



LED Street Lighting Business Case

September 2017

City-Owned LED Street Lighting in Texas: *Unlocking a Substantial Economic Opportunity with Performance Contracting*

Abstract

Light-emitting diode (LED) street lighting has seen significant adoption recently in cities across the U.S., and it is not hard to see why. LED lights reduce energy consumption from comparable high-pressure sodium (HPS) fixtures by 55 to 60 percent. LED lights also provide superior illumination with a high color rendering index (CRI), excellent light distribution, and improved peripheral vision for drivers. With expected lives of over 100,000 hours (15 to 20 years), LED lights also significantly reduce maintenance for cities that make the switch.

Utilizing a performance contract is one proven model to perform street lighting retrofits in cities like yours. The performance contracting model allows your city to leverage the electricity savings generated by the LED lighting conversion and to not have to find cash in your budget to make the improvements. This turnkey process also saves your city time because you can contract the GIS auditing, lighting design, engineering, and materials all under one contract.

Utilizing the performance contracting model, the energy services company (ESCO) is responsible for all aspects of project design and performance, while the city and ESCO work together to design and develop the specific scope of work. All project outcomes (light levels, cost, energy savings, etc.) are known before project approval by the city council. City councils also like the guaranteed maximum price structure of a performance contract because they know exactly what the cost will be when they approve the project.

Example Business Case

To demonstrate what a potential LED streetlight project cash flow can look like under a performance contract, we have modeled a representative city in the Oncor service territory in Texas. The numbers are shown for representative purposes only, and are built on the following assumptions:

- Fixture ownership: City
- Financing: Tax Exempt Lease Purchase – 3.15 percent interest
- Financing Term: 15 years
- Utility Rate: Published Oncor Street Lighting Service Tariff
Retail energy rate of \$0.03652 per kWh
- City Population: 100,000
- Approximate quantities: 7,600 fixtures split with the following distribution
 - 15 percent - 400 W HPS
 - 20 percent - 250 W HPS
 - 10 percent - 200 W HPS
 - 10percent - 175 W Mercury Vapor
 - 5 percent - 150 W HPS
 - 40 percent - 100 W HPS
- Includes engineering study to GIS map existing fixtures
- Includes turnkey installation, materials, project management, and light level commissioning

Tariff Considerations

Currently, LED project paybacks in the Oncor service area are artificially longer than they should be because existing service tariffs and LED tariffs for unmetered service do not properly account for wattage drops below 100-watt fixtures. This is also the case with other “LED tariffs” in Texas, including those provided by member-owned cooperatives. This is particularly detrimental to project economics when one of the most common existing fixtures in a city is a 100-watt HPS fixture. A typical LED retrofit for 100-watt HPS fixtures will replace each HPS fixture with a 31-watt LED fixture. Although the retrofit provides a significant efficiency gain in true power consumption, under the existing tariffs and LED tariffs, there is minimal economic benefit attributable to the project. This is due to the LED category for unmetered service having only one category of LED fixtures from zero to 100 watts.

> Table 1. Missing Watt Categories for LED Tariffs

This table illustrates the missing watt categories for existing LED tariffs and is typical for Texas utilities.

Table 1. Missing Watt Categories for LED Tariffs

Points of Delivery (POD) Charge: \$57.41 per governmental entity served by the Competitive Retailer.

Lamp	Watts	Lumens	kWh	Schedule			Rectangular*	Post-Top*
				A	B*	C* and D		
Mercury Vapor * (See Note 1)	175	7,900	70	\$10.49	\$14.88	\$1.53	\$26.77	\$9.63
	400	21,000	150	\$11.47	\$20.06	\$3.14	N.A.	N.A.
	1,000	63,000	370	\$14.55	\$24.30	\$7.56	N.A.	N.A.
Sodium Vapor	100	9,500	40	\$10.19	\$14.59	\$0.92	\$26.54	\$9.34
	150	16,000	70	\$10.71	\$16.24	\$1.53	N.A.	N.A.
	200	22,000	80	\$10.78	\$19.37	\$1.73	N.A.	N.A.
	250	27,500	100	\$11.00	\$19.60	\$2.13	\$25.69	N.A.
	400	50,000	160	\$12.49	\$22.23	\$3.34	N.A.	N.A.
	1,000*	140,000	375	\$14.51	\$24.28	\$7.66	N.A.	N.A.
Metal Halide	150	14,000	65	\$12.42	N.A.	\$1.43	N.A.	N.A.
	175 (see note 2)	14,000	65	\$12.42	\$18.80	\$1.43	N.A.	N.A.
	250	25,000	100	\$14.26	\$22.29	\$2.13	\$36.62	N.A.
	400	36,000	160	\$14.74	\$23.04	\$3.34	\$36.62	N.A.
	1,000*	110,000	370	\$17.75	\$26.03	\$7.56	\$40.98	N.A.
LED/Low Wattage (See Note 3)	100		40	N.A.	N.A.	\$0.92	N.A.	N.A.

