/continuity in construction material.
- External lighting (photo metrics submission).
- Sealed drawings, as required.
- Rooftop mechanical screening.
- Signage.

Planning Commission members agreed to defer action on the item this evening.

The petitioner will address items as discussed and present the preliminary site plan at the April 13, 2010 Regular meeting, at which time the petitioner will also be seeking Special Use Approval.

Mr. Savidant sought a straw vote from members on acceptance of the proposed two-space parking space reduction.

OTHER BUSINESS

7. CITY OF TROY CODE ENFORCEMENT PRESENTATION

Paul Evans, Inspection Supervisor, gave a presentation on the role and function of the Code Enforcement department.

He addressed:

- Various violations handled.
- Staff.
- Technological improvements.
- Tracking system.
- Field efficiency.
- Image, goals and objectives.

Mr. Evans opened the floor for questions.

Mr. Maxwell asked if the department has seen an increase in commercial vehicles within the past year.

Mr. Evans said there appears to be no increase in the number of commercial vehicles, but a report could be run for actual counts.

Mr. Sanzica asked what data management system the City uses to track code enforcement matters.

Mr. Evans replied the system is “Equalizer”, noting different modules are used for various departments.

Mr. Strat asked if the Planning Commission members could do anything to assist the Code Enforcement department.

Mr. Evans said the department would welcome notification of any violations members might see as they drive around the City.

8. PUBLIC COMMENTS – Items on Current Agenda

There was no one present who wished to speak.

9. PLANNING COMMISSION COMMENTS

Mr. Savidant thanked Mr. Evans for a great presentation.

Mr. Maxwell addressed the special millage election.

The Regular Meeting of the Planning Commission adjourned at 8:46 p.m.

Respectfully submitted,

Michael W. Hutson, Chair

Kathy L. Czarnecki, Recording Secretary

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DATE: March 17, 2010
TO: Planning Commission
FROM: R. Brent Savidant, Acting Planning Director
SUBJECT: RAPID ENERGY ASSESSMENT PROCESS (REAP) – Presentation by CWA

Representatives of Carlisle/Wortman Associates, Inc. will be at the March 23, 2010 Special/Study meeting to present a synopsis of the draft Rapid Energy Assessment Process (REAP) and City of Troy Energy Efficiency and Conservation Strategy. The findings presented will be considered during the next agenda item, Energy and Natural Features Protection Article

Attachments:

1. Troy Draft Rapid Energy Assessment Process Report (excerpt).
2. City of Troy facility energy costs (Excel spread sheet and pie charts).
3. Troy's Energy Efficiency and Conservation Strategy (a Federal form required for our Energy Efficiency and Conservation Block Grant)

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City of Troy

DRAFT EXCERPT



Carlisle/Wortman 2010

Rapid Energy Assessment Process Report

Acknowledgments

Mayor

Louise E. Schilling

City Council

Martin Howrylak, Mayor Pro-Tem

Robin E. Beltramini

Dane Slater

Maureen McGinnis

Wade Fleming

Mary Kerwin

City Manager

John Szerlag

Acting Assistant City Manager/Economic Development Services

Mark Miller, AICP, PCP

Assistant City Manager/Financial Administration

John Lamerato

City Staff

Brent Savidant, AICP, PCP, Acting Planning Director

Steve Pallotta, Director of Building Operations

Planning Consultant

Carlisle/Wortman Associates

Ann Arbor and Clarkston, Michigan

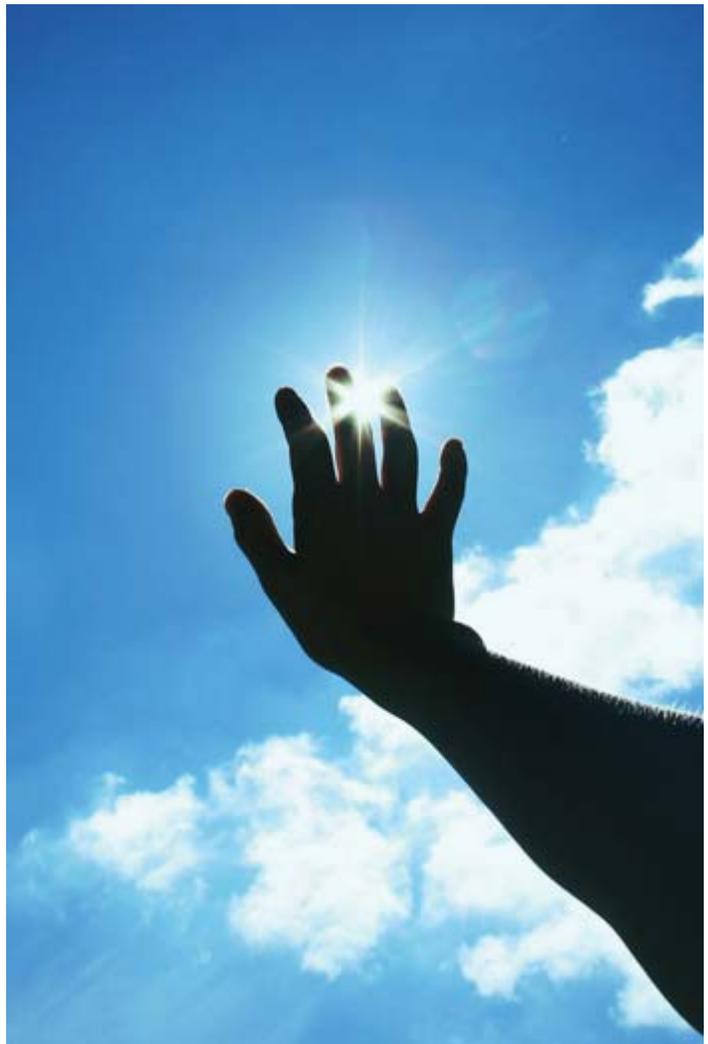


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8. Recommended Measures
9. Measure Scoring
10. Implementation
11. Energy Efficiency and Conservation Strategy

Introduction

Energy has become a critical consideration for Michigan communities. As revenues decline, awareness of energy issues has grown, and communities compete for the best businesses and dollars, the most successful communities have made energy a primary component of their policy decisions. In order to support this shift, the City of Troy has implemented the Rapid Energy Assessment Process© (R.E.A.P.). The R.E.A.P will allow Troy to identify the most immediate energy-related areas in which the City can improve, and obtain the best benefit from any available grant funding. The R.E.A.P. will also help Troy effectively develop a conservation strategy and begin quantifying energy use to make the City more energy efficient over time by providing a baseline against which energy usage and savings can be compared. In many cases, the measures identified by the R.E.A.P. process may provide savings to the Troy without any special funding whatsoever.



