DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

CIRCUIT RIDER PROGRAM

Energy Efficiency in Local Government Operations

April 30, 2014

Rob Graff

Delaware Valley Regional Planning Commission

Manager, Office of Energy and Climate Change Initiatives

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215.238.2826

DVRPC Region
(Project Area Highlighted)

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(Project Area Highlighted)

Planning areas

- Transportation Planning, Air Quality, Smart Growth Planning, Environmental Planning, Housing and Economic Development, Population and Employment forecasts, Long Range Planning, and…
- Energy and Climate Change Initiatives:
  - Regional greenhouse gas and energy use inventory
  - Climate change impact planning
  - Preparing the region for alternative energy
  - Electric vehicle readiness plan
  - Natural gas vehicle readiness
  - **Municipal energy management assistance**

Challenge of Municipal Energy Planning

- Small local governments
- Limited staffing capacity
- Fiscal constraints
- Equipment Vendor Driven
- Lack of confidence in energy decisions
- Unsure where to start with energy management

Our Partners

- Advisory Group
  - County Planning Depts. (EECBG projects)
  - The Reinvestment Fund
  - PA Southeast Regional Energy Office (PA DEP)
- PECO Act 129 incentives
- US EPA and ENERGY STAR tools
- City of Philadelphia's Greenworks plan
- PA's Local Development Districts

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

PECO
An Exelon Company

CIRCUIT RIDER PROGRAM

DVRPC Circuit Rider Program

Focus on energy efficiency in municipal operations

Provide smaller municipalities with easy access to the resources and tools they need to prioritize projects for cost-effectively reducing energy costs in their operations.

1. Reducing Energy Costs in Municipal Operations **Seminar Series**
2. **Streetlights and Traffic Signals**
3. **Direct Technical Assistance**

Circuit Rider: "any professional who travels a regular circuit of locations to provide services"

Direct Technical Assistance

- One-on-one assistance for from DVRPC and a certified energy expert (Practical Energy Solutions)
- Work **with** munis to Identify and prioritize cost-effective projects to reduce energy costs.
- Provide assistance with implementing recommended projects

Direct Technical Assistance Process

Finding the right consultant

- Wanted to assure interaction with DVRPC and municipalities.
- Innovation: Let's see how they respond to the problems we are seeing
  - Described two municipalities with different issues
  - Asked what they would do, how they would do it, and how they would leverage DVRPC staff time.

Evaluation Criteria

Technical qualifications that demonstrate excellence of previous work: (35%)

- **Experience working one-on-one with small- and medium-size municipalities** that demonstrate varied levels of commitment and expertise related to energy management.
- Experience with providing the Energy Management Services described in Section IV, Scope of Work.
- Familiarity with tools, resources and funding opportunities available to municipalities in the region.
- **Familiarity with the physical, political, regulatory and legal planning environment in southeastern Pennsylvania**.
- Demonstrated expertise in the preparation and presentation of technical materials to the public, municipal officials; demonstrated experience facilitating meetings.
- Relevant certifications and professional registrations of proposed staff.

Evaluation Criteria

Quality of overall proposal submitted (10%)

- Proposal is clear, concise, well written, and well formatted.

Sample Project Work Orders: **Technical Evaluation** (35%)

- Tasks laid out indicate an **understanding of how to effectively engage municipalities** and guide them through implementation within the number of hours available.
- Work order indicates an **understanding of the "experienced senior advisor" role** of the consultant, and makes proper use of DVRPC staff time for administrative, organizational, logistical, and appropriate analytical tasks.
- Tasks laid out indicate an ability to leverage energy management services within the consultant's experience and capabilities as described elsewhere the in the proposal.
- Demonstrate judicious and **efficient use of consultant's time** for sample project work orders.

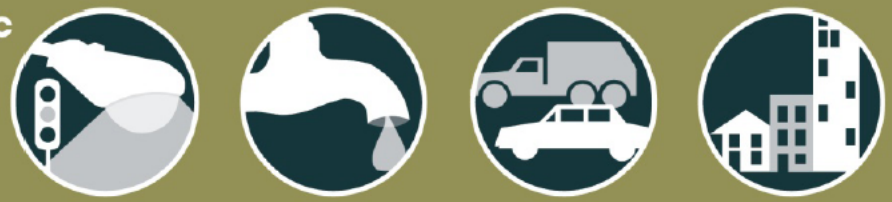
Sample Project Work Orders: **Cost Evaluation** (20%)

Small, local firm. Very personable, experienced with local municipalities. www.practicalenergy.net

Direct Technical Assistance Process

If you give it away, it must not be worth much

dvrpc



- OUTDOOR LIGHTING
- WATER/WASTEWATER TREATMENT
- VEHICLE FLEET
- BUILDINGS

CIRCUIT RIDER

FOR ENERGY EFFICIENCY IN LOCAL GOVERNMENT OPERATIONS

APPLICATION FOR DIRECT TECHNICAL ASSISTANCE FOR ENERGY EFFICIENCY

Municipality:_____

County: _____

Direct Technical Assistance Point of Contact

Name: _____

Title: _____

Mailing address:

_____

_____

_____

Telephone: _____

E-mail: _____

Who is currently responsible for municipal energy decisions (name and title)?

_____

_____

Which of the following does your municipality operate? (check all that apply)

- ☐ Administration building (number: __)
- ☐ Police station (number: ___)
- ☐ Fire station (number:___)
- ☐ Public works garage (number: __)
- ☐ Library (number: __)
- ☐ Street lights (number: _____)
- ☐ Water/wastewater pumping facility (number: __)
- ☐ Water treatment plant (number: __)
- ☐ Wastewater treatment plant (number: __)
- ☐ Vehicle Fleet (approx. number of vehicles: _____)
- ☐ Other (e.g. ice rink, pool, etc.)

_____

What are your most pressing energy concerns?

If you give it away, it must not be worth much

_____
_____

Does your municipality track energy use and costs? If so, how?

_____
_____
_____
_____
_____

How much does your municipality spend annually on energy?_____

What are your most pressing energy concerns?

_____
_____
_____
_____
_____
_____
_____
_____
_____

Please send copies of the most recent monthly utility bills for all municipal accounts along with your completed application. This information can be sent separately from the application.

For more information or clarification on any of these questions, please contact Liz Compitello at: 215-238-2897 or ecompitello@dvrpc.org

Please return application and utility bills by mail, e-mail or fax to:

Liz Compitello
Delaware Valley Regional Planning Commission
190 N. Independence Mall West
Philadelphia, PA 19106
ecompitello@dvrpc.org
Fax: 215.592.9125

What do I have to do to participate?

