



# **CIRCUIT RIDER PROGRAM**

Energy Efficiency in Local Government Operations

Reducing Energy Costs in Municipal Operations Seminar Series:  
**LED Traffic Signal Conversion Program**

Liz Compitello, Research Analyst  
Office of Energy and Climate Change Initiatives  
[ecompitello@dvrpc.org](mailto:ecompitello@dvrpc.org)  
215.238.2897

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Springfield Township

# Reducing Energy Costs in Municipal Operations

## Seminar 1: LED Traffic Signal Conversion Program

- Introductions – 15 min.
- Liz Compitello, DVRPC LED Traffic Signal Conversion Program – 30 min.
  - Also, “What is DVRPC?”, and “Introduction to Circuit Rider Program”
- Bob Artese, Springfield Township, Springfield’s Conversion Project – 30 min.
- Roger Clark, The Reinvestment Fund, Financing – 15 min.
- Questions and group discussion – 30 min.

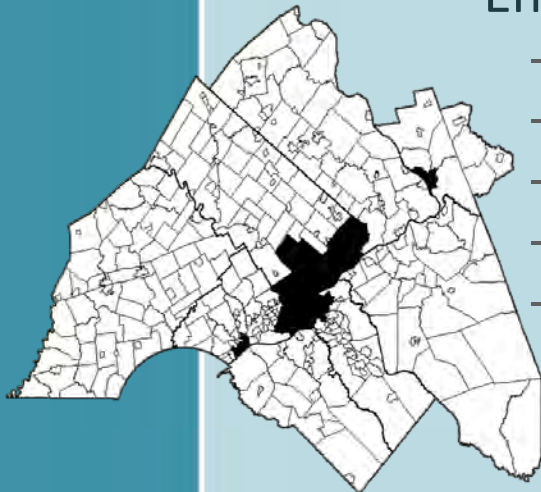
Seminar 2: (June 2012) Energy Management Best Practices

Seminar 3: (Sept. 2012) Project Financing and Budgeting

Seminar 4 (Dec. 2012) Outdoor Area Lighting: Streetlights, parking lot lighting, and recreational lighting:

# Delaware Valley Regional Planning Commission

- MPO for Greater Philadelphia Region
- Region is bi-state, nine counties surrounding and including Philadelphia
- 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 inventory
    - Sea level rise planning
    - Preparing the region for alternative energy
    - Electric Vehicle Readiness Plan
    - **Municipal energy management assistance**



# Challenge of Municipal Energy Planning

- 228 small and medium sized (<35,000) munis in SEPA
  - median population of 6,275
  - range in population size from 34,522 to 572.2
- Limited staffing capacity to support the type of energy management found in larger municipalities.
- Fiscal constraints.
  - Limited municipal budgets
  - No Systems Benefit Charge
- Inundated by vendors and solicitors selling products and services.
- Unsure where to start with energy management
- Prior to DVRPC Circuit Rider Program, no entity focused intently on these municipal needs is established region wide.

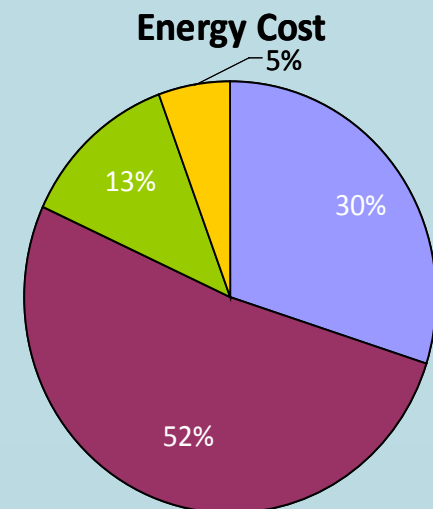
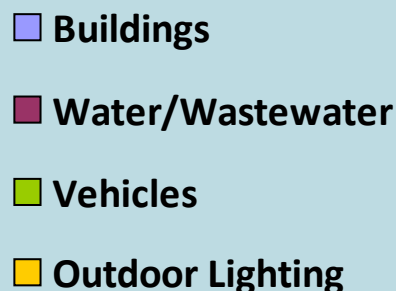
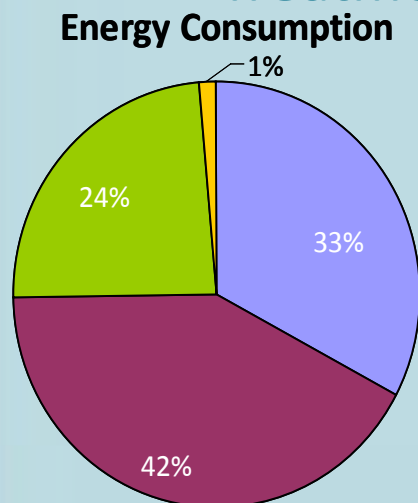
# DVRPC Circuit Rider Program

- 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.
- Targeting small- and medium-size municipalities in southeastern PA
  - 228 municipalities, median population of 6,275
- Funded by a U.S. EPA Climate Showcase Communities Grant
  - ~\$364K over 3 yrs.

