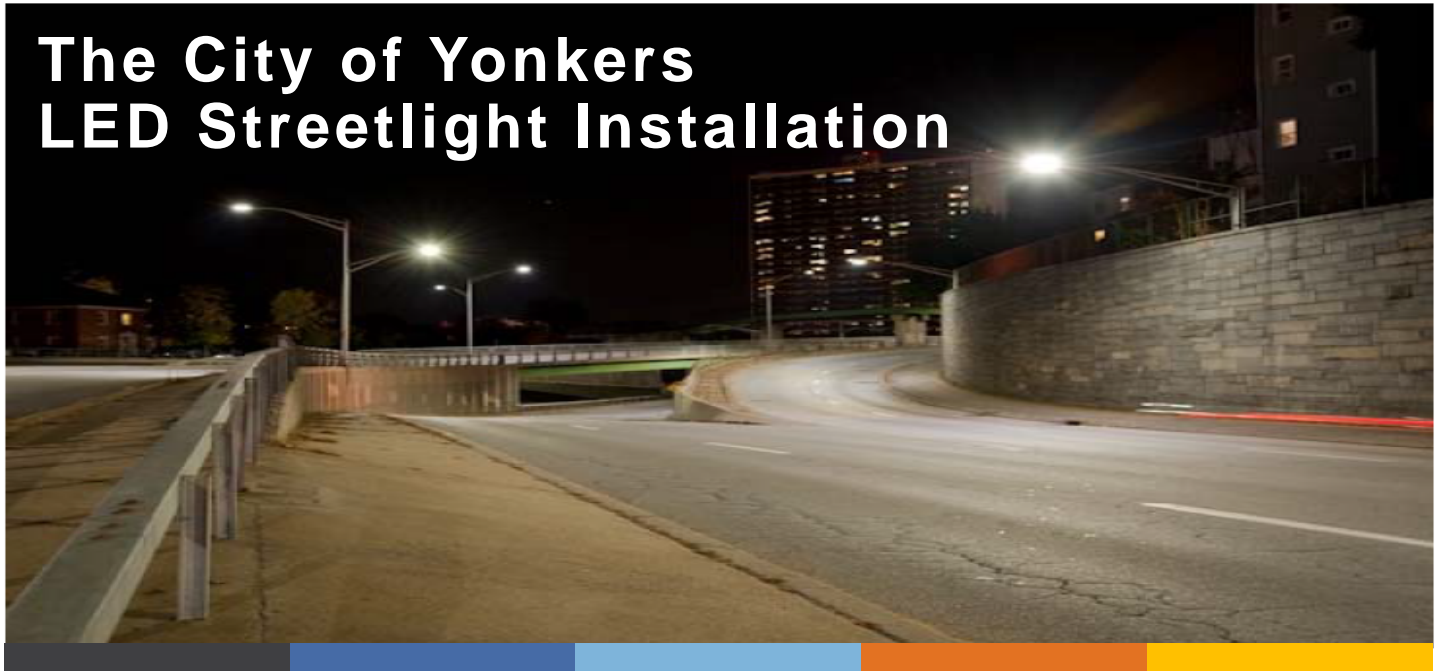




The City of Yonkers LED Streetlight Installation



EXECUTIVE SUMMARY

Anchor projects showcase Climate Smart Community (CSC) leaders that have been effective in achieving significant reductions in greenhouse gas emissions. With a growing number of innovative CSCs who are making a demonstrable impact in addressing climate protection, this document serves as a resource to other CSCs by providing local governments with the information and resources needed to implement a similar type of project in their own communities.

Street lighting is used throughout a community including urban centers, residential neighborhoods, commercial districts, highways and rural intersections. The quality of street lighting largely contributes to the safe movement of both vehicles and pedestrians. Well-lit streets promote commercial activity and the use of public facilities during evening hours, especially in the winter months of the Northeast.

Most streetlights use high pressure sodium (HPS) or metal halide lamps, which have a high luminous efficacy but waste energy in the form of heat and lack the technology to evenly transmit light over a given area. Light-emitting diode (LED) lamps are competitive because they also have a high luminous efficacy, but they have a longer lifespan, emit lower amounts of heat and are better designed to transmit light evenly across larger areas. LED lamps not only provide better quality street lighting but also reduce the frequency of light bulb replacement.

Large city street networks that use inefficient HPS lighting technology require significant amounts of electricity on a daily basis, which can result in high operational and maintenance costs for local governments. For the City of Yonkers, NY, public lighting accounts for \$2.8 million in annual electricity costs and accounts for 18% of Yonkers' municipal greenhouse gas emissions. Under the leadership of Mayor Mike Spano and with the dedicated support from Brad Tito, the Director of Sustainability, the City of Yonkers launched one of the largest LED streetlight installations in Westchester County. By converting to LED streetlights the City of Yonkers will decrease electricity costs for municipal operations by 65% and reduce greenhouse gas emissions by 10% over the next five years.