Elements of REAP

The Rapid Energy Assessment Process includes the following assessment programs in four areas, each listed with summarized areas for which the City will be assessed:

1. Renewable energy

- Identification of alternative energy obstacles in local regulations
- Identification the potential for wind, solar, and other alternative energy sources
- Analysis of existing use of energy and the source of that energy for municipalities

2. Policy

- Analysis of existing planning, zoning, and other regulations for energy issues
- Energy audit for internal operations and efficiency
- Review of local codes for obstacles to green building and site development

3. Building conservation

- Analyze existing municipal buildings for energy issues
- Review existing building stock and infrastructure in a general survey to identify retrofit potential

4. Transportation

- Review local transportation options and municipal fleets for energy efficiency
- Analyze access to transit and non-motorized options

This document will contain the results and recommendations from the assessment process. The document will provide a list of recommended projects that require various levels of time and resources. Recommended projects will be prioritized according to several factors:

1. Funding availability: What activities are eligible for existing grant funding?
2. Feasibility and data needs: How close is Troy to being able to complete this project? Is the necessary information available?
3. Required personnel: Can the project start and be completed with available personnel?
4. Potential benefit: What is the benefit of this project, and does it justify the expense or effort when reviewed against other similar projects?

Ultimately, this document will distill the many options available into a smaller, more immediate collection of projects that can and should be pursued. Estimated timeframe and budgets for these final recommended lists of projects will be provided. Also, the document will conclude with a summary of the City's Energy Efficiency and Conservation Block Grant Program Energy Efficiency and Conservation Strategy, whose projects were largely based on the analysis undertaken developing this report.

The R.E.A.P. Report will serve as Troy's long-term plan for sustainable development and energy efficiency to ensure that Troy residents are able to realize the significant quality of life benefits that are on offer. The City of Troy feels it has a new opportunity for sustainable practices that enhance the community and allow it to compete in the national marketplace for 21st century jobs and workers. The connection between a sustainable economy and sustainable building and living practices has never been more urgent or apparent.

EECBG and the Energy Efficiency and Conservation Strategy Summary

EECBG block grants were intended to provide money for projects such as developing energy conservation strategies and programs to conserve energy used in transportation, revising zoning requirements to promote energy efficiency, and developing non-motorized infrastructure and plans. The receipt of this money obligated the community to prepare an Energy Efficiency and Conservation Strategy (EECS) within 120 days from the time of the award, a short time frame. The R.E.A.P. allows communities to quickly assess energy efficiency potential and largely meet the submittal requirements for the EECS.



The Importance of the Energy and Land Use Connection

Local units of government have largely relied on state and federal programs to tackle the energy issues of today. However, as the EECBG demonstrates, it is the local units of government that the federal and state governments are relying on to actually execute energy efficiency and conservation programs. Local governments are not trained or equipped to quickly adapt to this new way of thinking and this new responsibility.

However, it clear that long-term energy efficiency and conservation must be clearly and directly tied to land use planning and community development. Compact, smart-growth, walkable communities are intrinsically energy efficient. The use of transit and non-motorized transportation are tremendous energy savers. Green building, low-impact development, transit-oriented



REAP ProcessFlowchart

1:

Communities take inventory of efficiency of their facilities/ community in preparation of effectively using money and qualifying for grants.

2:

Initial data is analyzed by the R.E.A.P. project team.

3:

R.E.A.P. project team develops an in depth critique of 60 weeks of potential energy savings.

4:

Communities develop and implement an Energy Conservation Strategy

5:

Reduction in costs, CO2, air pollution

6:

The City is now well positioned for energy funding

Energy Measures _internal measures

RENEWABLE ENERGY

- I.RE.1.a Solar energy generation on government facilities: photovoltaic
- I.RE.1.b Solar energy generation on government facilities: thermal
- I.RE.2.a Wind energy generation on government facilities: on site generation
- I.RE.2.b Wind energy generation on government facilities: utility scale generation
- I.RE.3 Landfill gas collection
- I.RE.4 Hydroelectric generation
- I.RE.5 Geothermal heating and cooling for government facilities

POLICY

- I.P.1 Create an energy program manager position
- I.P.2 Create an energy efficiency improvement revolving loan fund
- I.P.3.a Operations: adopt a municipal operations energy practices policy
- I.P.3.b Operations: conduct regular departmental energy reports and training
- I.P.4.a Conduct comprehensive municipal operation energy tracking
- I.P.4.b Adopt comprehensive quantitative operation energy reduction targets
- I.P.5 Purchase renewable energy credits
- I.P.6 Participate in utility provider renewable energy programs
- I.P.7 Obtain membership with national organizations to reduce energy use
- I.P.8 Consider alternative scheduling (such as a 4 day work week)
- I.P.9 Implement technologies for remote work and meeting capabilities
- I.P.10 Implement hoteling concept in municipal facilities for multi-use capability
- I.P.11 Adopt LEED requirement policy for new municipal buildings

BUILDING CONSERVATION

- I.BC.1 Reduce heat island effect of municipal facilities
- I.BC.2 Reduce light pollution for municipal facilities
- I.BC.3 Install native and water efficient landscaping at municipal facilities
- I.BC.4 Reduce wastewater at municipal facilities (reduce, reuse, recycle)
- I.BC.5 Reduce potable water use at municipal facilities
- I.BC.6 Obtain energy audits for municipal facilities
- I.BC.7 Install automatic lighting controls
- I.BC.8 Install building insulation
- I.BC.9 Incorporate passive solar heating
- I.BC.10 Install new natural daylighting elements (solar tubes, skylights, etc.)
- I.BC.11 Install energy efficient light fixtures
- I.BC.12 Install natural ventilation systems
- I.BC.13 Purchase energy efficient appliances
- I.BC.14 Increase efficiency of heating and cooling systems
- I.BC.15 Adopt a policy to purchase local materials
- I.BC.16a Adopt a policy to use 100% recycled paper
- I.BC.16a Adopt a policy to use environmentally friendly office supplies