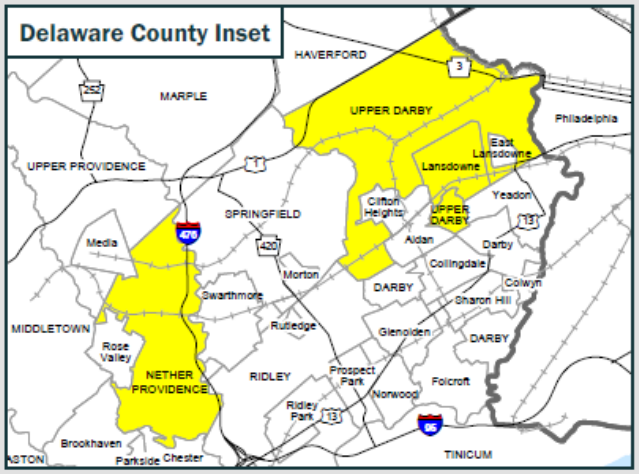
To apply, complete the simple application form on the next page. Note that municipalities must also send copies of the most recent monthly utility bills for all municipal accounts. Together with county planning departments, DVRPC will select municipalities that are committed to cost-effective energy management in their operations, but have staffing or financial barriers. **Municipalities in the program must:**

- Identify a single point of contact to coordinate with municipal staff and DVRPC's team.
- Commit to participating with DVRPC and the other selected municipalities throughout the project. This will include (please note that the hourly estimates provided will vary by size and capacity within each municipality):
  - gathering and compiling energy-use information for municipal operations to use as a starting point for developing an energy management plan (4-5 hours);
  - participating in a training workshop on gathering and managing energy use data (½ day);
  - participating in a walk-through assessment with DVRPC's energy expert (2 hours);
  - making staff and elected officials available for a debriefing on the findings and recommendations of the energy expert (2 hours);
  - working with DVRPC staff to set priorities on recommendations (½ day); and
  - joining other Direct Technical Assistance Communities in two half-day roundtables to share best practices, and report on your progress. (2 half-day roundtables).

This level of committed participation is critical to ensuring success in reducing your energy costs.

Direct Technical Assistance Communities*

CIRCUIT RIDER PROGRAM



Bucks County
- Lower Southampton Township
- Bristol Township

Chester County
- Easttown Township
- Phoenixville Borough

Delaware County
- Lansdowne Borough
- Nether Providence Township
- Upper Darby Township

Montgomery County
- Cheltenham Township
- Horsham Township
- Towamencin Township

BUCKS
MONTGOMERY
CHESTER
DELAWARE
PHILADELPHIA

N
0 4 8
Miles

* As of October 2012

dvrpc

Reflecting the Diversity of our Region's Municipalities

Municipality	Population (2010)	Median Household Income (2009 ACS)
DELAWARE		
Nether Providence	13,706	$96,435
Lansdowne Borough	10,620	$63,009
Upper Darby Township	82,795	$52,572
CHESTER		
Easttown Township	10,477	$128,984
Phoenixville Borough	16,440	$61,153
MONTGOMERY		
Towamencin Township	17,578	$75,128
Cheltenham Township	36,793	$72,584
Horsham Township	26,147	$81,888
BUCKS		
Lower Southampton Township	18,909	$74,193
Bristol Township	54,582	$47,693

Talk Their Language

DVRPC Circuit Rider for Energy Efficiency in Local Government Operations.

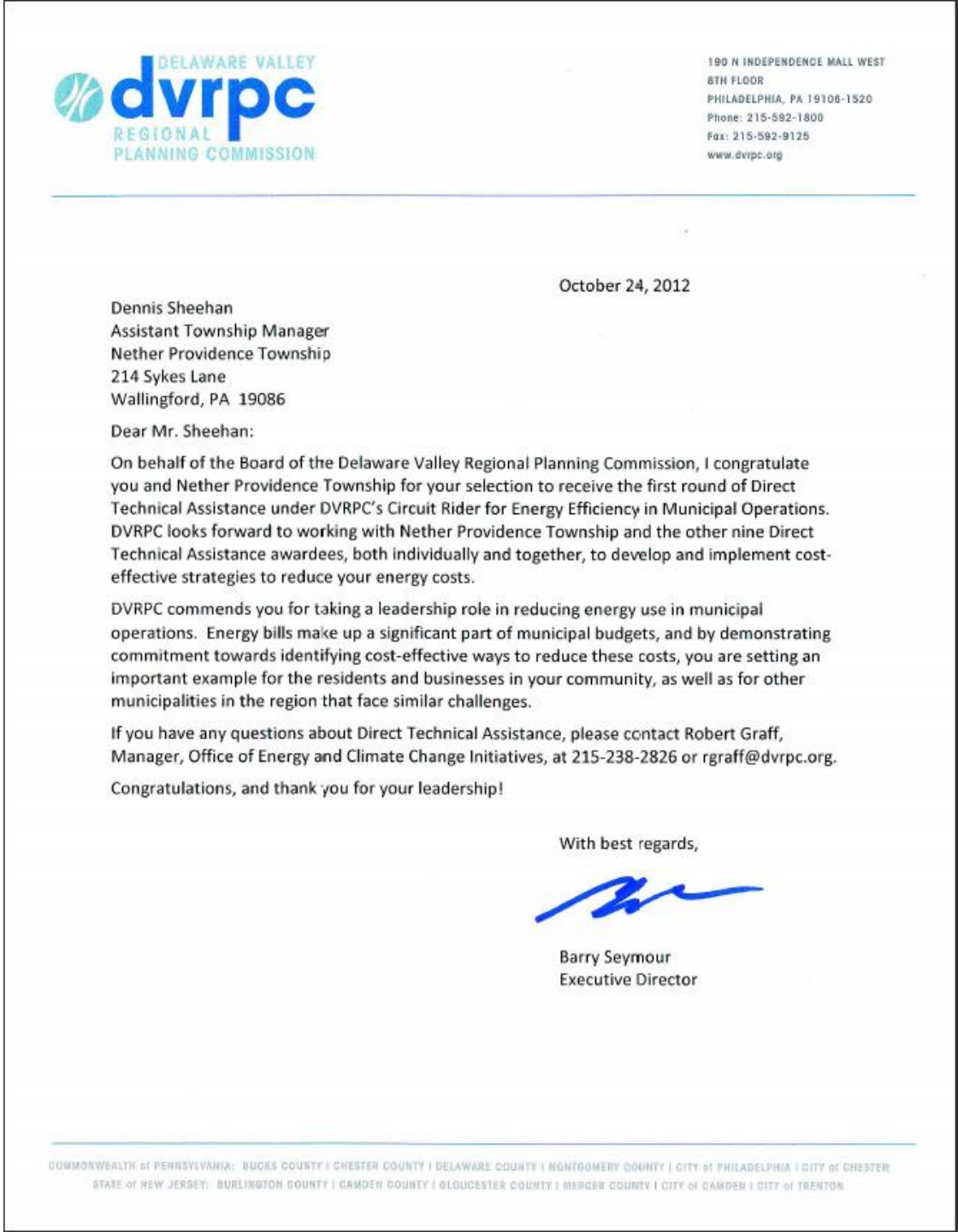
In 2011, DVRPC was awarded a grant through the United States Environmental Protection Agency's Climate Showcase Communities Program to create a replicable model of sustainable community action that generates cost-effective and persistent energy reductions while improving the environmental, economic, public health, or social conditions in a community. Through this program, DVRPC launched the *Circuit Rider for Energy Efficiency in Local Government Operations program*. DVRPC's *Circuit Rider* program works with municipalities in Bucks, Chester, Delaware, and Montgomery Counties to reduce energy costs in their municipal operations. Municipalities in southeastern Pennsylvania grapple with tightening budgets and limited staffing, and yet they are inundated by sales-pitches for energy efficiency improvements on a regular basis. Municipalities want to know where to start with energy management, and how to carry these aspirations through to the implementation of cost-effective and long-term solutions towards their energy challenges. With state and federal funding for energy efficiency projects ramping down, DVRPC seeks to work with municipalities to demonstrate how cost-effective energy management decisions can be implemented and institutionalized to achieve real savings.

