Making It Work in Your Community: Smart Utilities

Step 1:
Know what you're working with.

- ☐ Does the city have any government-owned utilities that service residents?
- ☐ How much of the city's infrastructure is leased or shared by utilities?
- ☐ What are the modernization/IoT plans for the local utilities?
- ☐ What is the current relationship between the city and local utilities?
- ☐ Are there regular strategic planning meetings?
- ☐ What are the current financial arrangements between the city and utilities?
- ☐ What are the plans for future smart grid, distribution network and renewables projects?

Communities and utilities can leverage existing networks of poles and wires and existing rights-of-way to expedite deployment and reduce costs. For instance, utility poles, including light poles, can be used to mount various devices that enable other "smart" services. Partnerships with the wireless industry can provide the connectivity to power smart utility projects like:

- ☐ Remote-controlled LED street lighting
- ☐ Small cell sites
- ☐ Wireless LAN access points
- ☐ Audio sensors for gunshot detection
- ☐ Cameras for capturing photos of vehicle license plates
- ☐ Traffic enforcement
- ☐ Tracking systems for stolen vehicles/fugitives/Amber Alerts

Step 2:
Get the technical specifications.

Is end-to-end encryption required?

- ☐ If a device is monitoring or controlling the grid or has access to critical information, enhanced end-to-end security features should be considered.
- ☐ End-to-end encryption can be built into the configuration as routers are deployed.
- ☐ If you are deploying modules/embedded chipsets into equipment like relays, capacitator banks and meter cans, the encryption must be developed and incorporated by the equipment manufacturer.

Are devices protected?

- ☐ Devices should be sourced for FIPS Level 2 certification and supply chain protection.
- ☐ Ask who will have access to devices, from manufacturing to delivery.

How will you ensure system reliability?

- ☐ See if you will need a quality of service arrangement to ensure prioritization of utility traffic.
- ☐ Pay attention to antenna configuration, which is critical to increasing reliability, throughput, and capacity. Consider MIMO and cross-polarized antennas where applicable.

Step 3:
Prioritize security.

Security is paramount for reliable, resilient smart utility services. Implementing a cybersecurity plan during the design phase of your project can help keep your smart utility assets safe. Specific to wireless connectivity, smart utility devices should be certified to CTIA Cybersecurity Certification Level Two or Level Three. This provides proper management, oversight and integration with your existing cybersecurity systems.

Consider certifying:

- ☐ Gas meters
- ☐ Electricity meters
- ☐ Industrial gateways