

April 10, 2017

Thoryn Simpson
Senior Procurement Analyst
Office of Management and Budget
City-County Building, Room 502
Pittsburgh, PA 15219

RE: RFI for Smart Streetlights, RFI No. 2017-0001

Dear Mr. Simpson:

The City of Pittsburgh has a long history of innovation and firsts. From early electrical generation developments to its current day robotics programs, Pittsburgh's technologies have changed the world. As Pittsburgh embarks on the journey toward becoming a "Smart City", the blueprint of tapping industry leaders and administrative visionaries who will share ideas, and past lessons to bring to life the vision of a resilient Pittsburgh has begun.

A successful Smart City initiative relies on smart technology, but it also requires leadership and vision. As Pittsburgh takes its pioneering spirit to the next level with Smart Streetlighting, Philips Lighting North America Corporation ("Philips Lighting") is eager to work together in a collaborative "co-creation" approach with the City, its citizens, its world class universities, and other organizations.

Philips Lighting appreciates the opportunity to submit our technology, ideas, and Smart City roadmap to the City of Pittsburgh through this RFI response. We stand ready to serve as your committed partner in this project to achieve the full promise and potential of digital light for your Smart City.

As the Philips Lighting Account Manager, and a native of Pittsburgh, it is with great pride that I am able to present this RFI response to the City for review. I am honored to be actively involved in local organizations that are contributing so much to the Pittsburgh community. These organizations include "Sustainable Pittsburgh", "Pittsburgh 2030", and "GBA", just to name a few. Through my involvement with these organizations I have had the opportunity to meet various City officials and employees. Their vision and devotion to Pittsburgh has inspired me.

Philips acknowledges that all responses may be considered public information in accordance with the Commonwealth of Pennsylvania Right to Know Laws as described in Section 5 of this document.

Regards,

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City of Pittsburgh Smart Streetlights

Request for Information

RFI No.: 2017-0001

April 10, 2017

PHILIPS



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Project Overview

BUILDING THE FUTURE TOGETHER. Pittsburgh’s history is a story of adaptability and transformation. It is a story of a community with a strong sense of pride and a desire to continually improve and innovate. The City has always been able to navigate change by galvanizing the City’s thought leaders and devoted government officials.

This response embraces a co-creation approach designed to engage government with private sector leaders, higher education, Pittsburgh’s local contractor network, non-profits AND citizens. The co-creation strategy leverages Philips extensive partnership network (places like MIT) working alongside Pittsburgh’s own world class universities and resources. Philips Lighting brings a wealth of global knowledge, 125 years of lighting research and development and a commitment to cities having developed smart city roadmaps with cities like Los Angeles, Barcelona, Buenos Aires and Eindhoven. Augmenting the strategy is Philips advanced IoT technologies that have been co-developed in living labs.

A Philips smart lighting technical approach provides high quality light designed around citizen comfort and safety. The approach is flexible and modular to accommodate changing technologies.

Philips proposes an integrated streetlighting program comprised of:

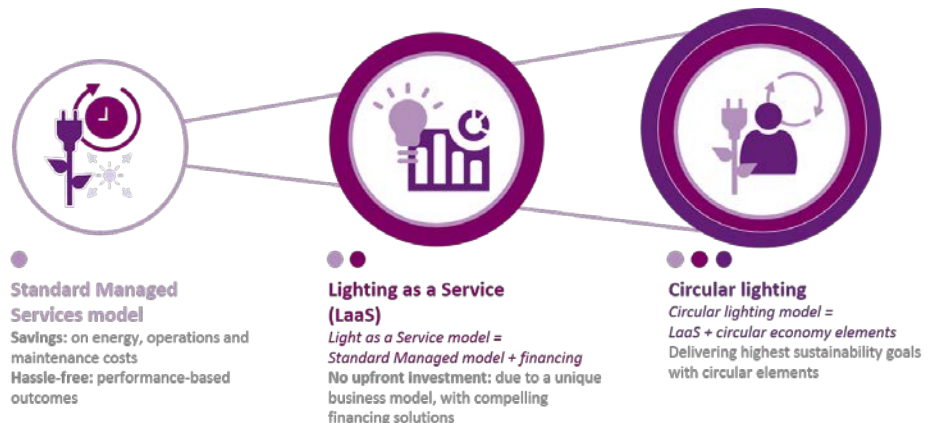
- Leading System & Sensor Ready LED Luminaires
- Urban Data Management Applications (remote control, diagnostics and asset management, and future applications such as noise, air quality monitoring)
- Smart Poles (expand citizen mobile network capacity)
- Pedestrian and roadway safety, improved traffic management
- Neighborhood Revitalization

Empowering cities with connected lighting means supporting the key smart city principles of openness, flexibility, reliability, and DATA.