Talk Their Language

Every municipality has opportunities for energy savings! Many of these opportunities are easy to achieve at low or no cost. In these times of tight budgets and limited staffing, many municipalities simply don't have the time to sift through competing options (and sales pitches) for energy efficiency improvements.

The Delaware Valley Regional Planning Commission (DVRPC), your regional planning agency, is pleased to announce **free one-on-one direct technical assistance to reduce energy costs**—designed explicitly for smaller municipalities in southeastern Pennsylvania. This flyer provides information on this opportunity, and explains how to apply.

Reward and Acknowledge



DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

190 N INDEPENDENCE MALL WEST
8TH FLOOR
PHILADELPHIA, PA 19106-1520
Phone: 215-592-1800
Fax: 215-592-9125
www.dvrpc.org

October 24, 2012

Dennis Sheehan
Assistant Township Manager
Nether Providence Township
214 Sykes Lane
Wallingford, PA 19086

Dear Mr. Sheehan:

On behalf of the Board of the Delaware Valley Regional Planning Commission, I congratulate you and Nether Providence Township for your selection to receive the first round of Direct Technical Assistance under DVRPC's Circuit Rider for Energy Efficiency in Municipal Operations. DVRPC looks forward to working with Nether Providence Township and the other nine Direct Technical Assistance awardees, both individually and together, to develop and implement cost-effective strategies to reduce your energy costs.

DVRPC commends you for taking a leadership role in reducing energy use in municipal operations. Energy bills make up a significant part of municipal budgets, and by demonstrating commitment towards identifying cost-effective ways to reduce these costs, you are setting an important example for the residents and businesses in your community, as well as for other municipalities in the region that face similar challenges.

If you have any questions about Direct Technical Assistance, please contact Robert Graff, Manager, Office of Energy and Climate Change Initiatives, at 215-238-2826 or rgraff@dvrpc.org.

Congratulations, and thank you for your leadership!

With best regards,

Barry Seymour
Executive Director

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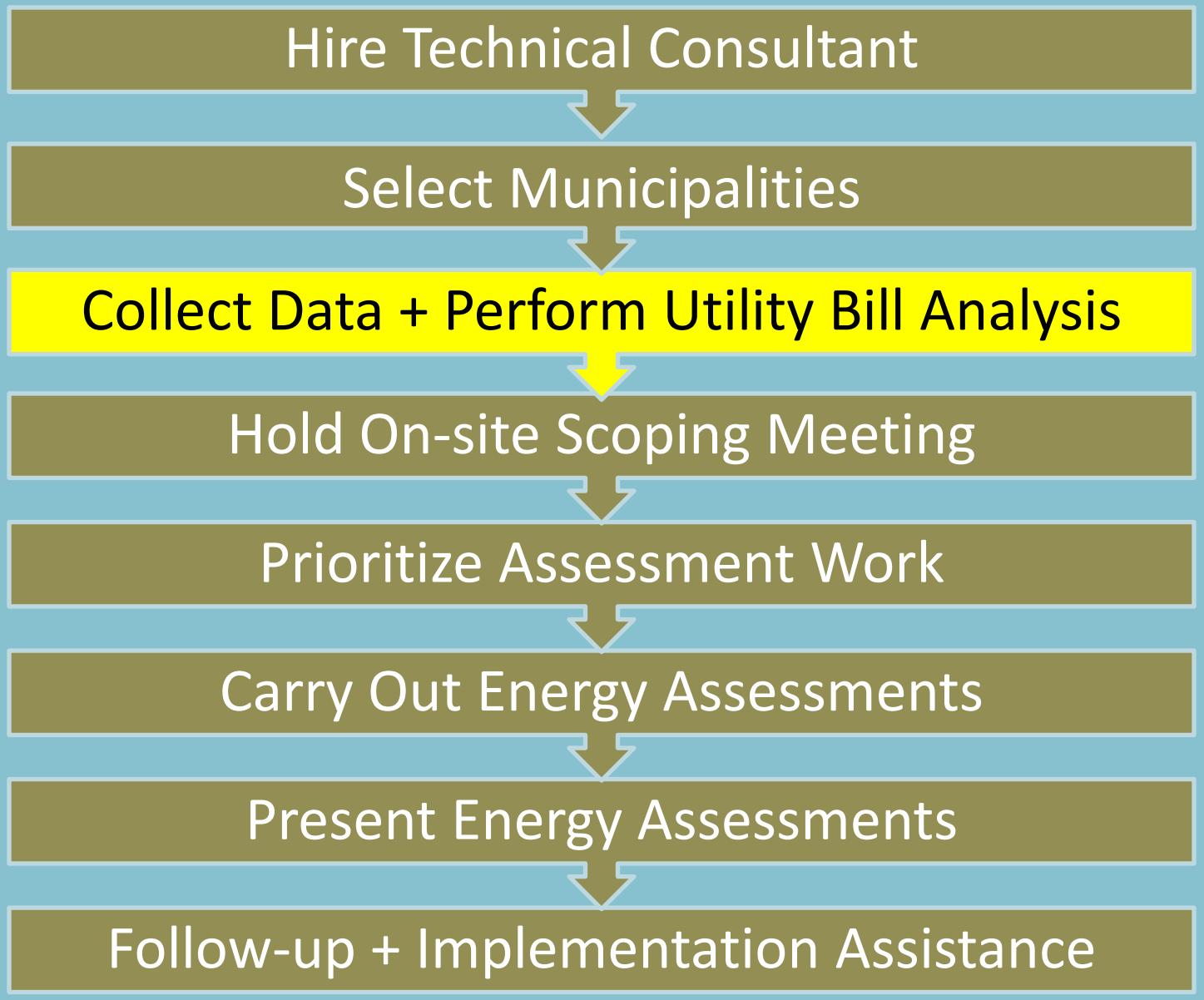
Executive Director

Direct Technical Assistance Process



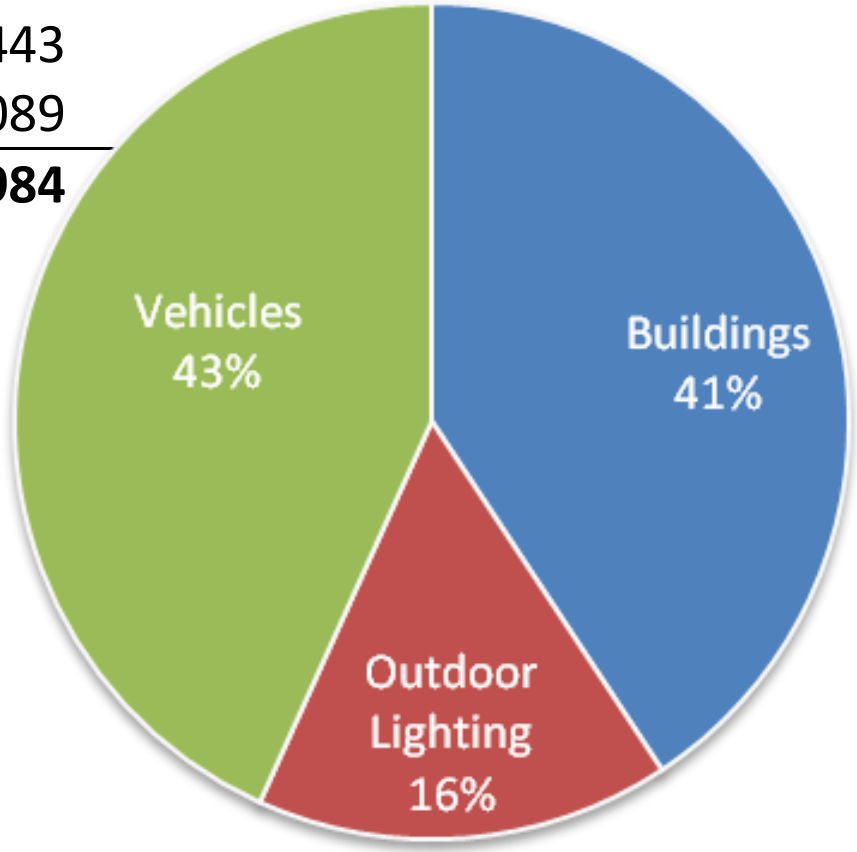
Baselining

- DVRPC worked with munis on data collection (fundamental starting point)

