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March 2021

A Best Practices Guide for Multi-Municipal Aggregation Programs

Lessons Learned from DVRPC's

REGIONAL STREETLIGHT PROCUREMENT PROGRAM

DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

The Delaware Valley Regional Planning Commission is the federally designated Metropolitan Planning Organization for a diverse nine-county region in two states: Bucks, Chester, Delaware, Montgomery, and Philadelphia in Pennsylvania; and Burlington, Camden, Gloucester, and Mercer in New Jersey.

DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

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DVRPC's mission is to achieve this vision by convening the widest array of partners to inform and facilitate data-driven decision-making. We are engaged across the region, and strive to be leaders and innovators, exploring new ideas and creating best practices.

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DVRPC is funded through a variety of funding sources including federal grants from the U.S. Department of Transportation's Federal Highway Administration (FHWA) and Federal Transit Administration (FTA), the Pennsylvania and New Jersey departments of transportation, as well as by DVRPC's state and local member governments. The authors, however, are solely responsible for the findings and conclusions herein, which may not represent the official views or policies of the funding agencies.

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CHAPTER 1:

Introduction

Purpose of this Guide

Multi-municipal aggregation programs can be incredibly valuable to assist local governments with implementation of projects. Aggregation programs, as described in this guide, will remove several key technical, procurement, and decision-making challenges that local governments face. This guide includes the best practices and lessons learned from DVRPC's Regional Streetlight Procurement Program (RSLPP), a multi-municipal aggregation program designed to enable conversion of LED streetlighting systems. This guide provides step-by-step information that will assist regional and multi-government groups with developing and implementing a multi-local government / aggregation procurement and implementation program, specifically for LED streetlight conversions. The lessons learned can also be applied to other applications of aggregated procurement and implementation for local governments. DVRPC is in the process of using the best practices included in this guide to develop additional implementation programs for local governments in southeastern Pennsylvania.

This guide also attempts to evaluate the pros and cons of the two distinct procurement methods that DVRPC used when implementing the two rounds of this program— energy performance contracting and design-bid-build. These two contracting methods are commonly used by local governments for construction projects, and this guide is intended to help municipalities and program administrators navigate which mechanism may work best for their projects when done at a regional or multi-municipal scale. The intended audience are those who might seek to implement a similar program, such as regional planning commissions, council of governments, or counties. This guide may also be useful for municipalities and other local governments to understand the value and process of working together. It may be used to educate internal stakeholders, and to clearly define a plan for structuring a similar program.

Outline of this Guide

Understanding an Aggregation Program

- About the Regional Streetlight Procurement Program (RSLPP)
- Key elements of an Aggregation Program
- Structuring an Aggregation Program: Energy Performance Contracting vs Design-Bid-Build
- RSLPP's Four Phases

Step-by-Step: How to Set Up an Aggregation Program

- Step 1: Identify Your Overall Program Structure
- Step 2: Recruit Participants
- Step 3: Get Ready to Launch
- Step 4: Kickoff Program with Consultants
- Step 5: Execute Your Program

Funding for this Guide

This material was prepared with support and funding of the Pennsylvania Department of Environmental Protection and the US Department of Energy's State Energy Program. Any opinions, findings, conclusions, or recommendations expressed herein are those of the author(s) and do not necessarily reflect the views of the DEP or DOE.

CHAPTER 2:

Understanding an Aggregation Program

Regional Streetlight Procurement Program (RSLPP)

The Regional Streetlight Procurement Program (RSLPP) was first launched by DVRPC in 2015. DVRPC is the Metropolitan Planning Organization and Regional Planning Commission for the Greater Philadelphia Metropolitan Area. DVRPC provides planning services to our counties and municipalities throughout the nine-county region of southeastern Pennsylvania and southern New Jersey.

The RSLPP leverages the purchasing and decision-making power of multiple municipalities in the region to procure, develop, and implement LED streetlight conversion projects for each participating municipality. The RSLPP was developed by DVRPC in 2015 to provide small and medium-sized municipalities in southeastern Pennsylvania with a turnkey approach to implementing an LED streetlight conversion project. Municipalities seek to convert streetlighting systems to LED to reduce energy and maintenance cost, improve lighting quality in their community, and lower their carbon footprint. DVRPC's turnkey aggregation approach addresses many of the barriers that small and medium-size municipalities face when implementing planning projects, such as securing funds for a project with high upfront cost, navigating the procurement and contracting processes, engaging effectively with the utility, and confidence in decision-making on a technical project.

There are 238 municipalities in the four suburban counties of southeastern PA, with an average population size of under 10,000. The majority of municipalities lack the staffing capacity, in-house technical expertise and in some cases the funding to confidently implement an LED streetlight conversion project. By working cooperatively through the RSLPP, these municipalities can aggregate their purchasing and decision-making power to realize lower costs, leverage shared technical expertise, and overcome procurement costs and barriers to confidently navigate these projects.

DVRPC has offered two rounds of the RSLPP to municipalities in the suburban counties of southeastern Pennsylvania since 2015. Two different program models were used in each round: In Round 1 (2015–2018), Energy Performance Contracting was the contractual mechanism that was used for project development and construction. In Round 2 (2018–2020), DVRPC managed a Design-Bid-Build process on behalf of participants to enable project development and construction. See the next section of this report for a comparison of these two contracting mechanisms. Each round of RSLPP has included turnkey services for municipalities who wish to implement a new LED streetlight system including auditing and design services, procurement, standardized contracts, financing, project management of construction support, utility engagement, and financing. Each round of the RSLPP was organized into four phases including 1) Feasibility, 2) Project Development, 3) Construction, and 4) Post-Construction Operations and Maintenance (O&M). All municipalities participating in the RSLPP follow a common timeline of steps through the four phases of the program, and these phases are accompanied by significant technical, procurement, legal and contractual support from DVRPC and its hired consultants.

Key Elements of the RSLPP

- **Turnkey**: The program provides all aspects of an LED conversion process and the ability to leverage a pool of financing.
- **Solicitations**: All solicitations are issued by DVRPC on behalf of municipalities.
- **Common timeline**: Parallel project steps ensures municipalities can confidently proceed through the LED conversion process.
- **Pooled buying power**: Economies of scale results in lower pricing on products, labor, and services provided through the program.
- **Expert vetting**: Products and services are vetted by experts, so the program achieves the highest quality at lowest possible price.
- **Full transparency**: on all products, labor, pricing, and design strategies can boost municipal decision-making confidence.

Structuring an Aggregation Program

There are two contracting mechanisms that can be used when structuring an aggregation program — **Energy Performance Contracting** and **Design-Bid-Build**. These two procurement methods are commonly used by local governments for construction projects and they are described below. Regional Organizations will need to decide which contracting mechanism to utilize when launching an aggregation program.