Philips Lighting systems and services provide:

- Anytime/anywhere access to city lighting and sensor data
- Better apps for field service technicians to streamline workflows
- Ability for citizens to participate with crowdsourcing apps that collect and share municipal data
- Historical data analysis and reporting for new insight and informed decision-making
- Sharing of data among different city departments to better serve citizens
- New applications that can be added over time to benefit public space creating a vibrant, livable city

BUSINESS MODELS. Along with manufacturing the world’s most innovative lighting solutions, Philips is a pioneer in lighting service finance models. No longer do public funds have to be allocated to light fixtures and replacing bulbs, maintenance costs, and utility bills. Public money can now be spent on buying the light that their community depends upon for its economic health and public safety. “Lighting as a service” is one proven finance model allowing the city to finance the capital costs associated with the project to be paid for over time, through energy and maintenance savings along with any revenue generating programs anticipated from the project.



1.0 Building Smart Cities is a Continuous Process

Collaboration is the key to building Pittsburgh's Smart City. More than any other city service, public lighting bridges the emotional and technical realms. It is important to foster openness on all levels, including infrastructure, communication, software, and assets.

In an era of connectivity it is important to forge partnerships with other players in this sector. Today we have partnerships with Accenture, Atos, Deloitte, Ericsson, Cisco, Vodafone, SAP, Amazon Web Services and welcome partnerships with others that complement our own in-house capabilities.

Furthermore, we are working closely with universities such as the Massachusetts Institute of Technology or the Technical University of Eindhoven to envision what smart cities will be. With the City of Eindhoven, NL we partnered with Accenture. Philips Lighting, is a member of the 2017 globally launched SynchroniCity Project and encourages the City of Pittsburgh to join us in the global project. In joining, Pittsburgh would tap into the global think tank of cities and organizations that aim to provide opportunities for industry, subject matter experts, and cities, piloting smart city technologies in cities on an exceptionally large scale.

The future of smart cities is the sum of many parts and success requires collaboration among companies large and small, government, academia and above all, citizens.

As part of a collaborative Smart City program, Philips Lighting is eager to explore new partnerships with Pittsburgh's world renowned universities. Philips Color Kinetics was founded by Carnegie Mellon University (CMU) graduates and our organization remains emotionally connected to the campus, for example, in installations such as the Randy Pausch Bridge. The famous innovator's work epitomizes what it means to persevere and develop new ideas collaboratively.



Figure 1. Lighting the Randy Pausch Bridge at CMU.

CMU and Philips Lighting pays tribute to CMU Professor Randy Pausch with Philips Color Kinetics lighting.

Pausch's courses with students on new human-computer interaction interfaces used lighting to realize some of their most striking projects. We propose embracing such a co-creation approach, because we understand that true smart cities are cities that evolve as new partners and technologies emerge.

Philips Lighting developed the Smart City Continuous Innovation Process (SCCIP) to structure this work. Capturing tomorrow's advancements with today's process, SCCIP enables the identification of new opportunities in the future to stimulate and enrich the ecosystem and economic viability of a city in the long run. This process provides structure to this often fuzzy front-end part of an innovation trajectory. With this

approach, creating smart city innovations for Pittsburgh will be a value-driven process, in line with an open innovation and co-creation approach. One example of prospective collaboration could leverage emerging technologies from CMU's and University of Pittsburgh's innovation labs whereby Philips could provide a platform for proof of concept innovations to help launch local research teams.

In October 2016, the consortium of Philips Lighting/Accenture/Heijmans was awarded a 15 year contract by the City of Eindhoven, NL to use the City as an innovative testing ground for the development of new lighting applications in public spaces, such as connected LED streetlighting management, sensory and mobile application integration. <https://cities-today.com/industry/eindhoven-to-create-worlds-first-crowdsourced-smart-city/>. This is one example of how Philips works with Cities to develop new applications that go to work for their City.

