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Saving American Cities

How Amerlux's smart tech cuts energy bills, crime

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Norma Isahakian had a problem.

As assistant director for Los Angeles' Bureau of Street Lighting, she needed to move the downtown district into the modern era without sacrificing aesthetics.

She knew that she would have to get creative, so she chose Amerlux's Avista Light Engine, which saved her part of the city from wasting energy and taxpayer dollars.

"These ornamental, decorative fixtures help define LA and we want to keep them at all costs," Isahakian said. "While the majority of the city's streetlamps involve cobra-head fixtures, some of our bigger post-top and glass globe fixtures throughout the city and downtown couldn't just use a standard screw-in lamp. We needed a more creative solution and this led us to Amerlux's Avista fixtures, which are working very well. Our total LED program is saving up to 75 percent in energy consumption, which amounts to quite a bit of cost savings annually, and is meeting all of our lighting needs. Overall, we're well-lit on the streets, people love the white light and improved CRI, and we feel very positive about the LEDs installed throughout the city and downtown area."

Upgrading streetlights from outdated and energy-guzzling lighting systems to new LED lights is one of the easiest and most effective ways to improve a city.

By providing better quality light, LEDs can quickly lower energy and maintenance costs, reduce violent crime, decrease car accidents and create more hospitable nighttime environments.

Many municipalities across the United States light their streets and parking lots with decorative post-top street lights ("acorn" or "globe" styles). The fixtures are often high-pressure sodium or metal halide lamps, both of which are extremely outdated and ineffective lighting systems.

High-pressure sodium lights have very poor color rendering and cast an eerie yellow hue over everything. Metal halide lights have better color rendering than high-pressure sodium light at first, but they start to degrade in color and performance after 100 hours of operation. At best, they have a lifespan of 20,000 hours, compared to at least 50,000 hours for LEDs.

Given their short lifespan, ongoing maintenance is required and the annual costs can be quite significant.

Even worse, both high pressure sodium and metal halide lamps have spherical bulbs, throwing light in 360 degrees, which is terribly inefficient and fills the night sky with light pollution—not to mention the significant energy costs associated with keeping these kinds of lights. Since neither option is energy efficient, power costs quickly become expensive for towns.

Other common problems with these lighting systems are uneven lighting with "hot spots" in some areas and dark shadows in others.

The solution to all these issues and more is LED streetlighting. Amerlux, an award-winning design and lighting manufacturing company, has developed the next generation of LED streetlight technology: The Avista LED light engine.

Avista Delivers Optimal LED Streetlight

Designed for extremely easy retrofitting and delivering outstanding light quality for a fraction of the energy required by other light types, Avista LED light engines are the optimal LED streetlight.

Avista is engineered to deliver beautiful light with great color rendering and clarity. Avista's light element is shaped like a horizontal disc, rather than a globe, so the light goes straight down to the ground and isn't flung into the sky as wasted wattage and light pollution. Its LED technology has an outstanding life and delivers flawless performance for upwards of 50,000 hours.

With its efficient design, the Avista LED can illuminate an area with comfortable light with far less wattage—virtually maintenance free for years. The result is a well-lit area with fewer accidents, less crime and where people feel safe and comfortable.

Cut Energy Costs by 75 Percent with Avista LEDs

Avista's LED technology is extremely energy-efficient and uses dramatically less power than conventional lighting. This translates to thousands, or millions, of dollars in annual savings—a major boost to a city's operating budget.

When Portland, Oregon retrofitted 6,100 streetlights with Avista, they went from 100-watt HPS lights to 42-watt Avista LEDs, saving the city about 60 percent in energy consumption and costs.

The savings were even more significant in Los Angeles, which updated the 1920s-era in its historic downtown area with Avista LEDs. Previously lit with inefficient and ineffective 250-watt HPS lights, they were replaced with 60-watt Avista LEDs, delivering 75 percent energy savings to the city.

Enjoy Tremendous Maintenance Savings from Avista LEDs

The U.S. Department of Energy estimates LED lighting can provide up to $50 in maintenance savings per fixture annually, delivering a tremendous financial advantage over the life of the LED light engine.