	A	C	D	E	F
1		PECO - TWP. BLDG. - 2010			
2		Acct. #	01409-360		
3					
4	SERVICE DATE	kWh	$$	Ccf	$$
5					
6	12-17/1-20	9,360	1,138.83	397	487.12
7	1-20/2-18	7,840	1,079.43	438	534.96
8	2-18/3-21	8,000	1,018.28	199	264.04
9	3-21/4-19	7,280	$1,011.48	21	50.63
10	4-19/5-19	11,862	$1,150.93	17	$45.75
11	5-19/6-17	10,000	1,528.63	15	41.95
12	6-17/7-19	14,000	$1,829.25	17	43.07
13	7-19/8-17	11,920	$1,440.33	16	42.03
14	8-17/9-16	10,640	$1,279.57	17	43.07
15	9-16/10-17	9,280	1,087.70	35	62.19

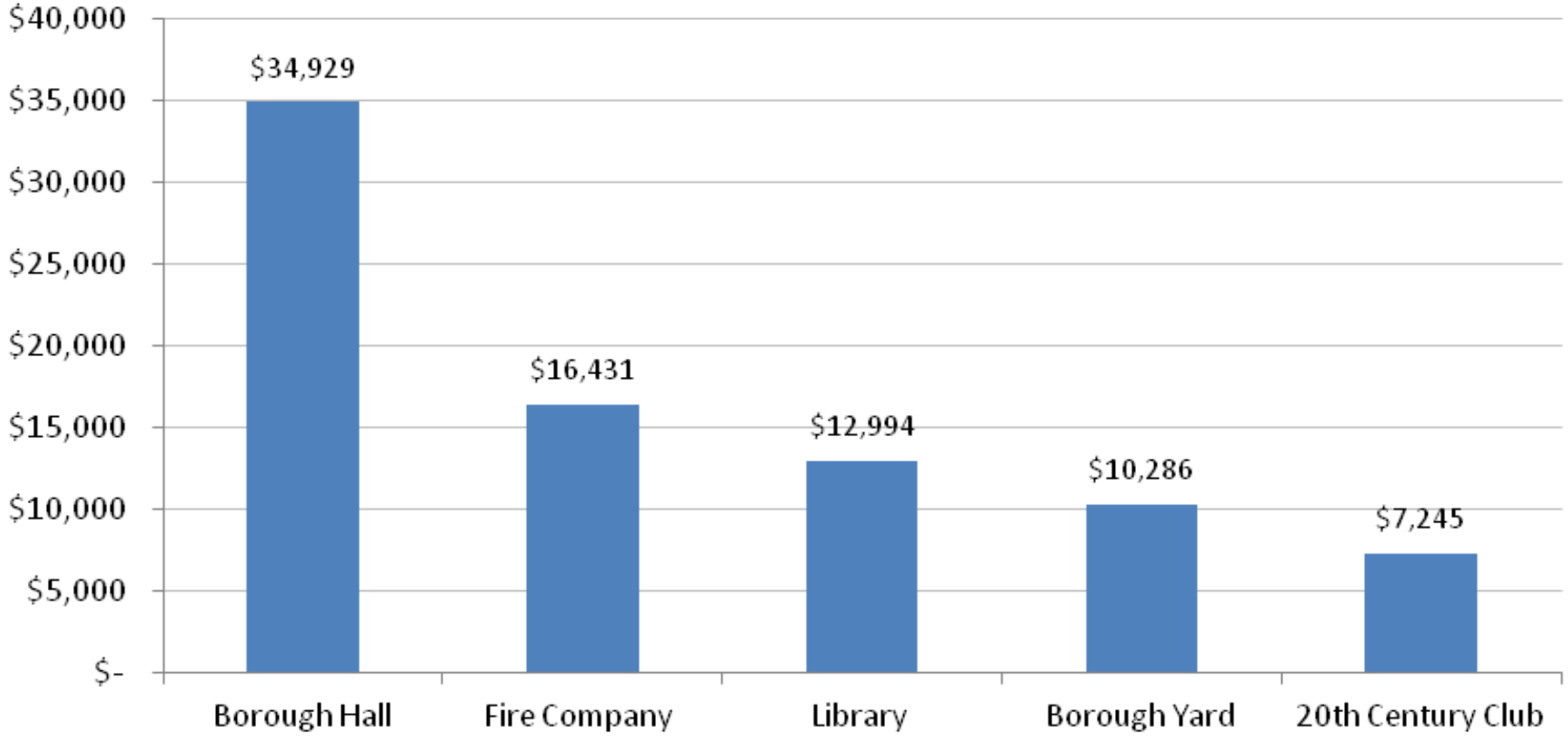
Annual Energy Cost—2011

Sector	Annual Energy Cost
Buildings	$90,452
Outdoor Lighting	$97,443
Vehicles	$96,089
Total	**$283,984**