Using the collaborative Eindhoven model as a guide, Philips Lighting would embrace a similar co-development “crowdsourced” approach with Pittsburgh, where Pittsburgh’s residents have a direct say in the Smart City services provided to them. Following the SCCIP method, Philips would engage stakeholders for Pittsburgh’s Smart City in workshops, surveys, and other feedback loops – ensuring Pittsburgh’s Smart City is as unique as the residents and visitors it serves.

With over 35,000 employees worldwide and 250 employees in PA, Philips Lighting has the resources and expertise to bring City of Pittsburgh’s ambitions to life.

Financing of the smart city is a key element in the continuous innovation space. Philips is committed to working with the City and its stakeholders to create the best mix of innovative lighting solutions and innovative financing solutions. Understanding that there are numerous ways to achieve the City’s goals, we look forward to a collaborative effort to this end.

One proven approach for a smart cities, and a prospective approach for Pittsburgh, is a Managed Services long term partnership model. Through this model, Philips Lighting delivers key performance commitments as co-developed with the City. These performance indicators may include energy savings commitments, light levels, and beyond.

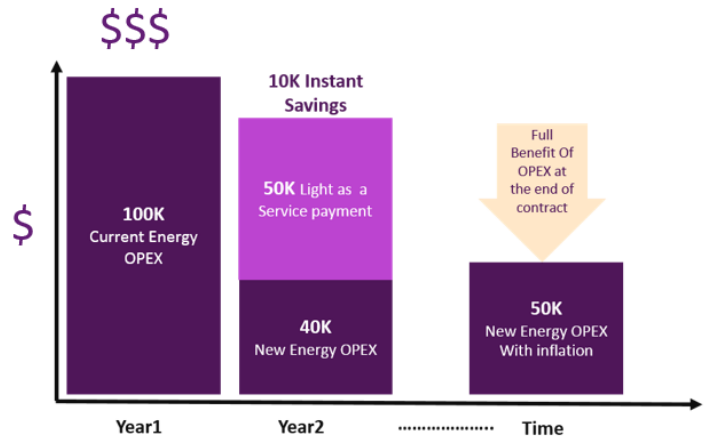


Figure 2. Smart City Business Models

A managed service model is one way cities can achieve the full economic value of a smart city.

For an example of innovative lighting and financing cooperation between Philips Lighting and government please see the following video link regarding our recent project with the Government of Aruba <https://youtu.be/EBPvNTSnCFA> . For additional information on Philips Lighting Capital capabilities please see the following link: www.philips.com/lightingcapital .

2.0 Lighting Makes the Smart City Real

The strategic renewal of Pittsburgh’s city streetlighting system will be one of the most visible steps on the roadmap to a smarter, more livable Pittsburgh. Around the world, connected lighting systems are being deployed as a foundational layer to smart city planning as a flexible and expandable solution to unlock data that will immediately improve city services and the quality of life citywide.

Public lighting plays a unique role in making the Smart City a reality. Because the physical lighting infrastructure is already installed where people live, work, play, and travel – it can serve as the, swiftly deployed, backbone for many different Smart City applications without cities having to roll out costly infrastructure.



Open technologies and well-defined software interfaces allow city managers to link services together and manage them centrally and comprehensively, and give citizens access to public data, allowing them to participate in solving problems and improving the city's quality of life.

As cities grow, the challenges they pose—environmental, economic, and social—grow with them. But cities are hubs of diversity and innovation: they can also become the source of solutions. Understanding that cities all have different priorities, budget, and infrastructure, it's important to have one of the most visible and costly assets managed well. Using smart streetlighting as the basis for building a citywide sensory network is a good first step.

Smart Cities use recent advances in communications, digital technologies, data sharing and analysis, and thoughtful design to make cities more livable, resilient, economically sound, and sustainable. Smart sensors and embedded devices—from street lights to power meters to traffic signals and beyond—work together with an open, connected infrastructure to create a distributed layer of intelligence that can save energy, streamline operations, and make citizens feel happier and safer.

A successful Smart Cities initiative relies on new technology, but it also requires leadership, collaboration, and vision. Pittsburgh's forward thinking administration has positioned the City to be a technology leader on the global stage. Smart lighting is the critical step forward on the Smart City roadmap.