The following CSC anchor project case study describes the steps involved in a LED streetlight conversion for city-owned streetlights including the development of a request for proposals for an energy performance contract, conducting a comprehensive energy audit, the process for LED installation and project outcomes. Local governments of all sizes are encouraged to review the case study to learn about the benefits of converting to LED streetlights and how energy performance contracts can be used to finance energy efficiency projects.



The Climate Smart Communities Program is jointly sponsored by six New York State agencies: the New York State Energy Research and Development Authority (NYSERDA), Department of State, Department of Environmental Conservation, Department of Health, Department of Transportation, and Public Service Commission.

Climate Smart Communities



Program Overview

In 2009, New York State established the Climate Smart Communities (CSC) program as a unique state and local partnership to reduce greenhouse gas emissions, save taxpayer dollars and advance community goals for health and safety, economic vitality, energy independence and quality of life. To accomplish these goals, local governments adopt the Climate Smart Communities pledge. This voluntary pledge is comprised of 10 pledge elements that include climate mitigation and adaptation strategies. The framework guides local governments in the development and implementation of successful local climate action programs.

CSC Program Goals

- **Reduce** greenhouse gas (GHG) emissions
- **Save** tax payers money by reducing energy demand and increasing efficiency
- **Improve** operations and infrastructure to support renewable energy and low-carbon technologies
- **Provide** a platform for addressing inter-municipal issues with similar assets and issues
- **Enable** access to tools and resources for best practices in climate protection
- **Facilitate** climate action planning to identify the best strategies for each community



CSC 10 Pledge Elements

1. Pledge to be a Climate Smart Community
2. Set Goals, Inventory Emissions, Plan for Climate Action
3. Decrease Community Energy Use
4. Increase Community Use of Renewable Energy
5. Realize Benefits of Recycling & Other Climate Smart Solid Waste Management Practices
6. Reduce GHG Emissions Through Climate-Smart Land-Use Tools
7. Enhance Community Resilience & Prepare for the Effects of Climate Change
8. Support Development of a Green Innovation Economy
9. Inform & Inspire the Public
10. Commit to an Evolving Process of Climate Action

CSC Regional Coordinator Pilot

In 2012, New York State created the CSC Regional Coordinator pilot program to provide support to local governments as they work to carry out the CSC pledge. This program assigned CSC Regional Coordinators to deliver technical assistance to local governments that have adopted the CSC pledge in four regions of the state: Mid-Hudson, Long Island, Capital District and Central New York. The Mid-Hudson Region encompasses seven counties including: Dutchess County, Orange County, Putnam County, Rockland County, Sullivan County, Ulster County and Westchester County. As of spring 2014 there are 49 local governments in the Mid-Hudson Region that have adopted the CSC Pledge to reduce greenhouse gas emissions and prepare for a changing climate to help protect public health and safety and support a secure economic future.

VHB Engineering, Surveying and Landscape Architecture, P.C. (VHB) is the CSC Regional Coordinator that provides climate protection services and resources to the 49 CSCs in the Mid-Hudson Region. VHB's approach includes conducting in-person consultations with each CSC to determine exact climate protection needs, and tracking the progress of current participants in achieving CSC pledge elements. Working closely with existing CSC participants, the VHB team delivers one-on-one tailored assistance, top-notch resources, and educational opportunities to advance climate protection efforts while promoting the successes of the CSC program and engaging new participants.






The City of Yonkers, N.Y.



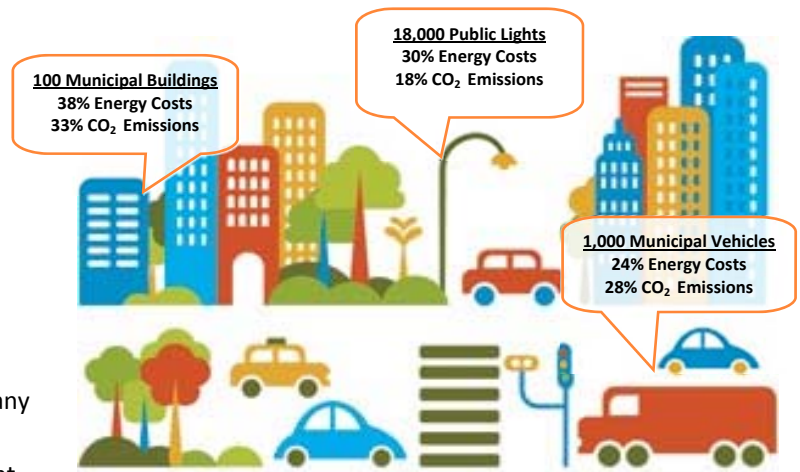
Climate Protection Priorities

The City of Yonkers is the fourth largest city in New York State and home to nearly 75,000 households with almost 200,000 residents and over 17,000 businesses. As with many local governments, there are energy expenses and greenhouse gas (GHG) emissions related to Yonkers' government operations. The city took the initiative to increase energy efficiency and promote climate protection while saving taxpayers money:

-  ⇒ 100 Municipal Buildings:
38% Energy Costs & 33% Carbon Emissions
-  ⇒ 1,000 Municipal Vehicles:
24% Energy Costs & 28% Carbon Emissions
-  ⇒ 18,000 Streetlights & Traffic Signals:
30% Energy Costs & 18% Carbon Emissions

In 2009, the City of Yonkers adopted the Climate Smart Communities Pledge as part of its ongoing commitment to reducing GHG emissions and preparing for a changing climate. Under the framework of Climate Smart Communities, Yonkers began work under *Pledge Element 2: Set Goals, Inventory Emissions, Plan for Climate Action*. In 2010, the City of Yonkers joined ICLEI – Local Governments for Sustainability and conducted a greenhouse gas emissions inventory for both the community and local government operations. Establishing a baseline GHG inventory provides a local government the data it needs to prioritize actions that will offer the best return on investment to reduce energy consumption, municipal costs and GHG emissions. The results of the GHG inventories were used to prepare the *City of Yonkers' Energy Action Plan* along with climate goals and implementation measures to reduce GHG emissions by 20% below 2005 levels before the year 2020.¹

Under the leadership of Mayor Mike Spano, the *Energy Action Plan* is being used to guide climate protection efforts in the city, including projects that address the 10 pledge elements (see call-out box) under the CSC Program, like ***Pledge Element 3: Decrease Community Energy Use***. Some of those projects include upgrading interior lighting of city buildings, installing energy management systems, right-sizing the vehicle fleet to increase fuel efficiency, and adopting a



“ The challenge is clear and urgent. The opportunity is extraordinary. ”

>> [Yonkers Energy Action Plan](#)

fuel efficiency policy for city-owned vehicles. The city continues to focus on decreasing energy demand from municipal operations, with the LED streetlight conversion project being one of the primary opportunities for achieving the goals of the *Energy Action Plan*.

Project Overview

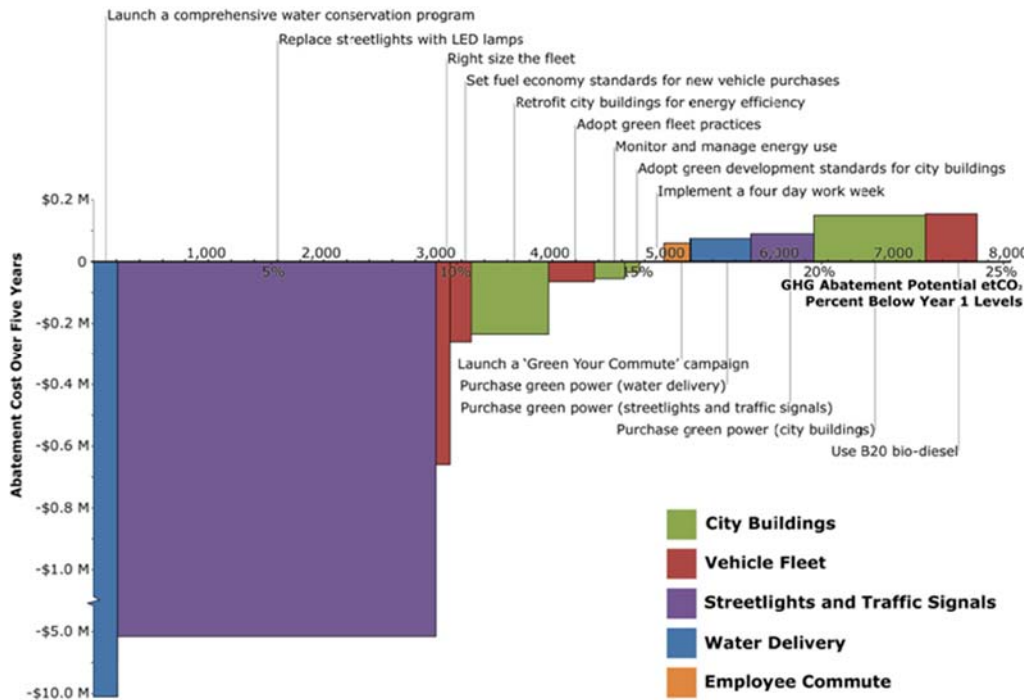
In 2013, the City of Yonkers began one of the largest light-emitting diode (LED) streetlight projects in Westchester County. Guided by the *City of Yonkers' Energy Action Plan*, the LED streetlight project was a two-year effort that included an energy performance contract with Lumen Light Solutions (contractor) and collaboration with numerous stakeholders throughout the city. Through a unique partnership between the Commissioner of Public Works, Tom Meier, and Director of Sustainability, Brad Tito, the city worked to convert 12,000 city-owned streetlights to energy-efficient LED lamps to reduce the city's carbon footprint. With an estimated gross energy savings of \$18 million over the next 10 years, this project is a successful, replicable example of how municipally-owned streetlights can be upgraded to reduce costs for local government operations and achieve a community's climate protection goals.²

