

## Chapter 4: Street Light Procurement and Financing

A number of different approaches have been used successfully by municipalities in New York State and beyond, each has its own costs, benefits and risks. Once a municipality decides to acquire its street light system and convert to LEDs, it must assess which procurement strategy and finance approach best meets its needs and priorities. **Municipalities should seek legal counsel to assure their procurement process and financing strategy conforms with New York State Law which governs municipal procurement.**

### Procurement and Installation of LEDs

This chapter examines three types of approaches to the procurement and installation of LED lights. In a **community-managed approach** (the lowest cost approach) the municipality procures LED installation and maintenance services through one contract, and the required equipment (e.g. fixtures and, if required, fuses) through another. In a **single contract approach**, the equipment and installation are procured together. And in a **performance-based approach** (the highest cost approach,) the municipality contracts with a turnkey provider for the entire project and receives shared or guaranteed savings.

Note that these approaches are generally used for procurement of standard “cobrahead” street lights, which is the predominant fixture type used in municipal street lighting. Because decorative lights and options for their conversion can be quite varied, they may be separately negotiated with the selected vendor if the cost is less than the statutory limit for competitive procurement rather than included in the Request for Proposals (RFP) discussed below. A town may always choose to seek competitive quotations for these additional services.

### Community-Managed

Under this approach, the municipality plays the role of project manager, overseeing separate processes for procuring equipment and installation services (with or without follow-on maintenance). While this approach typically offers the lowest cost, it also places a greater management burden and project risk on the municipality.

The RFP for installation services typically lays out requirements for a minimum level of contractor experience, qualifications for the workers, a detailed list of expected services, any bonding requirements, and the municipality’s inventory of existing lighting. The installation cost is typically a fixed price per unit that includes removal and disposal of the old fixture and installation of the new LED with photocell control. Prices are requested for a complete range of potential services as well as labor and equipment rates.

Some municipalities with the required personnel and equipment may decide to maintain the lights in-house with municipal staff. For those that choose to outsource maintenance, it may be best to pay for these services on a time-and-materials basis, with a minimum-guarantee period for any performed service, since the amount of service required will be quite small.

In a community-managed approach, the municipality can either procure materials through a competitive bid process or by “piggybacking” on an existing contract that was properly awarded by a federal, state or local governmental entity (see discussion of piggybacking, below). A competitive bid process managed by the municipality will require that detailed specifications be provided, and the local government must also have the technical capacity to review the received bids. Fortunately, municipalities now have guidance from the U.S. Department of Energy, which has published model specifications (see Appendix A). Still, municipalities will have to be able to understand the submissions to ensure that the RFP responses are compliant.

A community-managed approach places more responsibility for ensuring a successful project on the municipality and thus increases risk. Risks include managing the responsibility of various parties involved in the project, including the installation contractor, product vendor, and utility through any contingencies that may occur in a conversion project (e.g. discoveries regarding field conditions, product failure, etc.). In addition, the municipality bears the risk of any warranty failures, unless the risk is built into the product price. LED products and photocells can come with a minimum 10-year warranty, and municipalities can minimize risk by selecting high quality manufacturers that have a strong track record. Under this approach, the municipality would also be responsible for all necessary communications and protocols involving the utility, and for applying for any state or utility incentives, if available.

### Single Contract

Under this approach, the municipality issues a single RFP for a contract for the procurement, installation, and follow-on maintenance of the LEDs. This approach can include third-party project management, as in the case of the services offered by the New York Power Authority, described below. The RFP can include a warranty guarantee on labor for some period of time, and a guarantee of not less than 90 days following the project completion is recommended. Most premature LED failures will occur within this timeframe, although some municipalities have opted for a year-long guarantee. The RFP could also include specifications and brand preferences for the fixtures and photocell controls with minimum product warranties. Minimum qualifications for both the products and the contractor should be included, as should appropriate performance and warranty bonds to protect the municipality.