Energy Performance Contracting (EPC)

Energy Performance Contracting (EPC) is a contract between a facility owner (in this case the municipality) and an Energy Services Company (ESCO) that allows the owner to pay for a project that is developed and managed by the ESCO using the project's future energy savings. Since operational savings are used to pay off the project cost, they are not considered capital projects and thus result in more flexible financing options for municipalities. Through an Energy Performance Contract, the municipality contracts with a single ESCO, and the ESCO subcontracts. This type of contracting is supported by the Pennsylvania Guaranteed Energy Savings Act (GESA).

The Pennsylvania Sustainable Energy Finance Program (PennSEF) supports municipal use of EPCs. DVRPC partnered with PennSEF to administer the RSLPP.

Key Consultant that is Hired: Energy Services Company (ESCO)

Key Elements of a Program Centered Around Energy Performance Contracting:

- The regional entity (in this case DVRPC or other metropolitan planning organizations, regional commissions, or groups of municipalities) does not have to develop and manage a subcontracting process, so this model may be more suitable for entities with less technical capacity and staffing time.
- There is no upfront cost to municipalities or the regional entity. The ESCO provides a feasibility study for free to participants, and all project development services (e.g., auditing, design) are rolled into the cost of the EPC.
- Energy Performance Contracts are typically scaled for larger projects. This model allows municipalities that would otherwise typically not have access to this contracting mechanism gain access due to the scale created by aggregating municipalities together.
- EPCs will typically result in a more expensive project for municipalities overall, compared to Design-Bid-Build, as a result of the cost of the Savings Guarantee, a lack of transparency on vendor solicitations because the regional entity does not have control over the subcontracting process (the ESCO does this), and the overhead cost of the ESCO. When compared to design-bid-build, EPCs will often lead to a more expensive project with less transparency for the regional entity and municipalities. The increase costs result from the ESCO's overhead— they control the subcontractor selection process and workflow— and the Savings Guarantee itself.

How Energy Performance Contracting Impacts the Aggregation Program:

- The regional entity issues a Request for Proposals (RFP) for technical advisors to the program, including a Legal Advisor and a Designer. The Legal Advisor assists with contracting and procurement guidance. The Designer provides unbiased support of project management of the ESCO to DVRPC and on a one-on-one basis to municipalities. In Pennsylvania, the PennSEF program will provide access to a Legal Advisor so the regional entity may not need to competitively select a Legal Advisor for their program unless they wish to do so.
- The regional entity issues an RFP for an Energy Services Company on behalf of municipalities.

- The RFP process invites a single ESCO to serve the program. As per the Guaranteed Energy Savings Act, the invited ESCO must provide no-cost preliminary audits to the municipalities listed in the RFP.
- The RFP locks in equipment specification and pricing. This was done by including a specification of equipment in the RFP, requiring respondents to provide lighting solutions and pricing for all equipment specified.
- The RFP locks in service costs for ESCO service work during project design and construction phases, provided by the ESCO in their proposal, represented as a percentage of the overall contract amount.
- The RFP locks in installation pricing provided by the ESCO in their proposal, based on prevailing wage.

Design-Bid-Build

Specific to this model of the RSLPP, the Design-Bid-Build contracting approach results in a construction contract between a facility owner (in this case the municipality) and the program-selected installation partner. The program lead (in this case the Regional Entity on behalf of the municipality), must competitively solicit for all aspects of a streetlight project, including project development services and the vendors required for construction, so that municipalities can piggyback off of these contracts.

Design Services Professional (DSP) is hired to contract with each municipality for project development and management services, including auditing and designing municipal streetlighting systems, developing streetlight conversion projects, and managing construction contracts on behalf of municipalities. The DSP also works with the regional entity to develop solicitations for all required vendors for this project, including Manufacturers for all equipment, a Distribution Partner to order, track receive and ship equipment to the project site, and an Installation contractor who is responsible for installing the equipment. The regional entity contracts with vendors in each category, and then "assigns" the manufacturer and distributor contracts to the construction contract with the selected installer contract, allowing municipalities to piggyback off of a "fully-assigned" construction contract with the installer that includes all of the products, services, pricing, and terms and conditions that DVRPC locked in to their contracts with each vendor. The DSP is responsible for developing a project proposal for each municipality that serves as the basis of their construction contract with the installer, and references the equipment and pricing that was selected during the vendor solicitation process. Each municipality's construction contract with the installer is managed by the Design Services Professional on behalf of the municipality.

Key Consultant that is Hired: Design Services Professional

Key Elements of a Program Centered Around Design-Bid-Build:

- There is upfront cost for this method for municipalities, including the cost of the feasibility study and the cost for project development services (e.g., auditing, design). DVRPC paid upfront for the feasibility studies for municipalities but needed to find a funding source to provide this.
- The regional entity must be capable of running solicitations and contracting for all products and services for this work with the support of the DSP. Therefore, it may require more procurement, legal, and technical capacity to manage the DSP model than the EPC model. As a result, however, the regional entity likely will experience greater control, pricing, and transparency of project through solicitation processes.
- This contracting model is typically well suited for smaller and less complex projects like street lighting.
- Project costs are typically less expensive for municipalities overall due to the control over the solicitation process.

Aggregation Model:

- The regional entity issues an RFP to identify a Legal Advisor to provide contracting and procurement guidance to the program.
- The regional entity issues an RFP to hire a Design Services Professional (DSP) on behalf of the participating municipalities to serve the program. A DSP is responsible for project development (vendor selection, design, and auditing) and project management of the construction contract but is not responsible for any aspect of construction. This RFP resulted in a contract between DVRPC and the DSP that:
    - Required the DSP to provide free feasibility studies to all participating municipalities (under contract to DVRPC).
    - Provides the legal procurement basis for municipalities to contract with DSP for all project development (auditing, design, and procurement), project management of construction, and post-construction operation and maintenance services. Municipalities seeking these services will piggyback off of DVRPC's contract to directly contract with the DSP for the services in these phases.
    - Locked in pricing for all DSP auditing and design services to develop an Investment Grade Audit for each municipality's proposed project.
    - Contracted with DVRPC to partner closely on program development and delivery, and in Phase 2 to develop and issue the required vendor solicitations for distributor, manufacturer, and installation contractors.
- The regional entity works with the DSP to issue solicitations for all required vendors for the program, including manufacturers, distributor, and installer.
- Each municipality contracts with the DSP for project development services (auditing, design, and procurement), resulting in a final project proposal that serves as the basis of the construction contract with the installer.
- Each municipality contracts with the program-selected installer for construction, and this contract is managed by the DSP using the final project proposal as the basis of the scope of work in the construction contract.