Open Systems Enable Data Sharing and Powerful Analytics for Improved Services. A successful connected lighting solution will be open and able to integrate with other Citywide platform vendors. In this way, the City will be able to utilize data from transportation, air quality or any other city service. Open systems are required, to unlock the maximum value from the whole range of city services.

What do APIs mean for Pittsburgh?

- Integrate lighting management with any other asset management system from any city vertical or horizontal, both now and in the future
- Make better-informed decisions to improve efficiency and planning
- Use data exchange between different application verticals within Pittsburgh's Smart City
- Configure lighting management according to your needs

Technologies and standards are evolving rapidly in the dynamic smart city environment. Cities need to stay flexible and prepared for a future based on standards. Philips Lighting's software platform communicates to other City platforms using Application Programming Interfaces (APIs). With APIs, Pittsburgh can integrate, share, and manage data from different platforms. With data sharing and interoperability between the systems and departments, the City will be able to optimize city services, reduce operational cost, and enhance city citizen satisfaction.

At Philips Lighting, open means an architecture that enables different types of luminaires to be combined; an architecture based on cloud and mobile technologies which make it possible for new services to leverage the cloud and to evolve and grow just like the

City. Our CityTouch Lighting System Management (LMS) platform is designed manage and control streetlighting, integrate different sensor types based on the use case and share data with other platforms as needed. It also allows changes in light behaviors based on other platform commands. For example, it can accept traffic density data to change light level intensities.

2.1 CityTouch Connected Streetlighting

Today more than 700 customers from municipalities up to mega cities in 35 countries manage their streetlighting with CityTouch. The CityTouch system delivers the full promise and potential of digital light: A city of beautifully illuminated streets and places where every light point is connected to an intelligent system that delivers high-quality, reliable illumination. A system that serves as a pathway for information and services to deliver extraordinary value beyond illumination to the users and managers of city spaces.

CityTouch, Philips Lighting’s end-to-end streetlighting management system (LMS), integrates connected devices with its intuitive web-based applications. An open system, CityTouch works with almost any type of streetlight from any manufacturer. CityTouch communicates to the individual device level via the existing public cellular network: no proprietary unlicensed networks are required to be set up and maintained, plus the suite of CityTouch APIs open data up towards other city systems, meaning that Pittsburgh can achieve its stated objective to deploy an open, extensible platform built upon with CityTouch. City touch is a point to cloud technology with no need for cumbersome networks of gateways and controllers.



Figure 3. CityTouch Open Platform Delivers Flexibility

CityTouch connects with nearly all luminaires and integrates with existing City systems, so Pittsburgh is never locked in to one vendor.

Flexible for future innovation, CityTouch integrates with existing city systems (e.g. asset management tools), and is the network of choice for Smart City connectivity and the Internet of Things (IOT) movement. The secure cellular network provides flexibility and economic scale, with the assurance of a professionally managed network used by billions of devices. Through its Software as a Service (SaaS) model, CityTouch can adapt and grow with Pittsburgh. SaaS ensures the City will always have access to the newest system features as they emerge.

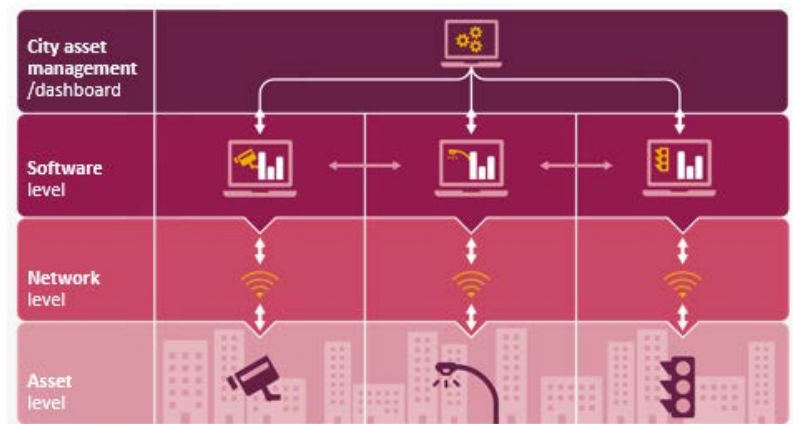


Figure 4. Philips Smart City Asset Management

Philips Smart City Asset Management dashboards will integrate lighting into Pittsburgh’s technical ecosystem and foster openness on all levels.