TRANSPORTATION

- I.T.1 Encourage and incentivise alternative transportation commuting (bicycle, walking, transit, etc.)
- I.T.2 Encourage and incentivise carpooling
- I.T.3 Replace police vehicles with more fuel efficient units
- I.T.4 Purchase diesel powered vehicles and equipment (fuel with biodiesel)
- I.T.5 Provide hybrid or alternative fuel vehicles for municipal use
- I.T.6 Adopt average fuel economy standard
- I.T.7 Provide priority parking for hybrid or alternative fuel vehicles
- I.T.8 Provide secure, sheltered bicycle storage and showers for employees
- I.T.9 Conduct life-cycle analyses when purchasing new vehicles

FEASIBILITY	DATA/ ANALYSIS NEEDS	FUNDING AVAILABILITY	REQUIRED PERSONNEL	POTENTIAL BENEFIT
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CITY OF TROY RAPID ENERGY ASSESSMENT PROCESS

Energy Measures _external measures

RENEWABLE ENERGY

- E.RE.1 Permit and create incentives for solar energy generation
- E.RE.2 Permit and create incentives for geothermal energy generation
- E.RE.3.a Permit and create incentives for wind energy on-site
- E.RE.3.b Permit and create incentives for wind energy for utility scale applications

POLICY

- E.P.1 Adopt zoning provisions promoting energy efficiency
- E.P.2 Adopt master plan provisions promoting energy efficiency
- E.P.3 Organize urban gardening programs

BUILDING CONSERVATION

- E.BC.1.a Waste reduction: encourage construction waste recycling
- E.BC.1.b Provide recycling facilities
- E.BC.2 Develop a green building guideline guidebook or manual for the community
- E.BC.3 Implement expedited permitting for green building projects
- E.BC.4 Provide density bonuses for energy efficient development
- E.BC.5 Provide education for and promotion of builders developing green building competency and proficiency

TRANSPORTATION

- E.T.1 Adopt a non-motorized transportation plan
- E.T.2 Install bike lanes
- E.T.3 Increase public transit ridership with incentives and improved facilities
- E.T.4 Create incentives for transit-oriented developments





Measures + Scores

Measure Worksheets

_internal
measures

Solar Energy Generation: Photovoltaic

Solar photovoltaic (PV) energy is a renewable form of electricity produced from converted sun energy. In most applications, solar PV is tied directly into a building's electrical system through a DC to AC inverter. Relative to other forms of electricity, both conventional and renewable, solar PV is not always cost effective. However, solar PV has huge potential due to its ease of operation, lack of moving parts, and its appropriateness for nearly any site. Solar PV remains an important part of future renewable energy development. As advances in solar PV continue to reduce the marginal cost of electricity it produces, solar PV will continue to increase in use across the world.

Feasibility

Solar energy has less of a payback in Michigan than it could in climates with a greater degree of sunny days. However, given the efficiency gains in modern solar PV equipment, the payback for PV installations is more realistic than ever. That being said, solar is a proven technology that may not be ideally suited in small installations in Michigan when compared with other renewable systems.

3

Data/Analysis Needs

12-24 months of electric bills for each facility to determine appropriate PV installation size. Facility site plans, roof pitch, orientation, nearby obstructions, etc. required to site potential PV equipment.

5

I.RE.1.a

Solar Energy Generation: Thermal

Solar thermal energy is a renewable energy that converts sun energy into heat. Typically, solar thermal technology is used to heat a building's hot water, and reduce the amount of natural gas or electricity that would normally fulfill this function. It is an efficient, inexpensive form of renewable energy which is easy to implement in new construction or in retrofits. Financially, solar thermal systems make the most sense in buildings that heat a lot of water, such as pools, firehouses and correctional facilities, or buildings that use water for radiant heat. They are an especially effective investment when a building is due for an old water heater or boiler replacement.

Much like solar PV, solar thermal equipment is limited by the overall solar energy we have access to in a predominantly cloudy northern environment. Solar thermal equipment, however, is efficient in ways that solar PV is not. For instance, the heat is immediately transmitted from the sun to the water, where in a PV installation, the solar energy is transmitted into electricity which is then used to power something else, creating a "middleman."

3

12-24 months of water bills for each facility and summer months' natural gas bills. With summer gas bills, one can remove natural gas used to heat buildings from the equation and determine the potential energy savings for a solar thermal installation.

5

I.RE.1.b

Funding Availability

Solar PV qualifies for tax breaks (30% of cost) for individuals, with no maximum. EECBG entitlement communities can use grant money to purchase Solar Photovoltaic equipment or use money from an energy Revolving Loan Fund. Funding may also be available from service-specific revenue sources as they are reinvested. For instance, parking fees are reinvested in PV powered parking meter stations.

5

Personnel/Resources

Facility utility bills can be furnished by the finance department or by a facilities manager. Maintenance personnel will also be necessary to help determine the age of existing equipment and a possible site for the solar collector (typically on the roof of a commercial or office building). Solar PV equipment must be installed by a qualified contractor.

4

Potential Benefit/ Impact

While expensive, Solar PV is deployable in most situations. Without noisy moving parts, it is suitable for rural, suburban or urban settings. Even grey places, such as Portland, Oregon, have extensively deployed PV systems. While a PV system takes up to 40 years for simple pay-back, it offers a visible commitment to renewable energy and can serve as a demonstration for the public.

3

Total Score: 20

Solar thermal qualifies for tax breaks for individuals, up to \$3000. EECBG entitlement communities can use grant money to purchase Solar thermal equipment or use money from an energy Revolving Loan Fund.

5

Facility utility bills can be furnished by the finance department or by a facilities manager. Maintenance personnel will also be necessary to help determine the age of existing equipment and a possible site for the solar collector (typically on the roof of a commercial or office building). Solar thermal equipment must be installed by a qualified contractor.