Project Background

The LED streetlight project was identified in the *Energy Action Plan* as an implementation measure to help the city reach its GHG reduction goals. According to the GHG in-



Yonkers' GHG Abatement Cost Curve



GHG ABATEMENT COST CURVE

The GHG Abatement Cost Curve lists the 14 initiatives listed in the *City of Yonkers' Energy Action Plan* by their potential energy and cost savings over the next five years. As shown, the biggest energy reductions can be made by replacing streetlights with LED technology, which would reduce greenhouse gas emissions by 10% and would result in a cost abatement of \$5 million over the next five years.⁴

“ The streetlights had a disproportionately large contribution to carbon emissions. It was a key opportunity for us to not only reduce greenhouse gas emissions, but also to address the high cost of electricity. ”

>> Brad Tito, Director of Sustainability

ventory, the total amount of emissions from the city's streetlights was estimated at 5,670 tons of carbon dioxide equivalent in 2005. In addition to a large carbon footprint, electricity for the 12,000 streetlights cost the city almost \$2.8 million in 2012, which does not include the yearly repairs performed by the Department of Public Works.³ To mitigate the high cost of electricity and GHG emissions, the *Energy Action Plan* recommended that the Department of Public Works install Light-Emitting Diode (LED) technology through an energy performance contract.

To jumpstart this project, the City of Yonkers formed a Selection Committee to ensure that a diverse set of interests and expertise were represented throughout the procurement process. The committee was comprised of staff at the highest levels of the city government, including the Commissioner of Finance, the City Engineer, a Mayoral Representative and members of the City Attorney's Corporation Council. Not all of the committee members were experts in LED streetlight conversions, but the diverse perspectives balanced community interests as the committee considered

the type of LED technology and qualifications of potential contractors.

Planning for a sustainable community requires coordination amongst different city functions and departments in order to achieve local goals. The Yonkers' LED streetlight installation is an example of how collaboration between departments facilitated the implementation of a large-scale sustainability project. This project was successful because it enabled the Director of Sustainability to work closely with the Public Works Commissioner and to coordinate efforts between different departments, the utility provider and contractor.

The City of Yonkers' LED streetlight project was completed in three major steps. The initial step was to develop an energy performance contract (EPC) by creating a request for proposals (RFP) and selecting a contractor for the job. The second step was the comprehensive energy audit, which involved inventorying all existing equipment, reporting on current maintenance needs, and verifying energy conservation measures. The final step was the LED streetlight installation,



which included the physical replacement of each street lamp and updating the utility's database to create a comprehensive inventory as a final deliverable.

STEP 1



The DLC is a non-profit organization that has driven the lighting market toward innovation by providing information, education, tools and technical expertise for cutting-edge technologies.
www.designlights.org



NEW YORK STATE ENERGY LAW— ENG Article 9

In New York State energy performance contracts for local governments are regulated under NYS Energy Law (ENG) Article 9: Energy Performance Contracts in Connection with Public Buildings and Facilities. Article 9 limits the duration of an EPC to less than 35 years or the lifespan of equipment and they must include a specific liability clause limiting the appropriation of additional monies for the purpose of the contract. An EPC typically includes two contractual phases: an audit contract and a post-audit contract.

General RFP Contract Elements:

- ⇒ Overview of the project
- ⇒ Proposed schedule
- ⇒ Submission requirements
- ⇒ Evaluation criteria

EPC Contract Elements:

- ⇒ ESCO selection criteria
- ⇒ Investment grade audit
- ⇒ Energy conservation measure (ECM) identification and implementation proposal
- ⇒ Performance contract and financing
- ⇒ Implementation of ECMs
- ⇒ Measurement and verification (M&V)

View our Energy Performance Guide at
www.MidHudsonCSC.org

Develop an Energy Performance Contract

Part A: Criteria for an Energy Performance Contract

The *City of Yonkers' Energy Action Plan* called for LED streetlight implementation through an energy performance contract, which enables the energy cost savings, rather than an initial capital investment, to pay for the energy efficiency project to generate those savings.⁵ In New York State, energy performance contracts (EPC) for local governments are regulated under New York State Energy Law (see call-out box for ENG Article 9).

In addition to the general contract elements of an RFP (see call-out box), the committee outlined specific criteria for the contractor and acceptable lighting infrastructure. The criteria for an acceptable energy services company (ESCO) included extensive

project management experience and knowledge of technical lighting specifications and installations. For the lighting infrastructure, the city consulted the New York State Energy and Development Authority (NYSERDA) and experienced communities, such as Dobbs Ferry and Eastchester, to identify four LED lamps to be included in the RFP. The committee also incorporated the performance standards of Design Lights Consortium (see call-out box) into the RFP to ensure that cost and durability requirements would be met by the contractor.

