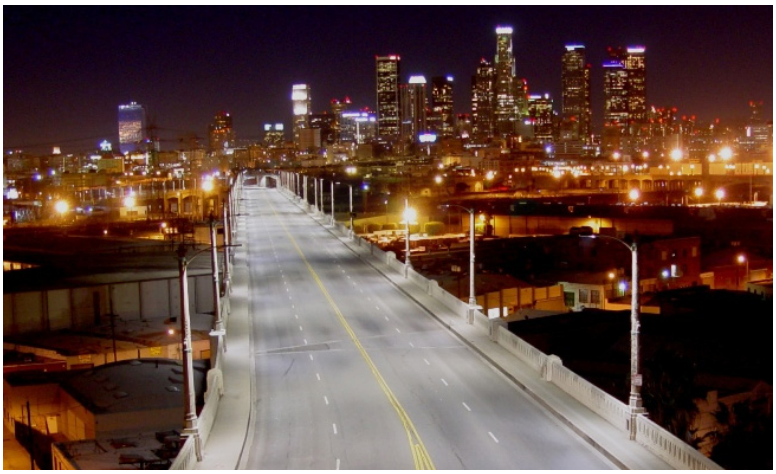
Los Angeles and Seattle: Utility Financing of Municipally Owned Streetlights



A number of municipalities across the U.S. are taking advantage of publically owned utilities to provide funding assistance with LED streetlight retrofits. In most cases, the funding comes in the form of a low-cost or market-rate loan that is repaid with project savings. This model has worked for a host of smaller municipalities, including several located throughout the state of Iowa, as well as for some larger municipalities such as Los Angeles and Seattle.

Los Angeles recently completed an ambitious LED replacement project, converting more than 140,000 traditional high-intensity discharge streetlights to LED. Los Angeles is the second-largest city in the United States, has over 4,500 miles of illuminated roadway, and owns its own power utility. Technical and financial analyses conducted by the Los Angeles Bureau of Street Lighting (BSL) projected that the total LED replacement could be accomplished for an estimated capital cost of about $57 million, and BSL applied for a $40 million loan from the city's Department of Water and Power. Projected operations and maintenance (O&M) savings from the replacement could be used to service the loan, at 5.25 percent interest, with repayment in year 7. Having received approval for implementation of the program in the spring of 2009, the city is on target for repaying its loan in 2016. Energy savings for the 140,000 units replaced are actually exceeding the projected 40 percent on which BSL's proposal was based, averaging 63.1 percent to date (see table below for more details). The city has since begun its next stage, which involves the replacement of another 70,000 decorative and other specialty streetlights.

By the end of 2013, Seattle City Light (SCL) will have completed the LED conversion of more than 41,000 residential streetlights. The city-owned utility will have funded the entire program at a cost of about $18 million. All costs are to be recovered through new streetlight rates paid by the City of Seattle's General Fund and seven other cities within SCL's service territory. While the simple payback is estimated at just over 6 years, the new LED luminaires' economically useful life of 15 years will provide the utility with 9 years of positive cash flow. In effect, SCL borrowed this money from ratepayers at a discount rate of 3 percent, but the 41,000 LED streetlights will save the utility almost $40 million in maintenance and energy costs over their expected 15-year life.

LED Retrofit Financial Summary *Population*	Seattle *635,000*	Los Angeles *4,000,000*
Total capital costs:	$18,000,000	57,000,000
Total LED fixtures in project:	41,000	141,090
Monthly kWh savings:	1,099,900	6,701,560
Monthly energy cost savings:	$205,910	$596,810
Annual kWh savings:	13,199,130	80,418,750
Annual energy cost savings:	$2,470,890	$7,161,770
Estimated lifetime kWh savings*:	197,986,950	1,206,281,250
Estimated lifetime* energy costs savings:	$37,063,170**	$107,426,550
Simple return on investment (ROI):	1.1	0.9
Estimated payback period	6 years	7 years
Estimate based on rate:	*$0.1872/kWh†*	*$0.088/kWh*

Financial figures rounded to nearest $10
**Financial analysis period is 15 years.*
***Seattle's figure includes O&M savings, which was not available for Los Angeles' analysis.*
†Rate is inclusive of electricity, fixture capital cost, O&M, & internal financing charge.