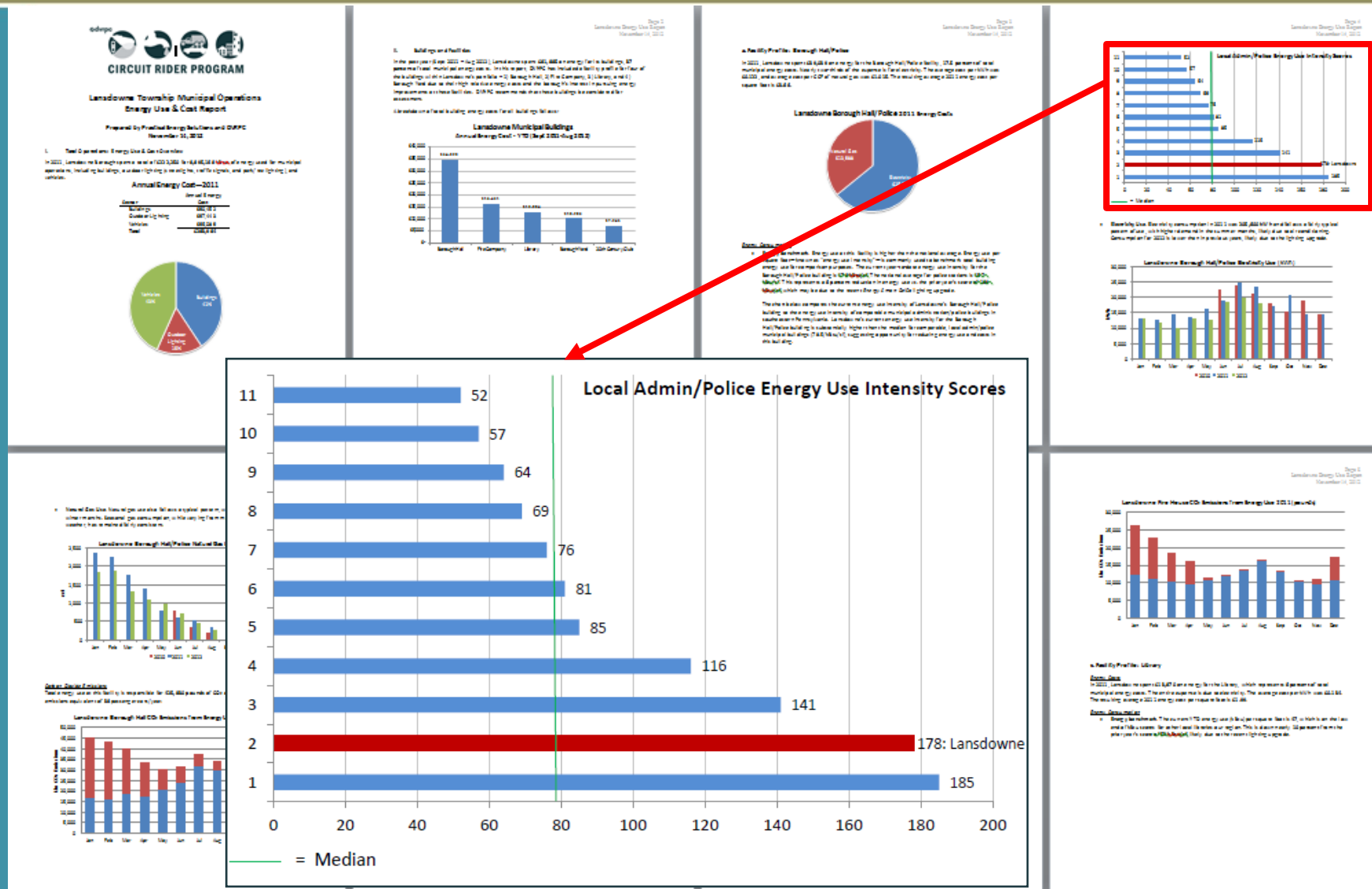
Lansdowne Municipal Buildings

Annual Energy Cost - YTD (Sept 2011-Aug 2012)



