CATAWBA COUNTY REGIONAL ECOCOMPLEX AND RESOURCE RECOVERY FACILITY
CASE STUDY

CATAWBA COUNTY ECOCOMPLEX CONNECTS RESEARCHERS AND BUSINESSES WITH REAL-TIME DATA

The Catawba County Regional EcoComplex and Resource Recovery Facility relies on full Wi-Fi access throughout its 800-acre complex to connect researchers and local businesses with real-time data collected from monitoring devices, sensors and processors.

SITUATION

The EcoComplex needed facility-wide wireless Internet access to fully realize the benefits of its ecological research and waste recovery efforts. The 800-acre Catawba County Regional EcoComplex is a vital ecological research facility where public and private partners conduct research and recover useable by-products from waste materials. Broadband service to the site was limited and the cost of running DSL or cable lines was prohibitive. The lack of wireless connectivity between facilities limited the data collected from monitoring devices, sensors and processors, which in turn hampered the facility's research opportunities and overall ecological benefits.

SOLUTION

The EcoComplex deployed Motorola Solutions' Mesh Wide Area Network AP 7181 to provide up to 180 Mbps of Wi-Fi connectivity for data, voice, video and control applications. Working with partner DoubleRadius, a Motorola Solutions Mesh Wide Area Network AP 7181 was installed to provide the wireless broadband infrastructure needed for facility-wide monitoring systems and wireless device access.

RESULTS

The Mesh Wide Area Network provides wireless access across the facility, giving researchers the real-time data they need to help reduce landfill waste and develop green energy solutions for Catawba County, North Carolina. According to J. Thomas Lundy, Catawba County Manager, "Broadband connectivity at the Catawba County EcoComplex enhances our efforts by reducing costs and enabling real-time monitoring between the EcoComplex laboratories, partnering universities and businesses which greatly facilitates research and sustainable business development." In addition to the ecological and cost-saving benefits, Internet access increases the educational opportunities for schools and other organizations at the facility.

CUSTOMER PROFILE

Customer
- Catawba County, NC
- Regional EcoComplex and Resource Recovery Facility

Product
- Motorola Mesh Wide Area Network AP 7181

Benefits
- Wireless access for researchers across the 800-acre complex
- Improved monitoring of Catawba County's landfill greenhouse gas emissions
- Delivery of real-time data to research partners
- Increased educational opportunities for schools and

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— Chris Shupe, Engineering Director at DoubleRadius

KEEPING IT GREEN

"Catawba County EcoComplex needed broadband connectivity to fully realize its goals," says Chris Shupe, Engineering Director at DoubleRadius, the Motorola Solutions partner that worked with the EcoComplex.

"Because they are county workers, and not a communications company, they partnered with us to design and build a wireless network that would continue to work without requiring maintenance regardless of the weather. Based on our experience, we chose the Motorola Mesh 7181 solution because it provides connectivity that works the first time and continues running trouble free for years."

Due to the remoteness of some of the APs, and in keeping with the facility's green-energy focus, EcoComplex staff worked with DoubleRadius engineers to design a solar solution to power two of them.

CONSISTENT AND STRONG COVERAGE

"Covering a large complex like this is a challenge due to its constantly changing environment and lack of power across the facility," says Terry Bledsoe, Chief Information Officer of Catawba County. "All of these challenges were addressed by Motorola and DoubleRadius."

Coverage throughout the facility is consistent and strong. Even standing half a mile away from the gateway node, a researcher's laptop can pull full bandwidth and connect seamlessly between APs throughout the EcoComplex.

"Due to the versatility of the Mesh 7181 product," says Shupe, "even with power-hungry radios, the APs delivered the signal strength needed with up to a week's worth of no sun or energy draw. The draw on radios came in under what we anticipated."

FAST DEPLOYMENT AND EVEN FASTER DATA COLLECTION

Typically, a deployment like this could take up to two weeks, but with the help of DoubleRadius, the network was pre-configured in less than a day and the entire system was up and running in three days.

With the Mesh Wide Area Network in place, it has never been easier to monitor sensors in real time and share information between the EcoComplex laboratories and partnering universities and businesses. The applications that the facility uses are web-based, so they respond well to mesh nodes, since the coverage is consistent throughout the facility.

"Motorola and DoubleRadius worked with us to provide a solution that allows our personnel and researchers from partner organizations to easily connect to databases, monitors and other resources from anywhere in the EcoComplex," adds Bledsoe.

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WHAT'S UP AND RUNNING AND WHAT'S NEXT

In addition to Internet access throughout its facilities, the EcoComplex now has the ability to:

- Monitor the data transfer for EcoComplex day-to-day operations
- Share research information among constituent universities via data transfer
- Conduct virtual field trips for awareness and outreach programs
- Read Supervisory Control and Data Acquisition (SCADA) meters for landfill gas monitoring and reporting

It also now has the potential to improve security through facility-wide video surveillance.

For more information about the Catawba County Regional EcoComplex and Resource Rocovery Facility and the products featured in this case study visit www.motorolasolutions.com/mesh