Comparing RSLPP Round 1 and Round 2

Energy Performance Contracting

Consultant Hired: Energy Services Company (ESCO)
Solicitations Run: Two (RFP for ESCO, e-mail bid for program technical advisor)
Financing: Available through Univest Bank and PA Treasury, arranged by PennSEF
Number of Participants:

- 45 municipalities entered program
- 35 municipalities proceeded with a contract to convert their streetlights

Total Installed: 25,000 streetlights (Cobrahead, decorative), >1,000 area fixtures, >5,700 traffic signals, manual and wireless controls
Individual Project Size: Ranged from 60–3,500 fixtures (average 765)
Individual Project Cost: Ranged from $24K– $2.2M (average $373K)
Total Program Cost: $14 Million
Source of Funds: 24 municipalities used program-arranged financing, 11 used internal funds
Payback: 3–20 years, 10.4 yr. average $16 million net energy and operational cost savings over 20 years

RSLPP Round 1 Pricing Per Light

Cobrahead (35W)	$124.59
Installation	$97.50
ESCO Service Costs	$63.07
Photocell	$9.54
M&V	$10.61
Total Cost	**$305.31**

Design-Bid-Build

Consultant Hired: Design Services Professional (DSP)
Solicitations Run: Five (RFPs for DSP, Legal Advisor, Installer, Distributor, Manufacturers)
Financing: Available through the Delaware Valley Regional Finance Authority with support from counties
Number of Participants:

- 26 municipalities entered program
- 26 municipalities proceeded to Phase 2. As of March 2021, all municipalities have entered construction or intend to

Total to be Installed: 15,000 streetlights (Cobrahead, decorative), 300 area fixtures, 6,500 traffic signals, manual and wireless controls
Individual Project Size (Streetlights Only): Ranged from 21–3,710 fixtures (average 539)
Individual Project Cost: Ranged from $34K– $1.3M (average $263K)
Total Program Cost: $6.8 Million
Source of Funds: 9 municipalities used or intend to use program-arranged financing, 17 used internal funds
Payback: 3–20 yrs, 8.3 yr. average
$10.6 million net energy and operational cost savings over 20 years

RSLPP Round 2 Pricing Per Light

Cobrahead (35W)	$92.00
Installation	$104.70
DSP Services Cost	$34.00
Photocell	$9.32
Distribution	$8.11
Total Cost	**$248.13**

RSLPP - How it Works: The Four Phases

All participants in the RSLPP followed a common timeline of steps organized in the following four phases of a LED conversion process. Each phase is described in greater detail starting on page 18 (Step 5: Execute your Program) of this report.

CHAPTER 3:

Step-by-Step: How to Set Up an Aggregation Program

Step 1: Identify Your Overall Program Structure

Step 1A
Determine the Appropriate Model: EPC or Design-Bid-Build

Energy Performance Contracting

- Fewer solicitations and project management—may be more suitable for entities with less technical capacity and staffing time.
- There is no upfront cost to municipalities. The Regional entity may still need to hire a legal and technical advisor.
- Typically scaled for larger projects.
- More expensive project for municipalities overall than Design-Bid-Build.

VS

Design-Bid-Build

- May require more technical capacity to manage multiple solicitations, but will likely result in greater control, pricing and transparency of project through solicitation processes.
- Upfront cost to the Regional entity and/or municipalities.
- May be more suitable for smaller/less complex projects like street lighting.
- Less expensive projects for municipalities overall.

Learn more about these two models on page 4 of this report, under *"Structuring an Aggregation Program."*

Step 1B
Evaluate Whether to Include a Program Fee

Program Fees

The regional organization will likely accrue upfront fees associated with hiring a technical advisor and a legal advisor to run solicitations and help guide program development. Your regional entity may wish to consider a program fee to recoup its upfront costs from municipalities as a percentage of each municipality's contract signed through the program. DVRPC did this at 5 percent on the contracts with the Design Services Professional, and up to 3 percent on each municipality's construction contract. These program fees were established at the beginning of the project, and municipalities were required to agree to them to participate. DVRPC intends to use recouped upfront fees in order to pay for upfront costs associated with its next local government aggregation program.

Step 1C
Identify the Team Members and Their Roles:
Team members will be consistent for both models, though their roles may vary.

Project Team

Below is a listing of project team members that the regional entity should be expected to partner with for a multi-municipal streetlight program. The team members will be consistent for both models, though their roles may vary. Some of the team members listed below will be brought on before the program is launched, and some will be brought on after the program is launched. It is important to become familiar with the project team roles before you launch your program to ensure you have the staffing capacity and procurement capability to manage the team.

The Regional Entity: The regional entity is the lead that designs and manages the program on behalf of participating municipalities. As the lead, this entity should be prepared to convene and facilitate the program as well. The regional entity will be responsible for program outreach, development of all solicitations, gathering data from program participants, managing the work of the legal advisor and the ESCO or Design Services Professional, managing overall program timeline and communication of next steps to municipalities, tracking program status, and addressing road blocks or barriers as they arise.

Municipal Steering Committee (MSC): A municipal steering committee serves several functions: 1) participating in the selection committee for all solicitations, 2) vetting key program decision points, 3) serving as a pre-assembled team of advocates for other program municipalities in cases when the program needs to negotiate a solution with the ESCO or other external partner (such as the utility), and 4) having another line of communication to better understand what concerns and successes municipalities are experiencing with the program day-to-day. Municipal steering committee member commitments typically involve participating in conference calls one to two times a month to evaluate program decisions, and if applicable, review solicitations (especially for the Program Advisor/Owners agent or ESCO).

To establish a municipal steering committee, DVRPC made an open call for volunteers during each RSLPP round and sought to have at least one representative from each county serve on the MSC. When not enough individuals volunteered, DVRPC self-selected municipal representatives and inquired if they were interested—in almost all cases, these individuals were willing to serve this role. You should seek a single staff person from a handful of municipalities participating in the program to serve on the MSC. MSC members do not have to be lighting experts themselves. Rather, it is helpful to have a member who is aware of the timing, administrative and communication needs of municipalities in your region, and are willing to speak openly about program concerns. Typically, steering committee members are municipal managers or other administrative staff that support the municipality's elected bodies through day-to-day decisions. Public works, finance staff, or even elected officials themselves may be appropriate steering committee members as well.

Utility: Your utility partner is an essential component to your program team, and bringing this partner on board as early as possible is recommended. With your utility, you can communicate openly about tariff rates, streetlight buybacks (if applicable), billing, or rebates (if applicable). DVRPC's RSLPP intentionally aligned with the geographic service territory of PECO, the investor-owned utility of southeastern PA. It was important that DVRPC and PECO had an open line of communication to work through billing processes, given that streetlight service in PECO territory is un-metered and a large quantity of bill updates would be required for municipalities to achieve their project savings. DVRPC, the ESCO or DSP, and PECO proactively worked to develop a bill update process in anticipation of each Round of the Program to ensure that the utility could handle the volume of bill updates that were occurring as part of the program.