Amerlux's Avista was made to deliver 50,000 to 100,000 hours of maintenance-free operation, meaning a maintenance crew shouldn't need to repair Avista LEDs for a minimum of 10 years, assuming the light is used for 12 hours a day. This long-term reliability makes Avista worth more than its weight in gold for towns.

AVISTA FAST FACTS:
Did You Know?

Rebate Eligible

Avista meets the new 4.0 standards of the DesignLights Consortium (DLC) that qualifies the product for rebates to shorten the ROI payback period.

In Portland, Oregon, Lisa Elbert, signals and lighting engineer with the City of Portland at Oregon's Bureau of Transportation noted, "We'd experienced an increasing number of failures with our previous HPS lamps. It's nice to have new lighting out there that will potentially last 20 years instead of requiring maintenance every 3-4 years."

Federal Monies Fund LED Retrofits

Billion-dollar government incentives are motivating municipalities and private companies to make smarter energy decisions with regulations that underwrite the expense until the incentives expire in 2019.

Energy efficiency is a big part of the American Recovery and Reinvestment Act of 2009, which remains in effect until the end of 2019. The $831 billion relief package offers plenty of line items for "green" technology. The law includes $13 billion worth of tax credits for companies to improve energy efficiency and another $4.5 billion for federal agencies to do
the same.

Avista meets the new 4.0 standards of the DesignLights Consortium (DLC), which also qualifies the product for rebates to shorten the ROI payback period.

LED Lighting Reduces Crime, Accident Rates

Avista LEDs offer outstanding light quality, which not only makes people feel safe, it illuminates the streets and sidewalks better, making them actually safer.

A recent study by the University of Chicago's Crime Lab and New York City found that LED lighting cut nighttime index crimes by 39 percent. The report included serious offenses like murder, robbery, aggravated assault, as well as various property crimes.

The study measured the effect of adding LED streetlights to a randomized selection of 39 public housing developments across NYC's five boroughs and compared it to an equally randomized and dispersed selection of 38 control sites.

Based on the crime reductions, the research team estimated the lighting upgrades increased the economic value of the communities by $700,000 each. These estimates do not include energy and maintenance savings, or the long-term effects of crime abatement on a community's economic vitality. Considering only the crime reduction benefits and not any energy savings, the researchers projected the lighting upgrades would be cost-effective in a mere
six years.

Evidence from the Avista upgrades in Portland, Oregon and Los Angeles, California bear out the University of Chicago's findings.

Kenny Hettrich, principal of the Hillsborough, Oregon-based manufacturer's rep agency Hy Light Group, Inc. said, "Today, visual acuity in Portland is dramatically improved and the Avista LEDs create a much warmer, safer, pedestrian-friendly ambience."

Candace Leos, Communications Manager for The Midnight Mission, a century-old homeless shelter located within Los Angeles' famed ''Skid Row'' section, just blocks from the historic downtown area, "Safety is a big issue for the entire downtown area and has been a widespread problem," confirmed Leos, who frequently ventures through downtown LA on her way to and from work. "The new lights that were installed are beautiful. They're brighter and cover a wider area, allowing people to see more clearly than before and, ultimately, make me feel safer."

Retrofit in Just 15 Minutes!

The Avista LED light engine is engineered for rapid retrofitting and most Avista installations take less than 15 minutes per fixture, dramatically reducing labor costs on projects.

When Portland, Oregon retrofitted 6,100 streetlights with Avista LEDs, they appreciated the tool-less installation process. "The method Amerlux devised—thumb screws that simply lock onto the casting—was huge for us in terms of the time and money it saved our installers/maintenance crew," Elbert said. Portland was able to install 80 fixtures a night with two crews working at once.

Customized retrofit kits with different adaptor plates for mounting onto different streetlighting fixtures are available and the system's adjustable height options provide additional flexibility, as well.

Maintain Current Aesthetics by Retrofitting

By retrofitting with Avista, it is easy to keep vintage streetlight fixtures and maintain the aesthetics of a neighborhood. The versatility baked into Avista's design allows Avista to be a "skeleton key" of sorts because it can be used in a wide variety of fixtures, including those by Holophone, Hadco, King, Louis Poulson, Lumec, Pemco, Sternberg and Visco.