Figure 4 shows the horizontal and vertical flow of information between existing and emerging Smart City systems. As stated above: Open ecosystems develop independently, but integrate seamlessly at a higher level. Data sharing with Surtrac is one example where shared information could allow the City to serve its citizens more effectively.



These innovations reduced Los Angeles' energy usage for streetlighting by over 63%, **saving at least \$9.5M annually** in operations and maintenance costs.

CityTouch LMS is an Internet of Things (IoT) enabled software platform that can securely integrate to Pittsburgh's developing IoT platform of choice and other smart devices.

With CityTouch, Pittsburgh will have remote control over its entire lighting inventory, using a proven asset management system that will enable a new level operational excellence for the City. CityTouch offers simple web applications to analyze, plan and maintain workflow management, allowing the City to monitor, manage and measure its connected lighting through the applications.

CityTouch's workflow application creates a process of communication and data sharing that gives cities valuable insights into their lighting data and helps them manage business processes more efficiently.



Analyze Data. The workflow app allows users to gain near real time insights – which gives transparency and analysis of a city's lighting infrastructure in the most user-friendly way. An intuitive user interface, map-based visualizations with simple charts and diagrams give a fast overview of streetlighting status.



Plan Maintenance Workflows. The CityTouch workflow app simplifies work plan and job order generation easy too. It allows you to manage the workflow of Pittsburgh's whole operational streetlighting ecosystem. Work scheduling and distribution of tasks can be managed simply and effectively, even with multiple installer companies involved.



Make Light Work of Maintenance Activities. The CityTouch workflow application facilitates workflow-based maintenance, allowing you to create and oversee repair jobs. The software can interact with other systems used by the city, so that these jobs can be accounted for. Plus, with easy tracking and documenting of every maintenance job, you can always see what work has been done.

The City of Jakarta, Indonesia is currently deploying CityTouch as its ongoing transformation into a smart city. This project involves upgrading nearly 90,000 street luminaires with energy efficient LED lights connected to a Philips Lighting CityTouch lighting management system – which is on target for completion in only seven months. This makes it the world's fastest streetlighting retrofit and remote management project undertaken to date.

With more than half of its street lights already converted to LED, the city of Los Angeles connects 110,000 light points using CityTouch and connector nodes with plug-and-play activation. With its new lighting management system, Los Angeles is well on its way to becoming a Smart City.

Other CityTouch customers include Macon Bibb, GA, Mesa ,AZ, Minnesota Department of Transportation, Wisconsin Department of Transportation, City of Philadelphia, Bristol Township, PA, City of Tuscaloosa AL, to name a few. We also have 13 small projects where customers are using our node, most notable is Dallas, TX.

Cities and towns across the United States are connected with CityTouch.

CityTouch's cellular network is the most established, secure and headache-free platform – Making it the most popular choice for proven Smart City technologies that have created a valued service and revenue model.

2.2 Future Ready with Smart Luminaires

Plans are underway for cities like Pittsburgh to leverage its streetlight network as a platform to adopt future technologies. Philips Lighting today is developing System Ready Luminaires (SRL).

SRL will contain come with Sensor Ready digital Drivers (SRD) and on-board connectors (Figure 5). SRD and new CityTouch applications may include, for example, the ability to monitor the mains power network and provide near real-time statistics of performance, status and failures. The SRD will also be capable of driving additional sensors, such as acoustic, as this technology becomes available and meaningful.

Data from future sensors maybe back-hauled via the CityTouch connectivity platform and displayed on new apps in CityTouch. Later, other sensors (say, from third parties) could be attached and the data given in one way or another, via CityTouch web-services and applications program interface (API). This ensures Pittsburgh would consistently be able to adapt to the ever changing needs of the citizens it serves.

Philips Lighting Luminaire Innovations. Next to the system and service innovations, Philips Lighting offers to pilot with Pittsburgh breakthrough innovation with respect to the quality of light (QoL) of the luminaires. The QoL of the luminaires enables visibility, safety and comfort for passengers and traffic. QoL can be distinguished in 3 main aspects: spatial, spectral, and temporal aspects. Philips Lighting will use its knowledge mainly around the spatial QoL challenges for co-creation pilot with the City.