A difference between this approach and the community-managed approach is that the contractor must pay the cost of the warranty bond, and will mark up the product accordingly. The single contract approach has lower risk for the municipality, since some of the risk is carried by the contractor. The municipality is still responsible for the lighting design decisions, unless it chooses a one-for-one replacement strategy—a replacement method that a number of contractors in New York have taken. The downside of this method is that existing lighting deficiencies, such as a lack of uniformity or inappropriate lighting levels, may be replicated and perhaps exacerbated by brighter LEDs. This risk can be mitigated by careful review of specifications for replacement lights, together with a review of the inventory of existing lights, to determine the desired lighting levels for different street types. As with the community-

managed approach, the municipality would be responsible for all required interactions with the utility and for any applications for funding or incentives.

### The Benefits of Aggregation and Piggybacking

#### Aggregation:

Local governments can reduce procurement costs and increase their leverage in negotiating contracts by participating in an aggregated purchase of LED street lights. In Rhode Island, a collaborative called the Partnership for Rhode Island Streetlight Management, or PRISM, provides centralized management of the process and the steps necessary to undertake an LED conversion and maintain the lights. PRISM is a non-profit organization (501C) in which all member municipalities have representation on the governing board, and pay a modest annual fee to a consultant for project management. This structure has already demonstrated its benefit to members, as demonstrated by the lower cost and quicker conversion of the City of Providence, a PRISM member, compared to a city with a similarly large number of lights in neighboring Massachusetts. The City of Providence converted its 17,000 street lights at an estimated cost of \$8.1 million within seven months of purchasing its street light from National Grid in March 2016. By contrast, the City of Worcester, MA, which already owned its 14,000 street lights, is converting its lights to LEDs under a performance contract estimated to cost \$9.1 million. Worcester began its program in December of 2014 and does not expect to complete the conversion until 2017.<sup>1</sup> The City of Worcester expects annual energy savings of \$910,000 while the City of Providence will enjoy annual energy savings of \$1.9 million.

Aggregated purchasing by New York municipalities is authorized by Article 5-G (Municipal Cooperation) of the General Municipal Law.

#### Piggybacking:

New York State local governments are authorized to procure goods and/or services through existing contracts that have been awarded by other federal, state or local governmental entities. This process, called piggybacking, can provide a streamlined pathway to purchasing street lights. In Westchester County, over a dozen municipalities have purchased street lights by piggybacking on a contract issued through a competitive procurement process by two Westchester municipalities. This contract provided a fixed per unit cost for each light installed, which allowed the contract to be scaled up or down according to the size of the conversion project for each interested municipality.

Local governments and other government organizations including schools and public authorities, can use centralized contracts that have been awarded by the New York State Office of General Services (“OGS”). The OGS maintains a database of more than 1000 centralized statewide contracts for commodities and services that are used for procurement by

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<sup>1</sup> <http://www.worcesterenergy.org/leading-by-example/espc/espc-amendments/street-lights-retrofits2>

State agencies, but are also available to local governments. The advantage of a state vendor is that the municipality can undertake its own independent research into the different LED products and select the one(s) that best meet(s) its needs and quality concerns. Another advantage of using OGS centralized contracts is that no additional paperwork other than a purchase order is required. In addition, New York municipalities can piggyback on contracts let by governmental entities outside of New York so long as the original procurement is “in harmony or general agreement with, and further[s] the same principles as the competitive bidding or best value requirements of GML § 103.”

Piggybacking does not fully leverage the cost savings that can be achieved through aggregation, and can also result in municipalities accepting outdated pricing. However, as demonstrated by many municipalities in Westchester, this simplified and streamlined procurement process can accelerate street light conversion efforts.

In order for piggybacking to be available, the original contract must have been awarded either to the lowest responsible bidder or on the basis of best value in a manner consistent with Section 103 of the General Municipal Law, and the contract must recite that it is available to other governmental entities. Furthermore, local governments may only award contracts on the basis of best value or piggyback on contracts awarded on the basis of best value if the local government has passed a local law authorizing the use of best value. The New York State Comptroller’s Office has provided guidance on piggybacking by local governments that details the conditions that must be met for piggybacking to be available.<sup>2</sup>

A form of piggybacking is employed in the “cooperative procurement” model. In this approach, a lead agency manages a competitive procurement process with external review, and issues a contract that includes provisions for piggybacking. The U.S. Communities Government Purchasing Alliance is an example of a cooperative procurement organization that aggregates the demand of public purchasing agencies nationwide for a wide range of products and services, including LED street lights and related services. The County of Los Angeles--the lead agency for the U.S. Communities Electrical RFP--managed the competitive bidding and contracted with the selected vendor for electrical products. Under the terms of procurement through U.S. Communities, pricing to public agencies cannot be higher than contracted (typically a discount off list price, or cost-plus); however, it may be lower, based on volume and other customer specific considerations.