In Portland, Oregon, many of the streetlights dated back 100 years and the city was reluctant to replace them. "Some manufacturers wanted to sell us a complete fixture with the pole, but Portland's castings are historic and we wanted to use them—we absolutely didn't want to replace them," Elbert said.

With Avista, Portland was able to keep its antique acorn-style fixtures and preserve the character of the area, while enjoying considerable energy savings and better lighting throughout the city.

Delivery In 10 Days or Less

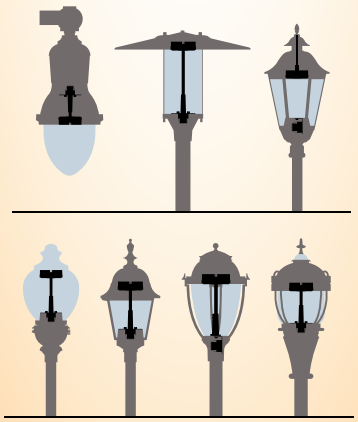
Amerlux's Avista LED light engines can ship in 10 days or less from the time they are ordered to quickly advance any retrofit project.

"Time is money," said Amerlux CEO and President Chuck Campagna. "We speak the same language as our customers. They plan, spec and maintain facilities and we do everything in our power to make sure that our products are shipped on time. No matter how complex

AVISTA FAST FACTS:
Did You Know?

Fits Many Different Fixtures

Avista is a light engine that efficiently produces light for exterior Post Top or Teardrop style luminaires. The Avista Light Engine is used within new fixtures from Amerlux, but also designed to fit many other manufacturers or legacy Amerlux fixtures as a retrofit.



the challenge, we take every opportunity personally until we exceed expectations."

Retrofit Today: Amerlux, FSG Offer Cities Free Energy Audit

To help municipalities, Amerlux and Facilities Solutions Group (FSG) have launched a new program to ensure that cities claim their share of federal reimbursement monies, which expires at the end of 2019. FSG is the audit and installation arm, while Amerlux supplies the Avista LED light engines.

"We can give a complete turnkey solution to customers with post-top fixtures," said Bernie Erickson, FSG's northeast regional vice president. "Starting with an analysis of the existing lights and energy costs, what the savings from the retrofit would be, and then complete installation."

To start the process, interested towns, developments and other facilities can contact (855) 662-7199 for a free audit by FSG to determine what kind of lights are already installed and the projected savings from retrofitting with Avista LEDs.

A member of FSG's "Green Squad" of auditors will analyze the situation, counting the number of fixtures and the types of lights the customer already has, and verify that the Avista fixtures would work in the existing luminaires.

FSG would provide the customer with a comprehensive report and executive summary detailing the overall economics of the project, including existing energy costs, likely energy savings, maintenance savings, cost of the retrofit, all grants and rebates the customer is eligible for and how long the project's payback period would be.

Superior Expertise: Why Amerlux Chose FSG

From its beginnings as a wholesale lighting supplier in 1982, FSG has grown to serve clients with lighting, electrical construction and services, technology services, energy management and signage solutions.

With this extensive scope of capabilities, FSG provides clients the time- and money-saving advantages of a single-source provider, designing, developing, installing, supporting, and servicing solutions to lower ownership costs immediately and in the long term. Now in its fourth decade, FSG operates across all of North America with more than 2,000 employees and hundreds of vendors and partners.

"The biggest benefit of FSG is how vertically integrated we are," Erickson said. "We are a single source provider of lighting and electrical products and services, energy management solutions and retrofits. Since we are a direct source for electrical contracting, distribution, design, auditing, retrofitting, rebate application management, we make it very painless for our customers. They don't need to hire several different vendors. We have all the services they could need in-house."

Consistently ranked as one of the top electrical contractors and largest electrical distributors, FSG is

adept at providing creative and effective solutions. Whether it is upgrading the LED lighting in more than 8,000 Starbucks cafes nationwide, quickly retrofitting 18,000 streetlights with LEDs for the City of El Paso, Texas, or saving the Town of Hempstead, New York more than $2 million annually for the 20-year lifespan of its new LED streetlights, FSG has deep expertise in helping customers save money with lighting retrofits.