4

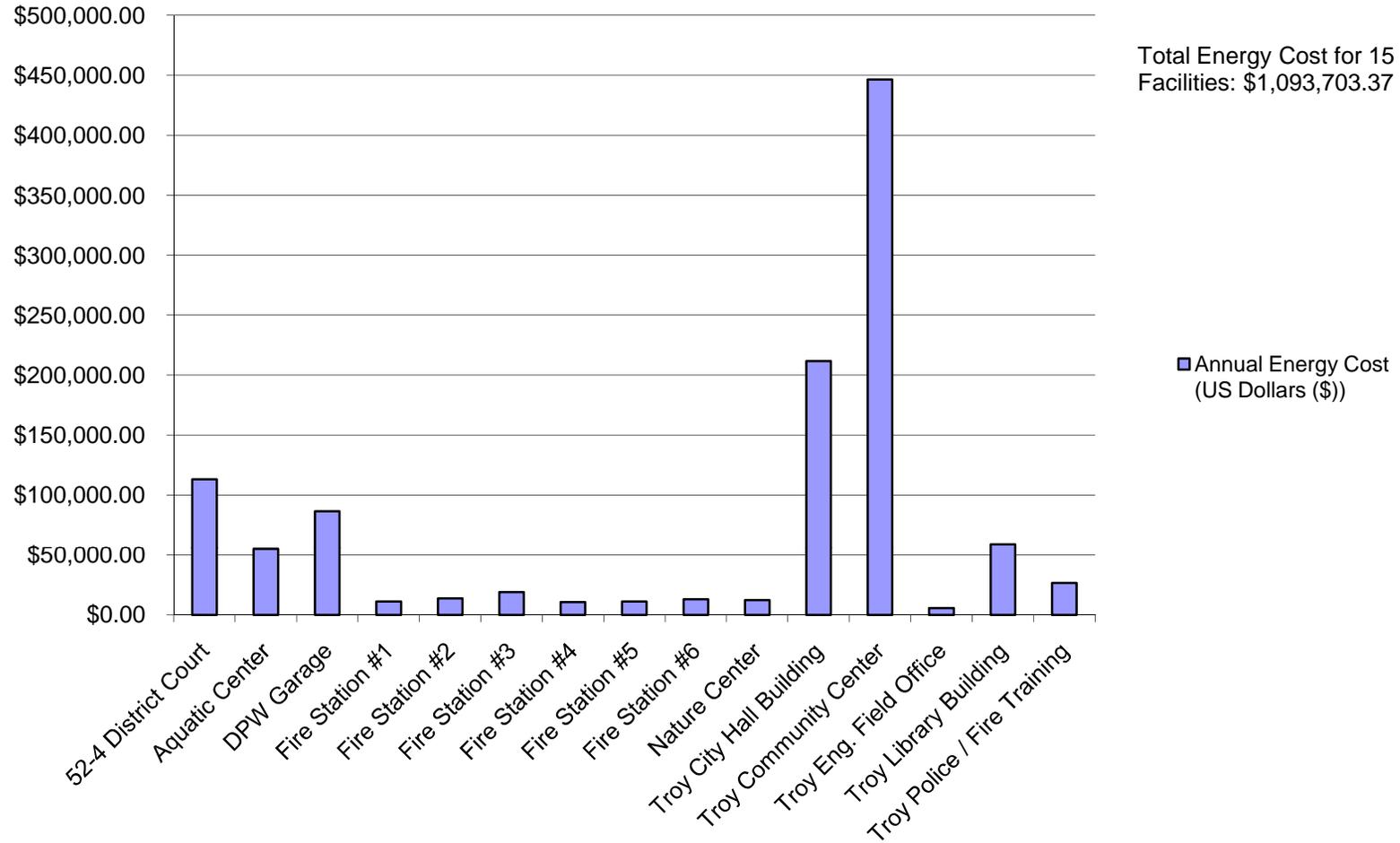
With an investment of a few thousand dollars, Solar Thermal systems can significantly reduce natural gas used to heat water and the corresponding CO2 emissions. Depending on how intensive a building's hot water use is, Solar Thermal systems can pay themselves back in just a few years.

