



CASE STUDY

CITYWIDE WIRELESS BACKBONE

for Public Safety Operations



SMART CITY



EMEA

How a Municipality Built a Scalable, High-Capacity Network to Support Citywide Safety Operations

A rapidly growing municipality is expanding its urban footprint with new residential areas, public institutions, cultural venues, and critical government facilities. To support its long-term smart city and public safety strategy, it required a communications backbone that could scale quickly and reliably as more cameras, higher-resolution video, and advanced safety technologies were introduced.

For nearly a decade, Ceragon together with the municipality's system integrator has provided the wireless transport layer enabling continuous expansion of the city's monitoring network. This high-capacity backbone ensures operational continuity for municipal safety teams, delivering reliable visibility across the city and supporting effective coordination and response.

THE CHALLENGES

Rapid Growth | Coverage Gaps | Dense Urban Deployment | Wireless Interference | Harsh Weather

As the city expanded, so did the urgency to extend continuous monitoring into newly developed areas. Each expansion phase raised the same question: how to deliver sufficient bandwidth and reliability to support additional cameras and safety services, without long deployment cycles or complex infrastructure projects.

Key challenges included:

- Scaling quickly, with hundreds of high-capacity wireless links already deployed and more required as the city grows
- Maintaining reliable connectivity at extended distances
- Keeping systems fully operational in heavy rain and adverse weather conditions
- Operating in dense urban environments where many wireless links converge
- Ensuring sufficient aggregate throughput to support more video streams, higher resolutions, and future smart-city applications
- Maintaining service continuity for municipal safety teams, where downtime directly affects operational effectiveness

THE SOLUTION

High-Capacity Wireless Backhaul | Expert Guidance | Citywide Monitoring Enablement

The municipality deployed a scalable, high-capacity wireless backbone built around EtherHaul and MultiHaul TG solutions, designed to support phased expansion and long-term performance. The network architecture supports multiple simultaneous point-to-point links, delivering high spectral efficiency, strong resilience, and broad urban reach. This backbone provides the bandwidth needed to increase camera density and introduce new technologies while maintaining consistent performance across all connected sites.

Core solution elements include:

- High-capacity wireless links optimized for continuous video transmission and real-time monitoring.
- Narrow-beam, high-frequency technology enabling dense, interference-free deployment.
- Rapid "place, align, and go" installation that accelerates rollout.
- High-availability design that ensures stable monitoring during severe weather and peak citywide events.
- A backbone approach supporting future integration of analytics, sensors, and additional smart-city safety systems.
- Ongoing expert consultation to support long-term planning.

THE RESULT

Citywide Camera Coverage | High-Availability | Operational Continuity

The municipality has steadily expanded its monitoring footprint across key urban areas and public facilities. The wireless backbone consistently delivers the reliability required for continuous operations, without interruptions, even following severe weather events.

Key outcomes:

- Expanded monitoring coverage across newly developed urban areas
- Increased available bandwidth supporting more cameras and higher-resolution upgrades
- High-availability performance in all weather conditions
- Faster expansion cycles using a scalable, future-ready platform
- Improved operational effectiveness for municipal safety teams
- A proven long-term partnership built on technology leadership and reliable service

About The Customer

The municipality is one of the largest and fastest-growing cities in a country located in the middle east, serving as a major regional center for residential communities, education, technology, healthcare, and government services. As the city continues to expand, it is investing in scalable smart city and public safety infrastructure to support long-term urban growth and operational resilience.