The financial requirements of Yonkers' RFP called for an explicit methodology for measuring savings, and guaranteed project savings and financing. The ESCO would be responsible for underperformance and covering the loss of energy-savings or the replacement of failed equipment.⁶ The RFP also required applicants to demonstrate their financial capacity by providing the city with a security deposit to be withheld if contract terms were not met.





11,972 Streetlights



\$2.8 million / year
Streetlight Electricity Cost



5,670 CO₂ / year
Streetlight Carbon Emissions

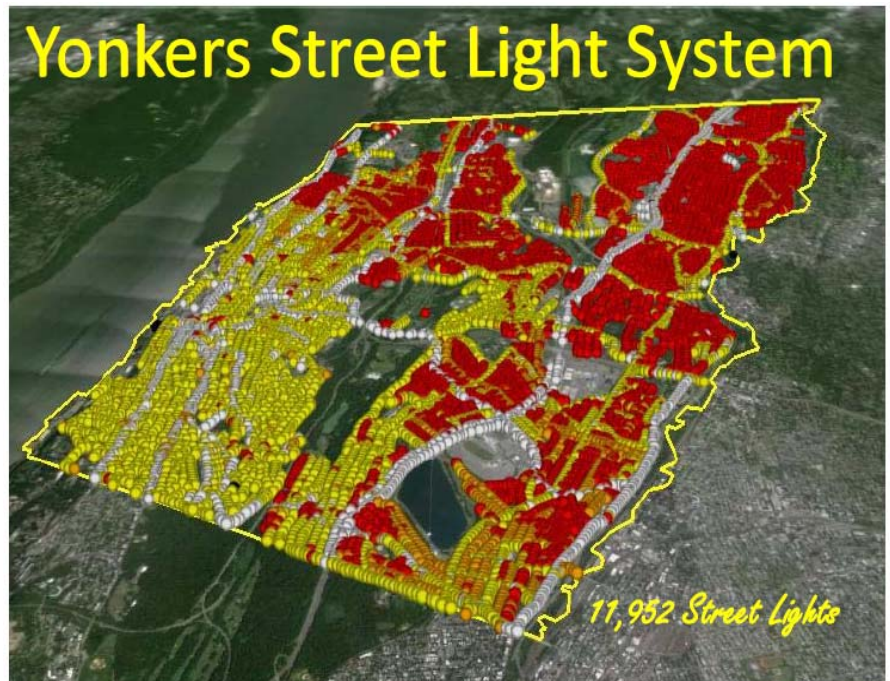
A unique element of the RFP was the inclusion of community education to facilitate public involvement and awareness of the city's energy efficiency efforts. The ESCO would be responsible for developing educational flyers, attending public meetings to address community concerns, and engaging the public throughout the planning process.

Part B: Review Proposals and Select Contractor

A total of seven firms responded to Yonkers' RFP when it was issued by Mayor Mike Spano in May of 2012 and were evaluated by the Committee in June 2012. There are at least two phases of an EPC: an audit and post-audit contract. Yonkers identified these phases as the baseline energy audit and the comprehensive energy audit. The first step in the proposal review process is to confirm the financial feasibility outlined in the baseline energy audit.

In order to calculate Yonkers' baseline energy use, the city relied on access to Con Edison's database of the streetlight systems, usage data and operation schedules. Using the utility database, applicants provided the city with financial estimations that outlined the current kilowatt consumption for the existing 11,952 city-owned streetlights and the projected kilowatt consumption after the LED streetlight installation. This baseline assessment was essential to review the cost effectiveness of proposals.

Out of the seven respondents to the RFP, the committee chose Lumen Light Solutions, LLC as the contractor based on the financial terms of the EPC. The initial cost of the project is completely funded by contractor. Once the LED streetlight installation is completed, the city will begin to make annual payments of \$870,000 for a ten year period, which would be incorporated into the municipal budget as a line item for rental equip-



ment over the ten year lease period. The expected annual energy savings of \$1.8 million would compensate the city for the \$870,000 annual payment.

The City of Yonkers also negotiated a guaranteed savings clause into the EPC so that the electricity savings will equal \$1.8 million per year. If there is any shortfall in energy savings, an amount equal to the savings amount is guaranteed by the contractor. Future payments to the contractor may be withheld if the guaranteed amount is not provided to the city. This clause protects the city from the risk of underperforming technology in the future. At the end of the ten year lease period, complete ownership of the streetlight system will be sold back to the city for \$1.00 and they will receive an updated database of Yonkers' streetlight inventory.

In addition to the financial attractiveness of the proposed EPC, the contractor met the qualifications of an experienced ESCO outlined in the RFP. Lumen Light Solutions is a joint partnership between two local firms in New York: Yonkers Contracting and Verde Electric Corporation. Yonkers Contracting is headquartered in the City of Yonkers with extensive experience in managing projects related to transportation, energy and the environment. The Verde Electric Corporation is based in Mount Vernon, New York, with expertise in cutting edge lighting technology and installations. This unique partnership brought together complimentary expertise in general contracting, local relationships, and lighting projects. With a vision for sustainability and energy



savings, Mayor Mike Spano and the City Council signed the energy performance contract in March of 2013.