Step 1C
Identify the Team Members and Their Roles:
Team members will be consistent for both models, though their roles may vary.

Program Technical Advisor and Owners Agent: A Program Technical Advisor will be necessary for both models, unless significant streetlighting expertise exists in-house. The Program Technical Advisor plays a critical role to the success of your program, so it is important to identify a trusted advisor. The ideal qualifications and the roles are:

Program Advisor and Owners Agent for the ESCO model: If internal expertise on streetlighting does not exist, a third party advisor should be brought on to assist with the development of the ESCO RFP, the program-level management of the ESCO, and to serve (on a contractual basis) as an "owners agent" to municipalities who seek that assistance to help manage their contract with the ESCO. The Program Advisor can also support with additional negotiation or engagement activities that may occur throughout the program, such as working with the utility, and oversight of the ESCOs procurement.

Program Advisor for the Disaggregated model ("Design Services Professional"): In the disaggregated model, the project consultant served the role of the program advisor and thus becomes more direct and integral to the function of the program.

Program Advisor/Owners Agent Qualifications (both models): For either model, the regional entity should seek to hire a program advisor that has as many of the following qualifications as possible:

- Lighting certified
- Experience managing complex lighting projects— from solicitation through construction
- Excellent oral and written communicator
- Experience working with municipal clients is ideal
- Collaborative and patient approach to the work (you do not want someone to come in and tell you how it is done, you want someone who will collaborate with you on the unique aspects of your region's municipalities and program goals)

Project Consultant: The Regional Organization will need to solicit for an Energy Services Company or a Design Services Professional depending on which contracting model is used in the aggregation program. The ESCO or DSP will be responsible for project development services including development of a feasibility study, a field audit, system design, the development of a final project proposal, and the project management for each municipality's project. In the Design-Bid-Build model, the DSP will also be responsible for assisting the regional organization with developing and evaluating all vendor solicitations—for manufacturers, installer, and distribution partners.

- Resources:
  - RSLPP RFP for ESCO (RSLPP Round 1)
  - RSLPP RFP for Design Services Professional (RSLPP Round 2)

Step 1C
Identify the Team members and Their Roles:
Team members will be consistent for both models, though their roles may vary.

Legal Advisor: If your organization does not have in-house legal counsel, a legal advisor will be required for both models as there are significant procurement, contracting, and finance questions that will arise for your organization. In Round 1, DVRPC's Partnership with PennSEF provided this capacity, and legal costs were applied to each municipality's construction contract. This model proved challenging for the PennSEF team, as not all municipalities proceeded to construction, and legal services were therefore provided at-risk until the construction period. In Round 2, DVRPC hired a legal advisor up front and paid for its services using a portion of a grant DVRPC received from the Pennsylvania Department of Environmental Protection, and DVRPC later plans to recoup these upfront legal costs through program fees for municipal participants. Your organization should seek to find a legal advisor that has experience with development of construction contracts, knowledge of cooperative procurement law, and (if using the ESCO model) state performance contracting statute. Experience with municipal financing and procurement is also essential.

- Resource: RSLPP RFP for Legal/Contracts Advisor

Financial Partner: For each round, DVRPC sought to arrange financing available to all municipalities in the program, regardless of an individual municipality's project size, payback period, or past-borrowing credentials. By arranging financing for the program, the lender is able to see this group of municipalities as a portfolio (with potentially many new clients), while the lead regional entity helps lower the administrative burden to the lender by assisting with communicating and gathering all required information from municipalities, and facilitating communication between team members.

However, financing can be one of the more challenging aspects to arrange for the program, but also the most critical to implementation of municipal projects. Ideally, you should find a financial partner who is willing to provide as many of the financial objectives listed in Appendix B under Financial Partner Qualifications as possible. The timing of bringing a financial partner on board may be challenging, as municipalities in the program will likely not be able to decide on financing until they bring the decision to enter into a construction contract before their elected bodies. This means that your program must identify a financial partner before it can guarantee municipal participation. Identifying a financial partner after municipal decisions are made would cause significant delay between signage of construction contracts and construction start, and would require a municipality to make a decision based on significant unknowns relative to the cost of financing.

- Resource: See Appendix B for a list of financial partner qualifications.

Step 1C

Identify the Team Members and Their Roles:

Team members will be consistent for both models, though their roles may vary.

Vendors: There are three essential vendors required for any street lighting project: Distributors, Manufacturers, and Installers. With the ESCO model, the ESCO will be responsible for subcontracting with these vendors, and sometimes these vendor services (such as installation) are included as part of an Energy Services Company's team in addition to their auditors, designers, and construction project managers. In the Design-Bid-Build disaggregated model, it will be the responsibility of the regional entity to procure and contract with these vendors on behalf of participants (municipalities then piggy-back off these contracts). For both rounds of the RSLPP, DVRPC sought to identify vendors that provided the highest quality product or service at the lowest possible price, which included evaluating manufacturer products on a lifecycle basis. In Round 1, while the ESCO was responsible for subcontracting to these vendors, DVRPC and its program advisor were able to evaluate the products selected by including a specification upfront in the RFP for the ESCO. In Round 2, Requests for Proposals were the best way to achieve these qualifications with price as a consideration for all vendors. Below are general guidelines on soliciting for each vendor to ensure the highest quality of services and products.

Distributor: Streetlighting projects are field-based and require several SKUs (stock-keeping units), or types of lighting products, for each municipal project. In your RFP, include the ability to evaluate distributor partners based on experience with distribution on a large complex project, experience with streetlighting projects specifically due to their complex nature, proof of a clean and organized warehouse, and a web-based user portal to track purchase orders, delivery dates, and change orders. You also should evaluate distributors based on pricing (material markup percent) and their net payment requirements for purchases. During the evaluation, be sure to visit the distributor's warehouse and test their online communication portal. If you hire an ESCO to manage this process, you may not be able to participate in the evaluation of the distributor, and therefore will lose the ability to understand the distributor markup and evaluate their performance. Typically, a single distributor selected for the program will be easiest to manage for all parties and will be easiest from a contracting perspective. A single distribution partner was used for each round of the RSLPP.

- Resource: RSLPP RFP for Distribution Partner Services

Manufacturers: Evaluation of streetlighting products will be a technical endeavor that should be managed by a third-party entity (not affiliated with any manufacturer or distributor), such as your hired Program Advisor/Design Services Professional. If you hire an ESCO to manage manufacturer solicitations, be sure to include required minimum equipment specifications in your RFP for the ESCO to allow you to evaluate on cost of manufacturer products that the ESCO will use (you will likely need your Program Advisor to assist with the development of these minimum specifications). Additionally, build into your RFP for the ESCO that you will have your Program Advisor evaluate selected products. The disaggregated Design-Bid-Build model will give your program more flexibility to design a comprehensive RFP from which to evaluate manufacturers directly, and again this RFP would be developed by the Design Services Professional. Several manufacturer products will need to be evaluated and therefor several manufacturers will need to be selected to partner in the program.