In particular, Philips will deploy latest innovation around three aspects:

- 1.) Reduce overall glare
- 2.) Reduce glare in wet weather conditions
- 3.) Improve visibility for different weather conditions

Technologies addressing these aspects are being developed and will be piloted in specific areas of Pittsburgh. Collected data from these QoL pilots - complemented with relevant external data sources, such as traffic and meteorological data - and their quantifiable benefits will allow informed decision making.

Philips Lighting's leadership and recognized expertise as true lighting professionals in the smart streetlighting marketplace provides unmatched perspective for the City. As the world's largest and most capable lighting company, Philips Lighting offers Pittsburgh a Smart City with world-class luminaires and fully integrated sensors, designed, manufactured, and supported by Philips Lighting. Recognizing the positive attributes of Philips Lighting's luminaires, CMU's "LED Street Light Research Project Part II: New Findings" presents an in depth analysis of our luminaires and controls <http://repository.cmu.edu/cgi/viewcontent.cgi?article=1120&context=architecture>

2.3 Urban Data Management

Using data from different sources allows for better understanding of what is happening and allows for immediate operational responses through change in setting of street lights. Just imagine when an alert has to be sent to residents in a selected area and streetlight will flash to support this.

Combining data captured by sensors combined with Open Data provided by the city and data coming from contracted services partners will support creating an eco-system of city partners by sharing and using data to optimize services to the public.

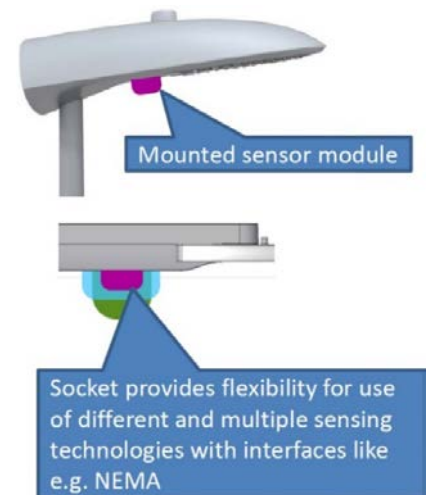


Figure 5. System Ready Luminaires
Pittsburgh will capture future innovation with today's technology.

An Urban Data Management system allows for the Economy of Data to finance services in the City of Pittsburgh. This way balancing short-term applications with a long-term stewardship is made possible. The City as the enabler of Urban Data Management will create a stronger position for itself in negotiating contracted service. Using collecting waste as an example, sensors will reduce operational costs for the contracted company, but it will also allow for different routing times to reduce traffic impact and it will allow for new applications for residents when bins are full.

An Urban Data Management system allows the city to take control and host a variety of Smart City applications from different providers. It will be the single source of data for Smart City solutions. The Economy of Data allows access to data by providing added values to the city or when used for commercial use it will generate revenue for the city. Financing Smart Street Lights will not only be made possible through energy savings but through the exploiting the Economy of Data.

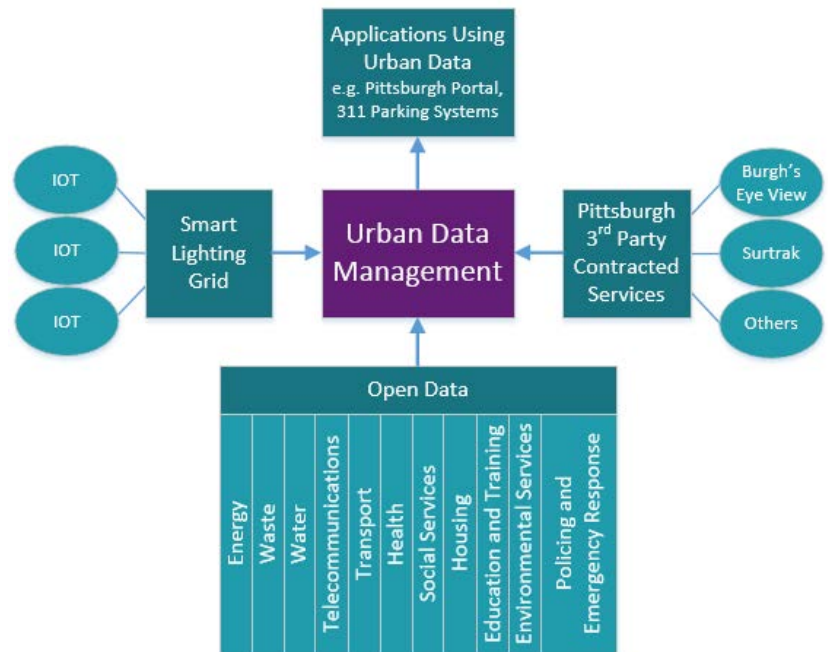


Figure 6. Urban Data Management
Pittsburgh will control and host multiple Smart City applications from multiple providers with an Urban Data Management System.