STEP 2

Conduct a Comprehensive Energy Audit

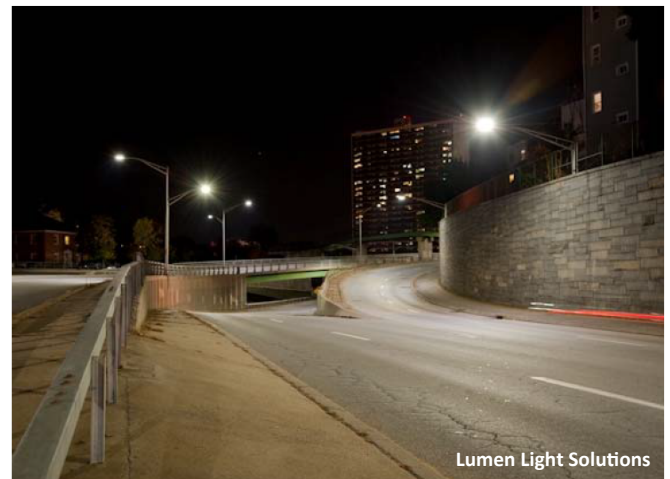
The comprehensive energy audit (CEA) refines the baseline energy audit and provides documentation for expected annual savings. It involves a detailed analysis of the 11,952 streetlights that are owned, operated and maintained by the city. Each streetlight had to be tested to ensure proper functionality so that the city would be able to make repairs to damaged poles or equipment before the LED streetlight installation. The contractor provided Yonkers with a CEA inventory report describing the lamp type, model, wattage, burn hours, pole number, condition, location, cross street, identification number and GPS coordinates for each streetlight. Con Edison worked with the contractor to develop a standardized methodology to keep the database updated throughout the audit. The CEA phase took approximately six months to complete and required constant communication and cooperation among the City of Yonkers, Con Edison and the Contractor.

The contractor also provided a weekly CEA inventory report which gave the committee an opportunity to make modifications to the type of lighting based on the needs of an area. This created an opportunity to address public concerns or preferences during the audit phase so that inventory adjustments

could be made prior to the installation process. The City of Yonkers developed installation priority areas beginning first with expired lamps, then major arterials and commercial areas, followed by smaller streets and residential areas. LED streetlight installation could not begin until the city approved the completed inventory of LED recommendations for each area and the methodology used to calculate the baseline energy audit.

“ The City of Yonkers’ goal is to reduce greenhouse gas emissions by 20% below 2005 levels before the year 2020. ”

>> Yonkers Energy Action Plan



STEP 3

Install LED Streetlights

Installation of the LED streetlights was estimated to take one year and be completed by July 2014. The contractor followed the same CEA process for installation priority areas beginning with expired lamps first, then major arterials and commercial areas, followed by smaller streets and residential areas. Con Edison worked closely with the contractor to develop a methodology for updating the utility database and provided training to the contractor and the Department of Public Works. Weekly reports were submitted to the city with the number of completed installations and monthly meetings were held to review the reports and discuss any issues, such as equipment malfunctions or repairs. In order to expedite changes in Con Edison’s database and for the city to begin to accrue savings in the billing system, the contractor issued specification sheets to Con Edison on a weekly basis so that wattage and quantity charges could be more easily verified. Once the updates were approved by Con Edison, the electrical charges for the lamp were adjusted and the energy savings started to generate in the billing system.

A certificate of substantial completion will be issued after the contractor has attempted to replace all of the streetlights identified in the CEA inventory report. Any outstanding issues

will be compiled into a final report and reviewed with the city. At this point the contractor will be required to train city employees, including staff members in the Department of Public Works, on the operation and maintenance of the new LED streetlights.

Next Steps

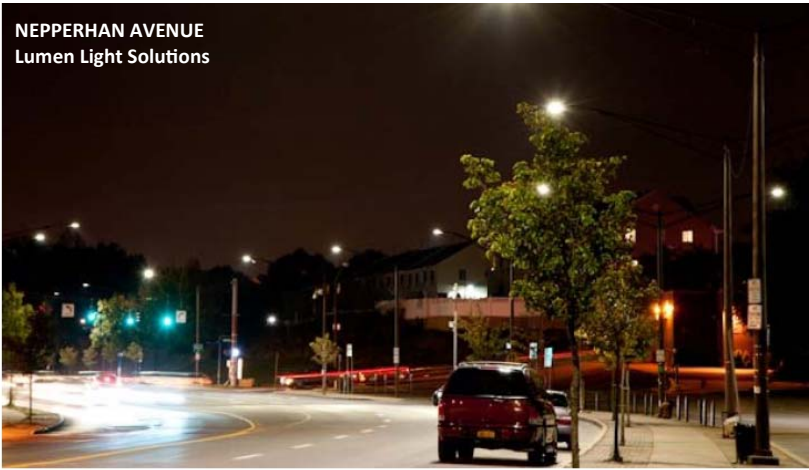
Measurement & Verification

The measurement and verification (M&V) process outlined in the energy performance contract quantifies the energy performance against the energy savings for the life of the contract. The City of Yonkers negotiated a contract clause for annual reconciliation for the guaranteed energy savings amount. This protects the local government from equipment or installation failures caused by the contractor.