Step 1C
Identify the team members and their roles:
Team members will be consistent for both models, though their roles may vary

Manufacturer streetlighting products needed include cobraheads, a variety of decorative lighting and their retrofit kits, photocontrols, and network controls (if desired). DVRPC also evaluated for area lighting (e.g., wall-packs, shoe-box fixtures), traffic signals and pedestrian signs due to the desire for this equipment to be included in municipal projects. No matter the method, when evaluating manufacturer products, a lifecycle cost should be used to evaluate cost if possible that takes into the energy use and maintenance cost of each fixture over the life of the system (RSLPP used 20 years across manufacturers in its evaluation). A non-exhaustive list of additional evaluation measures includes lighting performance (e.g., photometric performance, availability of a range of color temperatures), warranty duration, product lead times, presence on market (take extra care to evaluate products that do not have a multi-year performance track record), appropriate certifications (such as Design Lights Consortium or UL-listed). For greater detail on how manufacturers were evaluated, please see DVRPC's RFPs.

- Resources:
  - US DOE Municipal Solid State Lighting Consortium Model Specification
  - RSLPP RFP for Manufacturer Product Solutions

Installers: Installers will be responsible for much of the day-to-day implementation and communication of each municipal project, and therefore are critical front-facing members of the team. The RSLPP evaluated installers for project management capabilities (such as change order management, field status reporting), pricing and efficiency (per unit pricing on typical service items and the rate at which those service items could be installed (#/day)), and general contractor capabilities (such as relevant experience on projects similar to this volume and geography). In the DVRPC region, many municipalities have existing relationships with local installers, so municipal opinion weighed heavily in the evaluation and recommendation of this vendor in particular.

- Resource: RSLPP RFP for Installation Partner

Step 2: Recruit Participants

Step 2A
Initial Recruitment

Once the regional entity has developed its conceptual model for the program, the first step is to vet this model through candidate municipalities and then modify as needed. DVRPC used a two-page concept memo to describe the program and its timeline, and vetted this through a handful of interested municipalities, and revised as needed.

Step 2B
Formal Recruitment

The next step is to formally recruit participants. This can take from 1–3 months, and it should include clear deadlines for municipal participation.

Host an in-person workshop

to present the program to all interested municipalities at a centrally-located site in the region. Invite all municipalities by group email, and follow-up by phone to the municipalities who you expect are interested. During workshop, highlight participation requirements, program timeline, and expected outcomes. Clearly communicate any next steps and deadlines so that municipalities leave the workshop with an expectation to engage with your organization on the program.

Draft a letter of intent

A letter of commitment/intent should be provided for each municipality to participate in the program, that should do the following:

1. Authorize the regional entity to issue cooperative procurement solicitations on behalf of each municipality,
2. Clearly identify the program fees required and state that by signing municipality agrees to pay,
3. Outline upfront data requests (such as utility bills or surveys) that municipalities will be expected to fulfill prior to solicitations.

This letter should be provided at the in-person workshop, with a clear due date.

Gather Data

Gather the upfront data from each municipality. For the RSLPP, this data included a copy of the municipality's most recent streetlight and traffic signal bill from the utility company, a list of key contacts for each municipality (including the key point of contact who would be responsible for day-to-day direct communications about the program), and a completed "needs assessment survey" that DVRPC distributed via Survey Monkey. This data is then compiled ahead of your RFP for either an ESCO or a Design Services Professional, to provide a sense of overall scope or potential of procurement volume for future vendor solicitations.

Step 3: Get Ready to Launch

Step 3A
Hire Initial Project Team

At the outset, the regional entity will need to contract with a legal advisor, a technical advisor, and a Project Consultant. These partners provide initial services to the Regional Entity in developing and launching the program. See Step 1 for more information on roles and qualifications for these solicitations.

- Resource: DVRPC RFPs for
  - Project Consultant (ESCO or Design Services Professional)
  - Legal and Contracts Advisor

Step 3B
Engage Your Utility Company

Convene a meeting with your utility partner early in the program. Once the Project Consultant is on board, a meeting between the consultant and the utility facilitated by the regional entity will be necessary as well. The Utility Company will be responsible for updating municipal bills after— and sometimes during— construction/installation. It is important that each entity— the Regional entity the Project Consultant, and the Utility Company clearly understand tariff rates, streetlight buyback processes (if applicable), billing, and rebates (if applicable).

Step 3C
Identify Additional Sources of Funding

Streetlight projects carry a strong and reliable payback. DVRPC therefore did not encourage municipalities to pursue grants that instead could be used for other projects that do not carry a payback. However, in addition to arranging financing for municipalities that do not have upfront capital, DVRPC evaluated supplemental funding sources. These sources include utility and ISO (International Organization for Standardization) rebates, along with state-level transportation funding allocations available to each municipality. In the DVRPC region, this included PECO Smart Ideas rebates, PJM Capacity Market Rebates, and municipal Liquid Fuel Fund Allocations from PennDOT.

Step 4: Kickoff Program with Consultants

Step 4A
Establish a Clear Communication Protocol

Establish a clear communication protocol between the Program Consultant and the Regional Entity and between the Program Consultant and municipalities. For example, DVRPC hosted weekly project check-ins with its consultant team. DVRPC established that it would reach out to municipalities on all whole-program deadlines and next steps. DVRPC would also be responsible for setting up most one-on-one meetings between the ESCO or DSP and each municipality, while the ESCO or DSP would be responsible for one-on-one engagement on all project development-related communication specific to each individual municipality (and most often this correspondence would be copied to DVRPC).

Step 4B
Refine Program Goals and Expectations

While you may have clearly explained all of your program goals and expectations in your RFP for the Program Consultant (ESCO or DSP), and while the Program Consultant may have written an excellent proposal for the work, it is still important to meet in person to go through each step of the program to ensure that you are on the same page regarding goals, outcomes, and specific deliverables. It is important to do this initially at kickoff, but be prepared to continue to revisit this step throughout the program, and be sure to prepare your organization and your Program Consultant to be flexible to any needed changes when they arise.