Direct Technical Assistance Process

Scoping Meetings



Focus on Partners

- Coffee and donuts

Focus on Partners

- Coffee and donuts
- Meeting time

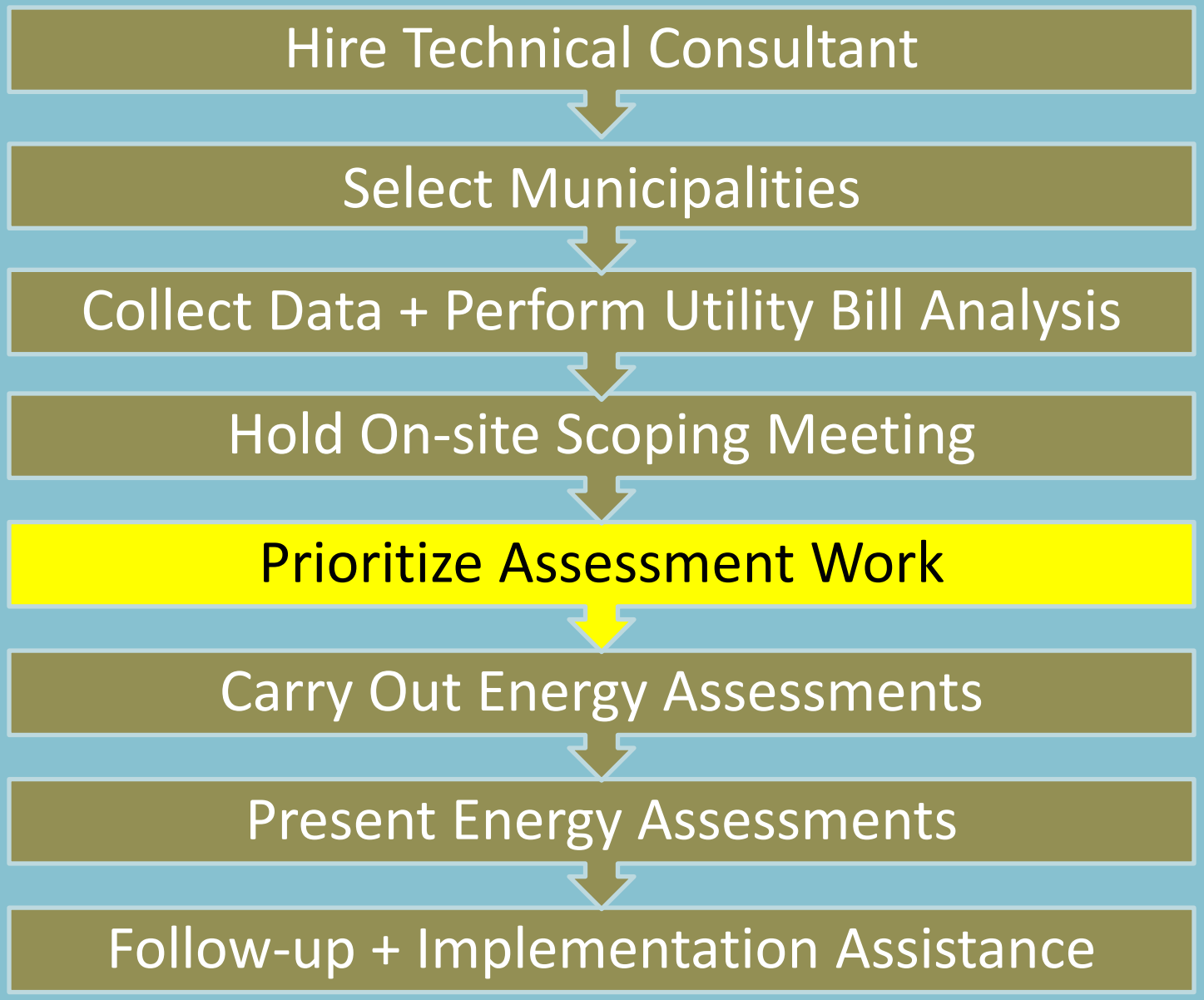
Focus on Partners

- Coffee and donuts
- Meeting time
- Make participants comfortable and respected

Marianne Leamy

Assistant Finance Director

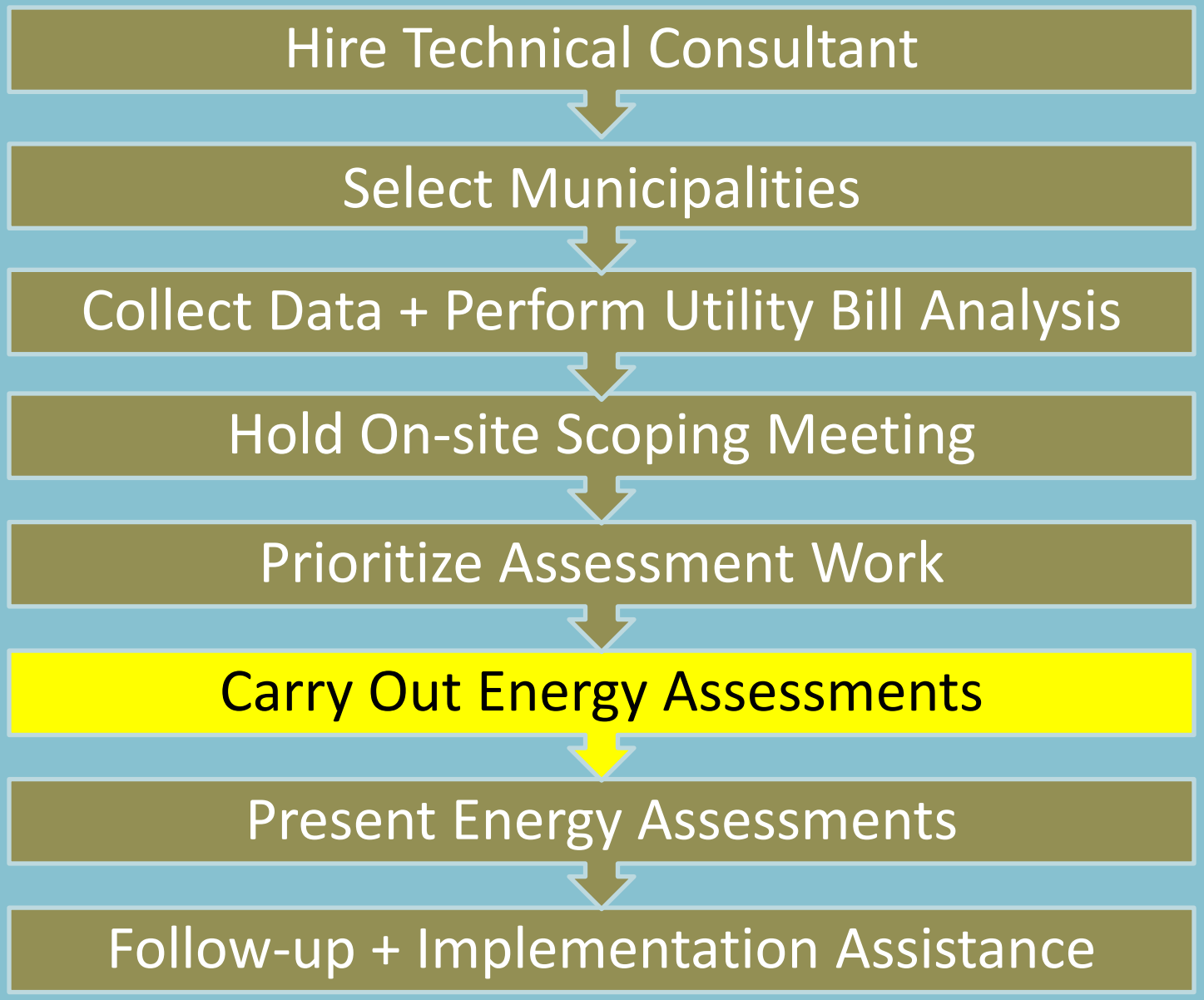
Direct Technical Assistance Process



Balancing needs with resources

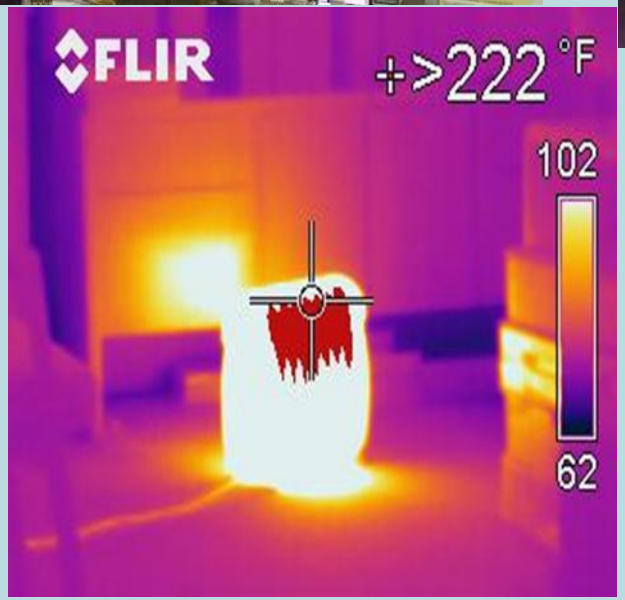
- Municipal Priorities
- Consultant Capabilities
- DVRPC Staff Abilities
- Economics / Payback
- Cost
- Chance of Implementation