Three Decades of Innovation: Listening for Change

Ever since Amerlux launched its first line of products in the 1980s—signature ED-17 metal halide lamps housed in custom track heads for use in the perimeter aisles of supermarkets—the company has demonstrated a passion for walking in its customers' shoes and developing solutions to address their specific needs.

In the case of the specialized supermarket track light Amerlux designed to replace the PAR 30 and PAR 38 halogen lamps, which dominated the grocery segment at the time, "our fixture was longer-lasting, affordable, offered 3,000K halogen-like color, and didn't project heat, so it didn't melt the ice or dry out produce, which was critical to managers in produce aisles or other refrigerated areas of the store," said Bill Plageman, Amerlux's vice president of marketing.

"Supermarkets nationwide took notice of our 'ruggedly handsome' solution and we penetrated that market because we were the only one offering this solution," continued Plageman.

Shifting Focus with Innovative Lighting Solutions

Amerlux further expanded beyond the grocery segment through the 1990s, bringing its solution-oriented approach to the high-end retail arena. The company was determined to solve the color and heat issues that retailers and lighting designers were experiencing with then-dominant halogen MR-16 technology.

AVISTA FAST FACTS:
Did You Know?

Sealed Optics

Avista's breakthrough IP66-sealed LED optical chamber prevents water intrusion and extends the fixture's useful life.

"We worked with the industry's top lamp manufacturers to help us deliver the best products using high-quality ceramic metal halide, which offered great color, improved beam projection, and no heat," Plageman said.

Presenting its solution to architects and lighting designers, the company quickly secured business from a broad range of large, well-known retailers nationwide, "which we did by listening to the market rather than developing the product first," he said.

Since launching its first fixtures to the market more than 30 years ago, Amerlux continues to leverage customer feedback as a critical source of new product innovation. The company remains dedicated to developing customized solutions that optimally address its customers' pain points.

"Our inspiration truly comes from listening and we take a thoughtful approach to lighting," Plageman said. "Innovation is about taking disruptive technology that's emerging and understanding exactly how it will be used by the human race, so we listen to our customers, as well as scientists, designers, doctors, retailers, and other experts in the industry and consider their input very carefully before we launch new products and solutions."

Lighting the Next Steps with Avista

The shift into the street light retrofit market with the Avista LED light engine is Amerlux's latest customer-focused innovation and its next step forward.

"We designed Avista in a disc shape with the LEDs positioned on the underside of the heatsink to maximize efficiency, resulting in a DLC-listed light engine that optimally addresses everything from energy-savings to Dark Sky compliance," Plageman said.

Avista, which takes exterior LED lighting to the next level, has been a top pick by a broad range of major cities and towns nationwide.

"During this time of disruptive technology in the lighting industry, we don't just run with the pack at Amerlux," Plageman said. "We listen hard and think very carefully before launching a product. We're capable of developing any product. Our philosophy—'It's not the big that eat the small but the fast that eat the slow'—results in delivering solutions when our customers really need them."

To learn more, please visit Bestlight.Amerlux.com/energyaudit.

To receive your municipality's free audit, call (855) 662-7199 now.

Amerlux's High-Performing Avista LED Light Engine

Reduces Energy Costs By 75% in LA's Historic Downtown Area

In Los Angeles' historic downtown area were about 600 1920s-era streetlights. Lit with older, inefficient 250-watt high pressure sodium (HPS) lamps, the lighting in the downtown area—home to the city's popular Arts District and "Historic Core" section—needed modernization but required a customized approach to ensure its continuity and compatibility with current LED technology.

These vintage streetlights required frequent maintenance by the city—an involved and costly process which often required closing the street and detour traffic—and Produced very poor light quality.

Working closely with the team from LA's Bureau of Street Lighting, Charles Valdepena, principal of Los Angeles-based manufacturer's rep agency ACV Lighting Consultants,carefully reviewed the city's specifications for lighting in these historic fixtures and ultimately recommended the use of Amerlux's Avista, an advanced LED light engine ideal for the retrofit project.

After working with Amerlux's engineering team to secure lab-tested confirmation that the Avista lighting solution met and/or exceeded all of the IES' "RP8" street lighting guidelines for footcandles, lumens, and other key performance measures, the city installed a group of the fixtures on Main Street as a test.