Step 4C
Define Overall Program Timeline

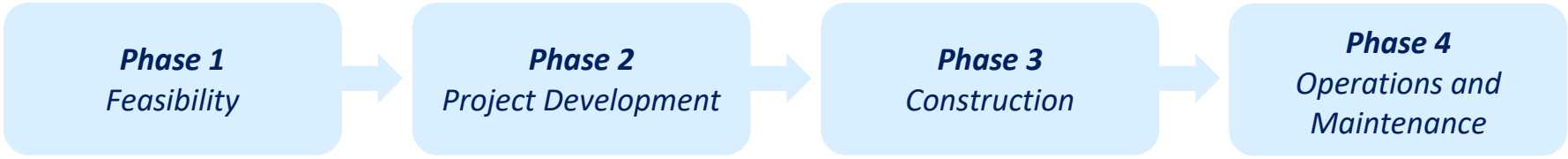
Revisit the timeline defined in the RFP or the Program Consultant proposal and refine as needed now and along the way. Delays can occur with consultant deliverables, municipal decision-making, navigating bureaucracies, and even within the supply chain. These delays may require that the whole program timeline be adjusted. Anticipate delays throughout and include buffers and check-in points to revisit the timeline. While delays may be frustrating to the regional entity, municipalities typically are understanding of these timeline shifts if they are clearly and transparently communicated.

Step 4D
Transfer Data

Share all data that you have received from municipalities with the selected ESCO or DSP so that they can begin preparing to meet one-on-one with each municipality. For the RSLPP, this included copies of streetlight and traffic signal utility bills as well as the responses from the needs assessment survey, and the full contact list for each municipality (clearly identifying the main point of contact and the list of all municipal contacts who should be included on any email coming from the ESCO or DSP).

Step 5: Execute Your Program

This section provides a detailed overview of the four phases of the RSLPP.



Phase 1
Feasibility

The Feasibility Phase provides an introduction for each participating municipality to the overall process as well as a one-on-one review of the costs and savings of a streetlight conversion project in their community. Municipalities can then prepare internal staff and elected officials to decide to proceed with the project. The phase consists of the following:

Host an in-person kickoff meeting: Work with your consultant to prepare an in-person kickoff meeting for all municipalities that clearly explains the four phases of the program, the expected timing for each phase, and what will be expected from each municipality during each phase. This face-to-face meeting is the opportunity to introduce your new ESCO or DSP to the municipalities and reinforces that this is a regional program with many participants working towards a common goal. Make sure that they walk away from the meeting aware of their immediate next steps and how to contact you if any questions arise after the meeting. If possible, also invite other key team members to this meeting, such as the utility, to keep them included in the process and allow them to show their support.

Arrange one-on-one needs assessment meetings with each municipality and the DSP or ESCO: This step provides an opportunity for the DSP or ESCO to meet face-to-face with all relevant municipal staff in each participating municipality. Prior to this, the ESCO or DSP should have reviewed all municipal data and information that was provided by the regional organization, and they should be prepared with additional questions for each municipality on project goals and objectives. For the RSLPP, DVRPC scheduled these meetings for the DSP or ESCO by arranging centralized municipal “host sites” around the region where municipalities could come and meet with a stationary ESCO or DSP at a selected time arranged by DVRPC.

Deliver feasibility studies (also known as Preliminary Audits): The Feasibility Study is an important decision-making tool for municipalities to consider whether or not to pursue an LED conversion project, and it is the key deliverable of this phase. An important consideration is whether municipalities will be charged an upfront cost for this study (See page 9 under “evaluate whether to include a program fee” for an overview of how to make this decision). The Feasibility Study should be a clear and concise report that provides a baseline of current costs for the municipality’s streetlighting system, an inventory of existing equipment, as well as a detailed analysis of the costs and savings associated with an LED conversion. See Appendix C for a sample Feasibility Study. The regional entity managing the program should be prepared to assist with the feasibility study in two ways:

1. Provide feedback on the study format to ensure it is transparent, concise, and easy to understand.

2. Assist in gathering and evaluating data sources. See Appendix A for a list of data sources for streetlight projects, including how the Regional Entity can assist with gathering this data.

Decide to proceed to Phase 2: At the conclusion of Phase 1, municipalities must decide whether or not to proceed to Phase 2, project development. Up until this time, municipalities have not committed financial resources to the program. A decision to proceed to Phase 2 is a commitment to sign a contract with the selected vendor (ESCO or DSP) for all project development-related services such as field auditing, system design, and procurement. The pricing for these services should have been locked in through the RFP that the regional entity developed to select the ESCO or DSP. The role for the regional entity includes:

1. **Develop template resolution** for municipalities to pass that authorizes the municipality to sign a contract with the DSP or ESCO for project development services. This resolution will need to reference the procurement method used by the regional entity that the municipalities are leveraging.

2. **Develop template contract with the DSP or ESCO for municipalities to proceed to Phase 2**. This is a program-wide contract that all municipalities must use to proceed to Phase 2. Consistency in the contract across the program saves time for the ESCO or DSP so they do not have to undergo an arduous contracting process with each individual municipality. It ensures that terms and conditions that protect the municipality are provided for in the contract and makes the contract process easier for the municipality because their solicitors and decision-makers can have trust in a program-developed contract.

Phase 2
Project Development

Phase 2 is the beginning of the financial commitment for municipal participants. During this Phase, municipalities who have passed a resolution to proceed to Phase 2 sign a contract with the selected vendor (ESCO or DSP) to "develop" a project proposal that will serve as the basis of the construction contract.

Develop and issue all required solicitations for vendor equipment and services: Any streetlight project will need to secure equipment manufacturers, a distribution partner or partners, and installers. For RSLPP Round 1, DVRPC ran only the initial solicitations for the ESCO and the program technical advisor, and all "sub" solicitations for vendors (material, distributor, labor) were run by the ESCO as part of the Energy Performance Contract. In RSLPP Round 2, DVRPC ran these solicitations directly with considerable technical support from the Design Services Professional and legal support from our Legal Advisor. See page 10–14 of this report for an overview of the qualifications that should be included in the solicitations for your project team, including vendors and service providers.

Deliver field audit data and final project proposal: The ESCO or DSP will conduct a field audit of all streetlighting and outdoor lighting equipment that are candidates for retrofit, and review (scrub) the data with each municipality. Raw and scrubbed data gathered during field auditing is then delivered via web map and Excel. The scope of the field audit and the format through which it is shared with municipalities should be outlined in the RFP process. The ESCO or DSP uses field audit data to conduct a preliminary design and then, with municipal input, final design of the proposed LED streetlighting conversion. The ESCO or DSP compiles a Project Proposal (known as an Investment Grade Audit in Round 1 and the Final Project Specification and Proposal in Round 2) that serves as the basis of the construction contract. The format of this report should be similar to the Feasibility Study so that municipalities are familiar with it. The Regional Organization should provide feedback on the format of the report to ensure that the information is provided in a transparent, concise, and easy to understand manner. See Appendix D for a sample Project Proposal. from RSLPP Round 2.

Provide educational webinars to municipal staff: Throughout Phase 2, provide educational webinars to municipal participants. DVRPC hosted several webinars for municipalities in partnership with the program consultant, including webinars on lighting control technologies, the streetlight design process and design considerations (e.g., color temperature choices, managing glare, and understanding lighting distribution types), impacts of "blue light," and an overview of the utility bill update process.