During the ten year lease period, the contractor is required to compile an annual report at the beginning of each year to calculate the total energy savings accrued from the previous year. If the energy savings are less than what was guaranteed in the contract, an amount equal to the deficit will be deducted from the payment to the contractor.

LED STREETLIGHT PROJECT	Timeframe											
	Year 1 (Quarterly)				Year 2 (Quarterly)				Year 3 (Quarterly)			
Action Items	1	2	3	4	1	2	3	4	1	2	3	4
Form a Selection Committee	■											
Issue RFP & Review Contractors	■	■										
Complete baseline energy audit		■										
Contract Negotiations		■										
Conduct Comprehensive Energy Audit			■	■								
LED Installation - work-order lights				■	■							
LED Installation - corridors & arterials					■	■						
LED Installation - residential areas						■	■	■	■			
Issue Certificate of Substantial Completion									■			
Repayment Period - M&V Annual Reports									■	■	■	10 +

NEPPERHAN AVENUE
Lumen Light Solutions



CLIMATE SMART COMMUNITIES PLEDGE ELEMENT 3

Decrease Energy Demand for
Local Government Operations



Saved \$1.8 million / 1st year



Saved: 2,960 CO₂ / year

Project Outcomes

As a Climate Smart Community, the City of Yonkers has gone above and beyond to fulfill *Pledge Element 3: Decrease Community Energy Use*. Public street lighting is an important component of a city's infrastructure that contributes to public safety, economic activity, operational costs, and environmental health. This project is a great example of decreasing energy demand in local government operations for other Climate Smart Communities who are committed to reducing greenhouse gas emissions, saving tax payer dollars, and supporting a green innovation economy.

Reducing GHG Emissions

Upon completion of the LED streetlight conversion in 2014, the City of Yonkers will be better positioned to achieve its greenhouse gas reduction goals of 20% below 2005 levels before 2020. According to the municipal greenhouse gas inventory, streetlights and traffic signals account for 5,670 tons of carbon dioxide released into the atmosphere per year. The LED streetlight project is expected to result in carbon emission reductions of 2,960 tons per year, which reduces the city's carbon footprint by 10%.⁷ To fully achieve the greenhouse gas reductions goals stated in the energy action plan, the city is planning to offset remaining carbon emissions from the streetlights and other outdoor public lighting. The city plans to purchase 25% of streetlight electricity from renewable energy sources, which will further reduce emissions by an estimated 560 tons.⁸ This project is a great example of how communities can effectively reduce GHG emissions through a combination of efforts, including energy performance contracting and offsets.

Economic Benefits

In 2012, the City of Yonkers spent close to \$2.8 million on electricity to power streetlights. The LED streetlight project is expected to decrease streetlight electricity costs by more than \$18 million over the ten years, which would result in a 65% cost reduction for streetlight electricity. The energy performance contract allowed for the initial costs of the LED streetlight project to be financed by the contractor, at no cost to the city. The contract also guarantees that the electricity savings will equal \$1.8 million per year and requires compensation from the contractor if the project underperforms. The structure of the energy performance contract protects the city from the installation costs incurred during the project and the risk of underperforming technology in the future.

Other significant economic benefits of LED streetlights are derived from the much longer LED lifespans and minimal maintenance requirements. The City of Yonkers estimated that the Street Maintenance Division performs about 3,800 streetlight repairs per year. The cost of maintenance is expected to decrease due to reduced frequency of maintenance required. The LED replacement lamps are projected to last 80,000 hours compared to Yonkers' current high pressure sodium (HPS) lamps that are projected to last for about 24,000 hours. The LED efficient bulbs come with a 12-year manufacturer's warranty, and the contract guarantees 10 years of replacement bulbs. The contractor is also required to provide training to city employees in the Department of Public Works on the operation and maintenance of the LED streetlights.

The City of Yonkers' contract with Lumen Light Solutions, a joint venture between two locally based firms, also helped address Climate Smart Communities' *Pledge Element 8: Support Development of a Green Innovation Economy*. In addition to supporting local businesses, two local firms will have gained experience in large-scale, energy efficient infrastructure projects and will be able to replicate this model throughout the region. The City of Yonkers has strategically positioned their local economy to be competitive in an emerging green industry.



