

EAST SIDE UNION HIGH SCHOOL DISTRICT AND THE CITY OF SAN JOSE

Beyond the classroom: digital learning with Wi-Fi



CASE STUDY



OVERVIEW

East Side Union High School District (ESUHSD) is located in San Jose, California and administers 19 high schools with a combined enrollment of approximately 24,500 students. Together, ESUHSD and the City of San Jose have come up with a unique solution in building one of the nation's first school district-funded municipal Wi-Fi infrastructures, bringing free broadband access to hundreds of families that didn't have it before.

REQUIREMENTS

- Providing fast broadband internet throughout the neighborhoods
- Reliable coverage throughout the city

SOLUTION

- 197 Ruckus T300 outdoor wireless access points (APs)
- Innovative public partnership leveraged school funding to extend the city-owned and operated public Wi-Fi network

BENEFITS

- The network supports high-speed connections and Terabytes of data every month
- Low-income students can take full advantage of digital curriculum and school-provided Chromebooks
- Fast, free public Wi-Fi is available throughout residential neighborhoods where most households previously had no broadband access

INNOVATIVE CITY-SCHOOL DISTRICT PARTNERSHIP BRINGS RELIABLE BROADBAND TO UNDERSERVED STUDENTS

Digital curriculum, one-to-one, Bring Your Own Device (BYOD) computing initiatives, the ability to access daily class materials and submit homework online are all part of the vision of the connected school—a vision that elevates classrooms and learning for everyone. Everyone, that is, with a reliable broadband connection. But what happens to lower-income students who don't have broadband at home?

School districts have been wrestling with this question for years. Now, East Side Union High School District (ESUHSD) and the City of San Jose have come up with a unique solution. Together, they're building one of the nation's first school district-funded municipal Wi-Fi infrastructures, bringing free broadband access to hundreds of families that didn't have it before.

THE CHALLENGE

Across the United States, school districts are investing in Chromebooks and digital learning platforms, and using federal E-Rate funds to deliver lightning-fast broadband to the classroom. Those investments make a huge difference—but only on school grounds. Students who don't have home broadband—a majority of students at some ESUHSD schools—risk getting left behind the digital learning revolution.

Schools are well aware of this lack of digital equity between the digital “haves” and “have-nots.” But with no control over the broadband infrastructure in their surrounding communities, most districts struggle to find solutions.

“Eastside Union High School District faced serious issues as we transitioned to a digital curriculum,” stated Randy Phelps, ESUHSD's chief technology officer. “We have 30% to 40% of our students challenged to complete homework since they don't have broadband Internet access at home. Providing a reliable, powerful solution for families is critical to achieving our mission.”

THE SOLUTION

Today, ESUHSD is working with the City of San Jose to bring free, reliable broadband connectivity to thousands of homes over Wi-Fi. The Access Eastside project is a groundbreaking example of what cities and school districts can do when they work together to address the digital equity challenge.

Through the project, ESUHSD is investing \$2.7 million in voter-approved school bond funds to deploy new Wi-Fi infrastructure across city-owned assets. The city, working with its partner SmartWAVE Technologies, is

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deploying and maintaining the infrastructure. The school district manages registration and support for ESUHSD students and their families accessing the Wi-Fi network.

As one of the first municipalities to embrace the model of a smart city, San Jose was already running a large-scale Wi-Fi infrastructure, so it was well positioned to support a new broadband initiative. Effectively, the new services function as an extension of the city's existing outdoor Wi-Fi network and can be deployed and managed in the same way, using the same tools and people.

DELIVERING RELIABLE OUTDOOR CONNECTIVITY

The new Wi-Fi network includes 197 Ruckus T300 outdoor wireless access points (APs). The APs can be easily deployed on city assets like streetlights and buildings. They feature Ruckus' patented BeamFlex™ adaptive antenna and Smart Mesh™ wireless meshing technologies which deliver better coverage and higher performance—essential to ensure that the district



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RANDY PHELPS

Chief Technology Officer, ESUHSD

can reach as many targeted homes as efficiently as possible. The compact form factor and industry-leading performance of the T300 outdoor APs—with no need for external antennas—make them easy to mount almost anywhere, without requiring new permits or negatively impacting the aesthetics of the street. And with power-over-Ethernet (PoE) connectivity that’s among the most efficient in the industry, they consume only a small amount of power.

“The small form factor and internal directional antennas reduced the overall footprint and wind load on street lights and traffic signal poles,” said Al Brown, chief executive officer, SmartWAVE. “In addition to the low power draw of the device, this greatly simplified the deployment of the Wi-Fi network. Permitting approvals for projects like this will typically provide the greatest barrier to entry. These features reduced this risk and provided a lot of flexibility during the installation.”

RESULTS

Today, the Access Eastside project is already having a major impact on the lives of approximately 1,700 ESUHSD students. The network supports high-speed connections and Terabytes of data every month. Low-income students who used to have no viable way to do their schoolwork at home can now take full advantage of digital curriculum and school-provided Chromebooks. At the same time, ESUHSD is realizing more value from their digital learning investments, knowing that more students are using these tools to work and learn more effectively.

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Currently, the Access Eastside project is a unique example of what can happen when districts and cities collaborate to promote digital equity—but it doesn’t have to be unique. Thousands of cities across the country, and around the world, are investing in public Wi-Fi infrastructure and smart city technologies. With a little creativity and teamwork, any of those cities could follow the blueprint laid down by ESUHSD and San Jose to extend those investments to at-risk students and families. They can build a future where *all* students can benefit from digital equity and learning at home, and everyone has the tools to reach their full potential.

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