#### Energy Performance Contract

Energy performance contracts (EPCs) enable the upfront costs of energy efficiency and other related projects to be financed through the savings resulting from those energy improvements.

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<sup>2</sup> <https://www.osc.state.ny.us/localgov/pubs/piggybackinglaw.pdf>

EPCs have been in use for well over 20 years in New York State and are regulated through New York State Energy Law Article 9.<sup>3</sup>

Under an EPC, the municipality selects a turnkey provider, also known as an Energy Service Company (ESCO), that can undertake the lighting audit, design, procurement of materials, installation and measurement and verification of savings. The service provider is required to provide the warranty guarantees, and is responsible for all repairs during the performance period as well as for all paperwork and coordination with the utility. The contract can be structured as either a fixed-cost or shared-savings agreement with the provider. The ESCO can provide the financing for the project as part of its services, or the municipality can finance the project separately. This approach is the lowest risk and least work for the municipality, provided a high-quality service provider is selected. However, the approach also means higher margins for the service provider, and therefore provides the lowest overall savings. Careful selection of the partner and the requirement of an open book with agreed-upon margins may mitigate some of these higher costs.

**Key characteristics of EPCs include:**

- Turnkey Service – The ESCO provides all services associated with the project, including investment-grade energy audit (see Chapter 6 for more information), lighting design, procurement, implementation, and measurement and verification of performance.
- Project Financing – The ESCO typically arranges for or provides project financing, often in the form of a municipal lease (though in some cases, a municipality may choose to finance the project itself).
- Shared or Guaranteed Savings – The ESCO provides either shared savings or a guaranteed level of savings which, at minimum, must be sufficient to pay for the cost of the project over the term of the financing. In the case of guaranteed savings, if resulting savings are less than the level guaranteed, the ESCO is obligated to make up any shortfall. The value of this guarantee to a municipality correlates with the level of risk or uncertainty about expected energy savings from the energy improvements implemented--the more certain the savings, the less valuable the provision of the guarantee. For street light conversions, the savings are highly predictable because costs are fixed in utility tariffs. Performance bonds add approximately three percent to the cost of a project and may preclude smaller companies from participating because of the performance bond collateral requirements.

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<sup>3</sup> See “Energy Performance Contracts for Local Governments: Industry Standards and Best Practices Guide”, Prepared by VHB Engineering, Surveying and Landscape Architecture, P.C. under contract to NYSERDA. June 2013.

[http://www.dec.ny.gov/docs/administration\\_pdf/epcguide.pdf](http://www.dec.ny.gov/docs/administration_pdf/epcguide.pdf)

- Portfolio Approach – Different energy-related projects of the municipality may be bundled together in a single performance contract, providing simplicity of project management and allowing projects with more significant energy savings to help fund projects with less savings. This approach can offer a municipality deeper and broader energy improvements than if each project were undertaken individually. Taking a portfolio approach to a performance contract with a firm that has the broad engineering skill set to tackle a diverse set of projects adds significant value (see description of the Town of Mamaroneck performance contract, below).

***The EPC process typically includes the following steps:***

- 1) *Develop an RFP for energy improvements in targeted municipal facilities;*
- 2) Select an ESCO through competitive bid;
- 3) Contract with the selected ESCO to conduct an investment grade energy audit of facilities, and to detail proposed energy conservation measures with associated savings for each;
- 4) Finalize the EPC with the ESCO for desired energy measures and related savings and, in coordination with the ESCO, secure funding;
- 5) Implement the EPC;
- 6) Measure and verify guaranteed savings by the ESCO.

*Valuable guidance regarding EPCs, including links to model documents, is available from NYSERDA, the U.S. Department of Energy, and other sources. Please see “Additional Resources for Municipalities” in Appendix A.*

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For any of the approaches described above, local governments always have the option of selecting an experienced consultant to assist with the RFP process. Communities in the Mid-Hudson region can also access resources and assistance provided through the Mid-Hudson Street Light Consortium (MHSC), funded by NYSERDA, including sample RFPs and support for an aggregated procurement using both the Community-Managed and Single Contract approaches. For more information, visit [www.NYStreetlights.org](http://www.NYStreetlights.org).

