

## City and County of Denver

# LED Street & Pedestrian Lighting, Smart & Micro Cell Pole Standards Project

Project Completed:	2018	
Role:	Sub Consultant - Lighting (WBE and SBE)	
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Clanton & Associates' process begins with developing lighting and control performance criteria. Aesthetics are key especially in defining Denver's Smart City image. Once design criteria are established, inviting manufacturers to submit product information/samples is next. Careful product evaluation will narrow the selection, for the few that will be installed for community/stakeholder feedback and technical adherence.

Clanton & Associates has also performed visibility research on different types of luminaire replacements in four cities (Anchorage, San Diego, San Jose and Seattle). Our research collaborator was Virginia Tech Transportation Institute. Results from this research clearly showed the importance of spectral content, how uniformity was not necessary beneficial on streets but definitely on sidewalks, and the critical issue of glare effects. Our results have influenced the technical recommendations on street lighting and adaptive lighting standards.

### Smart Poles

Smart Poles with WiFi antennae is a new concept that is being implemented in a few cities like Los Angeles. As communities begin to offer this as an income stream, communication vendors have been asking for rental space on street lighting poles. An integrated approach for communities is to deploy plug and play poles, that allow for not only WiFi, but for electric car charging, and other uses. Other possible uses may include Smart Grid nodes for neighborhoods, pedestrian smart phone location detection, vehicular GPS detection, spectral (color) tuning, distributed renewable energy command center, and future LiFi applications