Note: Oncor tariff information is from the Public Utility Commission of Texas website, dated March 1, 2016. Tariff details are attached. Rates may have changed. It is recommended that you contact your account manager to get a copy of the appropriate tariff for your city.

> **Table 2. Existing Tariff Analysis for City-owned Street Lights [Unmetered]**

Table 2 illustrates the retail energy savings for the project when calculated using the existing tariff for unmetered service. Notice that the highest quantity of existing fixtures are 100-watt HPS, but there are zero savings associated with that fixture replacement in the current tariff structure.

Table 2. Existing Tariff Analysis for City-owned Street Lights [Unmetered]

Existing Fixture Description	Existing Fixture Watts	Existing Quantity	Retrofit Description	Retrofit Fixture Watts	Existing Monthly kWh per Rate Code	Retrofit Monthly kWh per Rate Code	Existing kWh	Retrofit kWh	kWh Savings	Retail Energy Savings (\$)
400 HPS	480	1,144	215 W LED fixture	215	160	80	2,196,480	1,098,240	1,098,240	\$ 40,108
250 HPS	300	1,464	141 W LED fixture	141	100	70	1,756,800	1,229,760	527,040	\$ 19,248
200 HPS	240	799	Split 73 W & 141 W	107	80	40	767,040	383,520	383,520	\$ 14,006
175 Mercury Vapor	210	563	Assume same as 150 HPS	73	70	40	472,920	270,240	202,680	\$ 7,402
150 HPS	180	91	73 W LED fixture	73	70	40	76,440	43,680	32,760	\$ 1,196
100 HPS	120	2,522	31 W LED fixture	31	40	40	1,210,560	1,210,560	-	\$ -
Existing LED	40	671	No Retrofit	40	40	40	322,080	322,080	-	\$ -
							6,802,320	4,558,080	2,244,240	\$ 81,960

Zero savings attributed to 100-W HPS retrofit

> Table 3. 2017 Rate Case Submission

A revised Oncor tariff has been proposed and submitted to the PUCT that includes separate wattage categories for LED lamps. This revised tariff includes five separate wattage ranges for LED lamps and provides nearly a 50% increase in retail energy benefit for the same scope of work in this example.

Table 3. Proposed Tariff with LED Watt Categories

Points of Delivery (POD) Charge: \$68.00 per governmental entity served by the Competitive Retailer.

Lamp	Watts	Lumens	kWh	Schedule			Rectangular*	Post-Top*
				A	B*	C* and D		
Mercury Vapor * (See Note 1)	175	7,900	70	\$10.54	\$15.31	\$1.61	\$23.93	\$11.63
	400	21,000	150	\$11.73	\$19.25	\$3.25	N.A.	N.A.
	1,000	63,000	370	\$14.84	\$23.46	\$7.76	N.A.	N.A.
Sodium Vapor	100	9,500	40	\$10.19	\$14.97	\$0.99	\$23.83	\$10.91
	150	16,000	70	\$10.74	\$18.25	\$1.61	N.A.	N.A.
	200	22,000	80	\$10.94	\$18.47	\$1.81	N.A.	N.A.
	250	27,500	100	\$11.16	\$18.68	\$2.22	\$25.94	N.A.
	400	50,000	160	\$12.50	\$21.11	\$3.45	N.A.	N.A.
	1,000*	140,000	375	\$15.15	\$23.31	\$7.87	N.A.	N.A.
Metal Halide *	150	14,000	65	\$12.29	N.A.	\$1.50	N.A.	N.A.
	175 (see note 2)	14,000	65	\$12.29	\$20.50	\$1.50	N.A.	N.A.
	250	25,000	100	\$14.00	\$22.31	\$2.22	N.A.	N.A.
	400	36,000	160	\$14.44	\$22.31	\$3.45	\$33.75	N.A.
	1,000*	110,000	370	\$17.66	\$25.58	\$7.76	\$37.00	N.A.