Arrange financing: DVRPC arranged financing available to all municipalities in the program, regardless of an individual municipality's project size, payback period, or past-borrowing credentials. During this phase, it is important to identify a financial partner that is willing to provide financing to interested municipalities in the program. See Appendix B for a list of financial partner qualifications.

Coordinate with the utility company on rebates and bill updates: The bill update process and the majority of the rebate application process will take place during construction phase, but it is important to facilitate a discussion between your organization, your contractor, and the utility company to develop a process for bill updates so that they can occur in a timely fashion.

Provide resources for Phase 3 decision making: DVRPC worked with its Contractor and Legal Advisor to also develop the template vendor and construction contracts for each round of the program. In RSLPP Round 1, vendor contracts were not needed because Energy Performance Contracting was used, so DVRPC worked with the legal advisor (PennSEF) to develop a template construction contract, known as a Guaranteed Savings Agreement, that would be signed between the ESCO and each municipality that proceeded to Phase 3. In RSLPP Round 2, DVRPC contracted directly with each vendor that was selected (distributor and manufacturers) and "assigned" all off the manufacturer contracts and the distributor contract to the Installation Contractor who will hold the construction contract with each municipality. Municipalities then piggybacked off DVRPC's fully-assigned construction contract. To make this possible, DVRPC worked with its legal advisor to develop one set of vendor and construction contracts to be signed between DVRPC and the vendors. The RSLPP then developed a short "agreement" that served as the mechanism through which municipalities piggybacked off of the fully-assigned construction contract between DVRPC and the installer.

Phase 3
Construction

Phase 3 is the actual installation of the streetlighting system. During this phase, the Project Proposal serves as the basis of the construction contract. The installer or ESCO purchases the equipment on behalf of the municipalities according to the supply chain under contract to the program, and according to the product schedule and installation schedule developed in the Project Proposal. The DSP or ESCO manages the construction contract for each municipality.

Evaluate Project Schedule: A whole-program construction schedule is important to develop with your consultant to ensure that 1) the project team knows what to anticipate, and 2) you can clearly communicate to municipalities when their projects may begin. With multiple municipalities participating in the program, not all will be able to start at one time, so it is important to be transparent about this. DVRPC prioritized municipalities that accessed financing since these municipalities typically would all "close" on financing at the start of construction phase, and the project savings would be needed to make payments on the financing.

Update utility bill and rebates: Utility bill updates and final rebate applications occur during this phase. The regional organization should be responsible for hosting regular bill update calls between the utility and the consultant, as well as verifying that the consultant has submitted all required documentation for utility rebates, if available. The utility staff will do the actual bill updates.

Collect data: As projects are completed, it is important to gather data from your consultant so that you can track project outcomes—particularly the details on the equipment installed, its cost, and associated savings.

Phase 4
Post-Construction Operations and Maintenance

Phase 4 provides post-construction operation and maintenance services that include independent verification of project savings and guidance for on-going maintenance of the streetlighting system.

Deliver Measurement and Verification (M&V) of project savings: Any project that is projected to save energy should be followed up with a report that verifies that projected savings have been met and that the equipment installed is operating properly. If your organization uses the EPC model, a Measurement and Verification process is required for your project as per the Pennsylvania Guaranteed Energy Savings Act. DVRPC instituted a 3-year M&V period and the ESCO was required to produce an M&V report annually for the first three years after installation. For RSLPP Round 2, the DSP offered M&V plans as an optional scope of work item for Phase 4, and all municipalities included these services in their contract.

Prepare Operations and Maintenance (O&M) guidance: Operations and Maintenance guidance should ensure that municipalities understand how to identify equipment that has failed or is damaged, as well as how to order replacement parts of equipment. For example, a light that persists in the on setting during the day is known as a “day burner” and likely indicates that the photocell has failed and needs to be replaced, whereas a flickering lighting may need to be evaluated to identify if the entire fixture needs to be replaced or if it is an issue with the driver. Municipalities should clearly understand who to call for maintenance repairs as well as what replacements— parts and labor— are covered under their warranty, and how to order replacement equipment. To order replacement equipment, municipalities will need to know who to contact that will honor the warranty— whether through their maintenance provider, their installation contractor or the distribution partner, and what part numbers specifically to order. To do this, municipalities will need a detailed list of equipment that lists the part number of all equipment installed at each location in their community.

Consider outdoor lighting ordinances: A lighting ordinance is an optional follow-up step for municipalities to consider as part of their lighting projects, and these ordinances can typically be developed by the Consultant in either model (ESCO or DSP). A lighting ordinance will ensure that all future lighting installations in the municipality will align with the specification of the converted streetlight and outdoor lighting system.

Appendices

A. Data Sources for Streetlight Projects
B. Financial Partner Qualifications
C. Sample Feasibility Study
D. Sample Project Proposal

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Appendix A: Data Sources for Streetlight Projects

Data Source	Description of Data	DVRPC Role
Utility Bills	In the DVRPC region, a municipality's streetlight bill provides an inventory of the streetlight equipment that is installed. This includes the style of lamp (e.g., HPS) and lamp wattage. Using this information, plus the utility billing algorithm of 4100 burn hours per year X kWh used by each lamp, a baseline of energy costs can be generated. Further, the equipment inventory provided by the utility bills helps create the basis for the LED conversion scenario during the feasibility study.	DVRPC gathered utility bills from all participants in RSLPP Round 1 and Round 2 and shared with the consultant (ESCO or DSP) the data in raw (utility bills) and spreadsheet form.
Maintenance Cost Estimates	The feasibility study should include both the cost of maintaining the existing incumbent system as well as the expected cost of maintaining the desired LED system.	DVRPC gathered information on whether a municipality's maintenance service was in-house or contracted. The ESCO or DSP was responsible for developing a methodology for estimating maintenance cost savings, communicating this methodology to municipalities, and gathering the data sources needed to make costs and savings estimates.
Labor Pricing	Labor pricing estimates were developed using county-level prevailing wage determinations provided by the Pennsylvania Department of Labor and Industry for labor pricing for construction projects.	Prevailing Wage determinations are provided by the PA Department of Labor and Industry by county. The consultants— ESCO or DSP—were responsible for pulling this information and developing labor cost estimates for the feasibility studies.
Streetlight Products and Distributor Pricing	Any streetlight conversion project will include several pieces of equipment depending on the number and style of fixtures being replaced. Pricing for streetlights should evaluate base products plus any add-on components— those that are required and any that are optional as well. A distribution partner will mark up material pricing to fund their material handling services.	For RSLPP Round 1, DVRPC included a requirement for ESCOs to provide a pricing proposal for a list of specified streetlighting equipment that was developed by the RSLPP technical advisor. The RFP allowed DVRPC to "lock in" the pricing for the equipment specified through the RFP, and this pricing was used for all projects and included in feasibility studies. For Round 2, DVRPC hired a Design Services Professional to run the solicitations for streetlighting equipment, but these solicitations could not be run until after the feasibility phase. As such, Round 2 of the RSLPP leveraged RSLPP Round 1 pricing as an estimate of vendor equipment pricing.
Project Development Pricing	During Phase 2 of a project, project development-related services include: field auditing, system design, and procurement. The feasibility study should include a price for project development services, typically provided on a per-fixture basis.	Pricing for all Project Development services should be locked in as part of the RFP for the ESCO or DSP that is issued by the regional entity, and this pricing should be used in studies or project proposals by the program's ESCO or DSP.