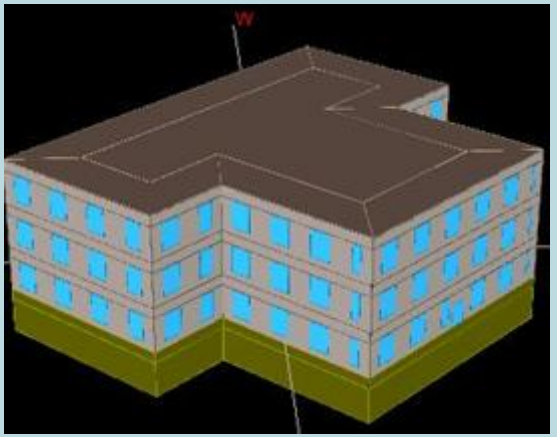
Direct Technical Assistance Process



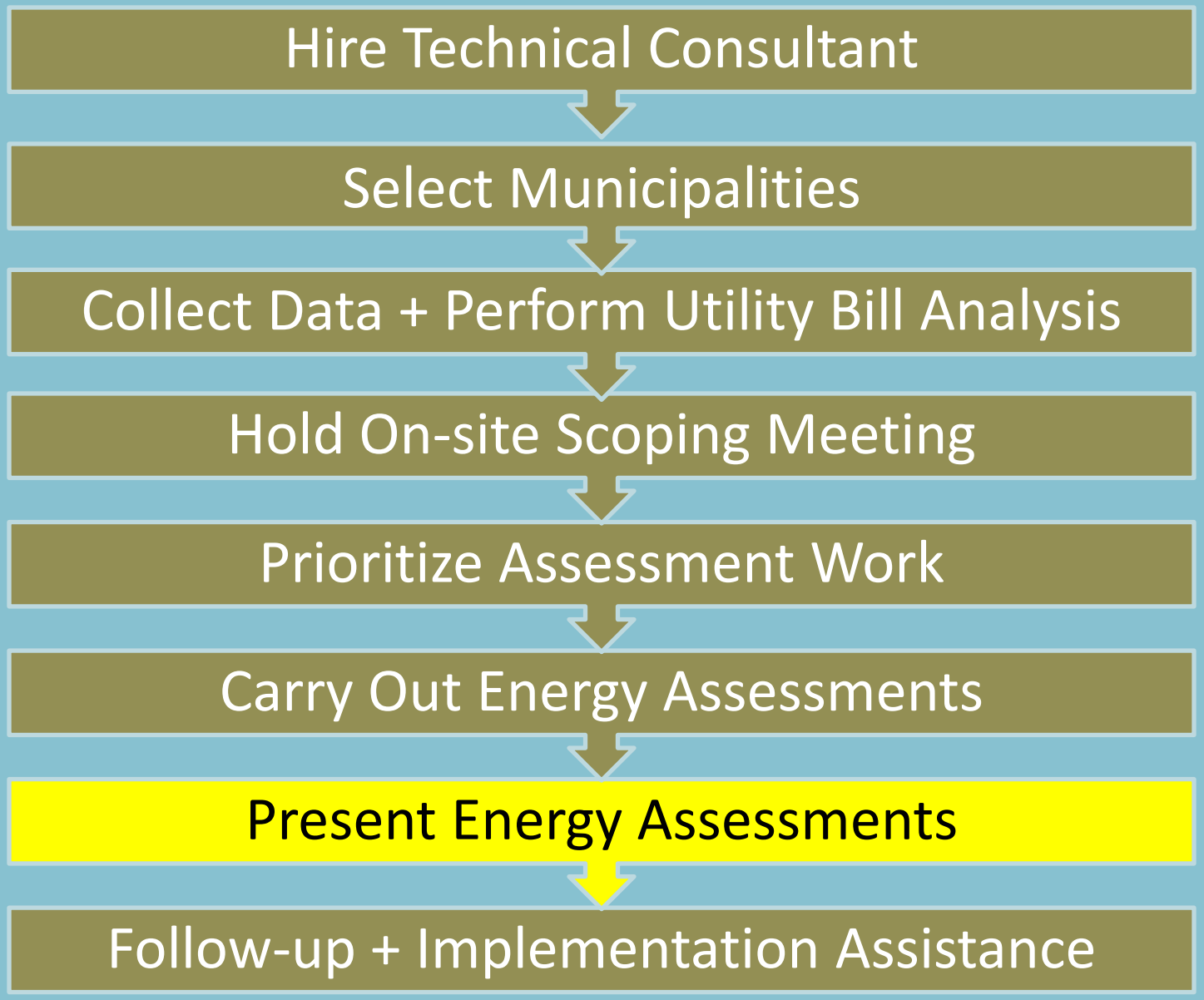
Energy Assessments

Figure 8. Significant Overlighting

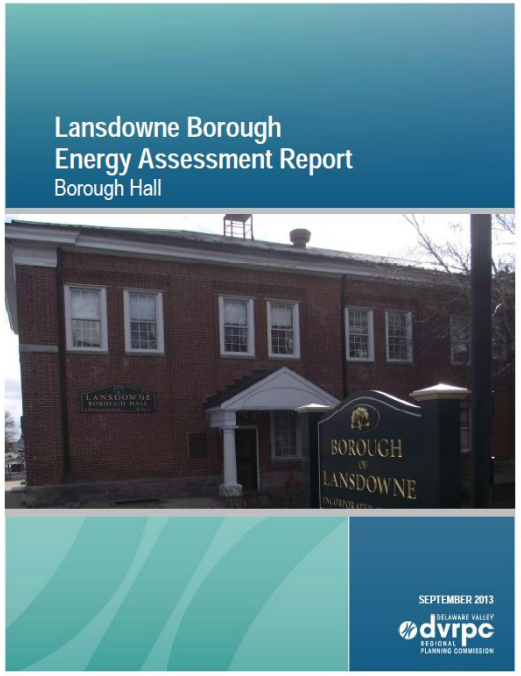




Direct Technical Assistance Process

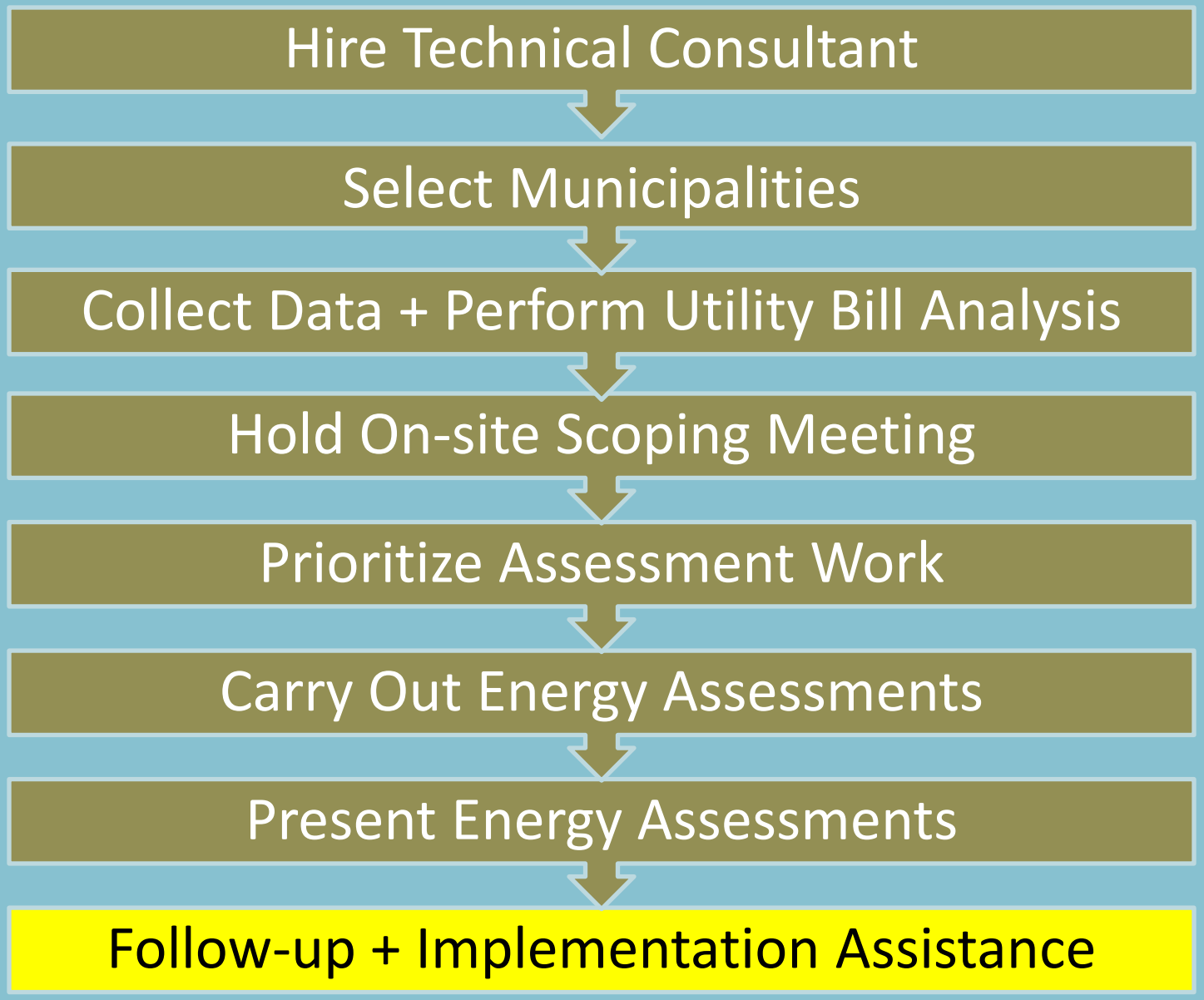


Energy Assessments (Findings)



Snapshot of DTA Energy Assessments	
DTA-wide 15 yr Energy Cost Savings	$1,112,347
Average Project Cost	$41,514
Average Annual Cost Savings	$11,581
Average Simple Payback (yrs.)	2.45

Direct Technical Assistance Process



Implementation Assistance

practical energy solutions

Towamencin Township Administration Building
Hot Water Baseboard Repair Plan
April 2014

The intent of this project is to gain control over the hot-water baseboard radiators in the Township Administration facility.