LED Street Lighting Options

Lamp	Wattage Range	kWh	Schedule A LED Street Lighting				Schedule D LED Street Lighting
			Cobra Head (See Note 3)	Rectangular (See Note 4)	Post – Top (See Note 4)	Historical (See Note 4)	
LED	0 - 55	15	\$11.42	\$24.45	\$16.02	\$28.30	\$0.48
LED	56 - 100	30	\$11.79	\$25.10	\$15.95	\$27.91	\$0.78
LED	101 - 140	45	\$12.20	N/A	N/A	N/A	\$1.09
LED	141 - 180	55	\$12.43	\$25.38	N/A	N/A	\$1.30
LED	181 - 265	80	\$15.02	N/A	N/A	N/A	\$1.81

> **Table 4. Proposed Tariff Analysis for City-owned Street Lights [Unmetered]**

Table 4 illustrates the dollar savings for the project when calculated using the proposed tariff for unmetered service. Notice the additional savings that can be generated from the 250-watt and 100-watt HPS fixture retrofits.

Table 4. Proposed Tariff Analysis for City-owned Street Lights [Unmetered]

Existing Fixture Description	Existing Fixture Watts	Existing Quantity	Retrofit Description	Retrofit Fixture Watts	Existing Monthly kWh per Rate Code	Retrofit Monthly kWh per Rate Code	Existing kWh	Retrofit kWh	kWh Savings	Retail Energy Savings (\$)
400 HPS	480	1,144	215 W LED fixture	215	160	80	2,196,480	1,098,240	1,098,240	\$ 40,108
250 HPS	300	1,464	141 W LED fixture	141	100	55	1,756,800	966,240	790,560	\$ 28,871
200 HPS	240	799	Split 73 W & 141 W	107	80	45	767,040	431,460	335,580	\$ 12,255
175 Mercury Vapor	210	563	Assume same as 150 HPS	73	70	30	472,920	202,680	270,240	\$ 9,869
150 HPS	180	91	73 W LED fixture	73	70	30	76,440	32,760	43,680	\$ 1,595
100 HPS	120	2,522	31 W LED fixture	31	40	15	1,210,560	453,960	756,600	\$ 27,631
Existing LED	40	671	No Retrofit	40	40	40	322,080	322,080	-	\$ -
							6,802,320	3,507,420	3,294,900	\$120,330

Reduced kWh due to multiple wattage ranges in the proposed tariff

Savings attributed to 100-W HPS retrofit

As you can see the proposed tariff creates a significant economic benefit for undertaking the same scope of work by more accurately billing for the actual energy consumption of the new LED lamps. In addition to retail energy savings, LED retrofits also provide for facility charge savings and maintenance savings. These two savings categories have not been detailed in this document, but are reflected in the proforma shown below.

Most ESCO companies will consider facility charge savings and as part of the energy savings because they will show up on your electric bill. These savings are included as part of the guaranteed energy savings shown below. Maintenance savings, however, can vary greatly based upon individual City maintenance plans and are typically provided to the ESCO by the City. For this example, maintenance savings were based on the material savings that come from not needing to replace 10% of the existing HPS lamps and ballasts annually. In some situations, the O&M savings can be significantly higher, particularly if the City is outsourcing their streetlight maintenance to a third party.

Project Costs for Proforma

Table 5. Input Costs for Sample Proforma

Initial Project Costs:		
Detailed Energy Audit	\$	80,000
Performance and Payment Bond (if applicable), Permits	\$	35,625
Implementation Costs	\$	2,577,734
Total Initial Project Costs	\$	2,693,359
Taxes	\$	-
Total Ameresco Contract Amount	\$	2,693,359
3rd Party Engineer Fee	\$	5,000
Total Project Cost	\$	2,698,359

Conclusion

In closing, although every street lighting retrofit situation is unique, there are some common elements to all projects that make them successful for all parties involved. Cities and citizens are increasingly demanding energy and resource efficient solutions that improve the environmental performance of their cities while also saving taxpayers money. In order for LED street lighting to work for a majority of projects, cities must work together with their utilities, city councils, and the Public Utilities Commission to ensure that LED tariff design is fair and captures an appropriate amount of savings for city customers and members.

