

Smart Communities In Focus

Spotlight: Columbus, OH



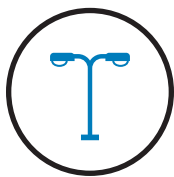
Columbus' smart city initiative, known as SmartColumbus, is aided through its partnerships with AEP Ohio, Autodesk, Amazon Web Services, AT&T, Continental, Central Ohio Transit Authority, Columbus Partnership, DC Solar, Mobileye, NXP Semiconductors, Ohio Department of Transportation, Sidewalk Labs, U.S. Department of Energy, U.S. Department of Transportation, and Vulcan Inc.

Columbus' Goals

- Drive economic growth
- Improve quality of life
- Foster sustainability
- Improve safety

Smart communities are built on smarter energy infrastructure and leverage the power of data and technology to improve sustainability, spur economic development, help drive efficiencies, and enhance the overall quality of life for their citizens. This summary focuses on specific efforts that Columbus is undertaking in: Smart Street Lighting, Smart Transportation, Distributed Energy Resources, and Data Analytics and Intelligent Services.

What Makes Columbus Smart?



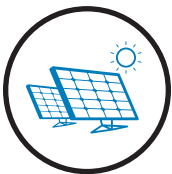
Smart Street Lighting—Saves energy, improves safety, and reduces traffic congestion.

- AEP Ohio will upgrade approximately 1,000 street lights to networked LED fixtures, with plans to network another 201,000 street lights pending PUC rate review approval.
- Columbus Public Utilities plans to replace 53,000 street lights with LED bulbs and to add more street lighting following a piloting phase.
- AEP Ohio and the City of Columbus are discussing the scope of smart street lighting equipment and features, including congestion and parking space monitoring, and shot spotting technology. AEP Ohio plans to provide, at minimum, networking capability that will allow sensor/monitoring equipment upgrades in future phases.



Smart Transportation—*Improves safety and mobility, reduces carbon footprint, and provides greater access to services.*

- AEP Ohio plans to invest \$7 million to install 1,275 electric vehicle (EV) charging stations, including 275 public charging stations—25 of them DC fast chargers—and 1,000 Level 2 residential chargers, pending PUC rate review approval.
- AEP Ohio is increasing its EV fleet and has made a commitment to purchase 48 additional EVs.
- Columbus is demonstrating connected, autonomous, shared electric shuttles at Easton Town Center.
- Columbus will connect 3,000 vehicles on the road, including installing pedestrian detection and collision avoidance technology on Central Ohio Transit Authority buses.
- More than 60 leading businesses and institutions in the Columbus region set a goal to reduce single occupancy vehicle traffic by 10 percent.



Distributed Energy Resources—*Improve sustainability, efficiency, and reliability.*

- AEP Ohio has proposed investing \$52 million to build 8–10 electric company solar-powered microgrids at critical locations throughout the city. Each microgrid could be supported by a roughly 3 megawatt-hour storage system and 500 kilowatts of solar generation. The proposal is awaiting PUC rate review approval.



Data Analytics and Intelligent Services—*Increase efficiency, improve city services, and enhance quality-of-life.*

- The City of Columbus and Ohio Department of Transportation plan to aggregate travel time and route data to provide information via smart phone apps for freight routing, delivery, and event routing.
- Information collected from AEP Ohio's smart lighting system will populate a data exchange being established by the City of Columbus.
- The City of Columbus plans to enhance web-based applications related to EV charging facilities location, public transit fares, and traffic congestion.
- AEP already has deployed 132,000 smart meters in the central Ohio area, and is in the process of replacing another 542,000 meters in the smart city footprint.

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August 2017