3

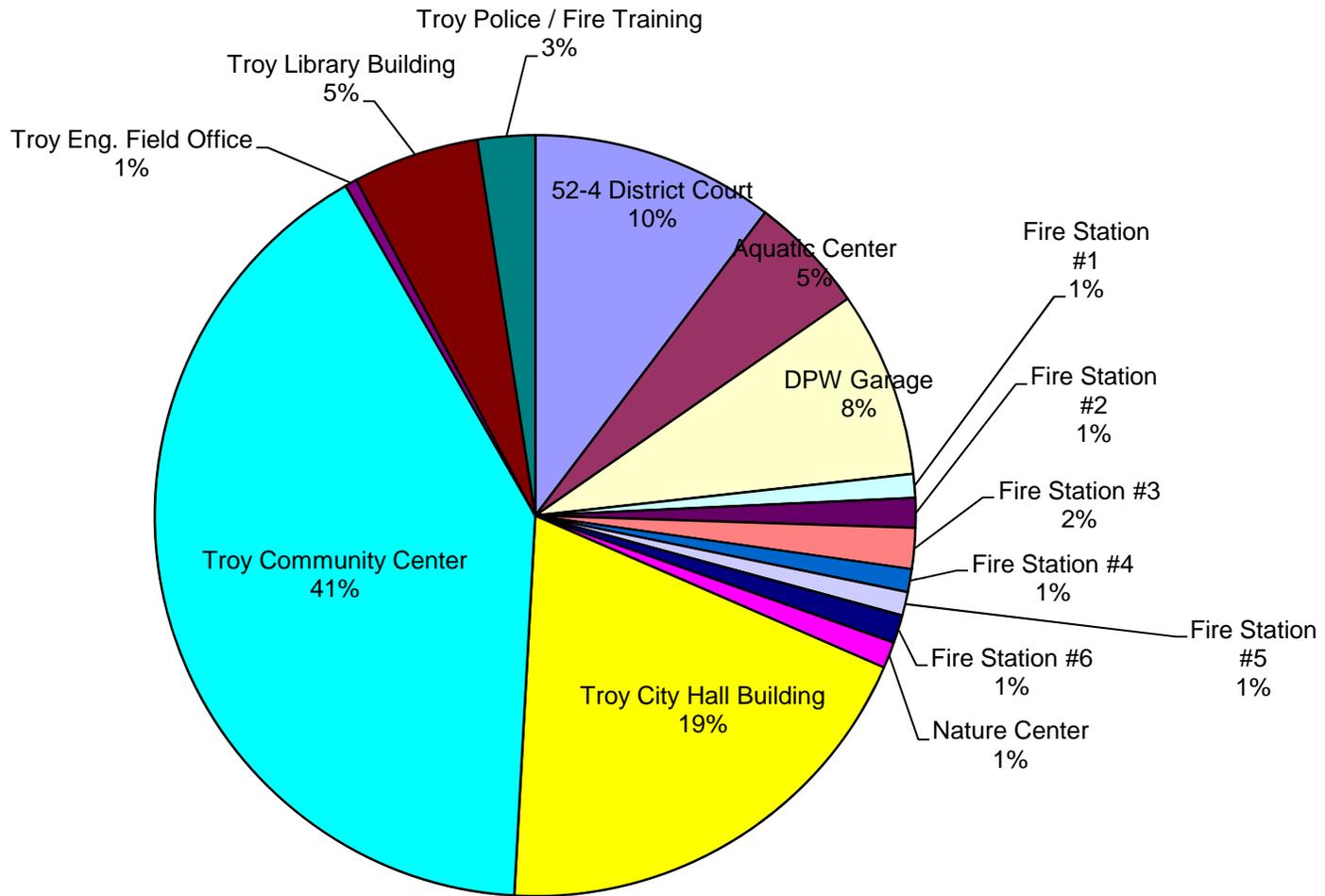
Total Score: 20

Facility Name	Annual Energy Cost (US Dollars (\$))	Total Energy Cost per Sq. Ft. (US Dollars (\$))	Percent of Total Energy Cost	Current Total GHG Emissions (MtCO ₂ e)	Total CO ₂ Annual Car Equivalent
52-4 District Court	\$112,994.30	\$3.47	10.33%	312.12	56.7
Aquatic Center	\$54,878.24	\$12.20	5.02%	348.55	63.4
DPW Garage	\$86,284.73	\$1.40	7.89%	575.56	104.6
Fire Station #1	\$11,065.58	\$1.67	1.01%	65.24	11.9
Fire Station #2	\$13,814.58	\$2.72	1.26%	82.48	15.0
Fire Station #3	\$18,938.84	\$2.18	1.73%	113.12	20.6
Fire Station #4	\$10,653.67	\$2.17	0.97%	63.07	11.5
Fire Station #5	\$11,039.65	\$1.84	1.01%	64.8	11.8
Fire Station #6	\$12,958.65	\$1.96	1.18%	77.24	14.0
Nature Center	\$12,238.99	\$1.50	1.12%	74.69	13.6
Troy City Hall Building	\$211,555.60	\$1.63	19.34%	1,809.30	329.0
Troy Community Center	\$446,403.37	\$3.51	40.82%	3,350.85	609.2
Troy Eng. Field Office	\$5,614.76	\$1.60	0.51%	23.06	4.2
Troy Library Building	\$58,635.91	\$1.31	5.36%	187.1	34.0
Troy Police / Fire Training	\$26,626.50	\$1.26	2.43%	161.55	29.4
Group Total	\$1,093,703.37			7,308.7	1,342.7

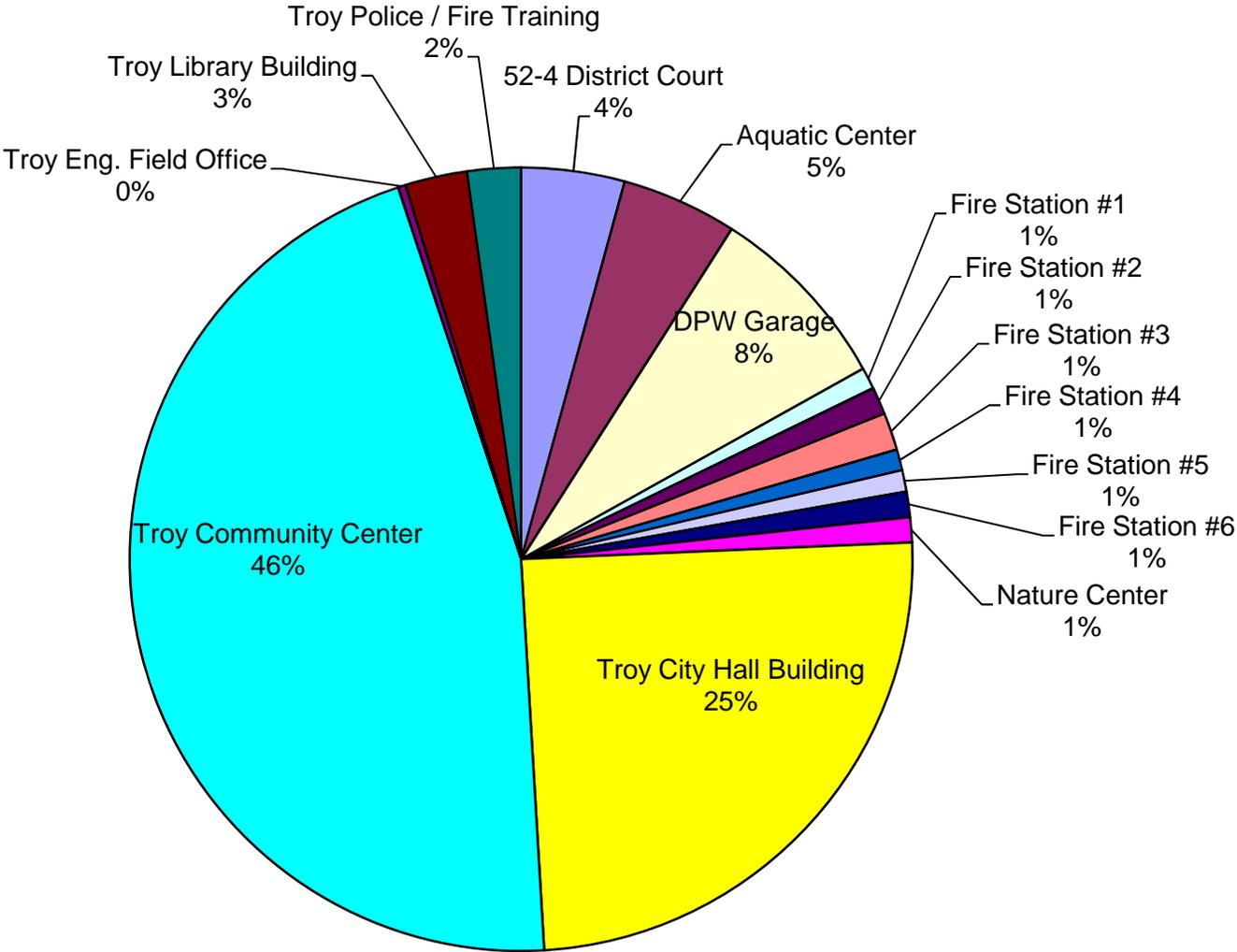
Annual Energy Cost, 6/08 - 6/09 (US Dollars (\$))