Existing Conditions

Currently, each baseboard radiator has an electric zone valve wired to a manual thermostat. In nearly every case, the controls are dysfunctional; some radiators run despite low thermostat settings while others do not run despite high thermostat settings. The lack of control could be due to a number of factors – including broken thermostats, faulty wiring, dysfunctional valves and actuators, and/or a problematic transformer, although a transformer problem is unlikely in this case.

Project Scope

To correct the problem, the following steps should be taken:

- Evaluate all valves, actuators, and wiring to ensure functionality. If needed, ensure functionality of transformer.
- Replace all faulty valves, actuators, and wiring.
- Replace all manual thermostats with *digital programmable thermostats with locking cover*. Ensure that all AHUs also have digital programmable thermostats with locking covers.
- Schedule all programmable thermostats carefully. The intent of the hot-water radiators is complement the air handling units (AHUs), which act as the primary heat source for the co building. The radiators provide supplementary heat on cold days when the AHUs cannot k heating demands and in the mornings when needed to bring the temperature up to setpo the baseboard thermostats should be set at temperatures below those of the AHUs, using similar to the following:

	Occupied	Unoccupied
Air Handling Units (core)	70°F	60°F
Hot-Water Baseboards (periphery)	66°F	50°F

- Once thermostats are scheduled, lock all thermostats to maintain temperature control. Se refined to meet the needs of the occupants, but the same approach outlined above shoul set baseboards lower than AHUs, with a 4°F difference between the occupied AHU and ho baseboard temperatures. Allowing building occupants to change settings will defeat the p project and can greatly increase energy costs, while undermining comfort.

practical energy solutions
101 e. evans street, suite 2, west chester pa 19380
t.610.430.1382 f.610.430.1375 www.practicalenergy.net

Estimated Project Costs (not to be distributed to contractors; for Township reference only)

Functionality assessment:	$ 1,200
Zone valve replacement:	$ 5,300
Programmable thermostat installation:	$ 8,000
TOTAL:	$14,500

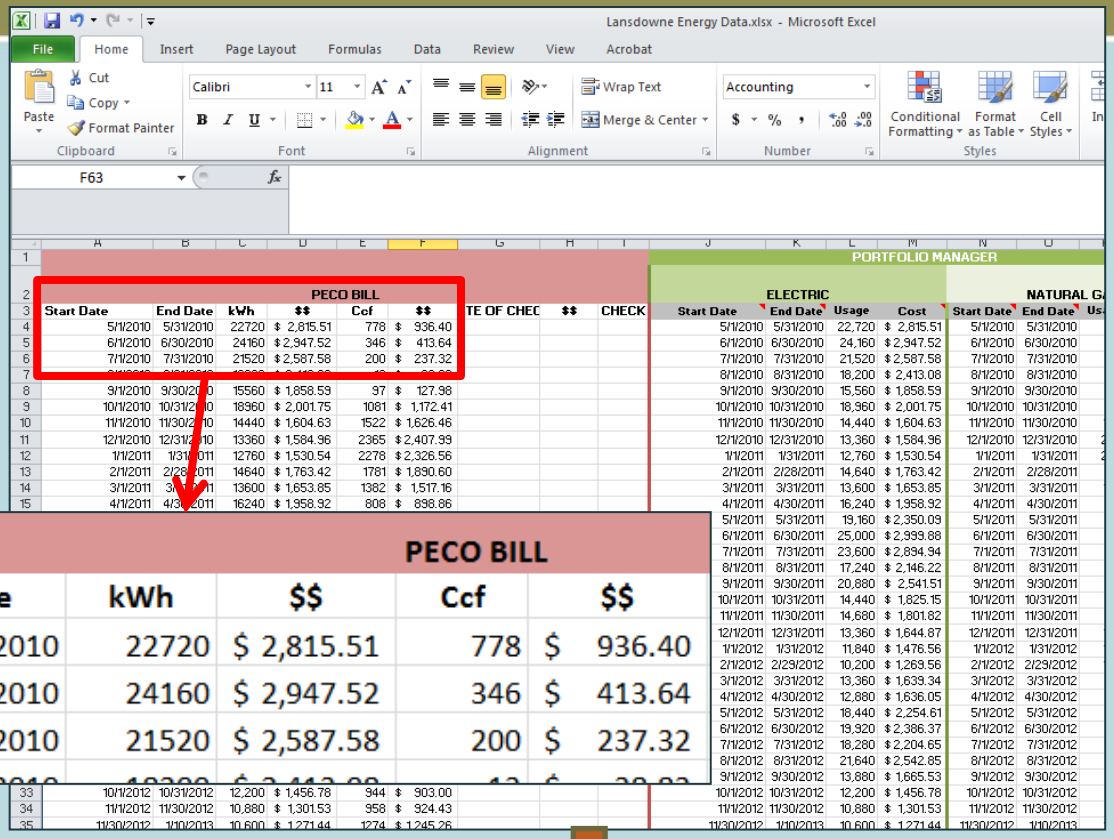
Notes:
Rewiring not included. If wiring is faulty, project cost will be greater.
Demo/disposal costs will also be extra. These are general estimates only.
Price also reflects replacement of all zone valves; if some zone valves are functional, price should decrease.

practical energy solutions
101 e. evans street, suite 2, west chester pa 19380
t.610.430.1382 f.610.430.1375 www.practicalenergy.net

Estimated Project Costs (not to be distributed to c

Functionality assessment:	$ 1,200
Zone valve replacement:	$ 5,300
Programmable thermostat installation:	$ 8,000
TOTAL:	$14,500

Energy Use Tracking



PECO BILL					
Start Date	End Date	kWh	$$	Ccf	$$
5/1/2010	5/31/2010	22720	$ 2,815.51	778	$ 936.40
6/1/2010	6/30/2010	24160	$ 2,947.52	346	$ 413.64
7/1/2010	7/31/2010	21520	$ 2,587.58	200	$ 237.32

ENERGY STAR®
Portfolio Manager®

Facilitate Exchange

Take Aways

- Select partners inclined to be engaged
- Value your partners
- Understand your role
- Reward and acknowledge
- Focus on partners
- Talk their language
- Facilitate exchange
- Be flexible and helpful

Please call or e-mail for more information and resources

Rob Graff, Manager
Office of Energy and Climate Change Initiatives
rgraff@dvrpc.org
215-238-2826

Liz Compitello, Research Analyst
Office of Energy and Climate Change Initiatives
ecompitello@dvrpc.org
215-238-2897

Survey Question

Task/Municipality	Cost
All meetings/planning sessions, Kick-off preparation and presentation for DH/PS, DTA questionnaire support, Prioritization assistance, Scheduling, Project management with Liz/conference calls, Internal project management	$9,794.67
Bristol	$4,568.08
Cheltenham	$7,511.96
Easttown	$1,940.46
Horsham	$4,327.04
Lansdowne	$3,215.76
Nether Providence	$3,276.23
Phoenixville	$3,487.68
Towamencin	$4,442.90
Upper Darby	$3,951.64
Expenses	$740.12
Total	$47,256.54