**[New York Power Authority - Single Contract](#)**

Public Authority Law 1005 (17) authorizes the New York Power Authority (NYPA) to finance and design, develop, construct, implement, provide and administer energy-related projects,

programs and services, to any public entity.<sup>4</sup> Eligible energy measures include energy efficiency and renewable energy projects, as well as energy audits and feasibility studies.<sup>5</sup> Within this broad range of offerings, NYPA provides turnkey street light conversion services and offers low-cost project financing.

NYPA's street light conversion implementation projects begin when a municipality enters into a Design Authorization with NYPA. NYPA has competitively selected implementation contractors in every region of the state that then seek competitive bids for labor and obtain quotes from vendors for materials for each project. In consultation with NYPA, the customer determines which vendors should be engaged for the project after reviewing the quotes and bids received. NYPA's implementation contractors charge a fee of 10-13 percent on the labor and materials budgets (depending on project scope); and NYPA charges a project management fee of 12-15 percent on the total budget.

NYPA currently offers fixed-rate financing for these projects through a tax-exempt municipal lease. Interest rates are determined at the time that the project is completed, and vary according to term,<sup>6</sup> prevailing market rates, and credit rating. In 2016, indicative interest rates were between 2.5-4 percent.

NYPA can also finance the acquisition of existing street light equipment as part of a conversion project, once the municipality has negotiated a purchase agreement with the utility. The funds advanced are added to the cost of the conversion project and financed short term through NYPA and eventually through the municipal lease.

**Key characteristics of NYPA street light conversion services:**

- Turnkey service – procurement, design and project management services;
- Project oversight by NYPA;
- Low-cost financing through a municipal lease;
- Savings are equal to or greater than lease payments;
- Financing for acquisition of existing street lights can be incorporated into the project.

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<sup>4</sup> In addition to local governments, NYPA can provide these services to any not-for-profit institute of higher education, any elementary school, any recipient of NYPA's economic development power programs and any municipal power distribution agency.

<sup>5</sup> Presentation provided to Nina Orville by Sandra Stead of NYPA on October 18, 2016. Communication between Nina Orville and Jesse Scott October 27 and 28, 2016., and July 28 2017.

## Financing

As we have seen, converting to energy efficient LED lights can create substantial long-term municipal savings. The competitive cost of LED street lights and the proven performance of the technology provide a relatively low-risk, high-return investment opportunity. Despite the attractive economics, street light conversion can require a significant investment if a municipality has a large number of lights, particularly if existing lights must be acquired from the utility. The scale of this financial undertaking can present a barrier to municipalities considering conversion, particularly if they are not aware of the range of financial options to implement this key cost-saving improvement. Fortunately, there is now a range of financing options available to municipalities, thanks to the attractive risk/return profile of street light conversions. New financing strategies and instruments have been developed and more entities are seeking to fund these transactions.

Purchase of the street light system from the utility may be financed as part of the conversion project or financed separately. The municipality may pay for the street lights upfront, or it may seek to negotiate with the selling utility to pay for the equipment over a period of time. The choice of financing vehicles available to municipalities for this purchase is discussed below. Note, however that Public Service Law §70-a, which governs the sale of street light assets by a utility, “establishes procedures for the transfer of ownership of complete street lighting systems to municipalities or other government entities.” This restriction to public ownership means that any third-party ownership model must be structured to allow the municipality to acquire the existing street lights directly from the utility. It may not be acquired directly by a third-party capital provider.

In this section, we will briefly explore the financing approaches that have been used by municipalities in New York, including:

- Bonding
- Self-funding
- New York Power Authority energy services contracts
- Tax-exempt municipal leases
- Other third-party ownership models

## Municipal Debt

Many municipalities may choose to fund street light acquisition and/or conversion projects through issuance of municipal debt. This debt may be issued in the form of bonds or Bond Anticipation Notes (BANs)--one-year instruments that may be renewed for up to five years. Use of municipal debt, which leverages low borrowing costs, is likely to result in the lowest cost for municipalities but may impact a municipality's future borrowing capacity. In addition, municipal

debt can be a cumbersome financing approach due to constitutional limitations on its issuance; and some forms of municipal debt require voter and State Comptroller approval.

