

## CASE STUDY

# SURREY SCHOOL DISTRICT 36

## LARGE, DIVERSE BRITISH COLUMBIA DISTRICT SUPPORTS EDUCATIONAL PARADIGM SHIFTS WITH HIGH-PERFORMANCE ARUBA EDGE NETWORK

### CUSTOMER PROFILE

Formed in 1906, the Surrey School District currently has the largest student enrolment in British Columbia at nearly 74,000 students and is one of the few growing districts in the province. A diverse district, more than half of Surrey's students are from a household where one of 195 languages other than English is spoken. This includes many students of Aboriginal ancestry (First Nations, Métis and Inuit). The district acknowledges the shared, unceded traditional territory of the Katzie, Semiahmoo, Kwantlen and other Coast Salish Peoples on which its students and educators work, play and learn.

### USE CASE

Meet Provincial curriculum modernization mandates that emphasize critical thinking, collaboration and communication for real-life decision-making by refreshing wired and wireless networks to adopt a secure, high-performance, high-availability, and highly scalable platform that enables next-generation classroom, operations and administrative strategies.

#### REQUIREMENTS

- Modernize, streamline and simplify wired and wireless networking
- Deploy a high-performance, reliable, self-healing, scalable network for superior experiences
- Gain security and automation capabilities with intelligent, centralized tool sets

#### SOLUTION

- Aruba Wi-Fi CERTIFIED 6 Access Points
- Aruba 2930F Switch Series
- Aruba 3810 Switch Series
- Aruba AirWave for network management
- Aruba ClearPass for network access control

### OUTCOMES

- Deliver seamless, high-performance experiences to more than 86,000 people daily
- Reduced wired deployment times by about 75% and wireless by up to 25%
- Support rapid educational paradigm shifts and power new curriculum models
- Gained secure, dynamic, and intelligent connectivity for IoT, mobile and cloud-delivered technologies
- Enabled future additions of location-aware options and granular user experience technologies

When British Columbia began revising K-12 education to emphasize critical thinking, collaboration and communication for real-life decision-making, the Surrey School District realized it needed a higher-performance, more manageable network capable of supporting new curriculum expectations and the region's anticipated population growth.

“Even prior to the curriculum modernization we were already experiencing increasing connectivity demands,” explains Dan Turner, Director of Information Services. “Plus, as an IT department, we were struggling with efficiently managing our aging wired and wireless network. It was clear we needed a refresh to position us for the future.”

## SEAMLESS, SECURE EXPERIENCES IN A FEATURE-RICH NETWORK

As the largest district in British Columbia, Surrey serves a diverse population of approximately 74,000 students and is the largest employer in the region with total staff of 12,500. Spanning 328 square kilometres, Surrey has 126 school buildings and three administrative locations, with several more elementary (K-7) and one secondary (8-12) school under construction.

“With over 55,000 devices connecting to our network daily, IT is expected to deliver seamless, secure experiences for everything from personally owned smartphone apps, to mission critical business applications,” Turner says. “We now have capability to secure all hardware, all software and all users.”

Already a customer of Aruba, a Hewlett Packard Enterprise company, Surrey worked with local partner X10 Networks to evaluate options in the marketplace and implement a solution.

“Reviewing Aruba’s wired and wireless edge networking offerings, as well as the company’s vision and roadmap, gave us the confidence that it had assembled the most competitive solution,” says Turner. “So we opted for a strategic partnership with Aruba for an end-to-end solution, which ensured a tightly integrated and feature-rich network.”

## MODERNIZING AND STREAMLINING WIRED AND WIRELESS WITH ARUBA

Surrey’s new Aruba ESP-based infrastructure, is comprised of multiple products, starting with Aruba’s Wi-Fi 6 access points (APs), using the 510 Series and 530 Series. For wired networking access and aggregation, the District is standardizing on the Aruba’s 2930F Switch Series and 3810 Switch Series.

The new infrastructure also includes Aruba AirWave for network management, with Aruba ClearPass providing unified wired and wireless network access control.

Overall, the solution enabled Surrey to design and deploy a world-class edge network.

### Wi-Fi up to 25% faster to deploy

Among the immediate benefits of Surrey’s new solution are Wi-Fi network streamlining and simplification.

“By selecting Aruba’s advanced APs, we increased our capabilities to handle escalating device densities and performance demands without adding to network complexity,” says Turner.

“In addition, Aruba’s Wi-Fi 6 innovations enabled us to retain our existing AP density model, which provided considerable savings in cabling and other costs, while realizing up to a 300% increase in wireless network capacity,” he adds.

Surrey’s new wireless gear is also faster to deploy. IT staff achieve up to a 25% savings per AP, which adds up to considerable efficiency increases and risk reduction over the course the District’s 5000-AP deployment.

### Dynamic Segmentation + ClearPass = automated and secure access

From a management perspective, Surrey's new product mix enables automating and securing its network simultaneously. For example, the wired switches provide Aruba's Dynamic Segmentation, which combines with ClearPass to automatically and dynamically assign switch ports based on Surrey's policies.

"Using Dynamic Segmentation, along with ClearPass, frees us from manual switch configuration chores," Turner says. On average, it takes 75% less time to deploy a switch than it did before.