Percent of Overall City Energy Costs by Building



Current Total GHG Emissions (MtCO2e)



Energy Efficiency & Conservation Strategy

Grantee: City of Troy, Michigan

Date: December 11, 2009

DUNS #: 076356302

Program Contact Email: Mark Miller (millermf@troymi.gov)

- 1. Describe your government's proposed Energy Efficiency and Conservation Strategy. Provide a concise summary of your measurable goals and objectives, which should be aligned with the defined purposes and eligible activities of the EECBG Program. These goals and objectives should be comprehensive and maximize benefits community-wide. Provide a schedule or timetable for major milestones. If your government has an existing energy, climate, or other related strategy, please describe how these strategies relate to each other.**

The City of Troy's proposed Energy Efficiency and Conservation Strategy focuses on the following goals. These goals will be met through the implementation of a broad range of new energy conservation technologies:

- 1) Implement technologies that will provide the City with the most significant energy savings in operating its administrative campus and other public facilities;
- 2) Implement technologies that will save the City money in terms of installation, operation, and maintenance of its public facilities;
- 3) Implement technologies that demonstrate to the public new ways to conserve energy that can be transferred to residential, office, and industrial settings;

These goals are aligned with the purposes of the EECBG program. The first and foremost goal of the City's strategy is to achieve the highest reduction in energy use to run its municipal operation. Significant reductions in the use of energy, both in building and fleet operation, will also minimize fossil fuel emissions. These reductions will partly be achieved in environmentally sustainable ways by using technologies that don't use fossil fuels, but other forms of energy generation (wind). Finally, the strategy implements energy savings in both the building and transportation sectors in various ways. As described by the actions included in the strategy, all energy and cost savings will be monitored, quantified, and reported to the City's residents to encourage implementation of new technologies in local homes and businesses.

Implementation Schedule

Task	Week of	Major Milestones
I. Energy Audits for High-Priority City Buildings		
Solicit bids, rate, and choose contractor to conduct energy audits for 11 high-priority City buildings.	Feb. 15, 2010	Obtain contractor
Contractor to conduct energy audits, draft report, and review with City staff. Finalize report.	Feb. 22 - March 22	Audits complete
Contractor and City staff to present final report on energy audits to City Council. City Council to review and approve energy efficiency building projects recommended in energy audits.	April 19	Building improvements approved by Council.
II. Energy Improvements for High-Priority City Buildings		
Solicit bids, rate, and choose contractors to install energy efficient building improvements recommended by energy audit results. (Note: Lighting work will be combined with installation of outdoor City campus and roadway lighting improvements - Task III.)	June 7, 2010	Obtain contractors
Contractors to install building improvements under supervision of City staff.	June 14 - Dec. 27	Building improvements complete
Monitor energy savings due to building improvements.	Jan. 3, 2011 - June 25, 2012	
Report quarterly energy savings to the public to encourage similar improvements in residential, office and industrial settings.	March 28, 2011 - July 2, 2012	Energy savings reported to public
III. LED Lighting Improvements		
Solicit bids, rate, and choose contractor to install LED lighting improvements at City buildings, in City Campus parking lots, and along City roadways.	June 7, 2010	Obtain contractors
Contractor to install lighting improvements under supervision of City staff.	June 14 - Dec. 27	Building improvements complete
Monitor energy savings due to lighting improvements.	Jan. 3, 2011 - June 25, 2012	

Report quarterly energy savings to the public to encourage similar improvements in residential, office and industrial settings.	March 28, 2011 - July 2, 2012	Energy savings reported to public
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IV. Wind Energy Project

Solicit bids for WECS, rate proposals, and choose product supplier.	Feb. 14, 2011	Obtain product supplier
Work with manufacturer to identify qualified contractors to install WECS. Solicit bids, rate, and choose contractor.	April 4	Obtain contractor
Contractor to install WECS under supervision of City staff and product manufacturer.	April 11 - Aug. 8	WECS installed
Monitor energy savings due to WECS.	Oct. 3, 2011 - June 25, 2012	
Report energy savings to the public to encourage similar improvements in residential, office and industrial settings.	Jan. 2, 2012 - July 2, 2012	Energy savings reported to public

V. Transportation Projects

City to purchase hybrid vehicles as part of regularly-scheduled annual capital improvements.	Over three-year grant period.	
Monitor energy savings due to hybrid vehicle purchases.	April 4, 2011 - June 25, 2012	
Report energy savings to the public to encourage similar improvements in transportation choices.	July 4, 2011 - July 2, 2012	Energy savings reported to public

2. Describe your government’s proposed implementation plan for the use of EECBG Program funds to assist you in achieving the goals and objectives outlined in the strategy described in question #1. Your description should include a summary of the activities submitted on your activity worksheets, and how each activity supports one or more of your strategy’s goals/objectives.

The City of Troy’s planned activities are:

- 1) **City municipal facilities improvements:** The first activity implemented under the EECBG Program will be energy audits at 11 municipal buildings. These buildings were identified as the poorest energy performers of the City’s facilities through an analysis of annual energy usage. These audits will identify physical and operational improvements that will make the buildings more energy efficient. The City will then make the improvements that promise the most significant energy savings. After the improvements have been installed, the energy use of the buildings will be monitored and savings reported to the public. The goals behind these

activities are to conserve energy, save tax dollars spent on municipal operations, and demonstrate to residents and visitors the benefits of new energy saving building technologies, encouraging them to adopt them in their homes and businesses. These projects will also employ professionals in the building trades, one of the hardest hit segments of Michigan's economy.