In general, in the case of bonds, transaction costs as a percentage of financing proceeds have been found to correlate inversely with the size of issuance and by size of issuer: Smaller financings and financings by smaller issuers incur greater cost as a percentage of the funds borrowed.<sup>7</sup> Municipalities therefore typically bundle the financing needs for multiple projects together in a bond issuance, and a single clean energy project, such as street light acquisition and conversion, would typically not be funded alone through a bond issuance, since project costs are typically under \$5 million.<sup>8</sup>

Use of BANs provides increased flexibility in project funding and timing. BANs carry very low interest rates and have low transaction cost but are short-term in nature. These characteristics make them a good source of interim project financing, as they may be repaid with proceeds from a later bond issuance. In addition, if the breakeven period for a street light conversion project is sufficiently short (less than five years), a municipality may choose to finance the project exclusively through use of a BAN.

### Self-Funding

Municipalities may choose to self-fund street light acquisition and conversion through use of local funds, including capital funds and/or operational funds. If the total project costs exceed funds available, a local government may choose to allocate savings (including fixture rental, energy costs, O&M, etc.) from an initial project phase to invest in subsequent phases. New York City is largely funding its street light conversion program by leveraging the previously existing street light budget and reinvesting savings from early phases of LED conversion to fund subsequent phases.<sup>9</sup>

Self-funding offers a low cost approach but has significant limitations, including availability of funds, for many municipalities. If a phased approach is taken to finance the conversion, total potential savings will take longer to realize and some economies of scale in procurement could be lost.

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<sup>7</sup> Joffe, Marc. "Doubly Bound: The Cost of Issuing Bonds." Berkeley, CA: Haas Institute for a Fair and Inclusive Society, University of California, Berkeley, 2015. This review of over 800 municipal debt issuances found a wide range of transaction costs with a median cost of 1.71 percent but the highest cost issuances at over 8.5 percent.

<sup>8</sup> <http://energy.gov/eere/slsc/bonding-tools>

<sup>9</sup> US Department of Energy, Office of Energy Efficiency and Renewable Energy, Financing NYC Brief. Available at:

[http://www1.eere.energy.gov/buildings/publications/pdfs/ssl/financing\\_nyc-brief.pdf](http://www1.eere.energy.gov/buildings/publications/pdfs/ssl/financing_nyc-brief.pdf)

### Tax-Exempt Municipal Lease

Tax-exempt municipal leases, also called tax-exempt lease purchase, are often used as the financing mechanism for energy performance contracts but may also be used as a stand-alone financing tool. Tax-exempt leases involve third-party ownership of the installed assets during the term of the lease, with an option for the lessee to acquire the assets for a nominal sum at the end of the lease term. This structure usually does not require up-front capital by the municipality and can offer low-cost financing (2.25 percent to 3 percent in today's market), since the lessor takes the tax benefit associated with the depreciation of the asset.<sup>10</sup>

The borrowed amount can be deposited into an escrow account from which project invoices are paid by the lending firm, after invoice approval by the municipality.

Although tax-exempt municipal leases are often used as an equipment finance tool in New York, they are not yet in common use here for street light conversion. However, in Massachusetts, Rhode Island, and other states, municipal leases are often used for this purpose. *As indicated previously, municipalities should seek legal counsel to assure their procurement process and financing strategy conforms with New York State Law.*

#### **Key characteristics of municipal leasing:**

- The project can be structured with no upfront investment;
- The lease amount can include costs to acquire the street light system from the utility, in addition to costs associated with a conversion;
- Energy cost savings gained through LED conversion are greater than municipal lease payments;
- At the end of the contract term, the installed equipment can be acquired by the municipality for a nominal cost;
- The project can be off-balance sheet (leases are subject to annual appropriation, and as such, are typically treated as an operating expense and not as debt);
- Municipal leases have low pre-payment penalties and low transaction fees and can therefore also serve as a bridge to other financing, since they can be executed very quickly;
- Municipal leases are available for a wide range of project sizes—from \$20,000 to multi-million dollar projects.