Following its success, the city completed the installation of more than 600 Avista fixtures across a six-mile swath of the downtown area, which encompassed LA's famed Spring Street, Hope Street, Olive Street, Figueroa Street, and Olympic Boulevard from 2nd to 9th Street.

Cut Energy Costs by 75 Percent!
Los Angeles slashed their lighting costs by three-quarters by retrofitting their historic street-lights with Avista LEDs. See how much your town could save. To get started, call (855) 662-7199.

Since completion of the upgrade, the city and its taxpayers are enjoying an up to 75 percent reduction in lighting energy consumption and costs in the upgraded area, while visitors are benefiting from enhanced visibility and greater peace of mind.

"The downtown area went from dingy, yellow 250-watt HPS fixtures with a monochromatic 2100K color temperature and 'glare bomb' properties to long-life, 60-watt LED technology with a much cooler color temperature and significantly improved color rendering," Valdepena said of the transformation, which has been met with only positive feedback from the city and its occupants.

"The effect is now a brighter, pleasant, soft blanket of light that enhances visual acuity and uniformly distributes the majority of light downward where it's needed," continued Valdepena.

PROJECT SUMMARY

END USER

The City of Los Angeles/Bureau of Street Lighting

PROJECT SCOPE

Upgrade of more than 600 1920s-era high pressure sodium-lit streetlights in downtown LA to Amerlux's Avista LED light engine in 2014-2015

AGENCY REP

ACV Lighting Consultants (Los Angeles)

UPGRADE BENEFITS

- The city has reduced its power consumption from street lighting by 75 percent and is enjoying commensurate energy cost savings.
- The LED Avista light engine improves visibility, minimizes glare, and makes neighborhood residents and tourists feel brighter and more secure.
- The Avista lamps' 50,000+-hour rated life will deliver years of maintenance-free operation.
- The Avista LED light engine represented a unique solution for upgrading specialized applications, such as downtown LA's oversized, vintage streetlamp fixtures.

Amerlux's Game-Changing Avista Light Engine Helps City of Portland

Decreases Energy Consumption 60%, While Preserving Vintage Streetlamps

As the largest city in Oregon with more than three million residents in its metro area, Portland is home to breathtaking natural beauty, a wealth of microbreweries and coffeehouses, and a historic downtown marked by must-see landmarks. The downtown is lit by more than 6,000 vintage streetlights.

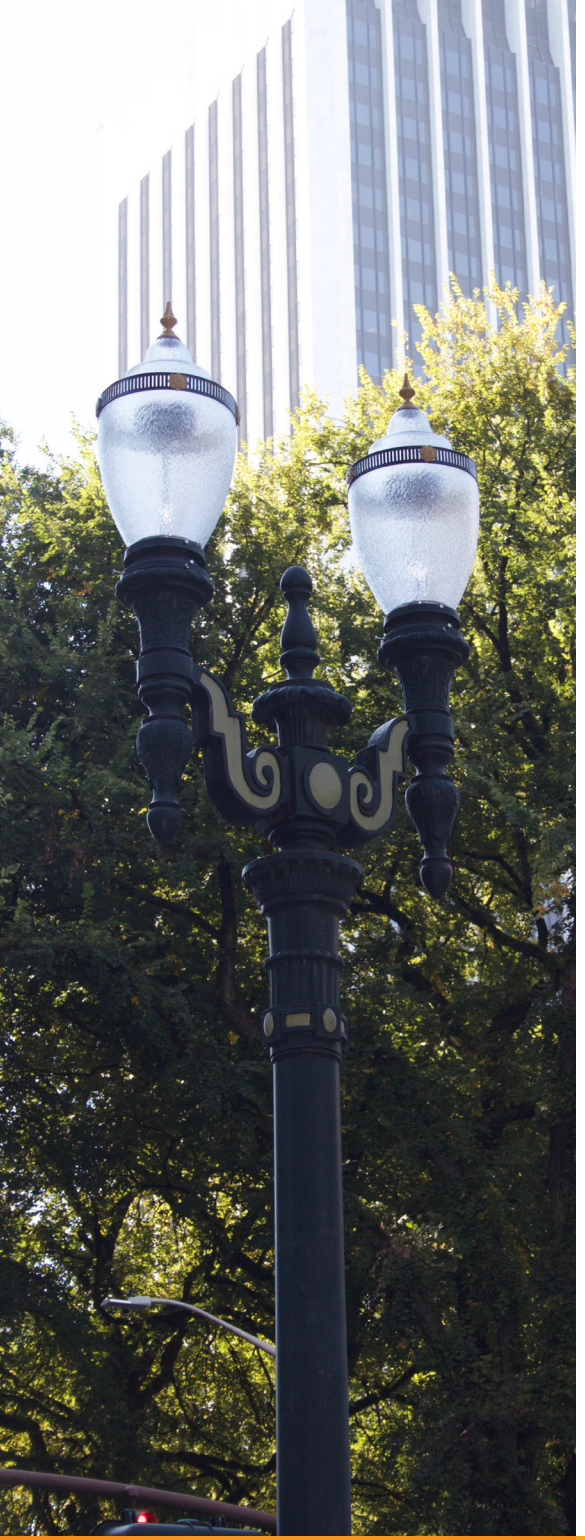
"Our poles and ornamental castings go back as much as 100 years and are attractive, but finding LEDs to adapt to them was difficult," said Lisa Elbert, P.E., Signals and Lighting Engineer with the City of Portland Bureau of Transportation. "Some manufacturers wanted to sell us a complete fixture with the pole, but Portland's castings are historic and we wanted to use them – we absolutely didn't want to replace them."