Table 6. Sample Pro Forma

Table 6. Sample Pro Forma

Proforma	Initial Values	Year									
		1	2	3	4	5	6	7	8	9	10
1 Projected Annual Energy Cost Savings	\$ 200,456	\$ 206,470	\$ 212,664	\$ 219,044	\$ 225,615	\$ 232,383	\$ 239,355	\$ 246,536	\$ 253,932	\$ 261,550	\$ 269,396
2 Guaranteed Energy Cost Savings	\$ 180,410	\$ 185,823	\$ 191,397	\$ 197,139	\$ 203,053	\$ 209,145	\$ 215,419	\$ 221,882	\$ 228,538	\$ 235,395	\$ 242,456
3 O&M Savings	\$ 27,118	\$ 27,118	\$ 27,118	\$ 27,118	\$ 27,118	\$ 27,118	\$ 27,118	\$ 27,118	\$ 27,118	\$ 27,118	\$ 27,118
4 Utility Rebates (Note 4)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
5 Total Project Savings (Line 2 + Line 3 + Line 4)	\$ 207,528	\$ 212,941	\$ 218,515	\$ 224,257	\$ 230,171	\$ 236,263	\$ 242,537	\$ 249,000	\$ 255,656	\$ 262,513	\$ 269,574
6 Payments for Financing Equipment	\$ -	\$ 192,108	\$ 197,166	\$ 202,371	\$ 207,727	\$ 213,239	\$ 218,909	\$ 224,744	\$ 230,747	\$ 236,925	\$ 243,280
7 Payments for Measurement and Verification Service	\$ 12,405	\$ 12,901	\$ 13,417	\$ 13,954	\$ 14,512	\$ 15,092	\$ 15,696	\$ 16,324	\$ 16,977	\$ 17,656	\$ 18,362
8 Payments for Operation and Maintenance Services	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
9 Total Payments	\$ -	\$ 205,009	\$ 210,583	\$ 216,325	\$ 222,239	\$ 228,331	\$ 234,605	\$ 241,068	\$ 247,724	\$ 254,581	\$ 261,642
10 Net Annual Benefit	\$ -	\$ 7,932	\$ 7,932	\$ 7,932	\$ 7,932	\$ 7,932	\$ 7,932	\$ 7,932	\$ 7,932	\$ 7,932	\$ 7,932
11 Cumulative Cash Flow	\$ 1,791,596	\$ 7,932	\$ 15,864	\$ 23,796	\$ 31,727	\$ 39,659	\$ 47,591	\$ 55,523	\$ 63,455	\$ 71,387	\$ 79,319
12 Net Present Value of Cash Flow	\$ 93,002										
13 Interest Rate	3.25%										
14 Discount Rate	3.25%										
15											

Line #	11	12	13	14	15	16	17	18	19	20	Totals
1 Projected Annual Energy Cost Savings	\$ 277,478	\$ 285,802	\$ 294,376	\$ 303,208	\$ 312,304	\$ 321,673	\$ 331,323	\$ 341,263	\$ 351,501	\$ 362,046	\$ 5,547,918
2 Guaranteed Energy Cost Savings	\$ 249,730	\$ 257,222	\$ 264,939	\$ 272,887	\$ 281,074	\$ 289,506	\$ 298,191	\$ 307,137	\$ 316,351	\$ 325,841	\$ 4,993,125
3 O&M Savings	\$ 27,118	\$ 27,118	\$ 27,118	\$ 27,118	\$ 27,118	\$ 27,118	\$ 27,118	\$ 27,118	\$ 27,118	\$ 27,118	\$ 542,360
4 Utility Rebates (Note 4)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
5 Total Project Savings (Line 2 + Line 3 + Line 4)	\$ 276,848	\$ 284,340	\$ 292,057	\$ 300,005	\$ 308,192	\$ 316,624	\$ 325,309	\$ 334,255	\$ 343,469	\$ 352,959	\$ 5,535,485
6 Payments for Financing Equipment	\$ 249,820	\$ 256,548	\$ 263,471	\$ 270,593	\$ 277,920	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3,485,569
7 Payments for Measurement and Verification Service	\$ 19,096	\$ 19,860	\$ 20,654	\$ 21,480	\$ 22,339	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 258,320
8 Payments for Operation and Maintenance Services	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
9 Total Payments	\$ 268,916	\$ 276,408	\$ 284,125	\$ 292,073	\$ 300,259	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3,743,889
10 Net Annual Benefit	\$ 7,932	\$ 7,932	\$ 7,932	\$ 7,932	\$ 7,933	\$ 316,624	\$ 325,309	\$ 334,255	\$ 343,469	\$ 352,959	\$ 1,791,596
11 Cumulative Cash Flow	\$ 87,251	\$ 95,183	\$ 103,115	\$ 111,047	\$ 118,980	\$ 435,604	\$ 760,913	\$ 1,095,168	\$ 1,438,637	\$ 1,791,596	