### Other Third-Party Ownership Models

The attractive economics of street light conversions, together with the state's Reforming the Energy Vision policy initiatives supporting accelerated energy efficiency investments, are drawing new entrants into the market for financing conversion projects. New York Green Bank

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<sup>10</sup> For example, Municipal Leasing Consultants, based in Vermont, provides municipal leases for energy efficiency projects with project costs of \$25,000 to \$50 million for terms of two to 20 years.

has recently closed financings with companies that offer project implementation and financing for energy improvement projects.

One company offers a third-party ownership model for energy efficiency and other clean energy improvements through an Energy Services Agreement. This model is similar to an EPC but, rather than offering guaranteed savings, the customer pays the implementer based on avoided energy costs (in other words, the costs that would have been incurred if the project had not been completed).

**Key characteristics of the third-party ownership model:**

- Oversees a design/build contractor to offer a turnkey solution, including project design, implementation, maintenance, measurement, and verification.
- Energy services payments are based on measured quantities of energy saved and are designed to provide net financial savings to the customer.
- Financing is available off-balance sheet.

[Review of Procurement and Financing Considerations](#)

Determining the optimal procurement and financing strategy depends on the particular characteristics, priorities, and needs of each municipality. Factors to consider in assessing procurement and financing options include:

- Internal project management capacity;
- Cost of financing (consider transaction costs as well as the interest rate);
- Municipal borrowing capacity and preferences;
- Value and cost of a performance guarantee.

In general, municipalities will pay more for reduced risk (which can be achieved through performance guarantees and third-party ownership) and robust project management support. Each municipality will need to weigh the value of those benefits against the additional project cost, and determine which project implementation and financing approach best matches its priorities. In addition, municipal capital budgeting plans and preferences may cause some municipalities to choose to finance a project through issuance of municipal debt, and others to utilize a tax exempt municipal lease or other third-party ownership model. In Westchester County, for instance, a number of municipalities have converted their street lights through contracts with the same vendor. The vendor offered two options: an ownership model requiring upfront and progress payments, and a lease model (available with or without a performance guarantee). Some municipalities, including the Village of Dobbs Ferry, prioritized minimizing total costs through use of municipal debt to finance the conversion. Others,

including the City of New Rochelle, valued the benefits offered under the lease-to-own model. *Municipalities should seek legal counsel to assure their procurement process and financing strategy conforms with New York State Law.*

Given the strong economic benefits of street light conversion, most municipalities should have a range of choices for how to implement this important energy improvement project. Municipalities with a smaller number of street lights (under 500 for instance) may have fewer choices than those planning larger projects. On the other hand, it may be easier to self-finance projects with a smaller number of lights—particularly if economies can be achieved through an aggregated purchase or piggyback arrangement.

As discussed in the previous chapter, collaborative procurement efforts reduce project costs and may also improve the terms and expand the range of financing options available to participating municipalities.

### Municipal Examples of Street Light Conversion

#### ***Community-Managed and Single Contract / Municipal Debt: Village of Dobbs Ferry (Westchester County)***

The Village of Dobbs Ferry, the first municipality in the Mid-Hudson to install a significant number of LED street lights, already owned its lights, just as other Westchester municipalities in Con Edison service territory do. The Village completed its LED conversion in two phases:

Phase 1: In 2011, the Village procured 300 LED lights for \$104,000, financing the purchase through a BAN, and had the Department of Public Works install the lights. The energy savings from converting the Village’s highly inefficient incandescent lights provided a three-year project payback.<sup>11</sup>

Phase 2: The Village financed the \$167,000 project cost of this phase with capital funds (\$85,000 balance remaining from first LED conversion, which had been budgeted at a higher anticipated cost) and a BAN.<sup>12</sup> This second phase, completed in 2016, included both furnishing and installation of the remaining 340 lights by the vendor to accelerate the installation process and allow the Village to benefit more quickly from the resulting energy savings.

Marcus Serrano, Village Administrator during Dobbs Ferry’s street light conversion and now City Manager of Rye, shared his perspective on project financing: “Municipal debt is the most cost-effective, prudent way to finance this upgrade. BAN rates are close to zero percent but they change every year. Bonds rates are close to three percent but they are locked in for terms of up

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<sup>11</sup> “Dobbs Ferry Streetlight Replacement Project” Presentation by Mayor Hartley Connett. Energy Efficient Streetlight Forum, Pace Land Use Law Center, November 7, 2013

<sup>12</sup> Conversation with Jeff Chutha, Dobbs Ferry Village Treasurer. October 25, 2016

to 30 years. Project payback period will help determine which vehicle is most appropriate for a project – projects with short paybacks are well-suited to use of BANs.”

