

# CAPA employs cutting-edge AI to boost manufacturing output

## Construction supplier drives growth utilizing Spectrum Enterprise connectivity and network solutions

CAPA, a Texas construction materials manufacturer, supports projects that help realize economic growth across the state. To assure the highest possible quality, at a pace fast enough to meet growing demand, CAPA counts on fiber connectivity from their technology partner, Spectrum Enterprise.

Spectrum Enterprise also helps CAPA stay connected to its many remote work locations. There, critical materials are processed for the manufacture of concrete, asphalt, concrete pipes and aggregates used in developing roads, office buildings, arenas, oil fields and much more.

“The good thing about having a strong company-wide infrastructure is that you can grow at a fast pace,” notes Jorge Salem, Information Technology Manager, CAPA. “Having Spectrum Enterprise as our partner since 2016 allows us to do more from anywhere, and manage what we do better from any location.”

In recent years, the partnership has grown with the installation of additional fiber circuits. Tied together by a networking platform co-managed by Spectrum Enterprise engineers and technicians, CAPA can oversee its many operations across thousands of miles from a single, easily operated portal.

### How connectivity improves the quality of concrete

For 40 years, CAPA has supplied materials for public and private construction projects across Texas. Based in Palmview, CAPA's products include concrete pipes and asphalt used to maintain and expand the transportation infrastructure of the Rio Grande Valley, one of the fastest-growing areas in the United States.

Of all the plants CAPA operates, the newest plant in Peñitas designed by Jaime Reyes, Engineering and Maintenance Manager, CAPA, is unique. It is here where Spectrum Enterprise connectivity serves a vital need. The Peñitas plant uses AI to measure how ingredients that make up their pipe and concrete products are combined. Because the plant must be able to produce large volumes of product under tight schedules, having AI saves time by ensuring the final mix meets their precise specifications.

Setting such high standards for quality pleases CAPA clients, including oil companies that want concrete pipes with non-porous surfaces. It also helps with the bottom line. An earlier prototype of this plant exceeded its delivery projections by 120% in just two years. It is anticipated this Peñitas plant will further increase product delivery by 130% shortly.



To accommodate AI enhancements for manufacturing better quality concrete materials, CAPA sought a major connectivity upgrade. The first step was reaching out to Spectrum Enterprise, their trusted technology partner.

### Client profile



**Company**  
CAPA

**Industry**  
Manufacturing

**Services**  
Dedicated Fiber Internet (DFI)  
Managed Network Edge  
Wireless Internet

### Overview

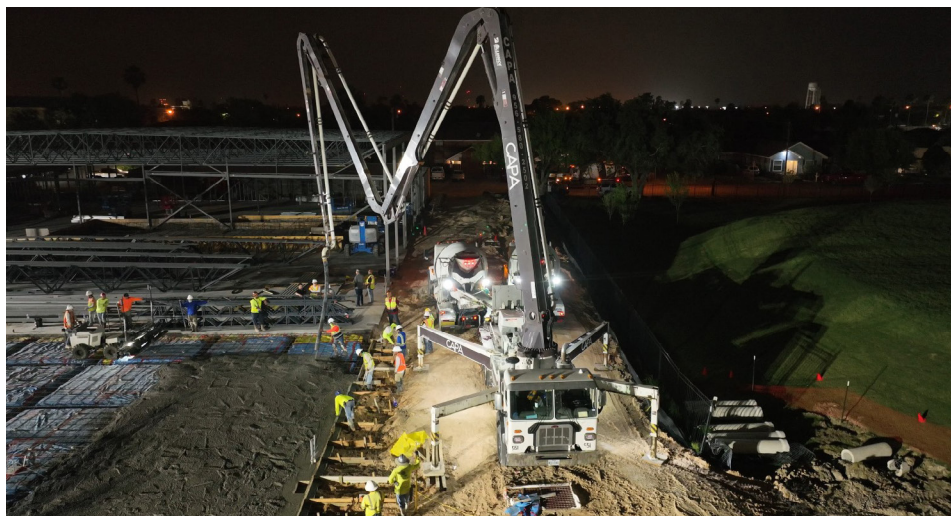
- Texas construction materials supplier CAPA manufactures and delivers concrete pipes and other elements used in part for building major roads and highways.
- To service a new plant that uses AI to maximize and refine its production, CAPA needed high-speed, reliable bandwidth.
- CAPA counts on mobile plants to extract and process construction materials. These plants are often set up in remote locations where getting a signal can be challenging.