- 2) **LED lighting improvements:** As part of the building improvement project, the City will also install LED lighting at its administration campus and along City roadways. This project is coupled with the building improvements to obtain the best price from electrical contractors. The project scope for lighting improvements is a result of an analysis study conducted for the City in late 2009 by Lumecon, Inc. It is estimated that the LED installations specified will save the City \$15,685 in electricity annually, and will also significantly reduce maintenance costs. The LED lighting will also result in significant reduction in energy usage, estimated to be up to 60% over the current fixtures. Energy savings will be monitored and reported to the public, encouraging like changes at residential and business properties. This project will also employ professionals in the building trades.
- 3) **Wind energy project:** Another demonstration and encouragement to the public to support alternative energy generation includes installation of two smaller-scale vertical axis wind turbines, to determine their feasibility for widespread adoption. These wind energy conversion systems will reduce the City's dependence on electricity generated from coal or other non-renewable resources. The turbines will also be a constant reminder to visitors for the need for energy conservation, and each person's responsibility to consider energy use in their daily activities. Lastly, the wind turbines used will be products manufactured in Michigan, supporting the state's emerging renewable energy industry.
- 4) **Transportation projects:** The City will take advantage of their regularly-scheduled fleet purchases to upgrade thirty vehicles to hybrids over the period of the grant. Each year would provide approximately \$6,000 per vehicle for 10 vehicles, for a total grant obligation of \$180,000 over three years to cover the difference between a conventional vehicle and the hybrid or alternative fuel version. The City of Troy has replaced, on its own, several conventional vehicles (Ford Escape SUVs) with hybrid alternatives (Ford Escape Hybrids) when they were due to be replaced, and has realized up to a 50% fuel efficiency increase. As stated, the grant would only be used to pay the difference between a conventional and hybrid vehicle. This project will significantly reduce the amount of fossil fuel used to conduct City business by potentially doubling the mileage realized per vehicle. This will also result in a large savings in fuel costs.

3. Describe how your government is taking into account the proposed implementation of plans and activities for use of funds by adjacent units of local government that are grant recipients under the Program.

The City will make efforts to coordinate marketing and/or educational activities to streamline services and provide a consistent approach and message to residents and business owners in the region. The City has a tradition of working with its neighbors, and the nearby entitlement communities of Rochester Hills, Royal Oak, Bloomfield Township, and Sterling Heights. Michigan law requires communities to communicate and correspond with regard to land use planning, which has in turn cultivated relationships between nearby communities throughout the State of Michigan.

4. Describe how your government will coordinate and share information with the state in which you are located regarding activities carried out with grant funds to maximize energy efficiency and conservation benefits.

The City will share the results of its energy conservation efforts to the greatest extent possible. City staff, public officials, and others involved in implementation of energy conservation projects will be made available for speaking engagements and workshops. We will also provide information regarding energy savings upon request to any local or state agency. Finally, the results of the City's energy conservation technologies will be made available to the public, and presented in a way that encourages others to implement similar technologies at their homes or businesses. The information will be available on the City's website, and at public places around the community, such as the Library and City Campus.

5. Describe how this plan has been designed to ensure that it sustains benefits beyond the EECBG funding.

The City's energy conservation projects will be the beginning of a long-term effort. The physical changes to the buildings, lighting, and addition of a WECS will continue to save energy, and the associated costs, far into the future. Monitoring and reporting will continue through the City's website. Energy saving results of these physical changes will enable the City to assess if additional conservation efforts are necessary to continue to meet energy conservation goals. Cost savings in operating the hybrid vehicles and LED light fixtures would make it possible to purchase additional hybrid vehicles and LED fixtures after the grant period is over.

6. The President has made it clear that every taxpayer dollar spent on our economic recovery must be subject to unprecedented levels of transparency and accountability. Describe the auditing or monitoring procedures currently in place or that will be in place (by what date), to ensure funds are used for authorized purposes and every step is taken to prevent instances of fraud, waste, error, and abuse.

The City of Troy has assigned the Assistant City Manager for Economic Development Services, Mark F. Miller, to coordinate energy efforts throughout the local government and the community, including management of all EECBG grants. The Assistant City Manager will play a significant role in assuring that all the desired EECBG Program Outcomes are achieved as listed in the FOA. Mr. Miller will be a direct report to the City Manager. The Assistant City Manager will provide transparency and accountability for the EECBG program by being a single-source position with responsibility for fund allocated and program implementation for all area energy programs. He will provide and report on energy savings for all local energy projects, including preparation of regular progress reports to the City Manager, City Council and Assistant City Manager, Finance.

The City of Troy's financial statements and federal award grant reporting is audited annually by independent certified public accountants selected by the City of Troy's City Council. The independent auditor's report on internal control over financial reporting and on compliance and other matters is in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in Government Auditing Standards, issued by the Comptroller General of the United States.

Additional Information:

1) Jurisdictional area covered by plan, and governing body and/or office with direct authority over plan.

The jurisdictional area covered by the plan includes the City of Troy. There are no other municipal entities (cities, villages, etc.) within the boundaries of the City.

The City Council will have ultimate authority over the plan. The Assistant City Manager will manage the grant funds, and oversee implementation of the projects funded by the grant.

2) Plan implementation partners and any leveraged funds from private or other public sources.

The City will work with the local utility company (Detroit Edison) regarding roadway lighting and operation of the WECS, as necessary. The City plans on implementing all projects within the limits of the EECSBG grant funds.

3) Baseline energy use and GHG emissions inventory and forecast.

Electricity and natural gas data for the all City buildings that make up 1% or more of the City's energy spending has been compiled for the period 2007 – 2009. The City has begun using Energy Star Portfolio Manager to track and review energy use for many of its buildings. In addition, extensive data exists for fuel usage for all City vehicles, including comparisons between conventional vehicles and pilot hybrid vehicles purchased by the City.

From this data, the City has been able to estimate baseline energy use for its largest 15 buildings, although comprehensive baseline energy use and GHG emissions have not yet been determined for the entire municipal operation. The City intends to begin using Energy Star Portfolio Manager exclusively for all City facilities moving forward. One of the activities Troy intends to engage to meet the reporting requirements of this program and to meet the City's voluntary participation in the Michigan Green Communities Challenge is the development of a new community-wide energy monitoring program. This program would allow the City to begin developing a baseline and set goals for the future.

4) Goals/objectives for total energy use and emissions reductions, and energy efficiency increase (including deployment of renewable technologies).

The combination of projects will greatly increase the energy efficiency of the 11 City buildings included in this plan, with resulting emissions reductions. Not only will less energy be used to operate the buildings, the City will be generating a small portion of its own electricity with installation of the new WECS, while analyzing the possibility of widespread adoption of wind energy systems. While a specific estimate of energy savings is difficult to calculate before conducting an energy audit, the City is committed to implementing the recommendations from the audit that will obtain the greatest energy savings and emissions reductions.