Appendix B: Financial Partner Qualifications

The following list of requirements were developed for each round of the RSLPP, with the goal of allowing each municipality to have access to these benefits.

- Ability to provide subject to appropriation debt: Subject to appropriation debt means that municipalities commit to appropriating the funds to pay debt service annually, and therefore this debt is not counted against a municipality's debt limit. The benefits to municipalities are that they are able to access these funds even if they are at or close to their debt limit, and it allows the municipality to avoid the costly and time-intensive filing process of applying for approval to take out general obligation debt. As a result, subject to appropriation debt helps to keep the program moving quickly and will typically lower the cost of borrowing for each participant relative to the complexities of general obligation debt.
- Flexible and extended financing terms: This allows municipalities to choose the terms of their loan so that energy and maintenance cost savings meet or exceed the finance payments each year and no out of pocket\ costs are required if none are available. Due to the payback, long term debt (>7 years), particularly debt that is "subject to appropriation," may be difficult to find as some lenders will be unwilling or unable to issue debt for longer than this period. Unique partnerships, or binding together more than one financial partner, may be required to meet this objective.
- Low and fixed interest rates: As with all borrowers, the lower the interest rate the better. Finding a lender willing to provide fixed-rate loans is equally as important, as most municipalities will be unwilling to enter into a variable interest rate financing, nor will they be willing to "re-finance" the project at an unknown rate 7–10 years into the future.
- No risk for another community's default: Be sure that the financial partner understands upfront that you are seeking to arrange standard financing across a portfolio, but that the risk of borrowing falls on each borrower, with no cross collateralization of debt permitted. This protects each municipality and all other program partners against the risk if one municipality defaults.
- Reimbursement of upfront consulting, design, and auditing costs associated with the project: In many cases, municipalities will need to pay for some upfront cost associated with their projects. It is helpful to have a way for municipalities to be able to reimburse themselves for these upfront costs at closing if possible.

Appendix C: Sample Feasibility Study

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Appendix D: Sample Project Proposal

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A Best Practices Guide for Multi-Municipal Aggregation Programs

Lessons Learned from DVRPC's Regional Streetlight Procurement Program

Publication Number: 00000

Date Published: March 2021

Geographic Area Covered:
Bucks, Chester, Delaware, and Montgomery counties

Key Words:
Implementation, aggregation, LED, streetlight, Energy Performance Contracting, Design Bid Build, Energy, Regional Streetlight Procurement Program

Abstract:
Multi-municipal aggregation programs can be incredibly valuable in assisting local governments with implementation of projects. Aggregation programs remove several key technical, procurement, and decision-making challenges that local governments face. This guide includes the best practices and lessons learned from DVRPC's Regional Streetlight Procurement Program (RSLPP), a multi-municipal aggregation program designed to enable conversion of LED streetlighting systems. The lessons learned can also be applied to other applications of aggregated procurement and implementation for local governments. This guide also attempts to evaluate the pros and cons of the two distinct procurement methods that DVRPC used when implementing the two rounds of this program— energy performance contracting and design-bid-build.

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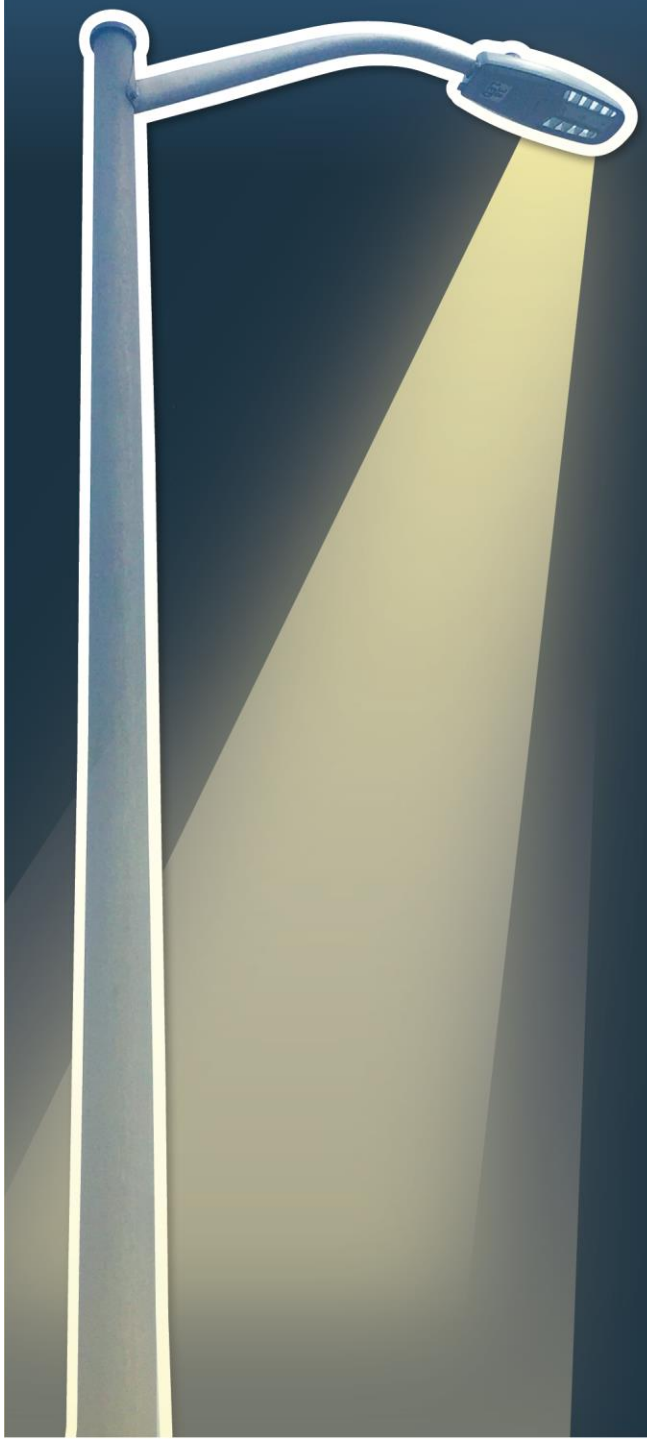

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