***Municipal Debt to Purchase Existing Lights:***

***City of Kingston (Ulster County)***

In October 2015, the Common Council authorized bonding \$2.1 million for acquisition of over 2,000 utility-owned street lights and LED conversion of these lights and an additional 400+ City-owned lights.<sup>13</sup> The PSC is currently reviewing the proposed acquisition from Central Hudson. An early estimate of savings resulting from the purchase and conversion of the lights is well over \$400,000 per year, providing an attractive project payback.<sup>14</sup>

***Cooperative Purchase / Self-Funding:***

***Village of Rye Brook (Westchester)***

The Village is converting its 640 street lights to LED through the U.S. Communities Contracts program, using the program’s contracted electrical supply vendor. The turnkey project, including equipment, labor, and project management, has a cost of \$250,000 and includes 56 “smart” lights that will be installed as a pilot. Annual energy savings of approximately \$50,000 yield a payback period just under five years and a GHG reduction of 59 percent. Rye Brook has used U.S. Communities contracts in the past, and as Village Administrator Christopher Bradbury described, “In this case we chose U.S. Communities due to the price, experience, ability to install in a short period of time, and the total solution package through one coordinated agency.” The Village self-financed the street light conversion project.

***Energy Performance Contract / Lease:***

***City of Yonkers (Westchester County)***

*The City of Yonkers, the fourth largest city in New York, is the first municipality in the state to convert all its street lights to LEDs. With annual street light energy costs totaling \$2.8 million,*

Figure 1 - Yonkers LED street light installation

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<sup>13</sup> Resolution 212 of 2015. LED Street Light Conversion Engineer Budget. Common Council of the City Kingston.

<sup>14</sup> C.T. Male Associates, “Street Lighting Fixture Replacement Energy and Feasibility Analysis,” prepared for the City of Kingston, January 2014: p. 1.

*the City's Climate Action Plan identified LED street light conversion as the biggest opportunity to save money, in addition to reducing GHG emissions.<sup>15</sup>*



*In 2012, the City of Yonkers issued an RFP for an energy performance contract for conversion of all 12,000 street lights. The \$8.7 million project cost is being repaid from energy savings through a 10-year municipal lease (a notable exception in New York), and the net savings to the City are almost \$1 million per year. After the term of the lease has expired, the City will acquire the assets for a nominal cost and retain the full \$1.8 million in anticipated annual energy savings. This project has also resulted in reducing municipal GHG emissions by 10 percent.*

According to Yonkers Mayor Mike Spano, “We converted almost 12,000 city street light heads to LED with absolutely no upfront cost to the City of Yonkers taxpayers. The contractor provided all the material and labor and is paid \$840,000 per year over a 10-year payback period, or \$8.4 million. We did not have to bond or borrow a dime -- this was truly a win-win for us. Our city now has a net guaranteed savings of \$1 million annually, with no money up front and a greener and brighter Yonkers to show for it.”

***Energy Performance Contract / Bonding:  
Town of Mamaroneck (Westchester County)***

The Town of Mamaroneck engaged an ESCO to complete a portfolio of projects that included a street light conversion under a 20-year \$7.35 million energy performance contract. The project scope also includes boiler upgrades, ice rink improvements, building envelope measures and a generator upgrade, and other measures. The savings generated through the street light replacements—the largest source of combined energy and operational savings—help fund other components of the project, including some which provide important benefits but generate little

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<sup>15</sup> The City of Yonkers LED Streetlight Installation, Climate Smart Communities Anchor Project 2014. Prepared by VHB, an independent contractor to NYSERDA. Accessed: 10/12/16. Available at:  
[http://www.midhudsoncsc.org/documents/CSC%20Anchor%20Project\\_City%20of%20Yonkers\\_2014\\_FINAL.pdf](http://www.midhudsoncsc.org/documents/CSC%20Anchor%20Project_City%20of%20Yonkers_2014_FINAL.pdf)

or no savings (e.g. generator upgrade). Savings from the street light conversion were maximized through use of dimming during least-trafficked hours.<sup>16</sup>