The goal of hybrid vehicle acquisitions will be to save enough in fuel costs to fund the difference between a conventional and hybrid vehicle for purchase after the grant period has ended. The goal of the LED lighting retrofits is to purchase additional energy saving fixtures with the cost savings realized from the initial LED installation.

5) Actions/plans/strategies and implementation schedule to meet goals.

All actions and a proposed implementation schedule are provided under question #1, Attachment D.

6) Expected outcomes and benefits of plan.

- Jobs created and/or retained. The energy audits and building renovations will create jobs in the professional building trades, such as electrical and mechanical contractor positions. The LED lighting and WECS projects will create jobs in emerging sectors. These projects will provide an opportunity for additional experience in retrofitting existing lighting with energy efficient LED fixtures, and installing state-of-the-art wind energy conversion systems. The City plans on purchasing the WECS from a Michigan manufacturer, supporting this emerging manufacturing sector and their employees. City staff will administer the projects funded by the EECBG Program, and savings realized from reduced energy costs will enable the City to retain staff throughout the municipality's operation.
- Energy saved. As discussed previously, the exact amount of energy saved from the proposed building projects has not yet been determined. Once the building energy audits have been completed, and recommendations made for energy conservation measures, then the amount of energy saved by these activities can be calculated. The City is committed to implementing the building projects that will provide the greatest energy savings. It is estimated that the LED lighting improvements will reduce energy usage for these fixtures by up to 60%. The WECS are estimated to generate 4,000 kilowatt hours (kWh) per year combined, thus saving this same amount of energy obtained from the grid (and generated by non-renewable energy sources). Reduction in fuel use by the hybrid pickup vehicles is estimated to be approximately 35-50%.
- Renewable energy capacity. In researching the WECS project, the City is considering installing two, 1.2 kW wind turbines that will each produce approximately 2,000 kWh per year in 12 mph average winds. Therefore, the City will generate approximately 4,000 kWh per year.
- GHG emissions reduced. In Southeast Michigan, our electricity power plants produce more greenhouse gasses (GHGs) per unit of power than the national average. According to figures from the EPA, every kWh used within the RFC Michigan electrical grid subregion produces 1.571 lbs. of Carbon Dioxide Equivalent GHGs (1.335 lbs. CO_{2e}/kWh national average). Therefore, the WECS project alone will save 9,426 lbs. CO_{2e} annually. Adding 30 hybrid vehicles to the municipal fleet will potentially reduce emissions by 190,233 lbs. CO_{2e} (if 50% fuel consumption is realized). The LED lighting project will save approximately 39,790 kWh annually, reducing emissions by 62,510.09 lbs. CO_{2e}. The building energy audits will also identify projects that can reduce GHG emissions further.
- Funds leveraged. The City plans on implementing all projects within the limits of the EECBG Program funds. However, the savings realized from installation of energy efficient lighting, fleet, and wind energy technologies may potentially be used to purchase additional energy savings equipment after the grant period has expired.

7) Obstacles to reaching goals and strategies to remove obstacles.

The City does not foresee any significant obstacles to reaching the goals of its Energy Efficiency and Conservation Strategy. City Management has approved the proposed projects that make up the Strategy, and is on board to implement them after the grant funds have been released.

8) Policies and/or administrative actions adopted or needed to support actions / plans / strategies / targets / schedule.

The policies and administrative structures are currently in place to implement the Strategy and actions. As mentioned above, City management has approved the projects included in the Energy Efficiency and Conservation Strategy. Approval from the City Council will also be solicited to review and approve the energy audits, and the recommended projects. This same body will be asked to review and approve all grant expenditures.

All bills paid to contractors or consultants are reviewed and approved for payment by the City Council. Bills received for payment through the EECBG Program will be included in this review process.

9) Evaluation, monitoring and verification plan.

Once the building improvements have been installed (based on results of the energy audits), building performance will be monitored using electricity bills, recording both the kilowatt hours used and the cost of the electricity. These bills will be compared with previous years' bills to determine the effect of the building improvements on energy usage. The same process will be followed for the LED outside lighting improvements. The energy generated by the WECS will be monitored and recorded using wireless monitoring software (installed in the WECS). The fuel usage of the hybrid vehicles will be compared with the fuel usage records (currently maintained by the City) of conventional vehicles in their same class and similar age.

10) Plan for how activities will be sustained beyond grant period.

The City's strategy is based on physical improvements across municipal facilities. The lifetime of these improvements, and their benefits, will extend well beyond the EECBG Program period. Reporting on energy savings to the public will be continued through the City's website. Energy saving results of these physical changes will enable the City to assess if additional conservation efforts are necessary to continue to meet energy conservation goals. As stated previously, the goal for this program is to potentially use the cost savings to purchase additional energy savings equipment and services.

11) Plans for the use of funds by adjacent eligible units of local governments that receive grants under the program; and plans to coordinate and share information with the state in which the eligible unit of local government is located regarding activities carried out using the grant to maximize the energy efficiency and conservation benefits under this part.

As described under #3 and #4 of Attachment D, the City will make an effort to coordinate marketing and/or educational efforts with adjacent communities to streamline efforts and provide a consistent message to residents and business owners. Also, the City will share the results of its energy conservation efforts to the greatest extent possible by participating in workshops, and through information sharing with the state and the public through the City's website and other methods.

12) Plans for how these funds will be coordinated with leveraged funds, including other Recovery Act funds, to maximize benefits for local and regional communities.

The City plans on implementing all projects within the limits of the EECEBG Program funds. However, the savings realized from installation of energy efficient building, lighting, fleet, and wind energy technologies may be used to purchase additional LED light fixtures and other energy efficiency improvements recommended by the City's Rapid Energy Assessment Report prepared during the development of the Energy Efficiency and Conservation Strategy after the grant period has expired.

DATE: March 17, 2010
TO: Planning Commission
FROM: R. Brent Savidant, Acting Planning Director
SUBJECT: COMPREHENSIVE ZONING ORDINANCE REWRITE (ZOTA 236) – Energy and Natural Features Protection Article

Representatives of Carlisle/Wortman Associates, Inc. will be at the March 23, 2010 Special/Study meeting to discuss Energy and Natural Features Protection article. The findings presented during the previous item (Rapid Energy Assessment Process) will be considered in this discussion.

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