### Outcomes

- The first CAPA AI-powered plant boosted productivity 120% above expectations, using bandwidth provided by a Spectrum Enterprise Dedicated Fiber Internet (DFI) circuit.
- A second, more powerful plant refines the quality of its produced materials utilizing an array of sensors and diagnostic tools channeling vital data through a second fiber circuit.
- CAPA manages and optimizes data flow to its remote mining and construction sites using a Spectrum Enterprise networking platform, Managed Network Edge.

### Why it matters

- CAPA is enabling Texas's ongoing economic development by helping facilitate the construction of major buildings and a vast transportation infrastructure.
- Staying connected with a widely dispersed network of plants is critical to CAPA's growth plans as it expands operations out of its established base in the Rio Grande Valley.
- The new technology helps CAPA better manage its supply needs and control costs.



CAPA is able to oversee operations at multiple remote locations in various parts of Texas utilizing a single platform, Managed Network Edge. The network offers full visibility to all connected offsite locations 24 hours a day.

“Our plant is doing it all by herself, harmonizing the right materials for the concrete in the right proportions, while all the time learning how to make it even better,” Reyes says.

Data passing to and from the plant is used to track weight, moisture, temperature and other conditions. This enables better quality materials, and is achieved using one of a dozen [Dedicated Fiber Internet \(DFI\)](#) circuits installed at key locations in the CAPA service area. These circuits come with a Service Level Agreement guaranteeing 100% uptime.

“To bring this technology to fruition, we needed the right connectivity to load large amounts of information and pass them quickly from point A

“Spectrum Enterprise is always on top of us, presenting new ways of doing things. It’s been a long journey and we have built a really good relationship.”

- Jorge Salem, Information Technology Manager, CAPA

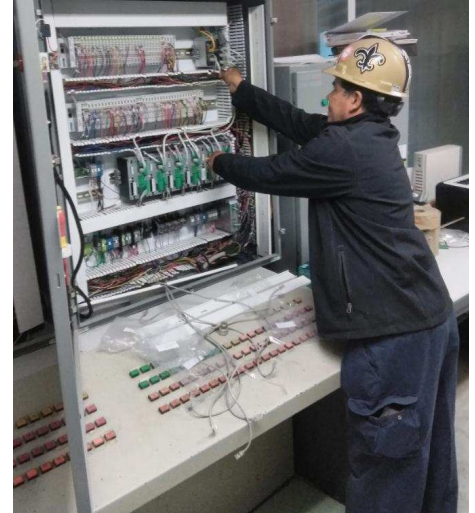
to point B,” Reyes explains. “Since we implemented the new connectivity, we have been able to go from an analog to a PLC (Programmable Logic Controller) system. This allows our plant to be faster and smarter.”

### Technology to go anywhere, however remote

CAPA has also modernized the reach of its connectivity network. Extracting, manufacturing and delivering construction materials to specific locations requires the ability to quickly set up new operations in some very remote places.

“In the past, setting up a new project site could take four months, but our clients will want it right away,” Salem explains. “Now, because of what Spectrum Enterprise gives us, we can move to a new piece of land, say a location in the middle of a big desert, and link it up to our network in minutes.”

What makes the “magic,” as Salem puts it, is a comprehensive network platform. This includes a managed firewall that protects CAPA from cyberattack and a Teleworker device with built-in WiFi and LTE capability



CAPA has operated plants throughout the Rio Grande Valley for 40 years. Moving into Laredo is part of a broader corporate strategy utilizing fast, secure connectivity solutions like Dedicated Fiber Internet (DFI).

that enables full connectivity to and from remote sites anywhere in the nation where LTE/wireless service is available.