The Urban Data Management including Analytics engine is offered as a Service based on Open Source software to the City of Pittsburgh. Examples of financing models are a cost per resident per year as basis with extended revenues as percentage on the commercial benefits for the City of Pittsburgh.

3.0 Connected City Experience

Philips Lighting’s connected city experience delivers an innovative infrastructure solution that promotes city livability, connectivity, and accelerates the adoption of LED and controls technologies, through a truly innovative Public Private Partnership. The Philips Lighting solution will support most wireless platforms and will provide a standardized, aesthetically pleasing, solution with all components enclosed and obscured from public view.



Figure 7. Voice of the Customer for Philips Smart Poles.
Los Angeles Mayor Eric Garcetti and San Jose Mayor Sam Liccardo promote the benefits of Philips smart poles.

In addition, Philips Lighting’s smart pole solution is capable of supporting both single and multi-tenancy models.

“IoT communications will undergo unprecedented growth in the next five years; it is predicted that over 50 billion IoT devices are expected to be connected with as much as U.S. \$8.9 trillion in annual revenue by the year 2020. With increased pervasiveness of mobile broadband, cellular connectivity is becoming even more valuable as an important access methodology for IoT. A significant part of IoT communications *are planned over cellular networks.* **4G Americas” Cellular Technologies Enabling the Internet of Things**

Connectivity will continue to be the primary driver for the City of the future, advancing economic development, enabling innovation, creating jobs, and enhancing Pittsburgh’s livability in today’s “always connected” society.

This integrated solution leverages the strength of Philips Lighting. We have developed a new smart pole design, taking advantage of the latest wireless high-speed data technology, known as “Small Cells.” Small Cells are an evolution of 4G LTE cell technology. Small Cells augment the existing macro sites to densify the network and provide the required coverage and capacity for the increase in mobile data traffic, thus enabling increasingly data-heavy applications on mobile devices. Our smart pole, combined with Small Cell technology, provides residents of Pittsburgh a seamless mobility experience that is not only visually appealing, but will also declutter the landscape. By integrating Small Cells into the city’s streetlight poles, the mobile network operators can deploy new sites quickly with the necessary communications configurations and RF Coverage, while maintaining visual aesthetics.

The core of the Philips Lighting’s proposition provides the latest wireless network connectivity, ubiquitous coverage, and data capacity throughout the City, the decluttering the streetscape while positioning the City of Pittsburgh as a leader in innovation.



Figure 8. Small Cell Technology

Integrating small cells into our streetlight poles allows mobile carriers to deploy new cell sites quickly, while providing the necessary communications configurations and coverage.

4.0 New Solutions to Enhance Life in Pittsburgh

Pedestrian Safety

Advancing Mayor Peduto’s Vision Zero strategy, Philips Lighting’s illumination approach repositions pedestrians at the core of design. Our illumination approach strives to tackle the most dangerous of urban intersections and other pedestrian spaces. The first layer of our approach is human-centric illumination. We redesign fixtures to maximize vertical light on pedestrians. We combine that with a sensory network that is aware of object interactions. Similar to a stage director orchestrating lighting in a theatre, the lighting system directs attention onto the subject while minimizing attention on surrounding objects.

The second layer of our approach enables data-driven planning for roadway safety. Reusing the sensory network built for illumination, we address the ‘data deficit’ facing cities today. We quantify demand for urban spaces. We establish safety insights such as near-crashes, yields to pedestrians, and visual performance. These insights enable a revolution in how cities decide where to invest and measure how urban spaces improved after investments.