City of Arlington



"The City of Arlington is pleased to take this step in a Public-Private Partnership with OpTerra to improve our energy efficiency reflecting strong financial stewardship while also bringing economic development to the American Dream City. This partnership with OpTerra Energy Services will help make us a greener city through guaranteed savings."

Robert Cluck, Former Mayor, City of Arlington

The Opportunity

Incorporated in 1884, the City of Arlington, Texas, known as "The American Dream City," is located at the heart of the Dallas/Fort Worth/Arlington metroplex. While Arlington started as a small rural farming community, the growing city is now home to more than 365,000 residents. In an effort to become a more sustainable city, Arlington leaders worked to maximize the efficiency of existing transportation systems, reduce energy and maintenance costs, and improve streetlight reliability by converting City-owned streetlights to LED. The City operates streetlights under rate schedule 6.1.1.1.8 for Lighting Service within Oncor's Tariff for Retail Delivery Service.

The Partnership

Phase I

In May 2014, the City of Arlington began exploring a comprehensive energy program in partnership with OpTerra. The program was designed and developed by a Texas-based team of OpTerra engineers alongside City management, with a key focus on retrofitting 10,500 of Arlington's streetlights with LEDs. Prior to the retrofits, City streetlights consumed 20 percent of City-wide electricity and the City was paying millions to keep the lights burning and maintained. During the first phase of the LED conversion, crews retrofitted streetlights along major arterials throughout Arlington. The first phase of LED installations was completed in just six months, which resulted in a 45 percent reduction in energy use.

As a result of Phase I, a total of 10,500 streetlights have been retrofitted from the previous 150 watt, 175 watt and 200 watt High-Intensity Discharge (HID) and High Pressure Sodium (HPS) streetlights to modern, high efficiency, 70-watt LED cobra head style fixtures. The conversion has resulted in significant operation and maintenance

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By the Numbers

- **\$18MM** in energy savings over 15 years
- A total of **11,223 LED streetlights** installed
- Energy efficiency upgrades for more than **30 buildings**
- Decreases CO2 emissions by **2,162 metric tons** – the equivalent to removing more than **385 cars** from the road every year
- Reduces the City's water consumption by more than **3.5 million gallons** every year
- Reduces the City's energy use by more than **2.5 million kilowatt-hours** each year

The Technical Scope

Phase I

- Installed 10,500 LED streetlights in major arterials throughout the City
- Installed seven-pin receptacles with the LED streetlights for future smart city advancement
- Modernized HVAC control system with the latest automated Direct Digital Control (DDC) system
- Performed mechanical upgrades including replaced chillers, cooling towers and boilers
- Performed domestic water retrofits and installed new jail flush valves

Phase II

- Retrofitted 320 ornamental lighting fixtures with LEDs in the Entertainment District
- Retrofitted 403 streetlights with LEDs along State Highway 360 and on Interstate 30 overpasses
- Installed new LED high-mast fixtures along State Highway 420
- Retrofitted 920 interior/exterior lights with LEDs
- Installed new HVAC rooftop units

Program Timeline

MAY 2014

OpTerra implemented the first streetlight pilots in Arlington.

DECEMBER 2014

The City of Arlington signed a contract with OpTerra to implement Phase I.

MARCH 2015

Construction began on the largest streetlight conversion project in the southwest, retrofitting 10,500 streetlights with LEDs.