"Having the network configure itself is absolutely essential to efficiently and effectively manage an environment as large and complex as ours," says Turner. "Combining ClearPass and Dynamic Segmentation definitely minimizes the staffing required to supply seamless, high-performance experiences to more than 86,000 people daily."



### Enhanced security keeps users safe and helps boost experiences

What's more, Surrey's enhanced security capabilities provide the district with granular data on every connection, regardless who accesses the network, which device is used, when the access occurs and for how long.

"Such detailed information enables us to continuously adjust and improve our security posture," Turner says. "It also helps us with network utilization planning to ensure we can make adjustments that ensure seamless and positive user experiences."

### ENABLING CLASSROOM INNOVATION, IOT AND NEXT-GEN INITIATIVES

In the classroom, Surrey is meeting today's educational requirements with greater flexibility than ever before.

For example, the District promotes Science, Technology, Engineering, Arts & Math (STEAM) education with a "makerspace" in every school building.

"Our network supports an incredibly diverse set of technologies in these spaces," says Turner. "From IoT-connected devices such as robots to 3-D printers and CNC [computer numerical control] machines, it's all about giving kids hands-on experience with putting their academic knowledge to work."

### New network and pandemic jump start educational paradigm shifts

Surrey's new network also enables teachers to use innovative instructional tools like FreshGrade, for digital student portfolios; and Microsoft Office 365, with Teams, for virtual collaboration.

“Only about five per cent of our users accessed Teams daily until we abruptly transitioned to all-virtual learning when the pandemic hit,” says Turner. At that point, utilization exploded to more than 65%, which Surrey’s infrastructure handled flawlessly.

“Upon returning to in-person learning last fall, many teachers continued using Teams for new types of collaborations and curriculum delivery,” he continues. “Being a part of this rapid pedagogical evolution is truly exciting.”

## ACHIEVING MULTIPLE ADMINISTRATIVE BENEFITS

Administratively, Surrey is using various new network-enabled tools to move the District forward.

One effort is leveraging Microsoft’s Power BI. “We’re developing an enterprise data strategy that uses BI to drive a wide range of efforts around reimagining schools,” Turner says.

Another initiative involves modernizing voice communications with unified communications (UC) and soft telephony. “Instead of getting stuck in an IVR [interactive voice response] tree, parents can quickly connect with teachers as calls ring through to their smartphones,” explains Turner. “Or, parents can leave a voicemail that’s delivered to a teacher’s email inbox. This solution also relieves teachers from being tethered to a physical telephone.”

Even the District’s budgeting process is improved. “Rather than sending out thick budget packets for departments to complete and return, it’s all online with access determined by our networking credentials,” Turner says. “The clerical efficiencies are considerable, let alone the productivity efficiencies for department heads and managers.”

## SELF-HEALING CAPABILITIES ACCELERATE TROUBLESHOOT

For Surrey’s IT department, the new edge network also significantly accelerates troubleshooting. “With advanced tools giving granular visibility into every site, we can detect issues faster and respond more rapidly than before,” says Turner.

Surrey also is beginning to harness the self-healing capabilities within its Aruba ESP-based solution. “We’ve already started dispatching replacement equipment to buildings based on the alerts we receive, rather than waiting for users to call us to report an outage,” Turner says. “Later, we can troubleshoot the affected gear in our data centre, without impacting teaching and learning.”

Another benefit is the capability to use ClearPass for device profiling and tracking. “Last spring we loaned 4,500 laptops to families,” says Turner. “Nearly all of them were returned because we could track which asset we loaned to which individual, enabling us to work with families effectively, while protecting the District’s asset inventory and investments.”

## NUMEROUS AUTOMATION INITIATIVES ON THE HORIZON

Moving ahead, the IT team looks forward to multiple future network enhancements. These include blanketing outdoor spaces with Wi-Fi, for seamless anywhere learning, and automating facilities management systems using various modern technologies.

“Having a high-performance, reliable network provides our facilities department with the infrastructure they need to execute IoT-enabled automation initiatives, such as watering our soccer fields more sustainably,” says Turner.

### Location Services and UXI next on the list

Additional enhancements under consideration include leveraging the location-awareness built into Aruba’s APs by adding Aruba Location Services and realizing a user-eye view of network experiences by deploying Aruba User Experience Insight (UXI).

“Because our device technology is so varied, ranging from the latest tablets to decade-old laptops, we’re very interested in UXI for enabling us to focus our limited resources on fixing areas with underperforming experiences,” Turner says.

In the data centre, Turner plans to evaluate the Aruba CX portfolio of intelligent switches to further simplify IT operations and accelerate service provisioning while also gaining dynamic AIOps-enabled management.

To unify it all, from core to edge, Turner also expects an eventual transition to Aruba Central for cloud-native, AI-powered insights and administration.

### Aruba partnership readies organization for the future

Regardless which networking project Surrey pursues next, Turner’s team continues to appreciate its outstanding “Customer First, Customer Last” partnership with Aruba.

“We’ve receive fantastic support from our Aruba team,” says Turner. “With their assistance, we’ve built an exceptionally robust edge network.”

“Now we’re well positioned for the future,” he adds. “Most importantly, our teachers and students don’t ever need to think about how they access the network – they just power on their device, log in and they’re working on the task at hand.”

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DAN TURNER, DIRECTOR OF INFORMATION SERVICES, SURREY SCHOOL DISTRICT