The Town chose to finance the portfolio of projects included in the performance contract through bonding, rather than securing funding through the ESCO. In this instance, the value of the performance contract structure was the efficiency of implementing a broad portfolio of energy-related projects with a single contractor as well as the savings guarantees for the varied measures. Mamaroneck Town Supervisor Nancy Seligson observed, “Working through an energy performance contract had two important benefits to the Town. One was the ease and simplicity of being able to work with just one contractor, and of course the other is the guaranteed energy savings. You can’t do or get either one of those with a conventional project. We chose to finance the project through bonds because the borrowing rates for municipalities with our then Aa1 rating (the Town is now rated Aaa) were favorable and the costs of issuance would be less.”

***Bonding for Existing Lights / New York Power Authority Contract:  
Town of Clarkstown (Rockland County)***

The Town began the effort to acquire its 3,880 street lights from O&R over five years ago after learning of the savings achieved by an upstate municipality that had purchased its street lights. Clarkstown completed the transaction during the fall of 2016, issuing a five-year bond with an interest rate below two percent and purchasing the lights for \$670,000. Street light ownership provides an immediate monthly savings to the Town of approximately \$40,000. Clarkstown considered a range of approaches to implement an LED conversion, including community-managed procurement/installation and single-contract procurement with private companies, before deciding to enter into an agreement with NYPA for street light conversion in September 2016. Total savings from Town ownership and LED conversion are expected to be over \$900,000 annually, once the conversion is complete.<sup>17</sup>

***Energy Performance Contract / Bonding:***

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<sup>16</sup> Town of Mamaroneck Honeywell Agreement. Attachment A - Scope of Work. Accessed on October 31, 2016 at: <http://www.townofmamaroneck.org/324/Sustainability-Collaborative>. Note that the opportunity for financial savings from reduced energy use through dimming is not currently incorporated in utility tariffs.

<sup>17</sup> Discussion with Robert Berdy, Insurance and Claims Manager, Town of Clarkstown, November 16<sup>th</sup>, 2016. Also, “LED Streetlights Expected to Save Clarkstown Thousands in Budget” Donna Christopher, The Daily Voice, 9/25/16. Available: <http://clarkstown.dailyvoice.com/politics/led-street-lights-expected-to-save-clarkstown-thousands-in-budget/678569/>

### **City of Poughkeepsie (Dutchess County)**

The City of Poughkeepsie is undertaking the conversion of its 3,383 lights under a performance contract and financed through issuance of a bond. The conversion is occurring in two phases:<sup>18</sup>

Phase One of the project, which is nearing completion, includes the following elements: 1) converting the 1,888 lights owned by the City, 2) purchasing the 1,495 lights owned by Central Hudson (at a cost of \$349,000<sup>19</sup>) and, 3) converting all traffic signals to LEDs. The estimated cost for the street light elements of this phase is \$3.99 million with a simple payback period of 9.8 years.<sup>20</sup>

Phase Two of the project includes converting the street lights purchased from Central Hudson to LED. This phase, with an estimated cost of approximately \$1.14 million, has a corresponding simple payback period of approximately 4.1 years.<sup>21</sup>

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<sup>18</sup> Extensive information regarding this project is available on the City of Poughkeepsie website: <http://cityofpoughkeepsie.com/led-lighting-program>

<sup>19</sup> STATE OF NEW YORK PUBLIC SERVICE COMMISSION, ORDER APPROVING SALE OF CERTAIN STREET LIGHTS TO THE CITY OF POUGHKEEPSIE (Issued and Effective July 14, 2016)

<sup>20</sup> [http://cityofpoughkeepsie.com/~cityofpo/wp-content/files/LED/FT10679\\_CityOfPoughkeepsieLEDStreetLightTrafficSign.pdf](http://cityofpoughkeepsie.com/~cityofpo/wp-content/files/LED/FT10679_CityOfPoughkeepsieLEDStreetLightTrafficSign.pdf), Section 4-2.

<sup>21</sup> <http://cityofpoughkeepsie.com/~cityofpo/wp-content/files/LED/01PoughkeepsiePresentation111615rev2.pdf>