Providing all of these capabilities and more is [Managed Network Edge](#).

“If we didn’t have this capability, it would be impossible for us to continue what we are doing, which is expanding into regions where our competition does not want to go,” Reyes notes.

Because it is a managed service, Managed Network Edge gives Salem the flexibility to manage his IT needs directly, or else step back and have his support team at Spectrum Enterprise resolve an issue.

### Expanding into Laredo

After years of establishing a market presence in the Rio Grande Valley, CAPA recently expanded its reach nearly 200 miles away into the Laredo area. There, competing materials suppliers work from stationary plant locations. Having a more mobile

operation gives CAPA a clear competitive advantage to pass on to its customers.

“CAPA was mainly focused in the Rio Grande Valley, but now they have begun to hit the Laredo market,” notes David Hardin, Account Manager, Spectrum Enterprise. “Major infrastructure projects are going on right now on our highways where CAPA is filling a critical need.”

The Teleworker function of Managed Network Edge helps CAPA set up temporary remote locations and service more out-of-the-way clients.

**“With Spectrum Enterprise support, our inventory of product went from filling one acre to filling sixty acres with ready product in just two years. We ran out of space and had to open up more land.”**

- Jaime Reyes, Engineering and Maintenance Manager, CAPA

CAPA also expands its connectivity footprint to locations where fiber circuit installations prove impractical by having Spectrum Enterprise install an effective turnkey solution, [Wireless Internet](#).

Connectivity also allows CAPA cameras to run at all locations. Over 400 cameras currently stream video so management is always aware of what is going on at any worksite. CAPA leaders use them as tools to coordinate on-site work activities from hundreds of miles away, to ensure critical productivity targets are being met.

“With Managed Network Edge, Jorge and Jaime can monitor connectivity to the Peñitas plant, ensuring no disruptions affect the bandwidth dedicated to the AI,” Hardin notes. “They can also use it to monitor activity at each of their locations where they have aggregate or materials that need to be loaded.”



CAPA plants need to be able to run continually, without disruption. Helping them do just that is a Service Level Agreement (SLA) with Spectrum Enterprise guaranteeing 100% uptime.

### A partnership that never stands still

Back in 2021, CAPA had to work within the confines of limited bandwidth and connectivity not designed to handle the demands of a vast enterprise. Aging plants needed to be upgraded to meet higher supply standards and satisfy expectations from the largest and most demanding clients in Texas.

“We have 100% connectivity uptime, which by itself is such a major thing,” Salem notes. “Combine that with the co-management of our network, where I can call Spectrum Enterprise to resolve something or else do it myself, and it’s great for us. Our relationship is like a marriage.”

“Since we moved to Managed Network Edge, I can do what I need to on my own to keep our plants up and running from anywhere, no matter how remote they are, no matter where I happen to be.”

– Jorge Salem, Information Technology Manager, CAPA

Reyes likens the experience of moving to Spectrum Enterprise as going from horse-and-buggy to a ten-lane highway.

“Before we had Spectrum Enterprise, we had to deal with crashes all the time trying to pass information, and we were tired of it,” he notes. “Now we have reliable, high-speed internet anywhere we need it.”

Reyes sees further opportunities to expand on the success of the new AI-powered plant, in the way of decreasing accidents, reducing carbon footprints and streamlining supply chains. He sees it blazing a trail not just for CAPA, but for American industry as a whole.

“This dream, this vision of a new plant that is going to revolutionize our industry using AI, would not have taken place without the infrastructure and technology that Spectrum Enterprise provides,” he says.

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### About Spectrum Enterprise

Spectrum Enterprise, a part of Charter Communications, Inc., is a national provider of scalable, fiber technology solutions serving many of America’s largest businesses and communications service providers. The broad Spectrum Enterprise portfolio includes [networking and managed services solutions](#); [Internet access](#), [Ethernet access and networks](#), [Voice](#) and [TV solutions](#). The Spectrum Enterprise team of experts works closely with clients to achieve greater business success by providing solutions designed to meet their evolving needs. For more information, visit [enterprise.spectrum.com](https://enterprise.spectrum.com).

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