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

# DVRPC Circuit Rider Program

1. Reducing Energy Costs in Municipal Operations Seminar Series
2. LED Traffic Signal Conversion Program (or other bulk purchasing)
3. Direct Technical Assistance
4. Workshops and training for Water and Wastewater Treatment Facilities



Source: DVRPC, 2009

# LED Traffic Signal Conversion Program

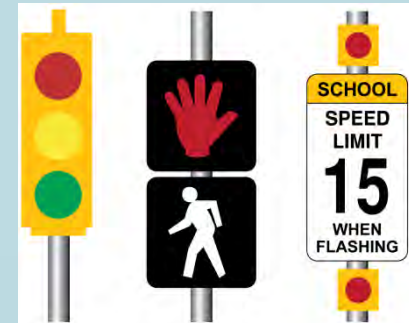
PECO estimates ~ 30% of traffic signal lamps in southeastern PA are incandescent (~25,000 lamps)

## Benefits of LED Traffic Signals

- LEDs use 80% to 90% less energy than incandescent TS lamps
- Maintenance cost reduction
- Re-lamp cycles: 5 years for red modules and 10 years for others
- LED traffic signals also offer significant peak demand savings
- Brighter lights with much lower chance of indication failing

## Regional program modeled after PA Local Development Districts

- Outreach and project coordination to municipalities
- Identify purchasing needs and organizing bulk procurement
- Identifying funding
- Training or identifying an installer for lamp installation



# PA Local Development District's LED TS Programs

1. Program outreach
2. Completed full scale lighting inventory to identify communities' equipment purchase needs

## SEDA-COG

- Counties and municipalities entered into MOU - Counties purchase LED equipment on behalf of municipalities
- 25% reduction over posted COSTARS equipment price

## NEPA

- NEPA solicited cost quotations through COSTARS
- Locked in price for the lamps
- Signals shipped in bulk to installer (procured through competitive bid)
- Purchased ~8,000 lamps.
- Received 20% reduction from COSTARS price.



Source: SEDA-COG, 2009



# PECO Traffic Signal Data

## Traffic Signal Lamps by County

	Total LED	Total Incandescent	% Incandescent	% Yellow Incandescent
<b>BUCKS</b>	15,789	1,743	10%	36%
<b>MONTGOMERY</b>	24,982	9,070	27%	52%
<b>CHESTER</b>	10,493	3,902	27%	36%
<b>DELAWARE</b>	9,737	12,101	55%	50%
<b>TOTAL</b>	<b>61,001</b>	<b>26,816</b>	<b>31%</b>	<b>43%</b>

Source: PECO, DVRPC, 2011

# PECO Traffic Signal Data

## LED Conversion Project Financials: Municipalities with <3 year payback

	Number of munis with <3 yr payback	Average Payback (years)	Total Lamps Replaced
<b>BUCKS</b>	18	1.9	1,727
<b>MONTGOMERY</b>	31	2.1	5,536
<b>CHESTER</b>	26	2.0	2,371
<b>DELAWARE</b>	34	2.0	10,217
<b>TOTAL</b>	<b>109</b>	<b>2.0</b>	<b>19,851</b>

Source: PECO, DVRPC, 2011

# LED Traffic Signal Survey

- LED TS Survey distributed to all 238 municipalities in SEPA
- 28 municipalities responded (12%)
- All respondents had completed a conversion project
- Traffic signal installation and maintenance
  - 32% in-house
  - 68% out
- All reported energy savings
- Majority (79%) reported maintenance cost savings
- 67% funded retrofit using in-house capital
- 18% reported using a cooperative purchasing group

# Next Steps: LED Traffic Signal Conversion Program

- Complete full-scale lighting inventory to identify:
  1. Municipalities that still need to convert
  2. Municipalities that may be due for a re-lamping cycle
  3. Verify municipal bills with PECO
- Gauge demand for participation in bulk purchase of lamps
- Identify cost-effective installation method (68% out-source installation and maintenance)
- Identify funding and financing for these projects

# Thank you!

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# Upcoming Circuit Rider Events!

- April 25<sup>th</sup>, 2012: Energy Efficiency at Water and Sewage Treatment Facilities Conference. Blue Bell, PA
- Seminar 2: (June 2012) Energy Management Best Practices
- Seminar 3: (Sept. 2012) Project Financing and Budgeting
- Seminar 4 (Dec. 2012) Outdoor Area Lighting: Streetlights, parking lot lighting, and recreational lighting: