CASE STUDY

City of Brownsville partners with Nokia and NTT DATA to leverage Private 5G to build a smarter and safer city

NOKIA | NTT DATA

As Brownsville continues to grow as a prominent tech hub, the deployment of a Private 5G network is essential. This cutting-edge network will provide faster connectivity and foster the adoption of emerging technologies. By prioritizing Private 5G, we're positioning Brownsville to stay ahead in technological innovation and economic progress."

Jorge Cardenas,
Chief Information Officer
The City of Brownsville

Brownsville, Texas, a border city with Mexico, has long faced connectivity challenges. Once recognized as the least-connected city in the United States, Brownsville's residents, community services providers and businesses struggled with limited access to reliable, high-speed internet. This lack of infrastructure inhibited the community's ability to keep pace with the digital economy and restricted opportunities for innovation, education and public services.

Yet, Brownsville is also a city of enormous potential. With its location on the U.S.–Mexico border and emerging role as a growing technology hub, city leaders identified digital transformation as a critical pathway to economic growth and community well-being.

OBJECTIVE

Improve the City of Brownsville's connectivity to make it a smarter, safer city

The City of Brownsville set out an ambitious goal: transform into a "smart and safe city" powered by city-wide, reliable connectivity. The vision extended far beyond improved internet speeds. Leaders wanted to enhance public safety, streamline municipal operations and create sustainable solutions that would benefit every resident. Building this foundation required enterprise-grade, future-ready technology. The answer was a dedicated Private 5G network, offering the reliability, performance and scalability needed to support both immediate use cases and the city's long-term aspirations.

The City of Brownsville's primary objective was to establish a comprehensive, shared network that could serve multiple municipal departments and elevate the community's digital capabilities. The new infrastructure was needed to provide seamless, reliable connectivity across the city, ensuring equitable access and supporting smarter public services.

Public safety was a central priority. The city required a network robust enough to synchronize traffic lights for smoother flow, deliver wireless coverage and security across parks and trails, and enable the police department to adopt advanced tools to improve community safety. Equally important was the ability to streamline day-to-day operations, reducing inefficiencies and increasing sustainability through real-time, data-driven decision-making.

City leaders also envisioned Private 5G as a platform for growth. With enterprise-ready, carrier-grade performance, the network would support future demand and emerging smart city use cases. By enabling technologies such as AI, IoT and edge computing, the infrastructure would lay the groundwork for industry expansion, enhanced public services and greater opportunities for residents. In short, Brownsville's Private 5G investment was about creating a more connected, safer and economically resilient city for years to come.

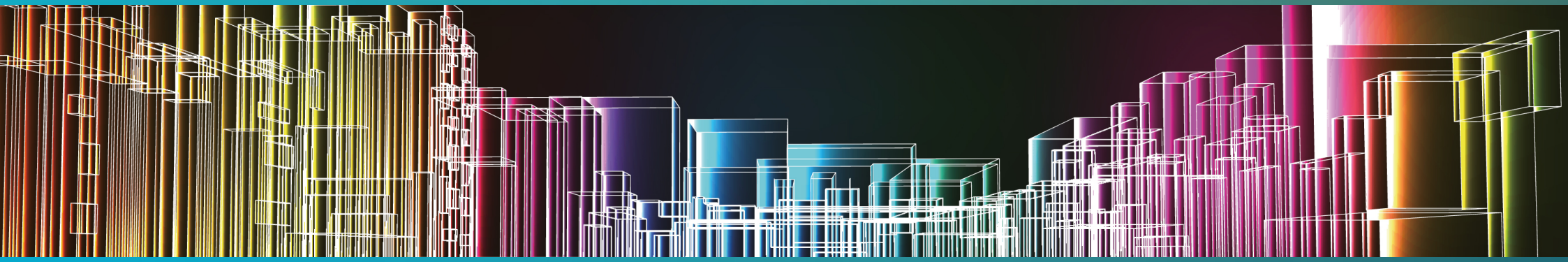
SOLUTION

Deploy Nokia and NTT DATA Private 5G for mission-critical operations

To achieve these goals, Brownsville partnered with Nokia and NTT DATA to deploy a city-wide Private 5G network. Our **AirScale Radio Access Network (RAN)** solution formed the foundation of the network, delivering the high-bandwidth, low-latency and secure connectivity needed for mission-critical operations. This carrier-grade Private 5G RAN is designed for enterprise environments, ensuring reliability and the ability to scale as demand grows.

The deployment was enabled by NTT DATA's globally available **Private 5G Network-as-a-Service (P5G)** platform. This turnkey solution went beyond basic connectivity by integrating IT and operational technologies into a unified smart city platform. With proven global experience and a strong partner ecosystem, Nokia and NTT DATA brought together expertise in both infrastructure and applications.

Key benefits included deployment flexibility via our **anyRAN for Enterprise** approach, which allows seamless collaboration with leading systems integrators and cloud providers. The solution also unlocked opportunities for innovative applications such as AI-driven video analytics, IoT-enabled sensors and real-time data processing at the edge. Together with NTT DATA, we delivered a private 5G solution designed not only to meet Brownsville's immediate needs, but also to support its long-term smart city evolution.



RESULTS

Delivering the first carrier-grade Private 5G network for municipal use in North America

In July 2024, the Brownsville City Commission approved a multi-year $4 million contract with NTT DATA Americas, covering the installation, management and operation of the Private 5G network and Smart City platform. NTT DATA selected Nokia as its strategic partner, marking the first North American deployment of an enterprise-ready, carrier-grade Private 5G RAN for municipal use.

The impact has been transformative. Brownsville is now recognized as one of Texas's most innovative cities, with initiatives spanning digital inclusion, smart infrastructure and sustainable development. Key use cases are already underway: traffic light synchronization to ease congestion, wireless connectivity and safety improvements across parks and trails, and enhanced tools for the police department to improve public security.

Beyond safety, the network is enabling more efficient municipal operations, improving responsiveness and helping the city meet sustainability goals. Its customizable design ensures scalability for new use cases, making it a foundation for future growth. Importantly, the network is empowering Brownsville's residents and businesses with the connectivity and services they need to thrive in a more digital economy.

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GLOBAL PERSPECTIVE

Private 5G is setting the standard for smart cities everywhere

Brownsville's Private 5G initiative reflects a broader trend: the global demand for reliable, modern connectivity to power critical municipal and enterprise operations. Private 5G networks deliver secure, high-bandwidth and ultra-low latency performance, making them ideal for mission-critical environments. As cities worldwide face the challenges of urbanization, sustainability and digital equity, Private 5G provides a path forward.

This technology lays the groundwork for smarter, safer and more connected urban environments. It enables public services to operate with greater efficiency, supports sustainability initiatives and improves everyday experiences for citizens. With the ability to integrate AI, IoT and edge computing applications, Private 5G helps governments and businesses harness real-time data to make informed, responsive decisions.

Equally importantly, Private 5G is designed with scalability in mind. It can flex to meet future demand and unlock new use cases, from smarter transportation to advanced healthcare services. As demonstrated in Brownsville, it accelerates digital transformation and drives economic progress, positioning cities to compete globally while improving quality of life locally. Brownsville is not just deploying a network; it is setting a model for how communities everywhere can embrace the future.

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