Brand Identity and Civic Pride

The Penguins win the Stanley Cup, the Steelers win the Super Bowl – at night Pittsburgh’s bridges radiate civic pride with shades of golden illumination. The City-County Building is bathed in pink to commemorate Breast Cancer awareness month. Enhance Pittsburgh’s brand identity, instill civic pride, attract tourists, and increase commerce. With Philips Lighting, Pittsburgh will join the world’s leading cities in forging a unique identity by creatively lighting important landmarks to create inspiring visual experiences.



Figure 9. KDKA Weather Beacon Illuminates and Communicates.

The beacon demonstrates how lighting can impact the City and instill civic pride.

The KDKA TV Weather Beacon atop the Gulf Tower, illuminated with a Philips Lighting Color Kinetics system, demonstrates the impact of lighting. The iconic beacon exhibits that lighting can beautifully impact a skyline, instill civic pride, and shows that lighting can be used to communicate with residents and visitors by offering a color-coded system for weather forecasting. Perhaps more important than weather forecasting, the beacon connects Pittsburgh’s sports teams with residents and visitors by announcing baseball home runs and hockey goals with color codes.

The City of Little Rock demonstrates the civic and economic impact of creative lighting. Through a P3 with Philips Lighting and other organizations, Little Rock beautified three bridges over the Arkansas River with colorful and dynamic lighting installations, “River Lights in the Rock”. The impact of this installation reaches far beyond the visible light reflected on the beautiful Arkansas River. The project resulted in economic development in the Little Rock waterfront area, which made it a popular tourist destination -ultimately enhancing community pride.

Pittsburgh’s more than 400 bridges spanning the scenic Allegheny, Monongahela, and Ohio Rivers are the ideal canvas for a creative lighting installation.

For more information on the comprehensive impact of creative, dynamic, lighting, Philips Lighting’s white paper is available for download at:
<http://www.philips.com/measuringimpact> .

Revitalize and
Connect
Neighborhoods

Sustainable urban growth must balance growing demands on resources, space and security while also making cities more liveable and enjoyable for

everyday citizens in their neighborhoods. City managers must prioritize which changes are most important to their cities not only through concerns for cost, feasibility and timing, but also by listening to the current needs and wishes of citizens. Creating an effective smart city means ensuring that the smart city is built around the citizen and their needs and aspirations.

One of the core requirements of a smart city is the ability to engage citizens in tackling challenges. Leveraging Philips Lighting’s connected streetlight network as an integrated platform, Pittsburgh can build its Smart City in a way that promotes citizen engagement in neighborhoods and across the City. As an example, integrated smartphone apps can allow residents to report potholes and other issues in their neighborhoods. Such an approach empowers residents to be Pittsburgh’s eyes and ears, engaging them in the process of maintaining their own city neighborhoods.

The City of Pittsburgh will advance its position as a symbol of 21st century economic and civic transformation with smart streetlighting from Philips Lighting. Taking Pittsburgh’s Smart City plans to the next level, Philips Lighting’s connected LED streetlighting will deliver clear benefits to the City by increasing safety through uptime, ensuring better visibility, providing the capability to further adapt lighting to the needs of a particular neighborhood, and by serving as the connected backbone for Pittsburgh’s Smart City.

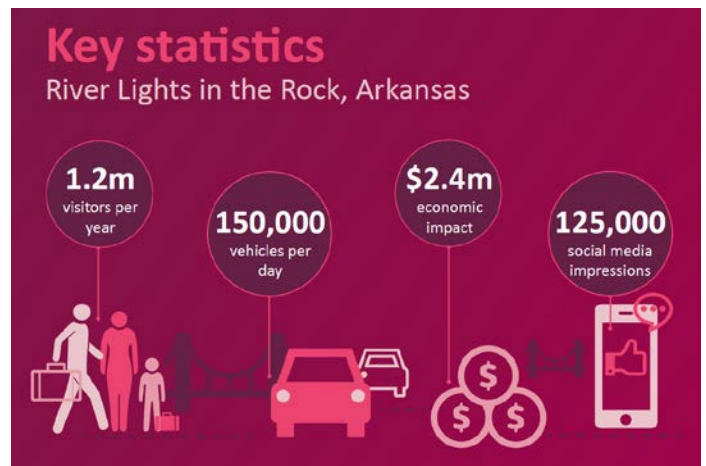


Figure 10. Lighting Beyond Illumination.

Lighting installations can spark increased tourism, economic development, community pride, social interaction, and neighborhood revitalization