Kenny Hettrich, Principal of Hillsboro, Ore.-based manufacturer's rep agency Hy-Light Group, Inc., explained, "The challenge with Portland's historic architectural post-top streetlamps was the shape of the globe and adapting LED technology to the city's exact specifications." Amerlux's 42-watt Avista LED light engine was up to the challenge.

Since completing installation of the bulk of their acorn fixtures in July 2017, the city has been delighted with the results. "We went from 100-watt HPS to 42-watt LEDs, saving the city approximately 60 percent in energy consumption and costs," said Elbert, who added that a rebate the city secured on the LEDs from the Energy Trust of Oregon and the Oregon Department of Energy further boosted the project's ROI and reduced its payback period.

For Elbert, the transformation in the city's quality of light has been equally rewarding. "The first time I saw the new lighting, I was absolutely stunned," she said. "I'd gotten used to seeing 'hot spots' and lamps burning inside the globe, but Amerlux's fixture uses a top-down LED system that makes the entire globe appear to glow without seeing the lights. We've worked for years to minimize the uplight component of our streetlights with various designs, but other lights always looked like they had a hood over them. By contrast, Amerlux's dark sky-friendly fixtures allow us to see the entire silhouette of the acorn globes."

"Most of the globes lit by the old HPS technology were discolored and the light coming through them was diminished and had a poor color rendition," Hettrich added. "Today, visual acuity in Portland is dramatically improved and the Avista LEDs help create a much warmer, safer, and pedestrian-friendly ambiance."



PROJECT SUMMARY

END USER

The City of Portland/Bureau of Transportation

PROJECT SCOPE

Upgrade of 6,100 century-old high pressure sodium-lit streetlights in Portland, Ore., to Amerlux's 'Avista' LED light engine in 2017

AGENCY REPS

- Hy-Light Group, Inc. (Hillsboro, Ore.)
- ACV Lighting Consultants (Los Angeles)

UPGRADE BENEFITS

- Portland has reduced its power consumption from street lighting by 60 percent, experiencing commensurate energy cost savings.
- The LED Avista light engine improves visibility, minimizes glare, and makes neighborhoods feel brighter and more secure.
- The Avista lamps' 50,000+-hour rated life will deliver years of maintenance-free operation.
- The Avista LED light engine offers a unique solution for upgrading specialized applications, such as Portland's oversized, vintage streetlamp fixtures.

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Passion. Power. Performance.

Upgrade Your Streetlights on Uncle Sam's Dime!

Avista retrofits are eligible for federal money under the American Recovery and Reinvestment Act of 2009 and remains in effect until 2019! Finance your retrofit before time runs out. To get started, call (855) 662-7199 or visit bestlight.amerlux.com/energyaudit.