DECEMBER 2015

The Arlington City Council approved the financing and signed the contract to implement Phase II.

OCTOBER 2016

OpTerra completed construction of Phase II which included more LED streetlight retrofits and energy efficiency upgrades.

FEBRUARY 2017

The City and OpTerra continue to explore scopes for additional phases work encompassing LED streetlight retrofits in Arlington's residential areas.

savings due to the long life cycle of the LED fixtures. The LEDs have a rated life cycle of approximately 100,000 hours compared with HID lamps that generally have a life of less than 25,000 hours. Over the course of the 25-year life of the LED fixture, every HID fixture would have a lamp changed about four times. The LED conversion not only creates energy and cost savings for the City, but also standardizes the fixtures along streets to a single fixture, reducing the number of fixture types kept in inventory and improving efficiencies in maintenance.

All streetlight data is recorded in a streetlight database with pole locations and fixture information, further contributing to ease of maintenance. Additionally, OpTerra is paving the way for more connected, intelligent control of the streetlighting in the future; the seven-pin receptacles installed provide a solid foundation for smart city advancement in Arlington.

Phase I was financed with the help of a tax-exempt municipal lease, set at 2.5 percent over 15 years. As part of the investment plan, the City bundled implementation of the streetlights with energy efficiency performance upgrades in 21 City facilities, including the Ott Cribbs Public Safety Center and the Elzie Odom Recreation Center. Additionally, OpTerra replaced aging air conditioning equipment, modernized control systems, and implemented water conservation measures.

Phase II

Propelled by the success of the rapid construction of Phase I, occurring in a six-month period during off hours, the City entered into a second phase of work with OpTerra. Phase II included decorative LED streetlight retrofits in the Entertainment District, on Interstate overpasses, and along several state highways. To boost occupant comfort while saving costs, the City installed new HVAC rooftop units at several City buildings. Additionally, new LED interior and exterior lights were installed in City buildings, providing brighter, better quality light for residents and visitors.

By utilizing a performance contracting model, no upfront costs were required from the City and the energy savings that resulted from the first phase of work contributed directly to the financial feasibility of the program's second phase. OpTerra guarantees the energy savings resulting from all of the energy efficiency improvements. Phase II was also financed using a tax-exempt municipal lease, but set at 2.3 percent and over a 17-year period.

The Impact

Demonstrating a commitment to sustainability and serving as a model for other municipalities in the region, Arlington is the first major city in the Southwest to retrofit dated, HPS streetlights with contemporary, more effective, and high-performing LED fixtures. As a result of both program phases, the City is projected to generate savings of more than \$18 million over 15 years and the new LED streetlights save the City \$15,000 in maintenance costs annually.

The program has not only been a boon for the City from a financial and public safety perspective; it has also transformed Arlington into a greener city. The full program decreases the City's energy use by more than 2.5 million kilowatt hours annually – enough to power 237 homes' electricity use for one year. The City's water consumption is also reduced by more than 3,500,000 gallons every year – enough water to fill more than five Olympic-sized swimming pools.

The extensive LED streetlight installation places the City of Arlington at the forefront of leading technology and sustainability initiatives in Texas. With a higher color

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temperature light than the legacy yellow sodium vapor lights, the new LED fixtures also enhance pedestrian and driver safety at night. The new LED fixtures save energy, ease maintenance, and redirect utility budget costs to support other initiatives that improve the quality of life of Arlingtonians.

Additional Phases

The City is contemplating additional work on the remaining streetlights that have not been converted to LED including residential areas. The potential for additional streetlight retrofits is spurred on by a new tariff that supports lower LED wattages. By exploring additional work Arlington is on track to become fully lit by LED streetlighting from neighborhood to neighborhood in the near future.



Watch our video, **Lighting Up Arlington: City-Wide LED Streetlight Transformation** <http://bit.ly/2iVg84J>

ENERGY CONSERVATION MEASURE	TOTAL PROJECT COST (\$)	TOTAL YEAR 1 SAVINGS (\$)
Streetlighting	\$6,870,000	\$509,000
Mechanical Systems	\$3,070,000	\$117,000
Interior Lighting	\$1,820,000	\$196,000
Controls	\$1,290,000	\$38,000
Water Conservation	\$370,000	\$35,000
Electrical	\$290,000	\$48,000
	\$13,710,000	\$943,000

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