Community Benefits

Not only does the LED streetlight project save tax payer dollars, but it also increases safety and enhances quality of life for the community. The completion of the comprehensive energy audit expedited the replacement of broken or malfunctioning equipment across the city. An installation priority map was implemented to not only restore public lighting but to increase the quality of lighting provided in those areas. The quality of street lighting largely contributes to the safe movement of both vehicles and pedestrians. Well-lit streets also promote commercial activity and allow the safe use of public facilities during evening hours.

The City of Yonkers also demonstrated a commitment to Climate Smart Communities *Pledge Element 9: Inform and Inspire the Public*. As demonstrated in Yonkers' LED streetlight conversion, large-scale energy efficiency projects require interdepartmental education and cooperation as well as external communication and engagement. This was managed through the collaborative efforts of the Yonkers committee. In addition, community education was built into the energy performance contract to facilitate public engagement and awareness of Yonkers' energy efficiency efforts. A total of five separate educational flyers were developed by the contractor for public distribution. There were seven public meetings held about the LED streetlight conversion project which the contractor attended to address community concerns and engage the public in the planning process. Creating a platform for public information and engagement was mutually beneficially as it provided opportunities for the project leaders to gain feedback from the community while promoting the environmental benefits and cost savings to taxpayers.

Recommendations

The City of Yonkers was able to reduce greenhouse gas emissions and save the city millions of dollars by replacing 12,000 streetlights with LED lamps through a well-executed energy performance contract. Other Climate Smart Communities who are considering retrofitting their streetlights can build on Yonkers' success by considering these recommendations:

1) Coordinate Early with the Utility Provider

Contact your utility provider early on to see what resources are available. Gaining access to a streetlight inventory will help to estimate total costs and benefits. Utilities may offer special incentives for streetlight retrofits or other energy efficiency projects.

2) Contact New York State Energy and Development Authority (NYSERDA) for Information

New York State Energy and Development Authority (NYSERDA) can offer guidance to communities about funding requirements and opportunities. They may also be able to share resources used by other communities who have implemented similar projects.

3) Form a Committee or Task Force

You do not have to be an expert to contribute to a streetlight project, but you will need to communicate and coordinate activities internally and externally. Invite major stakeholders and experts to join the conversation around upgrading to LED streetlights.



4) Engage the Public

The quality of public street lighting impacts the quality and safety of neighborhood communities. Community education and participation can be built into the contract to help residents and businesses better understand the energy savings and environmental benefits of converting to LED streetlights.

5) Develop a Comprehensive RFP

Develop a comprehensive request for proposals (RFP) so that the terms of the energy performance contract are explicit from the beginning. For more information refer to the *Energy Performance Contracts for Local Governments* provided below.

6) Conduct Baseline Energy Audits

Project feasibility will depend on the baseline energy audit. If there is no in-house capacity to estimate costs, consider hiring a contractor to conduct assessments. The cost of the baseline energy audit should be included in the request for proposals and the energy performance contract to ensure that the cost of the baseline energy audit is recovered.

7) Adopt Performance Standards for LED Technology

LED technology has improved dramatically, but it is important to ensure that a quality product is being installed in terms of performance needs, cost and durability. Consider the existing equipment and the easiest installations for those sites, such as the commonly replaced cobra-head fixtures. See the specifications used by Design Lights Consortium (<http://www.designlights.org>).

8) Maintain Updated Streetlight Inventory

Identify a streetlight inventory or database as the final deliverable for the project. This document will be essential to verifying upgrades with utility providers and planning for operational efficiency or maintenance in the future.

9) Lead By Example and Share Best Practices with other Climate Smart Communities!

>> References

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7. The City of Yonkers' Energy Action Plan. Mayor Mike Spano. The City of Yonkers, New York. September 2013. P. 35.
8. The City of Yonkers' Energy Action Plan. Mayor Mike Spano. The City of Yonkers, New York. September 2013. P. 36.

>> Additional Resources

- Yonkers Energy Performance Contract Toolkit available, including a draft RFP. Please contact Brad Tito at: brad.tito@yonkersny.gov.
- How to Finance an EPC, US Department of Energy: http://www1.eere.energy.gov/wip/solutioncenter/pdfs/T2_ICF_FS4_HowtoFinance_FINAL_052311.pdf
- Energy Services Coalition, Model Procurement and Contracting Documents: <http://www.energyservicescoalition.org/resources/model/index.html>
- U.S. Department of Energy Solutions Center—Energy Savings Performance Contracting (ESPC): http://www1.eere.energy.gov/wip/solutioncenter/buildings/performance_contracting.html
- Introduction to Performance Contracting. ICF International and the National Association of Energy Service Companies, 2007: http://www.energystar.gov/ia/partners/spp_res/Introduction_to_Performance_Contracting.pdf
- Public and Institutional Markets for ESCO Services: Comparing Programs, Practices and Performance, March 2005, Berkeley National Laboratory: <http://eetd.lbl.gov/EA/EMp/reports/55002.pdf>





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